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Contents

Call for Papers

CEA announces a call for papers for publication in the eleventh edition of the CEA Journal of Economics (Volume 6, Issue 2). The papers can come from any area of economics. CEA Journal of economics is EconLit listed.

Although not strictly limited to them, please observe the following guidelines. In case of submitting theoretical papers, please include: abstract, introduction, extensive literature review, theoretical ramifications, conclusion and bibliography. In case of submitting empirical papers, please include: abstract, introduction, short literature review, methodology, empirical findings, conclusion with policy implications and bibliography.

Format: electronic version, A4, Times New Roman, no indentation, single space, one space between paragraphs, APA style, maximum 20 pages.

Deadline: 30 November 2011

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MACEDONIAN QUARTERLY ECONOMIC MONITOR

May 2011

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1. Resent economic developments and current political environment

Economic recession in Macedonia is finished and GDP has grown three quarters in a row. Strong growth in export and investments were able to cover weak private and government consumption, reaching GDP growth of 2.3% in the fourth quarter of 2010 in favor of the same period of last year. Private consumption in the last quarter of 2010 declined by 3.1% (yoy) and increased inflation will further endanger weak recovery.

The biggest opposition party blocked the work of Macedonian Parliamentary which resulted in early elections on fifth of June 2011. Current political developments in Macedonia are creating an uncertain atmosphere as if the economic priorities might be endangered with new political campaigns. Finding solutions for the name issue between Macedonia and Greece might not happen in near future thus, blocking joining NATO membership and EU negotiations.

2. GDP developments

Starting from the second quarter of 2010 recovery continued till the end of 2010. After decline of 0.9% in 2009, GDP in 2010 showed small, but very significant growth of 0.7%. GDP kept the momentum from the previous two quarters, reaching grow of 2.3% (yoy) in the last quarter of 2010. This growth, mainly is driven by the strong recovery of the construction sector (38.2% yoy), which is the result of the Government investments and on-going reforms for simplifying the procedures for obtaining working permeations and other related documents. Also the trade and handicraft sector continued with strong growth in the fourth quarter (11.5% yoy). Agricultural sector kept a declining trend from the previous 3 quarters, declining by 3.7% (yoy) in the last quarter of 2010. Increased amount of subsidies and IPARD program were not able to pull agriculture from declining. In the fourth quarter, the number of nights spent by tourists increase by 3% (yoy), but sector of Hotels and restaurants during the same period declined by 6.3% (yoy). Analyzed by expenditure side, in the fourth quarter, strong growth had export (40% yoy) and investments (14.8% yoy). While personal consumption, after the increase in the previous two quarters, had negative growth of 3.1% in the last quarter of 2010. Government consumption during all four quarters of 2010 was declining, showing -3.3% (yoy) decrease in the fourth quarter.

Chart 1. GDP growth rates (yoy)
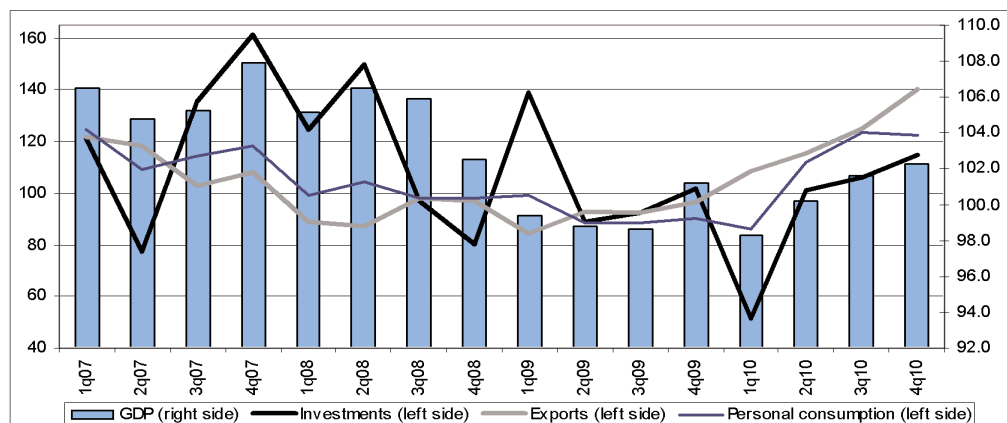
Source: State Statistical Office

3. Real sector

Increased industrial production…

Industry had negative growth during the last quarter of 2010, strongly increasing in the beginning of 2011,[1] by 24.5% (yoy) in March 2011. This was due to the increase of metal and energy prices on the global markets, mining and quarrying had a growth of 24.4% (yoy) in March 2011. Manufacturing, as the biggest industrial sector (participating with 83.7% in the industry), had growth of 28.9% in March 2011 in comparison with March 2010, driven mostly by the increase in the textile sector and production of iron and steel.

Chart 2. Industrial production – seasonally adjusted and industry cycle
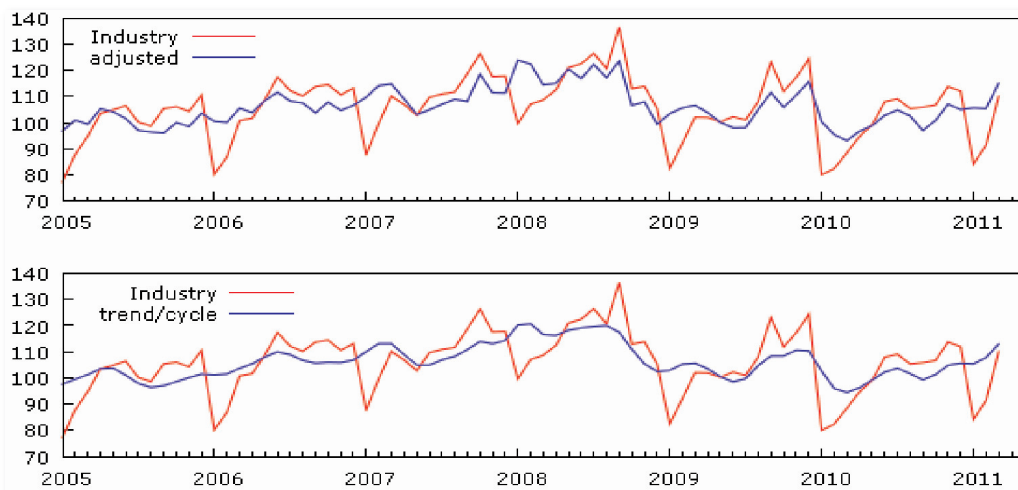
Source: State Statistical Office, authors' calculations.

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1) Here must be mentioned that at the beginning of this year, the State Statistical Office, for the purpose of collecting and processing data on Industrial production volume indices used the new National Nomenclature of Industrial Products 2008, while for calculation and publication of industrial production volume indices the new National Classification of Activities Rev.2 was used. Part of the growth is result of the changes in the sample, by involving new opened facilities/observations.

Serious slowdown in the construction sector….

After strong expansion in the second half of 2010, the construction sector in the beginning of 2011 is facing a serious slowdown. Issued construction permits in March continue a sharp drop, having 35.9% less value (yoy). The value of completed construction works abroad in 2010 is 15.1% less compared the previous year, and more concerning is that contracted construction works abroad in the first quarter of 2011, which is in period of economic recovery, are having 52.1% less value compared with the same period of the previous year.

Growth in the retail is kept….

Trade had stable growth in the fourth quarter of 2010, turnover in the retail and wholesale trade were increased by 5.8% and 10.4% respectively. Increased food and oil prices influence on the decreasing the growth rates of the retail sector, from 83.1%[2] (yoy) in January to 36.8% (yoy) in February 2011, but still there is strong growth. Decrease of growth rates in the retail sector is expected to continue in the following months due to the weaken purchasing power of Macedonia households.

More foreign tourists…

Number of domestic tourists at the beginning of 2011 had small increase, but number of foreign tourists is having strong stable growth of 14.8 and 31.6 percentages in February and March 2011 compared with previous year, respectively. Number of spent nights by tourists in March 2011 had strong increase of 19.9 % (yoy). On average, each tourist is staying 2.3 nights on its destination in Macedonia.

Chart 3.
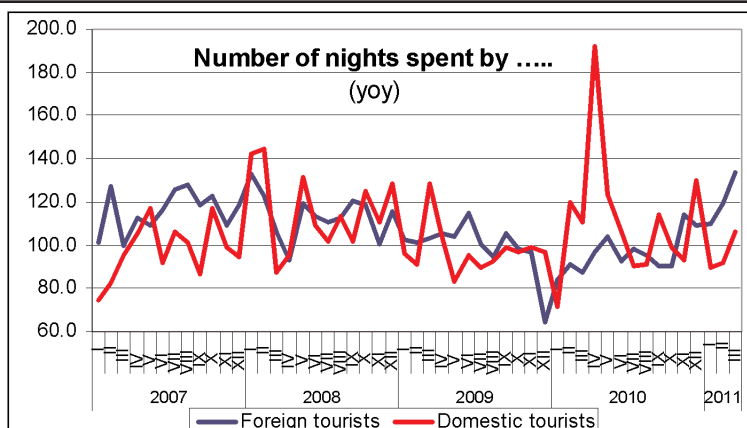
Source: State Statistical Office

4. External Sector

Stronger export growth…..

Export in 2010 recovered much faster from the import. High export in 2010 growth of 22.7% is driven by the increased demand in the main trade partner of Macedonia, European Union, and favorable global prices of commodities, especially metals. Import also had significant growth, but with slower dynamic from the export, reaching 8.1% growth in 2010. In the beginning of 2011, export kept its momentum, growing by 40.2% (yoy)

2) State Statistical Office starts publishing monthly data about retail and wholesales from January 2011.

in the period of January-March. Import also had sharp increase of 44.2% (yoy) in the first quarter of 2011. Very high import growth rates are mainly caused by the import of materials for manufacturing car parts, catalysts, which were not previously included in the statistics. Strong increase in the import of equipment, machinery and various materials is showing that crisis has been overcome and conditions in the Macedonian economy are considerably improved.

Decreased current account deficit and increased external debt...

Current account deficit in 2010 was 2.8% of GDP and is significantly lower from the previous year (6.7% in 2009) due to the strong export growth and increased transfers. Net FDI in 2010 were increased 52.7%, amounting 221.4 millions of Euro, which is 2.2% of the nominal GDP. 96.3% of FDI came from only 4 countries: France, United Kingdom, Austria and Bulgaria. As a result of the economic crisis in the Advance European Economies it was expected that current transfers will be decreased. Fortunately net current transfer continued its growth in 2010 reaching 1,366 million of Euros, representing 19.8% of the nominal GDP. In spite of the relatively favorable balance between net FDI and current account deficit, gross external debt was increased by 5.8% in 2010 in favor of 2009, reaching 62.4% of GDP. This was mainly result of the increase in the private debt, mostly due to the increased in the trade credits, bank loans and debt liabilities to the direct investors.

Chart 4.

Foreign direct investments

in Macedonia

Source: National Bank of Republic of Macedonia

Foreign Direct Investments in Macedonia

Source: NBRM
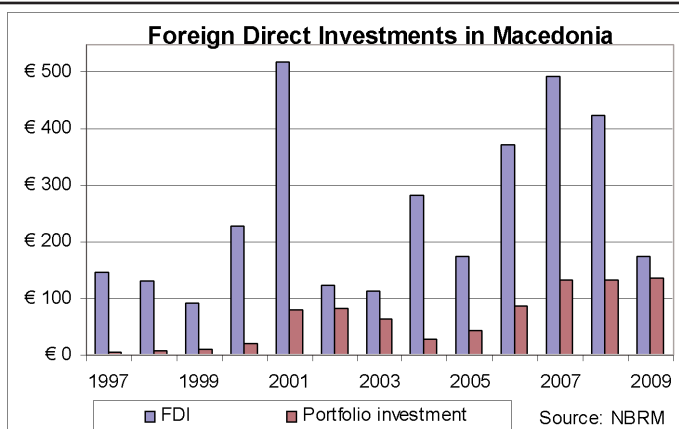
5. Labor market

Number of unemployed, according Employment Service Agency, continues to drop in the fourth quarter of 2010 and beginning of 2011. After the increase of 2 600 new unemployed in January and February, in March 764 unemployed are removed from the list. Unemployment in the forth quarter of 2010 was decreased by 1.5% (yoy), but is still on a high level of 30.9 percentages. During the same period; there was increased employment rate by 2% and activity rate by 1.7% (yoy). During the same period, number of employed in the agricultural sector was increased by 22.1% (yoy), as a result of the program for registering of farmers, in which Government is providing pension, social and health security for a very low price. Increase of metal prices on the global markets, after the economic crisis, contributes to increasing the number of miners by 24.3%. Also, number of employees in the hotels and restaurants was increased by 15% (yoy) in the forth quarter 2010.

Chart 5.

Number of unemployed by Employment Service Agency of RM seasonally adjusted

Source: ESA statistics, authors' calculations.
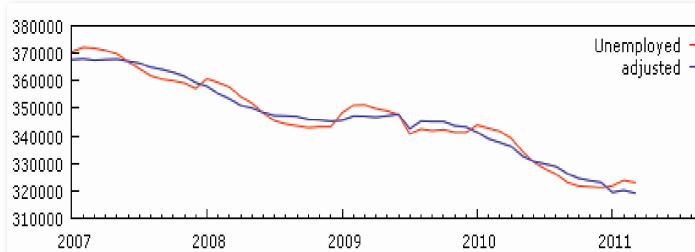
Average monthly gross wage, paid per employee in February 2011 is 30,032 MKD (around 500 Euros). Due to the high inflation gross and net wage in real term was decreased by 2.8% (yoy). Biggest increase of gross salaries is noticed in the export oriented sectors, such as mining and quarrying, manufacturing machinery, equipments and motor vehicles. Highest decrease in February 2011 was noticed in the trade and insurance sector by 3.7 and 3.9 percentage (yoy) respectively.

6. Monetary developments

After reaching 5.2% in March, inflation stopped to grow in April 2011 and leveled at 4.8% (yoy). National Bank of RM increased projection about the inflation in 2011 from 3 to 4.5-5 percentages. This is imported inflation resulting from the increase of commodity prices, mainly oil and food, on the global markets. Prices of Food products and fuels had the biggest increase in Macedonia. Sharply increased food prices further are worsening life conditions for 1/3 of Macedonian population who lives in poverty.

Chart 6.

Consumer Price Index and Food inflation

Source: State Statistical Office
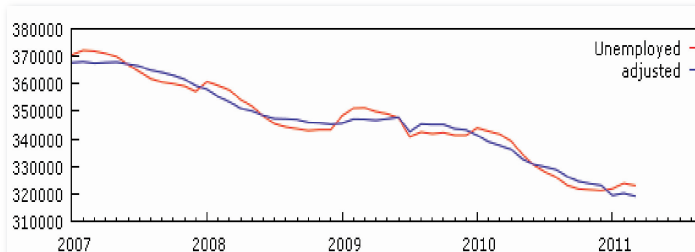
Growth of broad money (M4), continue in the fourth quarter of 2010 reaching a 12.2% increase (yoy). The same situation is with narrow money (M1), after two digits growth in the second and third quarter, finished the year with increase of 9.8%. Total amount of deposits was by a 14% increase in December 2010, compared with the same month from the last year. Household savings were increased by 17.4% in the end December 2010, in favor with the same period of last year. Positive pace in savings with two digits growth continued in the beginning of 2011.

Credit activity during the whole 2010 had stable growth, which continues in the beginning of 2011. Enterprise borrowing in December 2010 is increased by 8.4% (yoy), and by 5.1% is increased household borrowing, for the same period. In March 2011 both, enterprise and household savings continued to grow reaching 10.4 and 14 percentage (yoy), respectively. Credit activity in March 2011 was also increased by 9% for loans given to enterprises and household's loans increase by 6.6%. Weighted interest rates on loans in MKD decrease by 1.5 p.p. in December 2010, on 8.6%, and continue to decrease in 2011 reaching 8.1% in March 2011. High inflation of around 5% will influence decreasing interest rates to stop in the rest of 2011. Relaxed monetary policy and historically lowest level of CB bills on 4% in March 2011 would not be able to compensate inflation for further decreasing of interest rates.

7. Fiscal sector

Revenues in the fourth quarter of 2010 were higher by 1.6% from the last quarter of 2009. Taxes, as a biggest source of budget revenues, were higher by 2.2% (yoy). In the same period profit tax was increased by 25%, which is strong sign of the recovery of enterprises and increased profits, while import duties and VAT were lower by 21.1% and 1.5% respectively (yoy). This is mainly the result of the lower import in the last quarter of 2010. Social contributions in the last quarter of 2010 declined 0.9% (yoy), which is an unusual situation having in mind that number of employed during the same period was increased by 5.9% (yoy).

After strong increase of the expenditures of 11.2% in the third quarter on yearly level, spending was stabilized in the next quarter, with increase of 0.9% (yoy). Government decrease costs for salaries and allowances by 0.6% (yoy). Also, expenditures for goods and services were lower by 6.6%, from the fourth quarter of 2009. Decreased revenues from the social contributions, contribute to increasing budget transfers by 2.8% in the fourth quarter of 2010. After big fluctuations capital expenditures were relatively stable, with increase of 1.4% on yearly basis.

Budget deficit in 2010 was MKD 10.5 billion, realizing 100 percent of the fiscal target, and representing 2.5% of GDP. Total public debt in 2010 was 3 p.p. higher from 2009, amounting 35.1% of GDP. Debt structure in the end of 2010 was worsened compared to the end of 2009, by 4.1 p.p. and increased domestic borrowing causing ″crowding out effect″. To improve this situation and decrease the negative ″crowding out″ effects Macedonian government must provide precautionary credit line (PCL) from IMF in amount of 390 Million Euro, from which 200 Million Euro (2.9% of GDP) are drown in April 2011.

8. Expectations and uncertainties

Current situation in the Macedonian economy is dominated by positive developments in almost all sectors. Due to the increased customer confidence, export, industry and lending in the first quarter of 2011 are expected higher growth of GDP, from 2.3 percentage increase (yoy) in the fourth quarter of 2010. Also, as the GDP is growing three quarters in a row we expect sustainable growth prospects of the GDP in midterm.

Economic situation of households is expected to start improving in the mid term. While financial situation of the households in April 2011 is improved and over the next year is expected to be further improved, with tendencies for keeping the pace of growth in savings. Weak private consumption is expected to start growing due to increased consumers' confidence, expected improved of the general economic situation in Macedonia and reduced unemployment.

Chart 7.

Consumer opinion survey

Consumer opinion survey

Consumer confidence indicator
Financial situation of the household over the next 12 months
General economic situation in Macedonia over the next 12 months
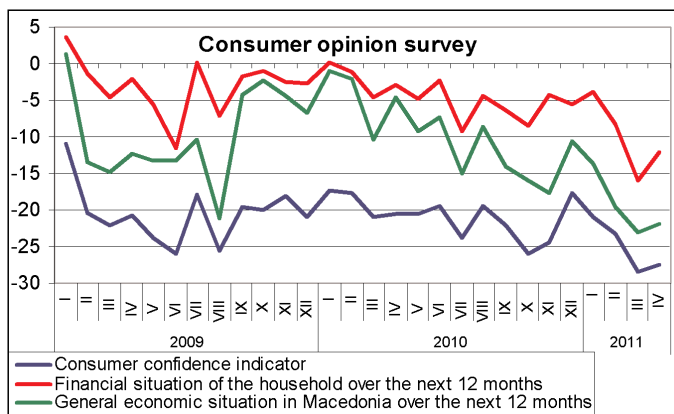
Source: State Statistical Office

Increased domestic demands in our biggest trade partners European Union and Western Balkans countries is expected to continue during 2011, which will increase Macedonian export. Increased export and increased

prices of commodities on the global markets will keep pace of industrial production and growth is expected to continue during the next quarters. Number of foreign tourists is expected to have stable growth, due to the global economic recovery, modernized Ohrid Airport and introduced direct flights from some of the European biggest cities during the tourist season.

In the financial sector, banks are expected to further increase lending to the enterprises and households due to the favourable monetary tendencies. During 2010 and beginning of 2011 deposits were growing very fast, and affordable credits from European Investment Bank are available for medium and big enterprises with low fixed interest rates in the first 3 years. Also, Ministry of Finance drew 200 million Euros from the IMF precautionary credit line (PCL), for covering budget deficit and returning money to the real sector of the economy. Last but not least positive factor, which will stimulate banks to increase lending to the real sector, is the historicaly lowest level of CB bills of 4%.

Uncertainties

Strong negative tendencies are present in the construction sector, agriculture has negative growth during the whole 2010, inflation is higher from previous expectations and outcome from the elections is making uncertainties regarding economic policies in the country.

During the campaign opposition political parties are announcing big changes in the economic policies. This may slow down current economic growth during the implementation of the reforms now with more balanced power at the Parliament. Current biggest ruling party is saying that they will continue with the same policies. In this situation, big shifting in the current constellations is not expected but the Government must work more on consensus building.

Inflation is decreasing purchasing power of Macedonian households which will cause strong negative effect in the growth of personal consumption and retail and wholesale sector. Also interest rates can be under pressure to start growth if inflation continues to growth in the upcoming months. All this has strong potential to injure weak recovery of the personal consumption.

Labor market in Macedonia is not following the same trends as GDP. During 2009 when GDP was falling, number of employees was increased and number of unemployed decreased. This shows that it is very difficult to predict what will happen in the labor market in near future. General tendency is that situation will be improved with continued decrease of unemployment and increasing active population and employment.

Table 1: Main economic indicators

	2009	2010	2010			
			Q1	Q2	Q3	Q4
Economic Activity						
Real GDP (% change, yoy)	-0.9	0.7	-0.9	0.4	1.3	2.3
Real private consumption (% change, yoy)	-3.9	5	3.9	6	9.8	0.8
Real government consumption (% change, yoy)	1	3,4	3.3	-6.5	-0.7	14.8
Real investment (% change, yoy)	-0.6	-8.4	-78.9	14.3	14.9	10.9
Industrial output (% change, yoy)	-7.7	-4.3	-9.1	-1.5	2.8	-4.5
Unemployment rate (ILO, %)	32.2	32.05	33.5	32.1	31.7	30.9
Nominal GDP (EUR million)	6,677	6,892	-	-	-	-
GDP per capita (EUR)	3,253	3,358	-	-	-	-
Prices, Wages and Exchange Rates						
Consumer prices (% change, yoy, pa)	-0.8	1.6	0.5	1.1	1.8	2.9
Retail prices (% change, yoy, pa)	-1.4	2.6	2.0	2.3	2.4	3.5
Average gross wage (% change, yoy, pa)	14.1	1	1.1	0.7	0.9	1.7
Average exchange rate MKD / USD	44.1	46.5	44.4	48.4	47.8	45.3

Exports of goods (USD million)	2,692	3,302	667	781	888	966
Exports of goods (USD, % change, yoy)	-32.6	22.7	27.9	16.5	16.4	31.1
Imports of goods (USD million)	3,472	5,451	1,117	1,335	1,349	1,648
Imports of goods (USD, % change, yoy)	-26.7	8.1	-2.5	13.5	8.8	11.4
Current account balance (EUR million)	-449.3	-191.1	-81.8	-50.5	77.3	-136.0
Current account balance (% of GDP)	-6.7	-2,8%	-	-	-	-
Gross foreign direct investment (EUR million)	175.7	221.4	50.9	76.34	6.2	88
Foreign exchange reserves (EUR million, eop)	1,598	1,715	1,607	1,708	1,689	1,715
Foreign debt ((% of GDP, eop)	56.6	62.4	55.3	58.8	58.7	62.4
Foreign public debt (EUR million, eop)	1,325	1,416	1,343	1,393	1,378	1,416
Foreign private debt (EUR million, eop)	2,455	2,884	2,466	2,661	2,665	2,884
Government Finance						
Revenue (MKD million)	128,498	132,150	29,521	32,325	36,133	34,173
Expenditures (MKD million)	139,393	142,692	33,619	34,298	36,705	38,130
Net = Gross operating balance (MKD million eop)	-10,895	-10,542	-4098	-1973	-572	-3957
General government debt (EUR million, eop)	1,597	1,711	1,601	1,664	1,651	1,711
Total public debt (as % of GDP eop)	32.1	35.1	32.3	33.7	34.1	34.2
Domestic debt as % of total public debt, eop	35.5	39.6	37.6	38.0	38.1	37.9
Monetary Indicators						
Narrow money, M1 (% change, yoy, eop)	-3.5	9.8	7.4	10.3	12.2	9.8
Broad money, M4 (% change, yoy, eop)	6	12.2	10.7	14.8	13.4	12.2
Total deposits (EUR million, eop)	3,050	3,467	3,129	3,272	3,312	3,467
Total Loans (EUR million, eop)	2,897	3,103	2,939	3,012	3,067	3,103
Total domestic credit (% change, yoy, eop)	3.5	7.1	-	-	-	-
Loans to households (% change, eop)	3.5	5.1	-	-	-	-
Loans credit to enterprises (% change, eop)	3.7	8.4	-	-	-	-
Interest rate on CB bills (%, eop)	8.5	4.1	7.3	5.5	4.5	4.1
Loans rate for enterprises, short-term with a currency clause (%, pa)	8.5	8.5	8.8	8.5	8.3	8.3
Loans rate for households, short-term with a currency clause (%, pa)	8.2	7.8	7.9	7.8	7.7	7.6

Notes: Conventional abbreviations: pa - period average; eop - end of period; yoy - year on year; MKD – Macedonian Denar; EUR – Euro; US$ - US dollar.

Sources: State Statistical Office, National Bank of Republic of Macedonia and Ministry of Finance.

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EXPLORING RELATION BETWEEN ORGANIZATIONAL INFRASTRUCTURE AND KNOWLEDGE SHARING – A CASE OF COMPANIES IN REPUBLIC OF MACEDONIA

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Abstract

Knowledge sharing is a key part of the knowledge management initiatives. To have a successful business case of knowledge management project, a supporting organizational infrastructure should be developed. Organizational infrastructure represents backbone of KM initiatives. In this article we explore the relation between organizational infrastructure and knowledge sharing, as one of the most important phases in the cycle of knowledge management on a case of companies from Macedonia. Knowledge can add value to the organization only if it's shared throughout the company.

Key words: Knowledge management, organizational infrastructure, knowledge sharing, knowledge transfer, tacit knowledge, explicit knowldge

Introduction

Organizations have taken different views on knowledge sharing. Some, believing that there is a danger in giving away secrets or viewing sharing as a diversion from individuals' primary work, have not encouraged sharing. Others, believing that there is great potential benefit in disseminating knowledge within an organization and perhaps beyond its boundaries, support it. Of course, the tenets of knowledge management presume that sharing is generally both beneficial and necessary if an organization is to realize its potential (William R. King p. 2008).

Knowledge sharing is one of the most critical steps in knowledge management activities. To achieve effective knowledge sharing, it is important to encourage workers to share their knowledge for the best interests of the firm (Dong-Joo Lee a, Jae-Hyeon Ahn p.938 2006). However sharing is hard to ensure, because knowledge is generated and initially stored within the employees. As Puccinelli (1998) states, "knowledge is fundamentally a product of people and not technology. Sharing is such a valuable component to the success of KM because it focuses on the human side of knowledge (p. 40)"(Jen-te Yang 2007 p.345).

Knowledge as an asset is critical to organizations to achieve competitive advantage. But knowledge as an asset like information has different features compared to material resources. Knowledge can add value to the company only if it's shared throughout the organization. Knowledge which resides in the head of the people or in the databases in the organizations and it's not used can not add value to company working. There is one interesting fact about knowledge sharing. Sharing does not mean reducing own level of knowledge. Person who is sharing his knowledge with other employees is not loosing his own knowledge. That is not property of material assets. If knowledge was lost through sharing probably the world would look differently than today covered with silence and closed mouth. Also at the same time people are afraid that if they share their knowledge and expertise they will loose their power in the organization. This people may hoard knowledge and be reluctant to share it.

Many authors are making clear distinction between knowledge transfer and knowledge sharing. For the purpose of our research we are not making this type of distinction. Contrary here in this research under term knowledge sharing we understand the total construct of shared knowledge, which means: knowledge which is shared between individuals and teams, interpersonally and through support of technology, unidirectional or multidirectional direction. Main focus of our research is to test the relation between some variables which constitute organizational infrastructure and knowledge sharing. Also the scope of the paper is limited only on knowledge which is shared within the organization. Knowledge sharing between organizations and outside the organization is not considered in this paper.

Also in this paper under term knowledge sharing both tacit and explicit knowledge is understood because we do not make clear distinction between knowledge transfer and knowledge sharing. Research conducted in past has confirmed that explicit knowledge which can be codified and documented is also easer to be transferred than tacit knowledge which can not be articulated. Documentation of knowledge is important when considering transferability of knowledge (Zander and Kogut 2006).

This article is exploring the relation between organizational infrastructure variables and knowledge sharing including both tacit and explicit knowledge. Thus, variables which support transfer and sharing knowledge were included in the regression analysis.

Organizational infrastructure

Activities in the domain of knowledge management would not yield success if there is no organizational infrastructure which will support KM initiatives. Today, a firm's employees must share their knowledge; indeed, such activities have become a competitive necessity (Wing S. Chow *, Lai Sheung Chan p. 458 2008).

Sheng Wang and Raymond A. Noe (2010) have conducted deep literature review in the field of knowledge sharing. In their paper they have developed framework for knowledge sharing research including organizational context, interpersonal and team characteristics, cultural characteristics, individual characteristics, and motivational factors. This framework is very similar to our model of organizational infrastructure. Most of the variables that we have constructed cover the same area although our research is more general and narrow.

Using system approach four main organizational subsystems were identified in the model of Michael J. Marquardt which supports organizational learning: organization, people, technology and knowledge management practices (Michael J. Marquardt 2002). In this research the variables which constitute the organizational infrastructure which need to support knowledge sharing were derived from systems learning organizational model of Marquardt.

Three main subsystems were derived from the model of Michael J. Marquardt and variables were constructed. These three main subsystems represent: people, technology and organization. Variables were constructed for all three subsystems. People as a subsystem involves: team work, level of trust and level of knowledge as variables. Technology includes a single variable named as a maturity of information systems. Organization as a subsystem includes several variables which were tested: organizational structure, strategy, mission, reward systems, organizational culture, professional training and participative management style. The influence of all these variables on knowledge sharing was tested and the results presented in the section empirical study are only those which has confirmed researcher hypothesis about influence on knowledge sharing.

Empirical study

Knowledge sharing is one of the most critical steps in knowledge management activities. To achieve effective knowledge sharing, it is important to encourage workers to share their knowledge for the best interests of the firm. However, successfully exerting this encouragement is very challenging.

An on line survey on 53 companies was conducted to collect data for modeling and regression analysis. Companies from various industry sectors were involved in the survey. The rate of response on the survey was 53%. Industry structure of the participants was following: production 36%, banking and insurance 22%, trade 16%, IT industry 14%, telecommunication 8% and other 8%.

A model which contains six independent qualitative variables was created which compose organizational infrastructure: organizational culture, level of trust, reward system, participative management style, maturity of information systems, and professional training. In the model are included only those hard and soft management variables which have influence on knowledge sharing as independent variable based on our research in companies in Macedonia. The construction of the variables can be different as well and some other research might show different results.

In this research testing of relation between 5 more variables and knowledge sharing was conducted (organizational structure, strategy, and mission, level of knowledge and team work) but no relation was identified. Thus, those variables are not included into the model. At the beginning of the research researchers were expecting to identify relationship between those variables and knowledge sharing as well. But all results should be seen through the light of research limitations like small number of observations, shallow scope of the research, lack of information of the respondents about the questions in the survey, using single method for analyzing the data etc. Bellow we briefly explain the meaning of the independent variables.

Open organizational culture as a variable includes attitudes, values, expectations, customs, employee behavior and communication within a particular company. Higher values for open culture represents type of culture which is open for changes, new ideas, opinions which support knowledge sharing thorough its customs, organizational stories and informal networks.

Participative management style as a variable represents organizational practices which provide employee involvement in decision making and encourages the involvement of stakeholders at all levels of an organization in the analysis of problems and implementation of solutions. A higher value for this variable represents a style of management, which provides support for all stakeholders to participate in the decision making process at all organizational levels.

Maturity of information systems as a variable represents the capacity of information systems to transfer already codified knowledge and to support sharing knowledge among employees, through collaborative tools. A higher value for this variable means higher capacity and greater support for knowledge transfer and sharing.

Reward system as a variable is analyzed trough the perspective of the design of the rewarding system in a particular organization. Through this variable we wanted to test whether companies which have a rewarding system focused on rewarding employees who actively share knowledge achieve higher values for organizational knowledge sharing. Higher values for this variable means that an organization have a rewarding system which supports knowledge sharing through promotion and giving different kind of financial and social rewards.

Professional training is a variable which shows that a particular company organizes professional training, workshops and seminars which need to stimulate employees to put their knowledge on disposal to their colleagues and satisfy organizational hunger for knowledge refreshment. Higher values for this variable represents a state where companies are organizing regular training and team building seminars to create informal networks which will support knowledge sharing throughout organization.

Level of trust as a variable represents mutual respect of the ownership of ideas among employees. Members of the organization need not to be afraid that their manager or colleague will steal their idea and reward. Higher values for this variable correspond to higher trust and respect within the organization and assume stronger knowledge sharing.

A single independent variable was created as weak knowledge sharing which also is a qualitative variable. Higher values for this variable correspond to an organizational climate where employees are not sharing their knowledge and the organization is not utilizing appropriately the knowledge potential of its own members. Lower values for this variable represent stronger sharing of knowledge among all employees throughout the company.

Variables which are included in the model are qualitative and obtain values from 1 – lowest to 5 – highest. The influence of all independent variables was tested on dependent variable. In this research were using regression techniques like ordered probit (technique which use normal distribution) and ordered logit (which use logical distribution). These techniques were used because they are the most suitable techniques for a research where dependent variable is a qualitative and we test dependencies between qualitative variables.

The following table shows the influence of the independent variables on single dependent variable with values in a range from 1 - 5. 5 represent stronger presence than 4, 4 represent stronger presence than 3, 3 represent stronger presence than 2 etc. In this kind of regression models for accurate interpretation of the results it's important to analyze two key elements: first, sign in front of the coefficient of the independent variable and second, statistical significance of the coefficient.

A positive sign of the coefficient in front of the independent variable means that higher values for independent variable increase the probability for higher values of the dependent variable and vice verse. If the sign in front of the coefficient is negative than, higher values for independent variable increase the probability for lower values of dependent variable. Statistical significance of the coefficient shows whether we can identify causal relationship or dependence between the independent variable and dependent variable. The existence of dependence was tested by calculating p – value which represents the lowest level of significance for which null hypothesis can be rejected or p value is equal to null. If p – value is lower or equal to 0,1 (10%) than statistical significance is 10%. In that case the value of the coefficient is not equal to statistical zero, which means that independent variable has influence on the dependent variable. In this research we use level of significance a = 0,1 op 10%. Relatively high level of significance was chosen because this research represents testing influence between qualitative variables where it's more difficult to identify dependences among qualitative variables.

The results are presented in the following table:

Table 1:

Independent variables	Weak knowledge sharing
Open organizational culture	Coefficient
	(-0,989605)
	P – value
	(0,0001)
Participative management style	Coefficient
	(-0,82143)
	P – value
	(0,0002)
Maturity of information systems	Coefficient
	(-0,4817)
	P – value
	(0,0309)
Reward system	Coefficient
	(-0,28721)
	P – value
	(0,0951)
Professional training	Coefficient
	(-0,21576)
	P – value
	(0,0031)
Level of trust	Coefficient
	(-0,69885)
	P – value
	(0,0007)

Negative sign in front of 6 variables shows that higher values for open organizational culture, participative management style, maturity of information systems, professional training, reward system and level of trust increase the probability for lower values of weak knowledge sharing. Lower values for the dependent variable weak knowledge sharing represents case where a particular organization have better knowledge sharing between organizational members. The dependences between all six independent variables and single dependent variable were proven through this exploration. In the appendix of the article are presented all the data which were used for testing the influence of components of organizational infrastructure on knowledge sharing among employees.

The results in table 1 have met the expectations of the researchers and the initially formulated hypothesis. Most of the variables which were tested have shown influence on knowledge sharing. This means that companies who want to utilize benefits from knowledge of their employees need to build supporting infrastructure. Without infrastructure it's not possible to achieve higher level of knowledge sharing throughout the organization and if knowledge is not shared and resides within the heads of the people than it's useless. Both of the researchers strongly believe that relationship exist also between the variables which were not includ-

ed in the model but were tested. Some limits of the research did not provide enough data those assumptions to be proven. This paper brings value especially for the companies in R. of Macedonia because the model identifies the variables which have strong influence on knowledge sharing. Thus, companies can focus their effort to support those variables in order to be able to utilize benefits from knowledge sharing.

Conclusion

The main goal of this research was to test the relation between organizational infrastructure and knowledge sharing in the companies in R. of Macedonia. We wanted to conduct this type of research on a specific business environment for companies in Macedonia. Through the results of the research we had intention to help managers from Macedonia to identify more easily the most important components of organizational infrastructure which support knowledge sharing. Thus, managers will be able to focus their effort to strengthen those elements in own organizations which stimulate knowledge sharing and provide them better utilization of the benefits from knowledge sharing.

This paper has confirmed the strong relation which exists between organizational infrastructure and knowledge sharing. Although some of the components which were tested did not show existence of dependence we strongly believe that research limitations were main cause for such results. Future improvements of the research can be done in order to obtain even more accurate results and create even better pathway for the managers in Macedonia.

References:

1. Birgit Renzl, Trust in management and knowledge sharing: The mediating effects of fear and knowledge documentation, Elsevier 2006

2. Dong-Joo Lee a, Jae-Hyeon Ahn, Reward systems for intra-organizational knowledge sharing, Elsevier, 2006

3. Jen-te Yang, Individual attitudes and organizational knowledge sharing, Elsevier Ltd 2007

4. Kimiz Dalkir, Knowledge Management in Theory and Practice, Elsevier Inc Oxford, 2005.

5. Michael J. Marquardt, Building the learning organization – Mastering 5 elements for corporate learning, Davies Black, 2002

6. Sheng Wang and Raymond A. Noe, Knowledge sharing: A review and directions for future research, Elsevier 2010

7. William R. King, Knowledge Sharing, Knowledge management : concepts, methodologies, tools and applications / Murray Jennex, editor, IGI Global, 2008.

8. Wing S. Chow and Lai Sheung Chan, Social network, social trust and shared goals in organizational knowledge sharing, Elsevier, 2008

9. Wen-Bao Lin, The effect of knowledge sharing model, Elsevier 2007

Appendix

1. Results obtained from testing

Dependent Variable: Weak knowledge sharing
Method: ML - Ordered Probit (Quadratic hill climbing)
Date: 12/28/08   Time: 15:07
Sample: 1 53
Included observations: 53
Number of ordered indicator values: 4
Convergence achieved after 5 iterations
Covariance matrix computed using second derivatives

	Coefficient	Std. Error	z-Statistic	Prob.
LEVEL OF TRUST	-0,69885	0,205141	-3,40669	. . .0,0007

Dependent Variable: Weak knowledge sharing
Method: ML - Ordered Probit (Quadratic hill climbing)
Date: 12/28/08   Time: 15:08
Sample: 1 53
Included observations: 53
Number of ordered indicator values: 4
Convergence achieved after 5 iterations
Covariance matrix computed using second derivatives

	Coefficient	Std. Error	z-Statistic	Prob.
MATURITY OF INFORMATION SYSTEMS	-0,481701	0,223175	-2,1584	. . .0,0309

Dependent Variable: Weak knowledge sharing . . . .
Method: ML - Ordered Probit (Quadratic hill climbing) . . . .
Date: 12/28/08   Time: 15:08 . . . .
Sample: 1 53 . . . .
Included observations: 53 . . . .
Number of ordered indicator values: 4 . . . .
Convergence achieved after 5 iterations . . . .
Covariance matrix computed using second derivatives . . . .

	Coefficient	Std. Error	z-Statistic	. . . .Prob.
OPEN ORGANIZATIONAL CULTURE	-0,989605	0,249324	-3,96915	. . .0,0001

Dependent Variable: Weak knowledge sharing . . . .
Method: ML - Ordered Probit (Quadratic hill climbing) . . . .
Date: 12/28/08   Time: 15:09 . . . .
Sample: 1 53 . . . .
Included observations: 53 . . . .
Number of ordered indicator values: 4 . . . .
Convergence achieved after 4 iterations . . . .
Covariance matrix computed using second derivatives . . . .

	Coefficient	Std. Error	z-Statistic	. . . .Prob.
PARTICIPATIVE MANAGEMENT STYLE	-0,821426	0,222088	-3,69866	. . .0,0002

Dependent Variable: Weak knowledge sharing . . . .
Method: ML - Ordered Probit (Quadratic hill climbing) . . . .
Date: 12/28/08   Time: 15:09 . . . .
Sample: 1 53 . . . .
Included observations: 53 . . . .
Number of ordered indicator values: 4 . . . .
Convergence achieved after 4 iterations . . . .
Covariance matrix computed using second derivatives . . . .

	Coefficient	Std. Error	z-Statistic	. . . .Prob.
REWARD SYSTEM	-0,287209	0,172063	-1,66921	. . .0,0951

Dependent Variable: Weak knowledge sharing . . . .
Method: ML - Ordered Probit (Quadratic hill climbing) . . . .
Date: 12/28/08   Time: 15:10 . . . .
Sample: 1 53 . . . .
Included observations: 53 . . . .
Number of ordered indicator values: 4 . . . .
Convergence achieved after 4 iterations . . . .
Covariance matrix computed using second derivatives

	Coefficient	Std. Error	z-Statistic	Prob.
PROFESSIONAL TRAINING	-0,215757	0,073069	-2,95279	0,0031

2. Data used for construction of the variables

Num.	Level of trust	Maturity of information systems	Open organizational culture	Participative management style	Reward system	Professional training	Level of trust	Weak knowledge sharing
1	3	2	3	2	2	1	2	4
2	4	2	4	4	3	1	4	4
3	4	5	4	3	2	1	4	3
4	4	4	4	4	4	6	4	2
5	4	3	2	2	2	6	3	3
6	4	3	4	4	4	6	3	2
7	5	4	4	4	4	1	1	2
8	4	3	4	4	2	6	4	2
9	3	4	4	4	4	1	4	2
10	4	2	4	2	3	1	4	4
11	4	4	4	4	4	4	4	2
12	4	4	4	3	3	5	4	2
13	5	4	4	3	3	1	4	3
14	5	3	3	2	3	1	3	4
15	4	4	4	4	3	3	4	3
16	4	3	4	2	2	1	4	4
17	1	3	2	2	2	1	2	5
18	4	3	4	4	3	5	4	2
19	4	4	4	4	2	6	4	4
20	3	3	3	3	2	1	2	4
21	4	3	4	4	3	6	4	3
22	2	3	3	2	4	1	2	4
23	2	3	3	3	3	5	4	4
24	4	4	5	4	2	1	5	2
25	4	4	3	3	2	1	4	4
26	4	2	3	3	4	1	3	3
27	4	4	4	4	3	1	4	4
28	4	4	4	3	2	1	4	3
29	4	4	4	4	4	5	4	2
30	5	3	3	3	2	2	4	3
31	5	4	4	3	4	5	4	2
32	4	3	3	4	3	1	4	2
33	4	3	3	3	4	6	4	2
34	4	4	4	4	3	6	5	4
35	4	4	4	3	4	6	4	2
36	4	4	3	3	4	2	5	5
37	2	4	2	2	1	1	4	4
38	3	3	2	3	3	1	4	4
39	4	4	2	4	4	1	4	4

40	4	4	4	3	4	6	4	4
41	1	2	2	2	5	1	1	5
42	3	3	3	2	2	1	4	4
43	4	4	3	4	4	6	5	4
44	5	4	4	4	2	4	4	2
45	4	4	4	4	3	6	4	4
46	4	4	4	4	4	5	2	2
47	3	4	4	5	3	6	4	2
48	4	4	4	3	4	6	5	2
49	4	3	4	4	2	1	4	4
50	4	4	4	4	4	1	4	2
51	3	4	3	3	2	4	3	4
52	3	3	3	4	3	3	3	2
53	4	4	4	3	4	6	4	2

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THE KNOWLEDGE ECONOMY AND SUSTAINABLE ECONOMIC GROWTH

MSc Shenaj Hadzimustafa

Abstract

Knowledge has become the major driving force of economic and social development all around the world. Coupled with globalization and accelerated by rapid distribution and transfer of knowledge by information and telecommunication technologies, this development impacts all countries and regions, public institutions, the corporate world, and the lives and prospects of individuals.

The knowledge economy is based on the generation and adoption of new knowledge created by scientific research and technological advances; investments in education and research; adoption of best practices; and openness to social, economic, and cultural innovations. For advanced industrialized countries with high labor and infrastructure costs, the knowledge economy offers competitive advantages in high-technology product manufacture and efficient service sectors. For natural- resource-based economies it offers improved technologies and higher-value added products with closer customer linkages, as well as a path for sustainable development. For developing countries, knowledge offers possibilities to short cut development phases, leapfrog technologies, and more quickly integrate into the global economy by becoming more attractive to international investors.

The generation and conversion of knowledge into economic and social benefits requires good innovation systems, including highly qualified personnel and efficient technology transfer (TT) and venture capital (as a generator of innovation). Higher levels of knowledge in a society tend to lead to higher levels of economic growth – and consequently to higher levels of economic development.

Key words: knowledge economy, economic growth, economic development, knowledge, sustainability

1. Introduction

Knowledge has always been an essential force in economic development. But in today's increasingly knowledge-based world, more and more countries are embracing knowledge and innovation-related policies to spur growth and competitiveness. At the same time, many developing countries are struggling to find ways to produce relevant knowledge and transform it into wealth, as well as to adapt and disseminate existing knowledge for their development.

In an agricultural economy land is the key resource. In an industrial economy natural resources, such as coal and iron ore, and labour are the main resources. Knowledge economy is one in which knowledge is the key resource.

It is not a new idea that knowledge plays an important role in the economy, nor is it a new fact. All economies, even the least-developed ones, are based on knowledge about how, for example, to farm, to mine and to build; and this use of knowledge has been increasing since the Industrial Revolution. But the degree of incorporation of knowledge and information into economic activity is now so great that it is inducing quite profound structural and qualitative changes in the operation of the economy and transforming the basis of competitive advantage.

The rising knowledge intensity of the world economy and peoples increasing ability to distribute that knowledge has increased its value to all participants in the economic system. The implications of this are profound, not only for the strategies of firms and for the policies of government but also for the institutions and systems used to regulate economic behaviour.

Ten years ago, Europe's leaders set an ambitious goal of becoming "the most competitive and dynamic knowledge-based economy in the world" by 2010 through a programme of policy initiatives known as the Lisbon Strategy. The objective of the Lisbon Strategy was to improve Europe's productivity and competitiveness through various policy initiatives, building on a number of earlier goals. These included the creation of an information society for all, establishing a European area of research and development, developing a business-friendly start-up environment, completing the single market, establishing efficient and integrated financial markets, building a knowledge society, ensuring more and better jobs for Europe, modernizing social protection, promoting social inclusion and enhancing sustainable development. The recent economic crisis has *underscored* the importance of a competitiveness-supporting economic environment to better enable national economies to absorb shocks and ensure solid economic performance going into the future (World Economic Forum 2010).

Given that the Lisbon Strategy is set to expire this year, the EU has been preparing a new 10-year growth strategy to replace it in an effort to improve the process this time around. This has been termed "Europe 2020", which seeks to enhance the delivery of growth and jobs for the next decade. At the heart of the agenda is a goal of "smart, sustainable, inclusive growth brought about through greater coordination of national and European policy."

To reinforce the ability to meet these targets, the strategy also identifies seven flagship initiatives the EU should take to boost growth and employment (World Economic Forum 2010, 3):

1. "Innovation union" to improve framework conditions and access to finance for research and innovation to ensure that innovative ideas can be turned into products and services that create growth and jobs

2. "Youth on the move" to enhance the performance of education systems and facilitate the entry of young people into the labour market

3. "A digital agenda for Europe" to speed up the roll-out of high-speed Internet and reap the benefits of a digital single market for households and firms

4. "Resource-efficient Europe" to help decouple economic growth from the use of resources, support the shift towards a low-carbon economy, increase the use of renewable energy sources, modernize the transport sector and promote energy efficiency

5. "An industrial policy for the globalization era" to improve the business environment, notably for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally

6. "An agenda for new skills and jobs" to modernize labour markets and empower people by developing their skills throughout the lifecycle with a view to increase labour participation and better match labour supply and demand, including through labour mobility

7. "European platform against poverty" to ensure social and territorial cohesion such that the benefits of growth and jobs are widely shared and people experiencing poverty and social exclusion are enabled to live in dignity and take an active part in society

The core of meeting the Europe 2020 strategy is the knowledge economy which should lead toward sustainable growth and development of the countries.

SUSTAINABLE ECONOMIC GROWTH AND DEVELOPMENT

Economic growth is the result of the accumulation of factors and increases in productivity. The significant differences in rates of growth among world countries are due much more to differences in productivity behaviour than to factor accumulation. But both growth sources tend to be affected by common variables and, in particular, by society's capacity to assimilate and generate knowledge and technologies and apply them to productive activities and by the opportunities that enterprises and individuals have to gain ownership of the results of their own efforts. Growth is achieved by increasing the productivity of existing investments or by making larger investments, or a combination of both. It is therefore important to improve the overall climate in which these investments are made and developed. (Inter - American Development Bank 2003, 6).

Achieving sustainable economic growth is necessary to reduce poverty. Growth provides the flow of resources needed for employment and income generation, and for the financing of programs geared towards poverty alleviation. At the same time, a number of studies have shown that persistent inequality limits a country's growth potential. Accordingly, addressing the levels of inequality in human capital and access to productive assets for the poor will help generate more opportunities for their inclusion in economic activities and will contribute to growth (Inter - American Development Bank 2003, 1). Therefore, advances in poverty reduction and the promotion of equity are a fundamental development goal. Economic and social development strategies must therefore include growth policies and specific actions for the poorest population, excluded groups, and low-income geographic areas. Clearly, the two objectives of poverty reduction and sustainable economic growth are compatible and renewed efforts are needed to promote growth and to ensure that the benefits of that growth accrue to the poor. While the overarching goals are closely interrelated, complementarity is not automatic, as it depends on the selection and orientation of policy instruments and on the attention given to their sustainability (IADB 2003).

Economic growth comes in two forms: an economy can either grow "extensively" by using more resources (such as *physical, human, or natural capital*) or "intensively" by using the same amount of resources more efficiently (productively). When economic growth is achieved by using more labour, it does not result in per capita income growth. But when economic growth is achieved through more productive use of all resources, including labour, it results in higher per capita income and improvement in people's average *standard of living* (Soubbotina 2004).

How do we determine which countries are more developed and which are less developed? In a broader sense the notion of human development incorporates all aspects of individuals' well-being, from their health status to their economic and political freedom. According to the *Human Development Report 1996*, published by the United Nations Development Program, "human development is the end—economic growth a means." (Soubbotina 2004, 8)

It is true that **economic growth**, by increasing a nation's total wealth, also enhances its potential for reducing poverty and solving other social problems. But history offers a number of examples where economic growth was not followed by similar progress in human development. Instead growth was achieved at the cost of greater inequality, higher unemployment, weakened democracy, loss of cultural identity, or overconsumption of **natural resources** needed by future generations. As the links between economic growth and social and environmental issues are better understood, experts including economists tend to agree that this kind of

growth is inevitably unsustainable—that is, it cannot continue along the same lines for long. *First*, if environmental and social/human losses resulting from economic growth turn out to be higher than economic benefits (additional incomes earned by the majority of the population), the overall result for people's wellbeing becomes negative. Thus such economic growth becomes difficult to sustain politically. *Second*, economic growth itself inevitably depends on its natural and social/human conditions. To be sustainable, it must rely on a certain amount of natural resources and services provided by nature, such as pollution absorption and resource regeneration. Moreover, economic growth must be constantly nourished by the fruits of human development, such as higher qualified workers capable of technological and managerial innovations along with opportunities for their efficient use: more and better jobs, better conditions for new businesses to grow, and greater democracy at all levels of decision making.

Conversely, slow human development can put an end to fast economic growth.

Figure 1. Economic growth and human development
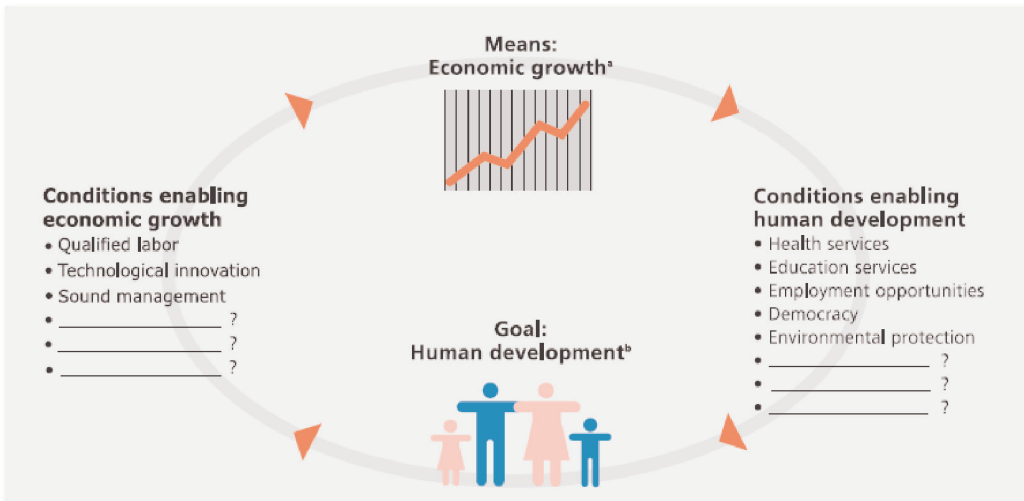
Source: Soubbotina, T. P. (2004). *Beyond Economic Growth,An Introduction to Sustainable development.* Washington D.C.: The World Bank, p.9

Economic development is the qualitative change and restructuring in a country's economy in connection with technological and social progress. The main indicator of economic development is increasing GNP per capita (or GDP per capita), reflecting an increase in the economic productivity and average material wellbeing of a country's population. Economic development is closely linked with *economic growth* (Soubbotina 2004).

Sustainable development is a term widely used by politicians all over the world, even though the notion is still rather new and lacks a uniform interpretation According to the classical definition given by the United Nations World Commission on Environment and Development in 1987, development is sustainable if it "meets the needs of the present without compromising the ability of future generations to meet their own needs."(Soubbotina 2004, 9). It is usually understood that this "intergenerational" equity would be impossible to achieve in the absence of present-day social equity, if the economic activities of some groups of people continue to jeopardize the well-being of people belonging to other group.

"Sustainable" development could probably be otherwise called "equitable and balanced," meaning that, in order for development to continue indefinitely, it should balance the interests of different groups of people, within the same generation and among generations, and do so simultaneously in three major interrelated areas–economic, social, and environmental.

So sustainable development is about equity, defined as equality of opportunities for well-being, as well as about comprehensiveness of objectives. Figure 2 shows just a few of the many objectives, which, if ignored, threaten to slow down or reverse development in other areas. You are invited to add more objectives and explain how, in your opinion, they are connected to others. In the following chapters you will find many examples of such interconnections.

Figure 2. Objectives of sustainable economic development
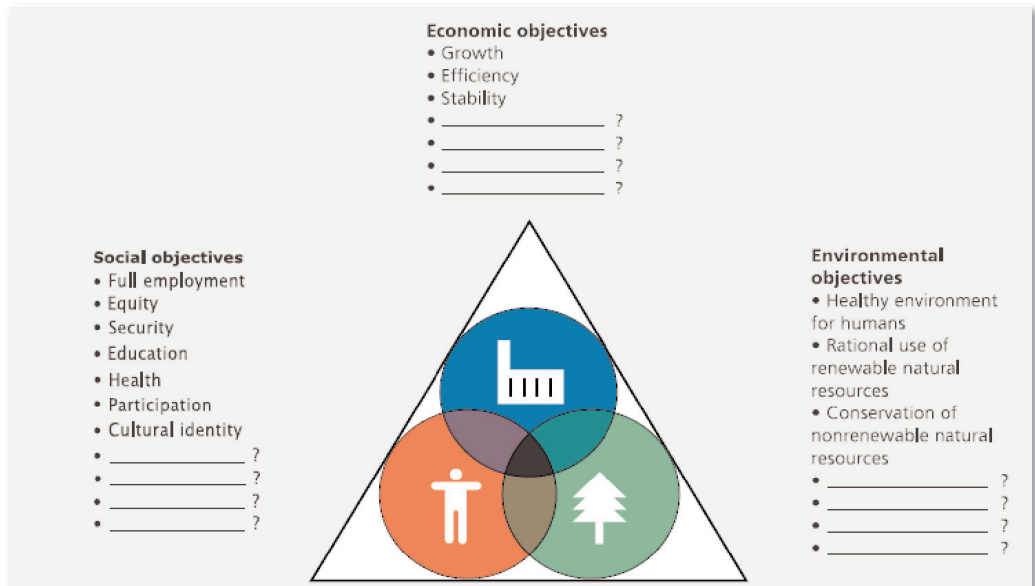
Source: Soubbotina, T. P. (2004). *Beyond Economic Growth,An Introduction to Sustainable development.* Washington D.C.: The World Bank, p.10

Arguably, the most critical problem of sustainable development—in each country as well as globally—is eradicating extreme poverty. That is because poverty is not only an evil in itself. It also stands in the way of achieving most other goals of development, from clean environment to personal freedom. Another, closely related, global problem is establishing and preserving peace in all regions and all countries. War, as well as poverty, is inherently destructive of all economic as well as social and environmental goals of development.

In the final analysis sustainable development is about long-term conditions for humanity's multidimensional well-being. For example, the famous Rio Declaration, adopted by the United Nations Conference on Environment and Development in 1992 (also called the Earth Summit, held in Rio de Janeiro, Brazil), puts it this way:

"Human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature." (Soubbotina 2004, 11).

WHAT IS KNOWLEDGE ECONOMY?

Knowledge has been of decisive importance in mankind's development. Early man's ability to make fire was a tremendous advance transmitted within and among tribes. Later, primitive societies accumulated knowledge about plants, animals, and minerals essential to their survival for thousands of years. Aspects of this knowledge are still of fundamental importance today in the fields of health care and nutrition, with applications in modern medicine.

To illustrate the dramatic role played by knowledge in the development process, Figure 3 presents the decomposition of South Korea's economic growth over the past four decades, and clearly highlights the contribution of knowledge, represented here by total factor productivity (TFP), to South Korea's economic miracle. In 1960, Korea's real GDP per capita was around US$1,110, and increased by eleven-fold to US$12,200 in 2003. In contrast, Mexico's real GDP per capita experienced a slightly more than two-fold increase, from US$2,560 to US$5,800 over the same period. Note that without the contribution of knowledge, Korea's real GDP per capita in 2003 would still be below that Mexico's. (Chen & Dahlman 2005, 3)

Figure 3. Contribution of Knowledge to GDP growth
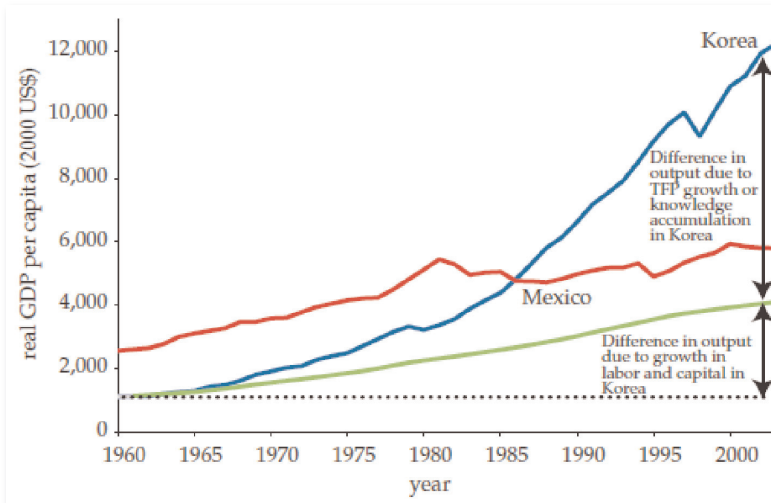
Source: Suh, J., & Chen, D. H. (2006). *Korea as a Knowledge Economy: Evolutionary Process and Lessons Learned.* Washington D.C.: The World Bank, p.6

Knowledge is special because it is difficult to obtain, whether through creation or purchase. Unlike information, knowledge involves combinations of facts that interact in intangible ways. Because it is difficult to obtain, it constitutes an entry barrier to growth—and this entry barrier, in turn, helps generate the rent earned from knowledge. There are several types of knowledge rent: technological (control of scarce process or product capabilities), human resources (availability of unique or advanced human skills and know-how), organizational (control of unique or advanced management practices), and marketing and design (both increasingly important in recent years, with a direct correlation to consumer know-how). (WBI 2007, 5).

Knowledge influences competitiveness, economic growth, and development as long as it finds concrete applications—in other words, as long as it is at work. The need to assess the importance of technological progress for sustainable growth, including related investments such as education, created the impetus for

new growth theories that have tried to endogenize (or "include") technological progress in their models. These new theories and related econometric models help explain why countries' economic trajectories tend to diverge, and therefore help justify government action and investment in public goods such as education and infrastructure, which facilitate the use of knowledge and innovation.

With sustained use and creation of knowledge at the center of the economic development process, an economy essentially becomes a Knowledge Economy. A ***Knowledge Economy (KE)*** is one that utilizes knowledge as the key engine of economic growth. It is an economy where knowledge is acquired, created, disseminated and used effectively to enhance economic development

Over the past quarter century, the rate of knowledge creation and dissemination has increased significantly. One reason is due to the rapid advances in information and communications technologies (ICTs) that have significantly decreased the costs of computing power and electronic networking. With the increased affordability, the usage of computing power and electronic networking has surged, along with the efficient dissemination of existing knowledge. Modern ICTs also enable researchers in different locations to work together, which consequently enhance the productivity of researchers, resulting in rapid advances in research and development and the generation of new knowledge and technologies. One indicator of the creation of new knowledge and technologies is the number of patents granted by the United States Patent and Trademark Office (USPTO)[3] each year (Chen & Dahlman 2005, 2). Patent documents include utility patents, design patents, plant patents, reissue patents, defensive publications and statutory invention registration. The number of patents are important indicator of the innovation presence in the economy, that is one of the crucial pillars in the knowledge economy that enables positive economic growth.

The increased speed in the creation and dissemination of knowledge has led to the rapid spread of modern and efficient production techniques, plus the increased probability of leapfrogging, which has consequently resulted in the world economy becoming much more competitive.

In addition to the higher level of competition, the nature of competition has been changing. It has evolved from one that was just based on cost, to one where speed and innovation are also essential. Commodity production is usually allocated to lowest cost producers, but intense competition resulting from globalization tends to drive profits from commodity production to nearly zero. As such, it has become crucial to derive additional value added from various means of product differentiation via innovative designs, effective marketing, efficient distribution, reputable brand names, etc. Thus, to prosper it is critical to be able to contribute productively to global value chains and to generate own new value chains, and the key part of which is not necessarily production, but innovation and high-value services.

In light of the above, sustained economic growth in the era of this new world economy depends on developing successful strategies that involve the sustained use and creation of knowledge at the core of the development process. At lower levels of development, which typically implies lower levels of science and technology capability, knowledge strategies typically involve the tapping of existing global knowledge and adoption of such foreign technologies to local conditions in order to enhance domestic productivity. At higher levels of development, which typically implies higher levels of science and technology capability, knowledge strategies also hinges critically on domestic innovative effort and underlie the move to produce products and services that higher value-added in order to be consistent with the high wages that are characteristic of these economies.

The emergence of the **knowledge economy** can be **characterised** in terms of the increasing role of knowledge as a factor of production and its impact on skills, learning, organisation and innovation (Houghton & Sheehan 2000, 9)

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3) The United States Patent and Trademark Office (PTO or USPTO) is an agency in the United States Department of Commerce that issues patents to inventors and businesses for their inventions, and trademark registration for product and intellectual property identification.

- There is an enormous increase in the codification of knowledge, which together with networks and the digitalisation of information, is leading to its increasing commodification.

- Increasing codification of knowledge is leading to a shift in the balance of the stock of knowledge – leading to a relative shortage of tacit knowledge.

- Codification is promoting a shift in the organisation and structure of production.

- Information and communication technologies increasingly favour the diffusion of information over re-invention, reducing the investment required for a given quantum of knowledge.

- The increasing rate of accumulation of knowledge stocks is positive for economic growth (raising the speed limit to growth). Knowledge is not necessarily exhausted in consumption.

- Codification is producing a convergence, bridging different areas of competence, reducing knowledge dispersion, and increasing the speed of turnover of the stock of knowledge.

- The innovation system and its 'knowledge distribution power' are critically important.

- The increased rate of codification and collection of information are leading to a shift in focus towards tacit ('handling') skills.

- Learning is increasingly central for both people and organisations.

- Learning involves both education and learning-by-doing, learning-by-using and learning-by-interacting.

- Learning organisations are increasingly networked organisations.

- Initiative, creativity, problem solving and openness to change are increasingly important skills.

- The transition to a knowledge-based system may make market failure systemic.

- A knowledge-based economy is so fundamentally different from the resourcebased system of the last century that conventional economic understanding must be re-examined.

THE KNOWLEDGE ECONOMY FRAMEWORK

It has been found that the successful transition to the Knowledge Economy typically involves elements such as long-term investments in education, developing innovation capability, modernizing the information infrastructure, and having an economic environment that is conducive to market transactions. These elements have been termed by the World Bank as the pillars of the Knowledge Economy and together they constitute the Knowledge Economy framework.

More specifically, the four pillars of the Knowledge Economy (KE) framework are (Chen & Dahlman 2005, 4):

- An economic incentive and institutional regime that provides good economic policies and institutions that permit efficient mobilization and allocation of resources and stimulate creativity and incentives for the efficient creation, dissemination, and use of existing knowledge.

- Educated and skilled workers who can continuously upgrade and adapt their skills to efficiently create and use knowledge.

- An effective innovation system of firms, research centers, universities, consultants, and other organizations that can keep up with the knowledge revolution and tap into the growing stock of global knowledge and assimilate and adapt it to local needs.

- A modern and adequate information infrastructure that can facilitate the effective communication, dissemination, and processing of information and knowledge.

The Knowledge Economy framework thus asserts that investments in the four knowledge economy pillars are necessary for sustained creation, adoption, adaptation and use of knowledge in domestic economic production, which will consequently result in higher value added goods and services. This would tend to increase the probability of economic success, and hence economic development, in the current highly competitive and globalized world economy.
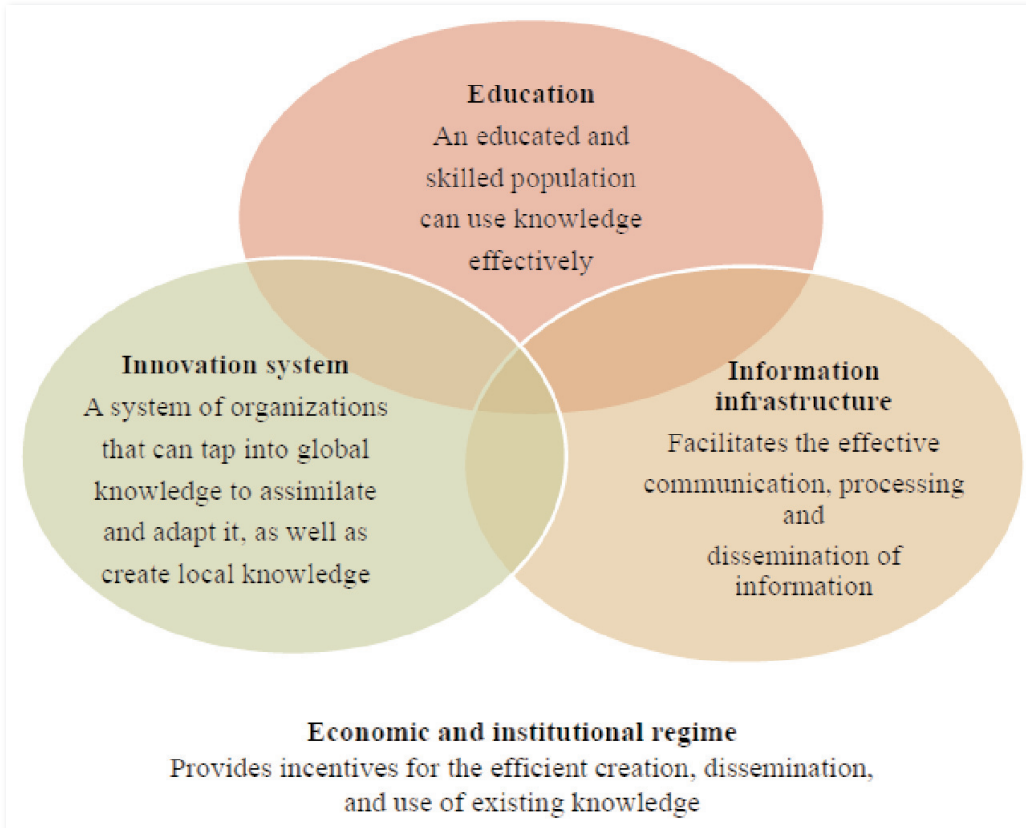
Rationales

- The labor force should be composed of educated and skilled workers who are able to continuously upgrade and adapt their skills to create and use knowledge efficiently. Education and training systems encompass primary and secondary education, vocational training, higher education, and lifelong learning. The weight placed on the different segments will differ somewhat depending on a country's level of development. For example, basic education will receive more attention at low levels of development, as basic literacy and numeracy are necessary foundations on which more advanced skills are built. Similarly, lifelong learning has increasing importance in the current context of the knowledge revolution, which requires constant adaptation of knowledge and know-how. It also grows in importance as the population ages.

  Globalization, meanwhile, is bridging the distance between basic skill needs and advanced skills, forcing countries to cover a wide educational band even at low levels of development to catch up with advanced economies and then remain competitive.

- A modern and adequate information infrastructure will facilitate the effective communication, dissemination, and processing of information and knowledge. Information and communication technologies (ICTs)—including telephone, television, and radio networks—are the essential infrastructure of the global, information-based economies of our time, as railways, roads, and utilities were in the industrial era. They can considerably reduce transaction costs by providing ready access to information. ICT-related policies cover telecommunications regulation as well as the investments needed to build and exploit ICTs throughout the economy and society through various "e-applications"—e-government, e-business, e-learning, etc. Low-income countries should focus first on the basic ICT infrastructure before promoting advanced technologies and applications.

- An effective innovation system is composed of firms, research centers, universities, consultants, and other organizations that keep up with new knowledge and technology, tap into the growing stock of global knowledge, and assimilate and adapt it to local needs. Public support for innovation, science, and technology covers a wide range of infrastructure and institutional functions, from the diffusion of basic technologies to advanced research activities. The former should receive a great deal of attention in developing countries. For most developing countries much of the knowledge and technology that nurtures innovation will originate from foreign sources, entering the country through foreign direct investment (FDI), imports of equipment and other goods, and licensing agreements. Foreign sources are important when the economy is less developed, though imports must not be allowed to obscure or marginalize the country's unique indigenous knowledge assets, such as traditional knowledge. Diffusion of basic technologies should receive a great deal of attention in developing countries.

Figure 4. The Four Interactive Pillars of the Knowledge Economy

Education
An educated and
skilled population
can use knowledge
effectively

Innovation system
A system of organizations
that can tap into global
knowledge to assimilate
and adapt it, as well as
create local knowledge

Information infrastructure
Facilitates the effective
communication, processing
and
dissemination of
information

Economic and institutional regime
Provides incentives for the efficient creation, dissemination,
and use of existing knowledge

Source: WBI. (2007). *Building Knowledge Economies.* Washington, DC: IBRD/The World Bank, p.27

● The country's institutional regime, and the set of economic incentives it creates, should allow for the efficient mobilization and allocation of resources, stimulate entrepreneurship, and induce the creation, dissemination, and efficient use of knowledge. The notion covers a vast array of issues and policy areas, ranging from aspects of the macroeconomic framework, to trade regulations, finance and banking, labor markets, and governance. The latter includes the rule of law and its applications (judicial systems), the quality of the bureaucracy as reflected in measures of government effectiveness, and the level of corruption. Mediocre governance resulting in a poor business climate is the single greatest hindrance to economic and social development in general, and to knowledge-based development in particular (Figure 4.)

The situation within different group of countries in the world concerning the knowledge economy and the components of the knowledge economy[4] is given in Figure 5. where the best results are in the countries within the Western Europe. Knowledge economy is less developed within the countries in the South Asia region.
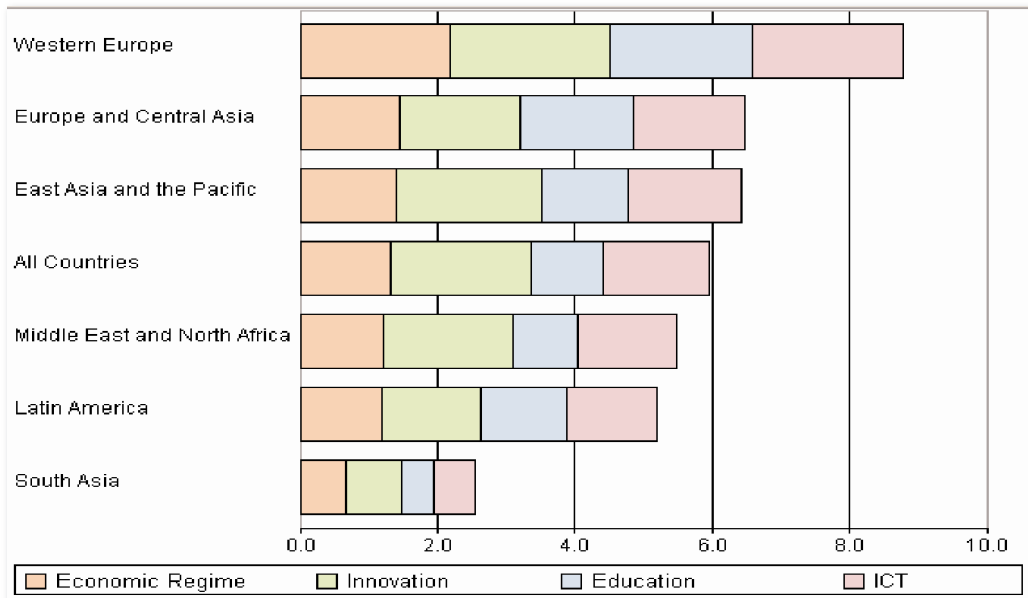
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4) According to KAM 2009 Methodology, World Bank

Figure 5. Cross Country Comparison: Knowledge Economy Index (KAM 2009)

Source: http://info.worldbank.org/etools/kam2/KAM_page9.asp

The top 10 countries, according to the Knowledge Economy Index prepared by the World Banks KAM methodology, are given in Table 1. where the results from the previous figure are confirmed, based on the fact that the top 5 Knowledge Economy countries are from the Western Europe region. Denmark is at the first place which compared with the second placed Sweden has better performances in the economic incentive regime and the education pillar. Sweden has better performances in the innovation and ICT pillar. Each of the knowledge economies has its own characteristics and own competitive advantages on which the high KE performances are based and sustainable economic growth and development are accomplished.

Table 1. Top 10 Knowledge Economy Countries (Knowledge Economy Index – KEI)

| Rank	Country	KEI	KI	Economic Incentive Regime	Innovation	Education	ICT
1	Denmark	9.52	9.49	9.61	9.49	9.78	9.21
2	Sweden	9.51	9.57	9.33	9.76	9.29	9.66
3	Finland	9.37	9.39	9.31	9.67	9.77	8.73
4	Netherlands	9.35	9.39	9.22	9.45	9.21	9.52
5	Norway	9.31	9.25	9.47	9.06	9.6	9.1
6	Canada	9.17	9.08	9.45	9.44	9.26	8.54
7	United Kingdom	9.1	9.06	9.24	9.24	8.49	9.45
8	Ireland	9.05	8.98	9.26	9.08	9.14	8.71
9	United States	9.02	9.02	9.04	9.47	8.74	8.83
10	Switzerland	9.01	9.09	8.79	9.9	7.68	9.68

Source: KAM 2009

THE KNOWLEDGE ASSESSMENT METHODOLOGY (KAM)

The transition to becoming a knowledge economy requires long-term strategies that focus on developing the four KE pillars. Initially this means that countries need to understand their strengths and weaknesses, and then act upon them to develop appropriate policies and investments to give direction to their ambitions and mechanisms to enable the policy makers and leaders to monitor progress against the set of goals.

To facilitate this transition process, the World Bank Institute's Knowledge for Development (K4D) Program has developed the Knowledge Assessment Methodology (KAM - www.worldbank.org/kam), which is an Internet-based tool that provides a basic assessment of countries' and regions' readiness for the knowledge economy. The KAM is a user-friendly interactive diagnostic and benchmarking tool that is designed to help client countries understand their strengths and weaknesses by comparing themselves with neighbours, competitors, or other countries that they may wish to emulate based on the four KE pillars (Figure 5.). The KAM is therefore useful for identifying problems and opportunities that a country may face, and where it may need to focus policy attention or future investments, with respect to making the transition to the knowledge economy. The unique strength of the KAM lies in its cross-sectoral approach that allows a holistic view of the wide spectrum of factors relevant to the knowledge economy.

Figure 5. Overtime comparison: KEI-Knowledge Economy Index
Comparison Group: All Countries
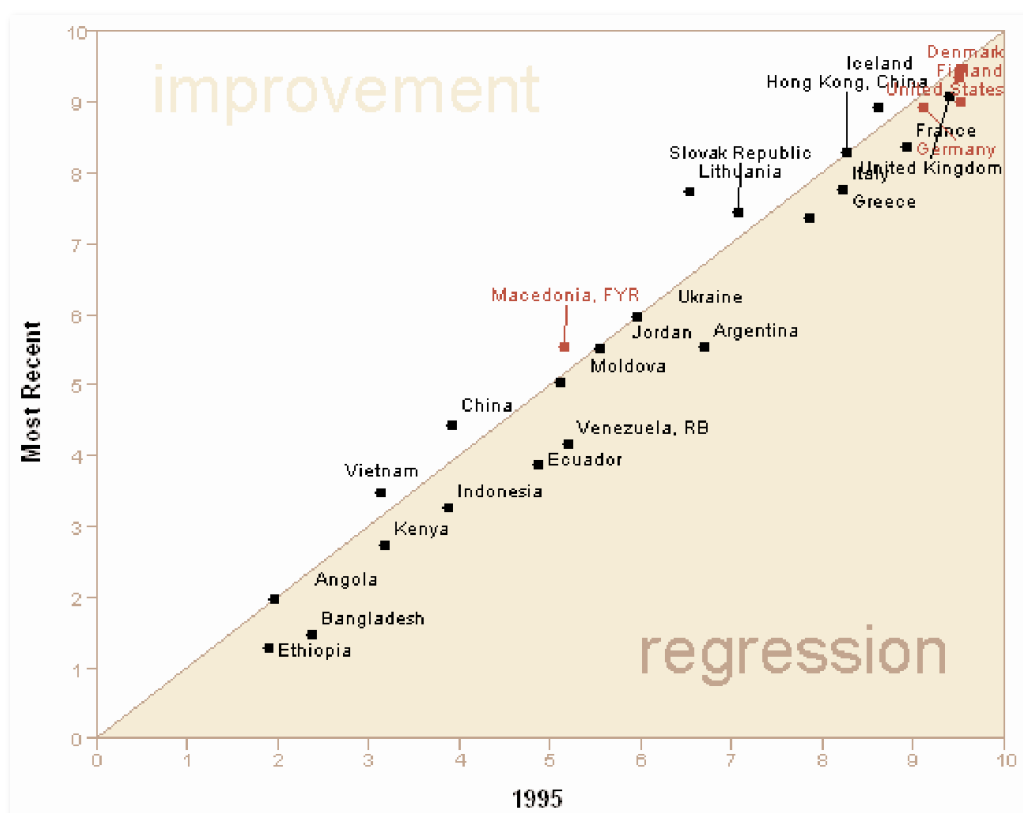
Source: http://info.worldbank.org/etools/kam2/KAM_page7.asp

The KAM consists of 109 structural and qualitative variables for 146 countries to measure their performance on the 4 Knowledge Economy (KE) pillars: Economic Incentive and Institutional Regime, Education, Innovation, and Information and Communications Technologies. Variables are normalized on a scale of 0 to 10 relative to other countries in the comparison group. The KAM also derives a country's overall Knowledge Economy Index (KEI) and Knowledge Index (KI). An example of the comparing results on the cases of China, India and Korea are given in Figure 6. it can be easily noticed that Korea has better results in front of China and India, comparing the total Knowledge Economy Index, and within the four pillars of the KE.

Figure 6. China, India, Korea Republic (most recent, KAM 2009)
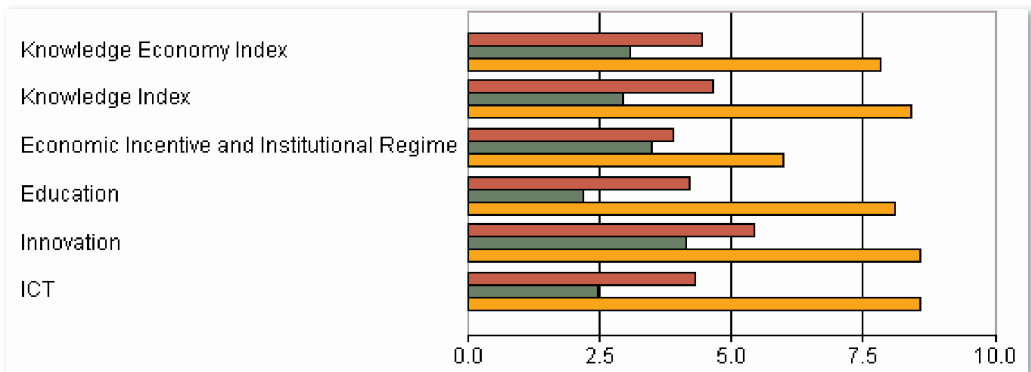
Source: http://info.worldbank.org/etools/kam2/KAM_page2.asp

Given its ease of use, transparency, accessibility over the Internet, the KAM has been widely used by government officials, policy makers, researchers, representatives of civil society, and the private sector. The KAM has also been used by multilateral and bilateral aid agencies, research institutions, consultants and others to undertake preliminary single or multi-country knowledge economy assessments.

THE KNOWLEDGE ECONOMY AND ECONOMIC PERFORMANCE

It seems logical that levels of economic development and levels of knowledge should be closely related. The positive correlation between the results of the KEI and the level of economic development does not establish a causal relationship—a high KEI will not necessarily produce a high level of economic development. On the other hand, it is plausible that high-income countries, because they are more affluent, are able to afford greater investments in knowledge and thus score higher on the KEI.

Table 2. presents the regression results. We see that the estimated coefficient of KEI 1995 is positive and statistically significant. The estimated value of 0.4605 implies that a unit increase in the KEI tends to increase average annual growth of output per worker by 0.46 percentage point. Recall that the KEI ranges from 0 to 10, and a unit increase is equivalent to an improvement of one decile (or about 13 positions) in the ordinal ranking of the 132 countries included in the KAM.

Table 2. Knowledge and Economic Growth, Dependent Variable: Growth Rate of Real GDP per Worker

Years: 1996–2004	Reg A1	
	Estimated coefficient	*Standard error*
(Log) initial GDP per capita (1996)	−0.9459***	0.3944
Growth of capital per worker	0.3838***	0.0323
KEI 1995	0.4605***	0.1673
Constant	6.6693***	2.6602
R squared	0.5894	
Number of countries	113	

Source: WBI. (2007). *Building Knowledge Economies.* Washington, DC: IBRD/The World Bank, p.40

It is clear, therefore, that higher KEI values are associated with higher rates of future economic growth, if other factors are held constant. This suggests that higher levels of knowledge in a society do indeed lead to higher levels of economic growth—and consequently to higher levels of economic development. A one-unit improvement in the KEI, equivalent to moving up one decile or 13 positions in the country rankings, leads to an increase of 0.46 percentage point in economic growth, after accounting for initial conditions, as indicated. (WBI 2007, 33).

These results are important. They confirm that knowledge and its applications have played a major role in the growth of countries. That conclusion justifies placing knowledge-related policies at the core of today's development strategies. At the same time, it would appear essential to improve the economic fundamentals so as to facilitate knowledge-based growth and accelerate the development process.

## THE KNOWLEDGE ECONOMY AND REPUBLIC OF MACEDONIA

Based on the fact that the knowledge economy has become crucial for the economic growth of a country that relies on the results of the four interrelated pillars, during the years Macedonia has improved its position in the area of KE (Figure 7.), from 71st place (year 1995) to 58th place out of 146 countries (year 2009). The highest result is in the area of information and communication technology, where on a scale from 0 to 10, Macedonia has 6.88 points. Significant improvements are being made in the area of the economic regime, and there is stagnation in the rest two pillars of the knowledge economy.

Figure 7. Macedonia and the knowledge economy (KAM 1995 and 2009)
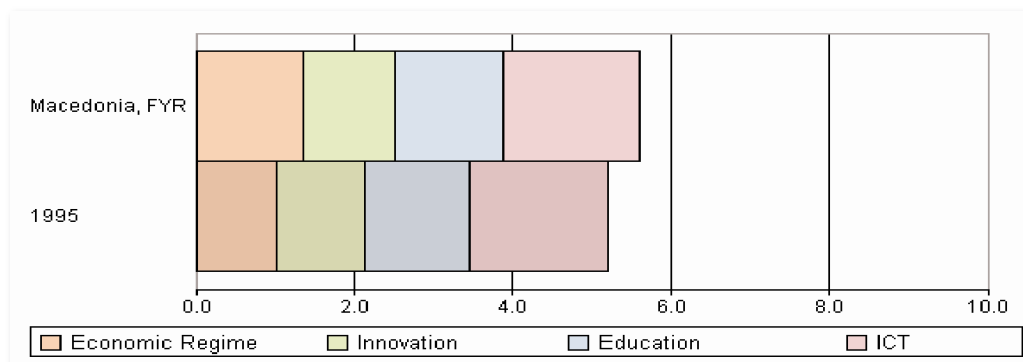
Source: KAM 2009

If we compare the accomplishments of our country with the ones from the other two countries from the Western Balkan group, Croatia has the best result in the KEI with 7.28 points and Albania 3.96. Croatia has high scores in the area of innovation and ICT, 7.67 and 7.62, respectively, whereas Albania's highest KE pillars results are in the area of educational and economic and institutional regime (4.97 and 4.09). If we compare the standard variables from which the KEI is consisted (Figure 8.), Croatia has best results in a number of variables compared with Macedonia and Albania, but the highest are in the area of the tariff and nontariff barriers, total telephones per 1000 people, and S&E Journal articles/million people. Macedonia's best results are in the area of the computers per 1000 people, total telephones per 1000 people and the tariff and nontariff barriers. The worse results Macedonia has achieved concerning the annual GDP growth, where Albania has the best results compared with the other two countries. Albania has also significant high adult literacy rate, but has low results in the area of USPTO granted patents and the rule of law.

Figure 8. Macedonia, Albania, Croatia
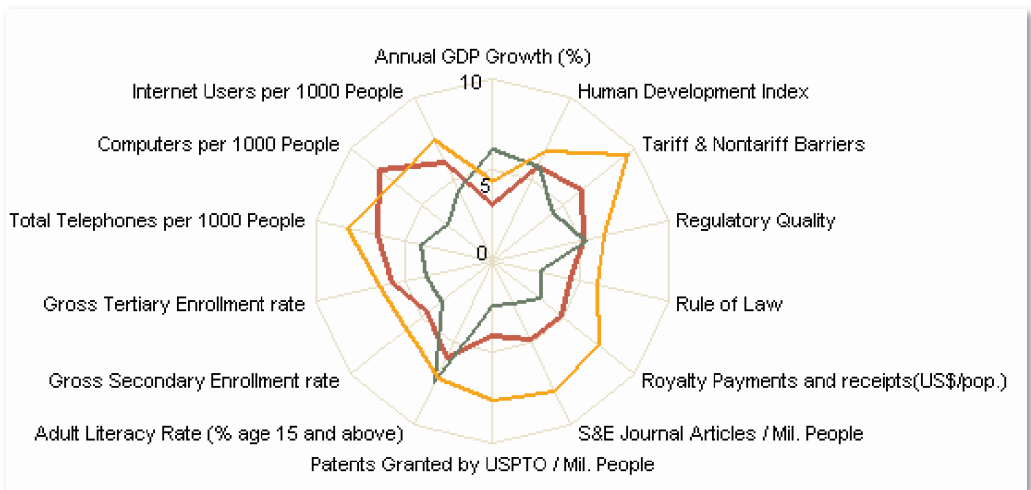

Source: KAM 2009

Previous in the text it was mentioned that the knowledge id important and for the competitiveness of the country. The picture of the Macedonians economy competitiveness is shown in the Figure 9. below. Macedonia has achieved improvements through the years concerning the competitiveness in the country, being 89th out of 134 country in the 2008 year, to the 79th place out of 139 country in 2010. The highest scores are accomplished in the area of health and primary education, macroeconomic environment and labor market efficiency. A lot of reforms still have to be made in the area of the institutions, and a number of investments have to be directed toward improving the infrastructure of the country and toward promoting more innovations that will enhance the economic growth processes.

Figure 9. Global Competitiveness Index: Macedonia 2010/2011
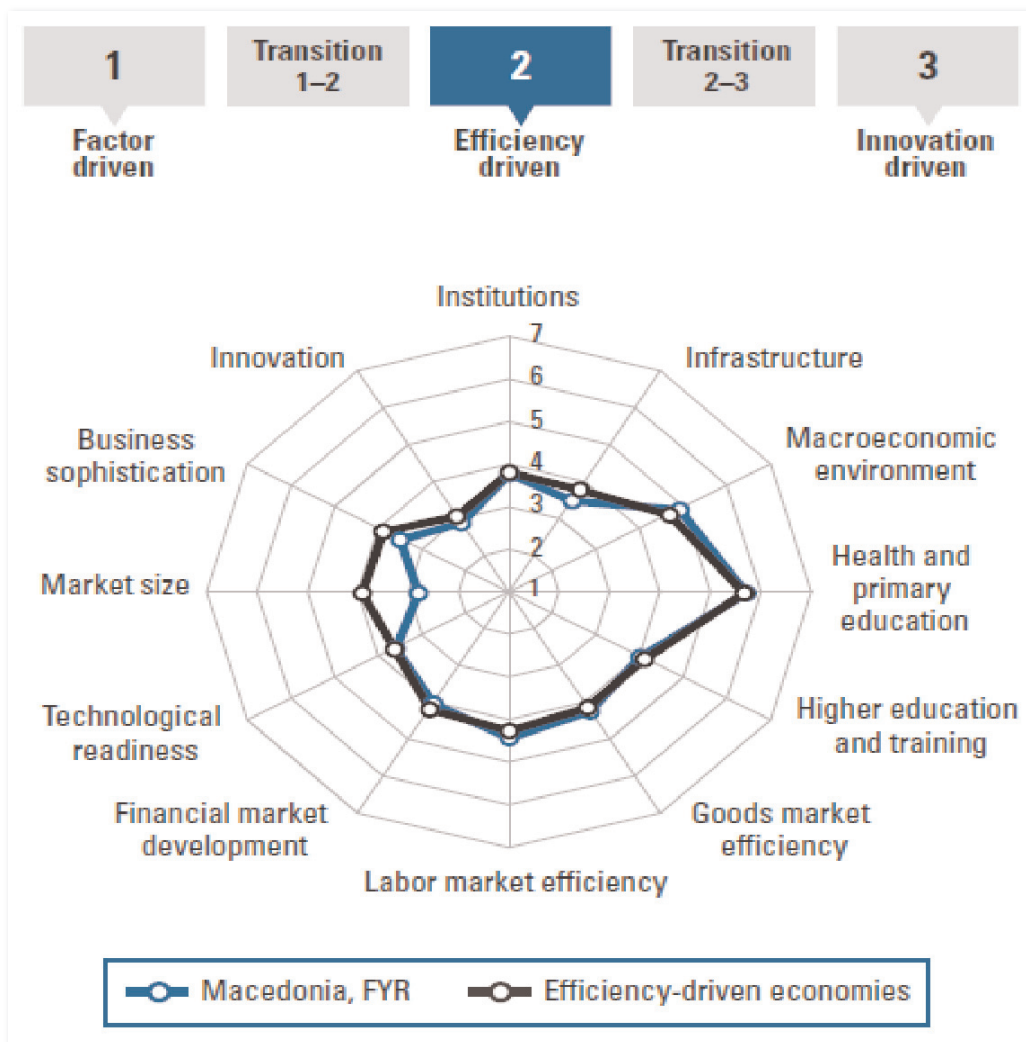
Source: Schwab, K. (2010), The Global Competitiveness Report 2010-2011. World Economic Forum, p. 222

Macedonia still has to deal with some problems that are important to foster the business climate in the country. Macedonia is being characterized with inefficient government bureaucracy, problems with access to finance and policy instability. Resolving the problematic factors influence the motivation of the domestic and foreign companies to operate in the country and thereby to participate in the Gross Domestic Product creation.

Figure 10. The most problematic factors for doing business: Macedonia
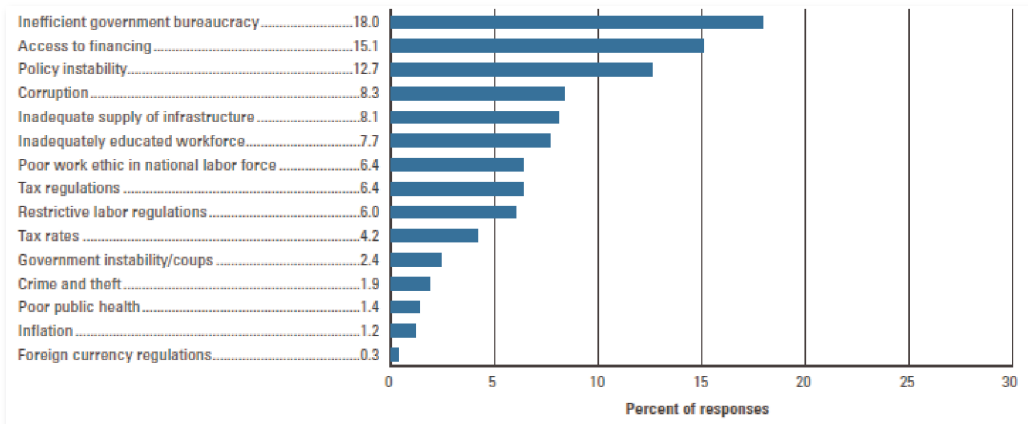
Source: Schwab, K. (2010), The Global Competitiveness Report 2010-2011. World Economic Forum, p. 222

Fostering each of the knowledge economy and global competitiveness pillars is of a great importance if the country wants to have a sustainable economic growth, as an improvement in only few of the pillars will not generate consistency and long term positive economy effects. Therefore the policy makers and decision makers should prepare consistent policies and decisions that will improve the economic performances of the country and generate positive externalities.

CONCLUSION

With the spread of modern and efficient information and communication technologies, the world economy has become more competitive as well as interdependent. As such, economic survival made it essential to have knowledge creation, dissemination and use play a focal point in long-term developmental strategies. In other words, it is critical for countries make the transition to become a Knowledge Economy.

This paper also presents the Knowledge Economy framework thus asserts that information infrastructure, and a conducive economic incentive and institutional regime are necessary for sustained creation, adoption, adaptation and use of knowledge in domestic economic production, which will consequently result in higher value added goods and services. This would tend to increase the probability of economic success, and hence economic development, in the current highly competitive and globalized world economy.

Taking into consideration the fact that the knowledge economy is essential for the economic growth and development of the countries and their global competitiveness, the government actions and the policy making processes should support the movement of the countries on the knowledge economy path.

The Macedonian economy is on the path toward knowledge economy. Although a number of reforms still have to be undertaken, the Macedonian economy is moving forward on this path. The consistent policies will foster this direction and result with higher rates of economic growth in the country.

References:

Abel, Andrew B.; Bernanke, Ben S.;. (2001). Macroeconomics 4th ed. Addison Wesley Longman, Inc.

Alavi, M., & Leidner, D. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. MIS Quarterly 25 (1) , 107-136.

Aubert, Jean-Eric; Reiffers, Jean-Louis;. (2003). Knowledge Economies in the Middle East and North Africa, Toward New Development Strategies. Washington D.C.: The World Bank.

Brinkley, I. (2006). Defining the economy economy. London: The work foundation.

Chen, D. H., & Dahlman, C. J.(2005). The Knowledge Economy, the KAM Methodology and World Bank Operations. Washington D.C.: The World Bank.

Chen, D. H. (2006). Koreas as a Knowledge economy: Overview. Washington D.C.: IBRD/WB.

Committee, A. (2008). Innovation Measurment: Tracking the state if Innovation in the American economy. Washington D.C.: The Advisory Committee on Measuring Innovation.

Dahlman, C. J., & Aubert, J.-E. (2001). China and the Knowledge Economy:Seizing the 21st Century. Washington D.C.: IBRD/The World Bank.

Dahlman, C. J., Routti, J., & Yla-Antilla, P. (2007). Finland as a knowledge economy. Washington D.C.: The World Bank.

Dahlman, C., & Utz, A. (2005). India and the Knowledge Economy: Leveraging Strengths and Opportunities. Washington D.C.: IBRD/The World Bank.

Davenport, T., & Prusak, L. (1998). Working knowledge. Boston: Harvard Business School Press.

Dolfsma, W., & Soete, L. (2006). Understanding the Dynamics of a Knowledge Economy. Cheltenham UK: Edward Elgar Publishing, Inc.

Dti. (2003). Innovation report: Competing in the global economy: innovation challenge. London: Dti.

Fingar, P. (2006). Extreme Competition: Innovation and the Great 21st Century Business Reformation. Florida: Meghan-Kiffer Press.

Hargeaves, A. (2003). Teaching in the knowledge society. New York: Teachers College Press.

Houghton, John; Sheehan, Peter;. (2000). A primer on the Knowledge Economy. Melbourne: Centre for Strategic Economic Studies, Victoria University.

Inter - American Development Bank (2003). Sustainable Economic Growth: Strategy Document, Washington D.C.

Kahin, Brian; Foray, Dominique;. (2006). Advancing Knowledge and the Knowledge Economy. Cambridge: MIT Press.

Kaldor, N. (1957). A Model of Economic Growth. Economic Journal , 591-624.

Larsen, K., & Vincent-Lancrin, S. (2005). The impact of ICT on tertiary education: advances and promises. Advancing knowledge and knowledge economy. Washington D.C.: OECD.

Mahroum, S. (2008). Innovate Out of the Economic Downturn. Business week .

Markus, L. (2001). Toward a theory of knowledge reuse: Types of knowledge reuse situations and factors in reuse success. Journal of Management Information Systems 18(1) , 57-93.

Nonaka, I. (1994). A dynamic theory of organizational creation. Organization Science , 14-37.

Nonaka, I., & Nishiguchi, T. (2001). Knowledge emergence. Oxford: Oxford University Press.

Nonaka, I., & Takeuchi, H. (1995). The knowledge-creating company: How Japanese companies create the dynamics of innovation. Oxford: Oxford University Press.

OECD. (2003). The Sources of Economic growth in OECD countries. OECD.

Porter, M. (1996). What is strategy? Harvard Business Review , 74.

Potocnik, J. (2005, March 18). The importance of SMEs in the European Knowledge economy. Celje, Slovenia.

Rasheed, N. (2005, July 7). The impact of Knowledge management on SME's. Knowledge Board.

Romer, D. (2001). Advanced Macroeconomy. New York: McGraw-Hill/Irwin.

Rooney, D., Hearn, G., & Ninan, A. (2005). Handbook on the Knowledge Economy. Cheltenham, UK: Edward Elgar Publishing Limited.

Schleicher, A. (2006). The economics of knowledge: Why education is key for Europe's success. Lisbon: OECD.

Schwab, K. (2010), The Global Competitiveness Report 2010-2011. World Economic Forum

Smith, H., & Schurink, W. J. (2005). The interface between knowledge management and human resources: A qualitative study. SA Journal of Human Resource Management 3 (1) , 6-13.

Snowdown, Brian; Vane, Howard R. (2005). Modern Macroeconomics, It's origiins, development and current state. Massachusetts: Edward Elgar Publishing, Inc.

Soubbotina, T. P. (2004). Beyond Economic Growth,An Introduction to Sustainable development. Washington D.C.: The World Bank.

Stiglitz, J. E. (1999, January 27). Public Policy for a Knowledge Economy. London, UK: Department for Trade and Industry and Center for Economic Policy Research.

Suh, J., & Chen, D. H. (2006). Korea as a Knowledge Economy: Evolutionary Process and Lessons Learned. Washington D.C.: The World Bank.

Takeuchi, H., & Shibata, T. (2006). Japan, Moving Toward a More Advanced Knowledge Economy. Washington D.C.: The World Bank.

Thomson, A. A., & Strickland III, A. J. (1998). Staregic Management-Concepts and cases. Alabama: McGraw Hill.

Turban, E. (1992). Expert systems and applied artificial intelligence. New York: Macmillan.

WB. (2003). Lifelong Learning in the Global knowledge economy. Washington D.C.: IBRD/The World Bank.

WBI. (2007). Building Knowledge Economies. Washington, DC: IBRD/The World Bank.

Wickramasinghe, N. (2006). Encyclopedia of Knowledge Management: Knowledge Creation. Idea Group Inc.

World Economic Forum. (2010). The Lisbon Review 2010: Towards a More Competitive Europe?.Geneva

Zeng, D. Z., & Wang, S. (2007, May). China and the Knowledge Economy: Challenges and Opportunities. WPS4223 . Washington D.C.: The World Bank.

Zimmerer, W. T., & Scarborough, M. N. (2002). Essential of Enterpreneurship and Small Business Management. New Jersey, USA: Prentice/Hall.

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THE PARTICIPATION OF WOMEN IN FULL-TIME JOBS: THE CASE OF ALBANIA

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Abstract

The economic rights of women are represented by the level of participation in jobs, in keeping the job and in the reward. Getting a job for the Albanian women is limited by a considerable amount of factors, such as the duty and the responsibility in growing up the children, doing housework, the education level, the limited access in professional personality, the possibility to get a loan etc.
The women in Albania have less access than the men in starting a job, and as a result, the level of their unemployment is higher. Even though the access of women in education is equal to the access of men, this does not provide the women with the same opportunities as the men in labour market.
The level of employed women is lower than the level of employed men and this phenomenon has attracted a lot of economists all over the world. It is obvious that the economic behavior of women related to the decisions in the work labour depends on some factors that are result of the graphic of the supply of the work on the life cycle.

Keywords: Level of employment, trend.

1. The history of the Albanian woman

1.1 What was the Albanian woman like?

In the '90s, the Albanian woman was under the dictate of a military emancipation. For many years, she was victim of a totalitarian system, she was a soldier, a worker, an intellectual, co-operative, headmaster and in some cases, member of the Politic Bureau. The most important events of her life were determined: the time for engagement, love, birth of the children, but also the timetables of the work, the solitary training and firing were the same as the men.

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However the Albanian society after the '90s made an immediate change as far as the mentality for women is concerned. Unconditional liberation was part of all women life aspects, especially in the young generation. It should be mentioned the fact that after the '90s, the Albanian woman started to look for more space for intellectual possibilities and for her veto in a considerable amount of life fields. Nevertheless, the system change had social consequences for Albanian women.

1.2 What is the Albanian woman like in the years of democracy?

From 1995 to 2008, the labour market in Albania had important changes and one of the main factors was the denationalization of the state enterprises.An characterictic for the labour market in Albania is still the sexual difference in the jobs, as the men are in most of them. These differences are reflected in the employment scale of men and women and referring to the figures, this difference was lower in 2005, as the employment scale of men was 51.4%, whereas the employment scale for women was 38.6%. After the year 2000, the employment scale of women is decreasing, and in 2008, according to the Questionnaire of the Labour Power, this figure is 45.6% and differs with 14.3% from the employment scale for men.

The average number of the employed labour power in the non-agricultural private sector after the year 1999 has followed an increasing trend and referring to the figures for the year 2000, this number was 116,024, whereas in the year 2008 the average number of the employed people in this sector has increased to 228,500 or with 50.5%.

The employment in the state sector from 1998 to 2008 has decreased, but this decreasement has affected in the increasement of employment in the non-agricultural private sector. The data for the average number of the employees in the agricultural private sector until the year 2006 is based on the result of the Questionnaire of the Measurement of the Living Level 2002 and 2005. However, for the year 2007 and for this sector, the data based on the Questionnaire of the Labour Power in Albania, the first result of which were in 2007, point out that there is an increasement of the number of the employed labour power from 542,152 in the year 2005 (according to LSMS 2005) to 568,549. The employed people in the agricultural private sector are still the biggest part of the employed labour power in all economic sectors.

1.3 The woman in politics and taking desicions

The formulation and execution of the law "For the Sexual Equality in Society" and the sexual quota in The Jugular Book, caused that in the last parliament elections, the proxy of the woman has risen from 7% in 16%, marking the first progress in this aspect, but not in the parameters established by the law in the limits of 30%.

But in the process of successful execution of the sexual quota, politic parties have played a considerable role, by expressing the desire for the woman participation in parliament, not just in the election lists.

Actually in the locative governance, referring to the last local election in 2007, there is one woman in the post municipal leader from 65 civic centers, 3 women in the post of leader of mini civic center from 11 mini civic centers in Tirana and 6 woman in the post of leader of comunal center from 291 comunal centers .

There are more women registrated in universities than men, they are 58% of all students that follow academical studies. The academical staff in universities consists of 43,6% women and 56,4% men. Moreover 38% of them have scientific grades. In the state authorities the presence of women is more encouraging, the percentage of woman is 27%.

1.4 What's about women in Balkan countries?

Overall, the impact of the transition has not been good for women. The socialist gender ideology and gender equity is currently regarded as a part of the repressive socialist system that has been overthrown. These ideological changes influenced new legislation and deprived women of the incentives they had previously

been granted by the socialist state. The new democratic governments now support women's right to stay at home. In this and other ways, the transition has encouraged a patriarchal ideology that pushes women back into the home.

Thus, women are the first to lose jobs, particularly higher-level and better-paid jobs, and particularly in industry, as a result of privatization. More and more women are working in low-paid industrial and service sectors, with a growing pay equity gap. Women's unemployment has increased, and at 26% it is higher than men's unemployment (20%), while there are decreasing opportunities to find jobs, especially for women over 40–45 in the private sector. The feminization of poverty is thus gathering pace, as women have lost the benefits of previous social welfare system. Women are more likely than men to be exposed to poverty, because the support of children depends mainly or totally on women; and they are more likely to be poor in old age as a consequence of the higher unemployment rate and the gender-based income gap. With growing poverty, sex trafficking and domestic violence are increasing. The needs of many of the most vulnerable groups of women (Roma, rural, minority, self-supporting mothers, elder, housewives, and disabled) are invisible and unmet.

As employees, moreover, women find their rights systematically ignored. Private-sector employers prefer to hire women, because they are considered to work harder, cause less trouble, and be readier to accept subordinate positions despite having greater expertise; they often perform jobs beneath their educational level. Employers also prefer to hire young women, so there are few or no jobs for women over 45. Many women work without a contract, without paid pension, social security or healthcare security, and without protection at work.

2. The employment of women

Every year though The Programs of Employment Stimulation, the albanian government has a fund of 20 million leks for the unemployed that are looking for a job and this fund is used on the average by 2200-2500 unemployed people, 80% of them are women and a considerable part of this percentage are victims of familiar violence. For these women the government offers free professional traning in public centers of professional traning and also social service in public and private centers.

On one hand, the women are 49% of all unemployed labour power, but on the other hand, they are 43% of the academical staff and 27% in public authorities.

The figures point out that the women are employed in public sector (education, health, state authorities, government institutions), in private sector (companies, small and medium enterprises) and also in business and agriculture.

The employed women in private sector, in different industries have the primary and secondary education and the average wage varies from 15.000 to 25.000 leks per month.

By analizing the employment problems, in spite of the educational level and the limited professional qualification, other subjective factors are: the level of unemployment, economic factors, the patriarchal society etc.

In Albania the woman is present in the informal labour market, too. In a lot of regions, the informal sector competes in wages and employment the formal labour market. The employment for women in the informal sector is associated with unsecure economic activities, which do not gurantee full time employment, generate low income and are relatively characterized by the low productivity. The difference in men and women wages stimulates the employment of women in informal market.

Despite the society emancipation, as far as the employment of women in concerned, little things have changed. The women are 37% of all employed labour power. The difference between employed men and women is large. What is more, during these years, this figures have remained the same. This difference is more obvious in the non-agricultural private sector, where the percentage of employed women is still 25%.

The figures show the mentality that is still present: the breadwinner is the man, so the woman may stay all day without working. In Tirana this mentality has changed, but in other towns, expecially in rural regions, there is no change at all. Another factor that affects strongly in the woman "discrimination" is the lack of labour market and the high rate of unemployment.

According to the figures, 13.6% of the population is unemployed. It is mentioned that special politics are going to be followed for the groups of women in need.

In order to understand the employment figures for men and women, we can refer to the table 2.1 and the graphic 2.1.

Table 2.1 The employment level during the years.

The year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
The level of employment (in %)	62.5	60.3	59.0	57.0	56.0	55.1	51.9	51.1	50.7	50.3	49.7	48.7	56.4	54.3
– Men	74.7	72.6	74.0	71.0	69.0	66.0	63.8	62.8	61.4	61.2	60.0	58.8	63.6	63.0
– Women	50.2	47.9	45.0	43.0	42.0	44.1	39.4	38.9	38.2	38.9	38.8	38.1	49.3	45.6

Source: INSTAT

Graphic 2.1 The trend of employment in Albania.
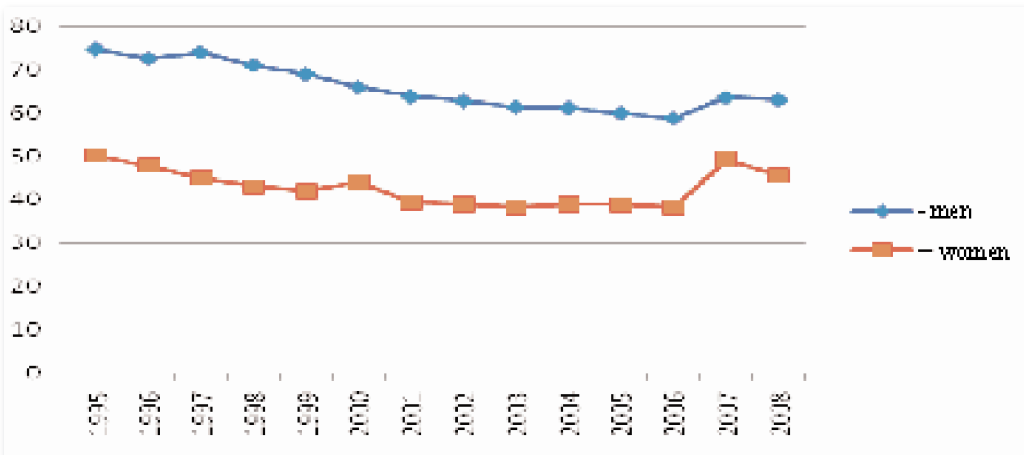
As it is obvious from the graphic 2.1, the employment level for men and women is decreasing for the years 1995-2009. This decreasement is explained by the fact that in Albania, the accurate figures exist only in the public sector. And as the private sector is concerned, there is lack of figures, as a result of non-declaration of the full number of employees in different enterprises in order to avoid social and health security. Therefore, in Albania are still individuals that work without securities. However, we are going to analize the employment trends for both categories with these figures.

For the men, the employment level trend is:

The employment level for men = 75.27 -1.31 *t

$$Se = (1.31) \ (0.16)$$

$$tv = (57.31) \quad (-7.92) \quad R^2 = 0.85$$

It is obvious that we have an important statistical trend and with a high explanation of the employment levels during the time. The employment levels for men are decreasing. The prediction for the year 2010 based on this trend is 55.62%.

For the women:

The employment level for women = 46.61 –0.57 *t

$$Se = (2.30) \quad (0.29)$$
$$tv = (20.08) \quad (-1.95) \quad R^2 = 0.25$$

The model of the linear trend for women is not statistically important. Therefore we are going to analyze the model of square trend of women employment. Based on this model:

The employment level for women = 54.66 – 3.79 *t +0.23t^2

$$tv = (21.86) \quad (-4.61) \quad (4.029 \quad R^2 = 0.72$$

The model of the square trend is statistically important and for the women, the levels of the employment change during the time are not constant. They change based on a square trend, not a linear trend.

3. The problem

The number of employed women is smaller than the number of employed men and this fact has attracted the attention of many economists all over the world. The economic behavior of women related to the decisions in the labour market depends on some factors in the graphic of the work supply in the life cycle.

This behavior has been essential to the research of the work supply, since the year 1970 and of course it has been focused on analyzing the factors that affect in participation decisions, the effect of this factor, the explanation of non-participation, the effect of preferences and the relation with the marriage decisions, the growing up of children, the divorce and getting retired.

The level of unemployed women in Albania (registered) has changed from 20.1% in year 1998 to 19.1% in 2002 and 13.5% in 2008.

This parameter is decreasing and it is less than 36%.

Table 3.1 The participation in work for the women aged 15-64

Years	1990	1997	1998	2000	2001	2002	03	04	05	06	07	08
USA	67.8	70.7	70.7	70.7	70.8	70.5	70.2	70.1	70.2	69.3	68.4	63.4
Europe	54.8	58	58.7	59.4	60.1	60.1	60	59.8	59.7	59.4	59.2	58.6
Albania	55.6	45	43	44.1	39.6	39.7	38.2	38.9	38.8	38.1	49.3	45.6

If we want to analyze the employment figures, the Albanian women have a lower employment level compared to the levels in other countries, even though they have increased the level of formal education, have postponed the age of marriage and have reduced the time for growing up the children. This level is lower, almost twice lower compared to the level of employed men in Albania in the same profession.

Table 3.2 The employment rate of women in Balkan countries (in %)

| Years	2006	2007	2008
Greece	38.74	38.79	39.13
Slovenia	45.52	45.22	45.49
Croatia	-	44.42	44.66
Macedonia	38.28	39.2	38.67
Euro area (17 countries)	43.72	43.96	-

Source: Eurostat

Referring to table 3.2, we see a large gap between Balkan countries. Greece and Macedonia have approximately employment rate of women and their trend. But Macedonia has a small decreasing rate in 2008 comparing to 2007, from 39.2 % to 38.6%. Slovenia and Croatia reflect a larger rate than two above Balkan countries and the same trends. Albania reflects approximately the same employment rate of Greece and Macedonia until 2006. After this year it reflects an increasing of women's employment rate approximately Croatia and Slovenia. In 2007 the employment rate of women is larger compare to Euro zone (17 countries), precisely 49.3 % versus 43.9 %.

Table 3.3
The data for the number of employed labour market in public sector according to the educational level

Year	Primary	Secondary	High
1995	60,144	136,012	79,731
1996	46,813	117,992	74,045
1997	49,972	116,983	59,340
1998	45,528	108,715	58,507
1999	41,897	102,728	56,804
2000	30,135	94,501	66,530
2001	25,793	94,410	68,762
2002	24,125	93,203	68,737
2003	22,736	87,955	70,725
2004	21,304	86,820	67,941
2005	21,177	85,057	68,781
2006	19,678	81,600	67,722
2007	18,528	80,900	67,672

The graphic consists of the employment according to the categories of education.

Graphic 3.1 Trend of employed labour market in public sector according to the educational level
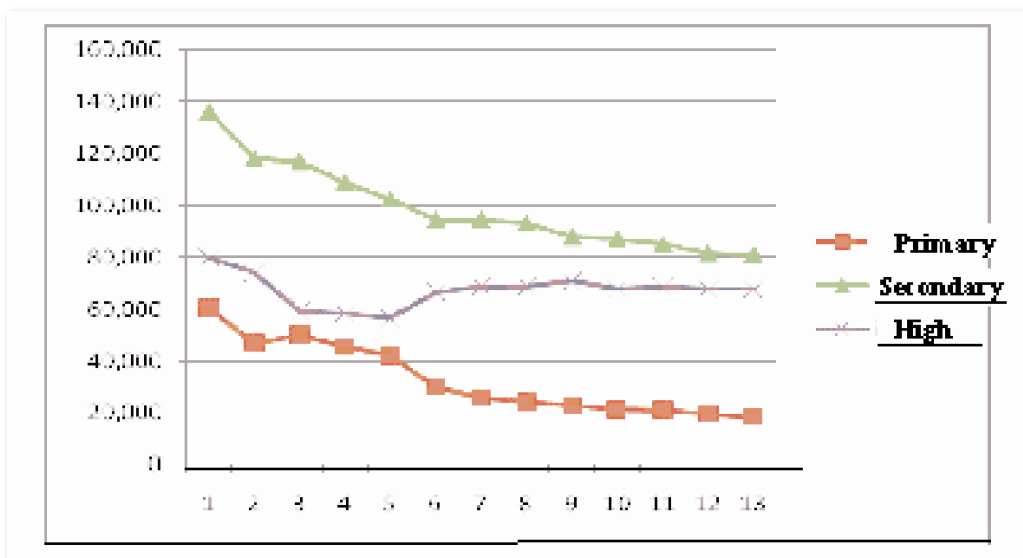
Table 3.4 The employment according to the age and the education level. (year 2007)

Education level	25-44 years	44-65 years
No education	0.4	2.4
4 year education	0.7	10.1
Primary education	26	13.2
Secondary education	15	7.2
High education	4.5	2.2

Source: INSTAT

According to the table 3.4, the most demanded in the labour market are the women with primary education and 25-44 years, who are more willing to work, despite of the wage. Most of them work in the private sector.

Table 3.5 Employment based on the sectors.

Year	2006	2007
A. In public sector	0.17	0.176
- Budgetary	0.13	0.131
- Non-budgetary	0.04	0.045
B. In non-agricultural private secor	0.24	0.245
- Employed	0.16	0.17
- Self employed	0.077	0.069
C. In agricultural sector	0.58	0.57

Source: INSTAT

Table 3.6 The employment of women according to the activity for the year 2008 (in %).

Sector	Total
Agricultural private	56.7
Non-agricultural private	29.7
Public	45.7

Source: INSTAT

The highest level of employment is in the agricultural private sector, as in this sector the women that live in rural regions are employed and this kind of employment is one of the best alternatives they have. A good figure in employment is also in the public sector, where the women are 45%, because the latest years the number of women in universities has risen dramatically and they have the priority to get a job.

4. The theoretical and econometrical consideration.

One of the main objectives of many researchers of the labour supply is the identification and the analysis of the factors. The theoretical model is based on the maximal utility of the consumer theory and the division of time. The behavior of the labour supply for an individual is defined firstly by the relations between the market wage and the hidden wage (the value of the time for the activities out of the market). The first wage refers to the function of the market demand, whereas the second wage refers to the function of the individual supply.

The empirical studies show that the behavior of the women work supply, the participation decisions and the work supply translated in the number of work hours is sensitive to the changes in the wage, the income not from the job, the partner's income if the women is married and the presence of children, especially those who have not started school and are in home.

Supposing that there are no fixed costs for coming or going out the labour market and that the work timetable vary freely, the behavior of the married women labour supply depends on two factors: the first has to do with the wage in the market (w_t) and the second has to do with the hidden value of the spent time not in market activities (w_j).

According to Franz (1985) we accept that the market wage is defined by the independent variable Xt as follows:

(1) $w_t = \beta X_t + \varepsilon_t$ where ε_t is the reside that has normal spreading

The first equation of the reserve wage (zero in work) is also linear function of X_r:

(2) $w_r = \beta_\gamma X_\gamma + \varepsilon_\gamma$ where ε_γ is the reside that has normal spreading.

Taking into consideration the participation of the labour market $w_t > w_r$:

The reduced equation of the function of the labour supply is:

$w_t = \beta X_t + \varepsilon_t$

(3) $$h_i = \begin{cases} 0 & nese \quad w_r \geq w_t \\ \beta_h X_{hi} + \varepsilon_{hi} & nese \quad w_r < w_t \end{cases}$$

Where hi represents the work timetable for the sub model when the women are working, Xhi is explanatory variable. The system of equations (1) and (2) is identifiable, whereas the model (3) can not be estimated with the simple regression, because the women that do not work are not included.

As the estimation of the wage in (3) is limited only with the women that work, the expected value is:

(4) $E(w_t \setminus h_i > 0) = E(w_t \setminus \varepsilon_{hi} > -\beta_h X_{hi} = \beta_w X_t + E(\varepsilon_w \setminus \varepsilon_{hi} > -\beta_h X_{hi})$

$$= \beta_w X_t + (\frac{\rho_{hw}}{\sigma_h}) M_i$$

where $M_i \equiv \left[\dfrac{\phi(z_i)}{\Phi(-Z_i)} \right]$ and $Z_i \equiv \dfrac{\beta_h X_{hi}}{\sigma_h}$

so the market wages are explained by the equation (5)

(5) $\quad w_t = \beta_w X_w + \left(\dfrac{\rho_{hw}}{\sigma_h} \right) M_i + \varepsilon$

As long as Mi, is unknown, we are not able to estimate the equation with traditional methods. We can get an estimation of it if we maximize the probability that a married women is working (the effects of Mi for every woman are included as a variable in the equation of the market wage).

We can continue the results (5) with the function of the labour supply for all the women of the population.

In the forwarding analyze for estimating the model, we have classified workers those women that have positive income from the job. The difference between this group and those who do not work is that this group of women is younger, more educated.

In this analysis are included:

a) One descriptive variable that takes the value 1 if the women has positive income from the job and 0 if otherwise.

b) Another important variable are the work hours that is measured by the variable usual work hours with weekly base.

c) Wage, is reflected by the weekly profits of the divided work according to the hours. The market wage is considered independent from the education, as this is included in another variable.

d) Education. Based on the figures, a woman with a high level of education in more preferred in the labour market.

e) Age, the more the experience the woman has, the more demanded in the market she is. f) The partner's income. When the partner has relatively high income, the woman has the tendency to leave the labour market, especially when the child is less than 10 years old.

Because of the lack of information, we have not included an important variable, such as the secondary income from the wealth etc.

In the following table are the estimations for the coefficients and their standard deviations:

	Coefficient	Std. Error	t-Statistic	Prob.
Education	0.19316	0.018	10.400	0.002
Age	0.23034	0.033	6.900	0.000
Work hours	0.91318	0.430	2.100	0.0021
Partner's wage	-0.5	0.016	-3.100	0.001

R-squared	0.955047		
Adjusted R-squared	0.953725	S.D. dependent var	4.677317
S.E. of regression	1.006164	Akaike info criterion	2.891501
Sum squared resid	68.84084	Schwarz criterion	2.987107
Log likelihood	-99.64830	F-statistic	722.3528
Durbin-Watson stat	1.349425	Prob(F-statistic)	0.000000

Dependent Variable: Participation in work.

Based on these result it is obvious that:

The model is statistically important and the woman participation in work is explained considerably by the variables of the study.

- The education has an important impact on the decision of working and the impact is positive, which means that the more educated the woman, the more is the part of the active living.

- The age has also an important impact in taking decisions, the women that have children older than 10 years are more inclined to work.

- The work hours have a positive impact, because the more stable is the offered job, which means that it is a full time job, the more positive is the decision.

- The partner's age has a negative impact in the probability of decision for working in a full time job.

5. Conclusions

The main feature of macroeconomic performance in Albania related to economic growth without the employment. Economic growth did not generate employment. Referring to the economic data we see the same trend of economic growth and unemployment, higher economic growth and higher unemployment, lower employment. This trade-off related to economic growth and employment reflects the lower employment of female compare to employment of male. This is more related to female due to:

(i) Shutting down a lot of industrial activities developed before years '90, which employed a large number of female;
(ii) Development of economic activities oriented to more employment of male like construction or trade;
(iii) Rural-urban movement gives a small chance for female coming to rural zones to enter in urban labour due to lower education, actual level of technology, ect;
(iv) High level of informality in labour market;
(v) Lower wages for female compare to male considering age, education and other personal characteristics.

In spite of the society emancipation in Albania, the women employment level is still lower than the women employment level in other countries.

After the year 2000 there is a decreasing trend in the employment level for both, women and men. Their trends seem to have changed in parallel, which shows that the difference in men and women employment has remained the same. The estimated trend models for both categories point out that the employment trends do not change with the same rate. Even though the women employment level is decreasing during the time, it has a smaller change than the men employment level. Therefore the difference between both levels is reduced.

Albanian governments are supporting strongly the woman employment and especially in the political and leading positions. The issue is still problematic in the rural regions, where the employment is difficult and the biggest possibility is the employment in agriculture. Employment policies have a large impact in improvement of labour market. Otherwise they have not an expected impact in reality due to high costs of implementation. Meanwhile it is more important to focus on effective uses of programmes and instruments like instruments of information, intermediation, professional training, fiscal incentives, ect.

Based on the theoretical and econometrical consideration, we have created an important model for the participation of woman in work related to important factors of positive impact such as the woman age, education and work hours and related to factors of negative impact as the partner's income.

In this context, there are a host of barriers to women's advancement. Underpinning them all is the persistence and strengthening of the dominant patriarchal society. Such barriers include:

Rights

- Shortage of mechanisms and political will to protect and fulfill economic and social rights; blindness to women's concerns;
- Lack of respect of international labour and environmental standards, lack of transparency, and adequate legislation to regulate foreign investments;
- CEDAW and other UN Covenants ratified, but not implemented, no mechanisms, no national strategies for implementing them;
- Absence of gender-sensitive legislative mechanisms to protect women against discrimination.

Development planning

- Development policies do not take gender concerns into account;
- Lack of gender awareness and awareness of gender dimension of trade, unemployment, SAPs, poverty;
- Absence of adequate statistics;
- No national strategies for advancement of women;
- Underrepresentation of women in decision-making positions;
- Administrative barriers to development of women's entrepreneurship;
- Low participation of women in enterprise ownership.

References:

BRUCE, D. (1999) Do husbands matter? Married women entering self-employment. Small Business Economics, 13, 317-329.

CABNET-OFFICE-STRATEGY-UNIT (2003) Ethnic Minorities and the Labour Market: Final Report. London, Strategy Unit.

CAPUTO, R. & DOLINSKY, A. (1998) Women's choice to pursue self-employment: The role of financial and human capital of household members. Journal of Small Business Management, 36, 8-17.

CARTER, S. & SHAW, E. (2006) Women's Business Ownership: Recent Research and Policy Developments. Report to the Small Business Service. http://www.sbs.gov.uk/SBS_Gov_files/researchand-stats/WomensBusinessOwnershipMainReport.pdf.

CCSR (2007) The accuracy and quality of data in the 2001 Census. http://www.ccsr.ac.uk/sars/guide/2001/quality.html.

CLARK, K. & DRINKWATER, S. (2000) Pushed out or pulled in? Self-employment among ethnic minorities in England and Wales. Labour Economics, 7, 603-628.

CLARK, K. & DRINKWATER, S. (1998) Ethnicity and self-employment in Britain. Oxford Bulletin of Economics and Statistics, 60, 383-407.

DALE, A., LINDLEY, J. & DEX, S. (2006) Ethnic differences in women's employment: the changing role of qualifications. Oxford Economic Papers, 58, 351-378.

DALE, A., SHAHEEN, N., FIELDHOUSE, E. & KALRA, V. (2002a) Labour Market Prospects for Pakistani And Bangladeshi Women. Work, Employment and Society, 16, 5-25.

DALE, A., SHAHEEN, N., KALRA, V. & FIELDHOUSE, E. (2002b) Routes into education and employment for young Pakistani and Bangladeshi women in the UK. Ethnic and Racial Studies, 25, 942-968.

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