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The abstract is titled: "TURKISH EXPERIENCE IN GLOBAL FINANCIAL CRISIS"

Abstract

Turkey faced with global financial crisis with strengthened fundamentals. These fundamentals along with the appropriate policy setting during the crisis enabled Turkey to recover from the effects of crisis in a relatively short period of time. This article aims to bring forward the transformation in the pre-crisis period which prepared Turkish economy for the turbulent times; the transmission mechanism of the crisis into the domestic economy; the policies implemented during the crisis and the recovery process of the economy. The experience showed that strengthened macroeconomic and structural conditions in the pre-crisis period as well as the measures during the crisis to rebuild the confidence in the economy had been instrumental in the quick recovery of the economy.

JEL Classification: E2, E5, E6, H3, H6

Key words: Turkey, crisis, structural policies, macroeconomic policies, outlook

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The Article is titled: "Economic Growth: Problems of Measuring and Principles of Management"

The model of national currencies proposed in the article ha been built with the account of conventional definition of money value and their purchasing power. It suggests measuring the indicators of economic growth through the updated monetary and financial system of the global economy.



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Title of the Abstract: “Future Trends of Energy Consumption in ECO Region, 2013-2030”

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Abstract

The objective of this paper is to project national-level energy consumption for ECO member states as well as aggregate energy consumption for ECO region up to 2030 by using a neural network analysis in which country-level demographic and economic indicators are employed as inputs. To see the consequences of different demographic conditions on future energy consumption trend, three alternative demographic scenarios have been used, and based on them three energy consumption trajectories have been projected. Despite considerable differences among the projected trends, the results indicate that energy consumption in ECO region and its member states will rise significantly over the discussed period.

Uzbekistan Embassy in Tehran

The analytical review is entitled: Main Milestones in Socio Economic Development of Uzbekistan in 2012. It has been forwarded to ECO Secretariat by the esteemed Embassy.

Future Trends of Energy Consumption in ECO Region, 2013-2030

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JEL classification: Q47, C45

Keywords: Energy Consumption, Projection, Artificial Neural Network, Economic Cooperation Organization.

1. Introduction

Considering economic aspects as well as environmental consequences of energy production and consumption, and the imminent decline in world oil production over the coming decades which is known as Peak Oil (Smil, 2003), examination of energy consumption dynamics, identification of factors that drive energy consumption, estimation of their effects, understanding of mechanisms through which these factors influence energy consumption, and projection of possible future energy consumption trajectories are important issues. Addressing such issues has great practical importance, and help policy makers and planners design energy-related policies and plans with more profound understanding and knowledge.

The purpose of this study is to project aggregate energy consumption (in kilo ton of oil equivalent) for Economic Cooperation Organization (ECO) region as well as its member states up to 2030. ECO is a regional intergovernmental cooperation organization that has brought together ten member states in Central, Western, and Southern Asia (i.e. Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyz, Pakistan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan). Almost all ECO countries have growing economies. Furthermore, as ECOKSI¹ (2011) indicates they have been experiencing significant demographic dynamics. In addition, some of the ECO member states have high and rapidly growing energy demand (Tomkins et al, 2008). All these features make the region an appropriate case for energy-related studies.

To achieve our objective, we use a specific type of neural network known as Group Method of Data Handling (GMDH). By controlling for complex interactions that may exist between energy consumption and its determinants, this method can provide us with an appropriate projection tool. Section 2 briefly discusses some important methodological aspects of GMDH-type neural network. Sections 3 and 4 are also devoted to the analysis and its results, conclusion of the paper, respectively.

2. Methodology

Artificial neural networks (ANNs) are a class of generalized nonlinear models inspired by biological neural networks which can be used for pattern recognition and prediction purposes, particularly when the issue at hand is complex, and underlying relationships and mechanisms are not completely understandable. Neural networks make less restrictive assumptions on the underlying distributions. This helps avoid potential misspecifications, and as a result, provides a higher degree of robustness in comparison to parametric analyses (Madala and Ivakhnenko, 1994).

An ANN consists of an input layer and an output layer. These layers are connected together through hidden layers. In learning or training phase, inter-connections between layers are adjusted, and when this phase is completed, a suitable output is produced at the output layer.

GMDH is a specific type of ANN. This algorithm is based on the concept of pattern recognition. In GMDH-type ANNs, a model is represented as a set of neurons in which different pairs in each layer are linked through a quadratic polynomial and produce new neurons in the next layer. Such formal representation can be used in modeling to map inputs to outputs. The objective is to find a function \hat{f} that approximates the actual function f in order to predict output \hat{y} for a given input vector $X = (x_1, x_2, x_3, \dots, x_n)$. Therefore, for M observations of multi-input-single-output data pairs so that:

$$y_i = f(x_{i1}, x_{i2}, x_{i3}, \dots, x_{in}) \quad \text{for } i = 1, 2, \dots, M \quad (1)$$

A GMDH-type neural network is trained to predict the output values \hat{y}_i :

$$\hat{y}_i = \hat{f}(x_{i1}, x_{i2}, x_{i3}, \dots, x_{in}) \quad \text{for } i = 1, 2, \dots, M \quad (2)$$

¹ ECO Key Statistical Indicators

The goal is to minimize the prediction error:

$$\text{Min } \sum_{i=1}^M [\hat{y}_i - y_i]^2 = \sum_{i=1}^M [\hat{f}(x_{i1}, x_{i2}, x_{i3}, \dots, x_{in}) - y_i]^2 \quad (3)$$

General connection between input and output variables can be expressed by a complicated discrete form of the Volterra functional series which is known as the Kolmogorov-Gabor (Ivakhnenko, 1968 and 1971; Farlow, 1984; Nariman-Zadeh et al., 2002):

$$y = a_0 + \sum_{i=1}^n a_i x_i + \sum_{i=1}^n \sum_{j=1}^n a_{ij} x_i x_j + \sum_{i=1}^n \sum_{j=1}^n \sum_{k=1}^n a_{ijk} x_i x_j x_k + \dots \quad \text{for } n = 1, 2, \dots, N \quad (4)$$

The full mathematical description can be represented by a system of partial quadratic polynomials consisting of only two variables (neurons), that is

$$\hat{y} = G(x_i, x_j) = a_0 + a_1 x_i + a_2 x_j + a_3 x_i x_j + a_4 x_i^2 + a_5 x_j^2 \quad \text{for } i = 1, 2, \dots, M, \quad j = 1, 2, \dots, N \quad (5)$$

In this way, such partial quadratic description is recursively used in a network of connected neurons to build the general mathematical relation of input and output variables given in equation (3). The coefficients a_i in equation (5) are calculated using regression techniques (Farlow, 1984; Nariman-Zadeh et al., 2002) so that the difference between actual and forecasted values for each pair of input variables is minimized. Indeed, it can be seen that a tree of polynomials is constructed using the quadratic form given in equation (5) whose coefficients are obtained by least square method. In this way, the coefficients of each quadratic function G_i are obtained to optimally fit the output in the whole set of input-output data pairs.

In GMDH algorithm, all the possibilities of two independent variables out of total n input variables are taken in order to construct the regression polynomial in the form of equation (5) that best fits the dependent observations $(y_i, i = 1, 2, \dots, M)$ in a least square sense. Consequently, $\binom{n}{2}$ neurons will be built up in the first hidden layer of the feed forward network from the observations. In other words, it is now possible to construct M data triples $\{(y_i, x_{ip}, x_{iq}); (i = 1, 2, \dots, M)\}$ for $p, q \in \{1, 2, \dots, N\}$. In the matrix form of $Aa = Y$ where a is the vector of unknown coefficients of the quadratic polynomial in equation and $Y = (y_1, y_2, \dots, y_M)^T$ is the vector of output values from observation. Matrix A is made of input variables, their crossed values and their quadratics as stated in (5).

The least-squares technique from multiple-regression analysis leads to the solution of the normal equations as follows:

$$a = (A^T A)^{-1} A^T Y \quad (8)$$

This determines the vector of the best coefficients of the quadratic equation (5) for the whole set of M data triples. This procedure is repeated for each neuron of the next hidden layer according to the connectivity topology of the network. However, such a solution directly from normal equations is rather susceptible to round off errors and, more importantly, to the singularity of these equations. Recently, genetic algorithms have been used in a feed forward GMDH-type neural network for each neuron searching its optimal set of connection with the preceding layer (Nariman-Zadeh et al., 2002).

3. Neural Network Analysis

3.1 Data and Variables

By using a panel-data regression analysis, Nouri et al. (2012) have exhibited that demographic indicators along with economic ones can explain national-level energy consumption patterns of ECO member states over the time period of 1960-2012. Taking account of these empirical findings, in order to project energy consumption for ECO member states and ECO region up to 2030, we employ GDP per capita (in constant 2000 US \$), total population, and percentage of urban population to the neural network analysis as inputs. Needless to say, energy use (in kilo ton of oil equivalent) is the output. The analysis is coded and implemented in MATLAB software package.

Our main sources of data are World Development Indicators (WDI) and ECO Statistical Network (ECOSTAT). In addition, for projecting energy consumption, we base our scenarios on three alternative demographic variants (i.e. low, medium, and high projections of demographic factors) which have been made by the UNPD (2010). It should be noted that all time series used for the analysis are of or have been converted to yearly frequency.

For Iran, Pakistan, and Turkey, the time period covered in the analysis is 1960-2012. And, for remaining countries (except Afghanistan which is excluded from the quantitative analysis due to lack of energy consumption time series), the time period covered is 1995-2012. It worth mentioning that while for Azerbaijan, Kyrgyz, Kazakhstan, Tajikistan, Turkmenistan, and Uzbekistan, energy consumption and GDP per capita time series cover the time period of 1990 to 2012, the observations for early 1990s have not been used in the analysis because of adverse effects they have had on the analysis. In fact, the early 1990s corresponds with the collapse of former Soviet Union through which these republics gained their independence. Due to a number of reasons, particularly political tensions and instabilities, these countries experienced structural breaks (i.e. severe changes socio-economic conditions) over these years. Specifically, as relates to our analysis, they witnessed relatively sharp fall in energy consumption and GDP per capita.

3.2 Scenarios

Because of uncertainty about future economic and demographic trends as well as possibilities in the evolution of technology and government policies, energy consumption forecasts are subject to large uncertainties. Nevertheless, well-grounded projections are insightful, and have important applications. In order to have more reliable projections, we make some assumptions in regard to trends in total population and GDP per capita. These assumptions are formulated as three alternative scenarios.

We base our scenarios on possibilities that are probable for the total population. There is a subtle technical issue which encourages us to limit our scenario making to the size of total population. Since

demographic processes have a built-in inertia that determines short- and mid-term outlooks more predictably than economic trends, total population seems to be the most reliable variable among other input variables to base our projection on.

As mentioned earlier, Basis of the scenarios are three alternative demographic variants which have been made by the UNPD (2010). The UNPD (2010) projections of total population are based on the probabilistic fertility projections from the *2010 Revision of World Population Prospects* which have been implemented with a Bayesian Hierarchical Model (http://esa.un.org/unpd/wpp/P-WPP/htm/PWPP_Total-Population.htm). The projections made by the UNPD are available at 5-year interval. Since yearly frequency data are required for our computations, we apply a frequency conversion method called quadratic match average to generate such data. This method fits a local quadratic polynomial for each observation of the low frequency series (i.e. 5-year interval time series), then use this polynomial to fill in all observations of the high frequency series (i.e. 1-year interval time series). For the sake of tractability, we also assume that the GDP per capita for each country will follow its previous trend which seems reasonable because of developing economies these countries have.

3.3 Results

In Table 1, energy consumption projections for each ECO member state as well as ECO region are presented at five-year interval up to 2030. This form of data representation makes inter-country comparisons (e.g. level or growth rate of energy consumption) possible.

Table 1: Projections of Energy Consumption in ECO Member States and ECO region (kt of Oil Equivalent)

	2015			2020			2025			2030		
	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
Azerbaijan	13406	13461	13516	14505	14615	14725	15695	15867	16042	16982	17227	17477
Iran	268864	265508	279195	320513	372206	468448	334558	471913	746519	320691	526639	1034380
Kazakhstan	76783	77429	78080	87442	88796	90176	99581	101833	104133	113405	116782	120257
Kyrgyz	3202	3233	3264	3429	3491	3553	3673	3769	3867	3934	4070	4210
Pakistan	95866	96483	96949	109156	111918	114490	122706	129015	135154	136299	146971	157609
Tajikistan	2609	2628	2647	2849	2888	2927	3112	3174	3237	3399	3488	3580
Turkmenistan	23714	24099	24488	25144	25898	26670	26661	27831	29046	28270	29908	31634
Turkey	108592	109115	109637	120379	122439	124485	130532	134767	138930	139378	145933	152292
Uzbekistan	51948	52140	52333	53980	54346	54715	56091	56646	57207	58285	59044	59811
ECO Region²	644982	644095	660111	737398	796597	900185	792610	944815	1234135	820643	1050063	1581250

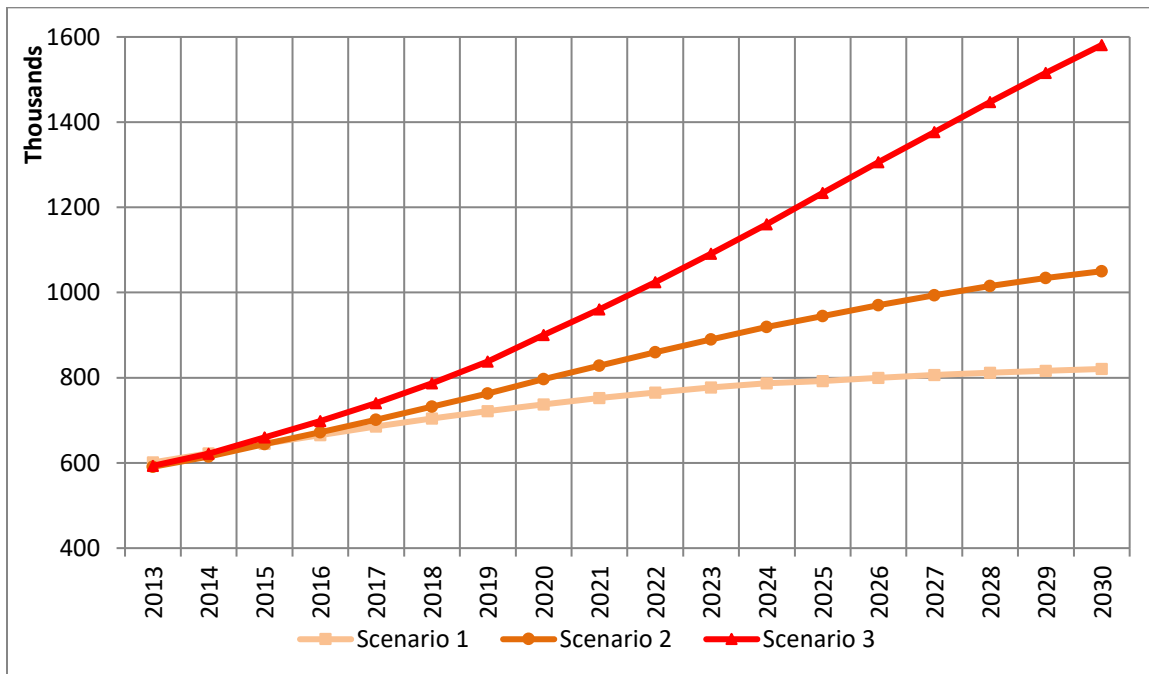
Graph 1 reveals probable energy consumption trajectories in ECO region under low (scenario 1), medium (scenario 2), and high (scenario 3) variants of demographic factors up to 2030. Obviously, under

² Except Afghanistan

all three scenarios, energy consumption will rise over the coming two decades. Under Scenario 1, though energy consumption will increase by more than 30 percent, it will be ultimately stabilized around 800,000 kilo tons of oil equivalent during the late 2030s, which can be interpreted as good news in respect of energy conservation points of view. Under Scenario 2, energy consumption will almost be doubled over the discussed period. This trajectory is rather concave, which means energy consumption will increase by a decreasing growth rate. Evidently, under Scenario 3, energy consumption will rise by more than 160 percent.

It should be noted that in Graph 1 we have assumed that all ECO member states will experience similar conditions in respect of scenarios (e.g. in calculation of future energy consumption in ECO region under Scenario 1 which is simply the summation of future energy consumption in each ECO country, it has been assumed that all ECO countries will similarly experience Scenario 1).

Graph 1: Total Energy Consumption in ECO Region under Alternative Scenarios (kt of Oil Equivalent)



4. Conclusion

In this paper, we have used GMDH neural network neural network analysis to project energy consumption in ECO member states as well as ECO region under three alternative scenarios up to 2030. Projections we have made reveal that all ECO member states will witness increasing trends in their national-level energy consumption. Among them, Iran, Pakistan, and Turkey will remain three rapidly growing energy demand centers in ECO region. Taking account of the probable trends of energy consumption which indicates significant rise in energy consumption, ECO countries should plan to meet their energy needs in economically efficient and environmentally sustainable ways. ECO member states can promote their cooperation in respect of energy-related issues, and help each other overcome challenges they will encounter due to growth in national-level energy consumption.

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References

Brauner, E.O., Dayhoff, J.E., Xiaoyun Sun, Hornby, S. (1997): "Neural network training techniques for a gold trading model", Computational Intelligence for Financial Engineering (CIFER), Proceedings of the IEEE/IAFE 1997, 57 – 63.

ECO Statistical Network (ECOSTAT), ECO Key Statistical Indicators (ECOKSI), (access on-line: <http://ecosn.org/ECOKSI/ECOKSI.aspx>).

Farlow, S. J. (1984): "Self-organizing Method in Modeling, GMDH Type Algorithm", Marcel Dekker Inc.

Ivakhnenko, A.G. (1968): "The group method of data handling; a rival of the method of stochastic approximation" Soviet Automatic Control, 13(3): 43-55.

Liddle, B. & Lung, S. (2010): "Age-structure, urbanization, and change in developed countries: revisiting STIRPAT for disaggregated population and consumption-related environmental impacts", Population and Environment, 31, 317-343.

Madala, H.R. and Ivakhnenko, A.G. (1994): "Inductive Learning Algorithms for Complex Systems Modeling"; CRC Press Inc., Boca Raton.

Nariman-Zadeh, N., Darvizeh, A., Darvizeh, M., Gharababaei, H. (2002): "Modeling of explosive cutting process of plates using GMDH-type neural network and singular value decomposition", Journal of Materials Processing Technology, 128(1-3), 80-87.

Nouri, M., Mohaghegh, M. Azizi, A. (2012): A comparative study on the relationship between energy consumption and main demographic and economic indicators among ECO member states, Formal Report, Population studies and Research Center for Asia and the Pacific.

Smil, V. (2003): *Energy at the Crossroads: Global Perspectives and Uncertainties*. MIT Press, Cambridge, MA.

Tomkins, R., Avers, S., Robinson, P., Cameron, C., Groom, C. (2008): "Trading arrangement and risk management in international electricity trade", Formal Report 336/08, Energy Sector Management Assistance Program.

United Nations Population Division – UNPD (2010): "World Population Prospects: The 2010 Revision", (access on-line: <http://esa.un.org/unpp/>).

York, R. (2007): "Demographic trends and energy consumption in European Union Nations, 1960-2025", *Social Science Research*, 36, 855-872.

TURKISH EXPERIENCE IN GLOBAL FINANCIAL CRISIS*

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Hatice KÖKDEN

Abstract

Turkey faced with global financial crisis with strengthened fundamentals. These fundamentals along with the appropriate policy setting during the crisis enabled Turkey to recover from the effects of crisis in a relatively short period of time. This article aims to bring forward the transformation in the pre-crisis period which prepared Turkish economy for the turbulent times; the transmission mechanism of the crisis into the domestic economy; the policies implemented during the crisis and the recovery process of the economy. The experience showed that strengthened macroeconomic and structural conditions in the pre-crisis period as well as the measures during the crisis to rebuild the confidence in the economy had been instrumental in the quick recovery of the economy.

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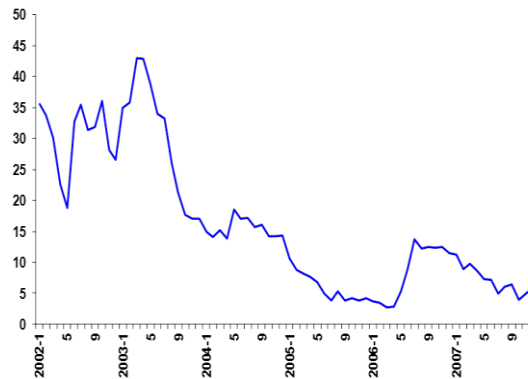
Framework for Macroeconomic and Structural Policies in the Pre-Crisis Period

Turkey achieved significant progress in transforming its economy into stable and better functioning market economy after 2001 crisis. In that period, macroeconomic and structural policies were implemented as to support growth and stability and Turkey experienced an economic growth path led by its dynamic private sector.

Tight fiscal policy was at the core of the economic policies implemented in this period and included measures to discipline public expenditure policies as well as to increase tax revenues. Tight fiscal policy exhibited itself in the high primary budget surpluses, which averaged around 4.5 percent of GDP in 2002-2008 period. This improvement in primary balances along with the success in disinflation and rise in confidence in the economic policies led to a decline in real public borrowing rates, from its level of 30 percent in 2002 to 12.2 percent in 2008. Improvement in both primary balances and interest burden led to a sharp decline in EU defined public debt to GDP ratio, from 74 percent in 2002 to 40 percent in 2008.

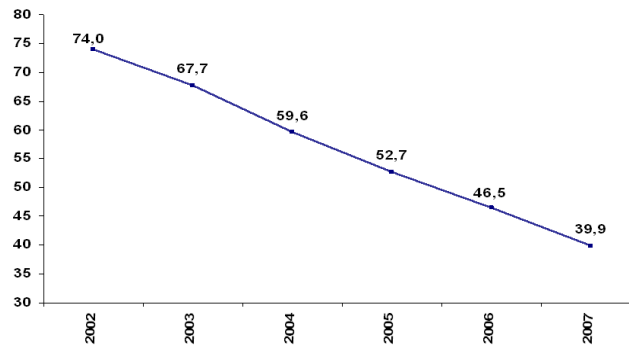
Real Public Borrowing Rates (%)

EU Defined Public Debt



* The views expressed in this article are those of the authors and do not represent the official views of the Undersecretaries of Treasury of Turkey.

Stock/GDP(%)



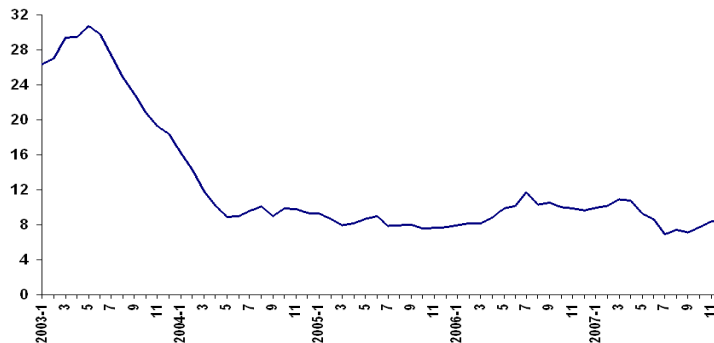
Source: Undersecretariat of Treasury

A series of public sector and fiscal reforms aimed at a permanent improvement in fiscal balances as well as a rise in public sector efficiency. To this end, administrative reforms improved public financial management and public procurement system in terms of increasing transparency, accountability, internal control and, setting accrual based accounting system and multi-year budgeting practices. In addition to that, tax reforms were introduced to simplify tax structure and to set an independent revenue administration.

Social security and health reforms led to the unification of different social security institutions under one umbrella; some parametric changes were also made to retirement ages and minimum premium duration for eligibility for retirement and replacement rates to help financial viability of social security system. On the other hand, access to health services was improved with introduction of a universal health insurance system.

The confidence in monetary policy and the credibility of Central Bank of Turkey improved significantly with a new framework. With this framework Turkish Central Bank was given instrumental independence, price stability was set as the main target of the Central Bank and inflation targeting was adopted along with floating exchange rate system. Implication of this improved monetary policy framework together with the high credibility of overall economic policies resulted in a sharp decline in inflation and its volatility. In fact, average inflation rate which was above 70 percent in 1995-2001 period fell down sharply to around 13 percent in 2002-2008 period.

Annual CPI Inflation (%)



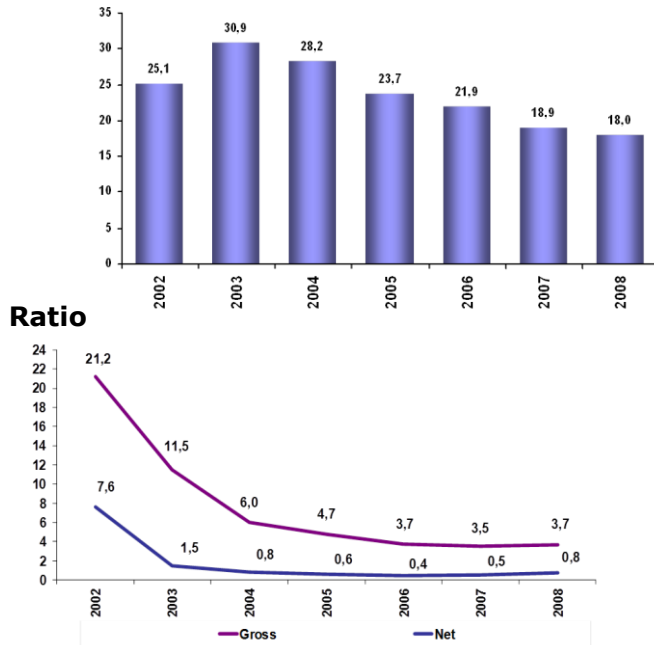
Source: Central Bank of Turkey

The 2001 crisis in Turkey had a highly damaged banking sector which immediately required substantial government action. As part of this action some private banks had to be nationalized or closed down and some government banks were operationally and financially restructured. Following these occasions, a comprehensive reform in the regulatory and

supervisory framework of Turkish Banking system led to a better monitoring of the sector as well as substantial improvement in the balance sheet structure which was apparent from almost doubling capital adequacy ratios as well as around 17 percentage point decline in non-performing loans in 2002-2008 period.

Banking Sector Capital Adequacy Ratio

Non-Performing Loan

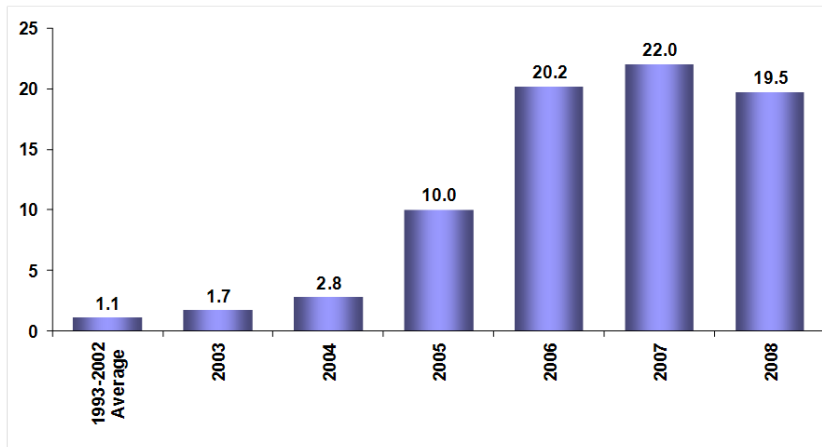


Source: Banking Regulation and Supervision Agency

This period can also be highlighted by a series of reform in supporting the existence of private sector in the economy together with the improvement in business and investment environment. To support private sector and improve functioning of the economy two areas of reform is pronounced. Privatization was seen as an effective way of improving private sector and this approach led to a series of successful privatizations in 2002 to 2008 period, including privatization of telecommunication, energy, insurance, sugar, iron and steel, banking, petrochemicals and airlines industries. These privatizations were accompanied by the foundations of independent regulatory bodies for the network industries which left to private sector by the government in order to assure well-functioning markets in these sectors.

In the way to improve business and investment environment, a new foreign direct investment regime was a cornerstone. The regime brought by a new law removed administrative barriers to FDI, leveled the playing field for domestic and foreign investors and set the new framework for foreign investment promotion. These efforts were fruitful as reflected in sharp rise in FDI inflows from its very low level of 1.1 billion dollar in 1993-2002 period on average to 22 billion dollar in 2007.

Foreign Direct Investment Inflows to Turkey (USD, Billions)



Source: Central Bank of the Republic of Turkey

Having aware of the importance of enhancing in R&D and innovation capacity in increasing the competitiveness and potential growth of the economy, Turkey attached great importance to support these activities. As an outcome of these support R&D expenditures increased almost four times in 2011 with respect to 2002 along with the rise in publications in academic nature and registration in triadic patents. This ratio of R&D expenditure to GDP which is 0.9 percent in 2011 is targeted to increase further to 3 percent in 2023.

Labor market reforms and education reforms are ranked as most important items in improving labor utilization and labor productivity. Needless to say, these two areas warrant continuous efforts to ensure permanent competitiveness gains. Labor market reforms preceding global financial crisis aim that bringing some flexibility into the labor market by diminishing financial and non-financial burden on employment, supporting the employment of disadvantaged groups like women and youngsters, improving active labor market programs both in quality and quantity wise, and an extension of unemployment insurance both in time and coverage terms.

Education reform also focused on enhancing the system in terms of both quality and quantity. In this respect the share of education in the budget increased. The rise in compulsory education from 5 to 8 years in 1997 was instrumental in increasing the schooling years. In parallel, elevation of number of teachers and classrooms and improvement in IT infrastructures of schools helped to raise quality of education. Equal access of boys and girls to compulsory education was put a priority area and girls' attendance to school increased with the financial incentives provided to the families in less developed regions.

The comprehensive reform implementations during the period from 2002 to 2008 in parallel to stability oriented monetary and fiscal policies enable Turkey to face the global financial crisis with a strong and resilient economic structure. Turkey possessed a sound financial system, reduced public sector borrowing requirement, improved risk profile and public debt, all of which enabled Turkey to have swift and effective policy reaction to the global crisis. Policy makers adopted a balanced approach in supportive fiscal and monetary policy design and acted timely in introducing the exit strategy from these policies.

Transmission Channels of the Global Crisis into the Turkish Economy

Turkey which is an open and small economy, integrated to the world economy via external trade and capital flows was affected from the global crisis mainly through three channels: Trade, financial and expectation channels.

The trade channel was effective since our main trade partners like the EU area was severely affected from the crisis. In fact, sluggish economic performance in the Euro area at the current juncture still acts as a dragging factor on Turkish economy. Moreover, the product composition of exports which is based mainly on industrial products as well as investment and durable consumption goods heightened the sensitivity of the economy to the cyclical movements in the partner economies.

Product Composition of External Trade

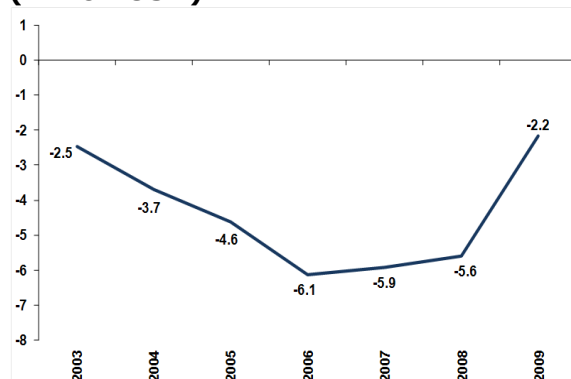
(% share in total, 2008)

	Exports	Imports
Agriculture	8.5	6.5
Petroleum and Mining	9.0	31.2
Industry	78.6	58.4
Iron and Steel	12.8	7.4
Chemicals	4.3	12.5
Machinery and Transportation	29.6	25.5
Automotive Spare Parts	13.5	7.5
Textile	7.1	2.8
Clothing	10.8	1.1
Other Products	3.9	4.0

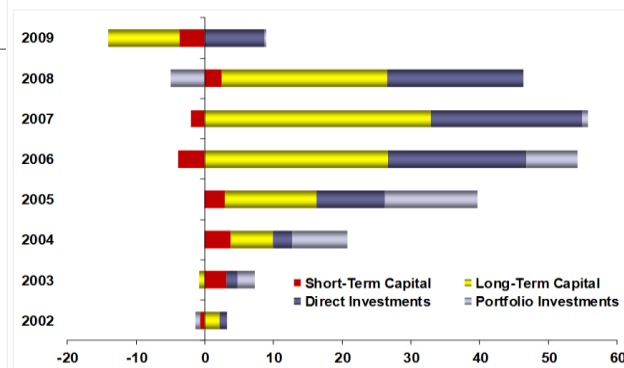
Source: Turkish Statistical Institute

As a country with structural current account deficit, Turkey needs external financing which makes the financial channel an important one. When the financial flows to developing countries diminished during the crisis period, access of private sector to external financing is negatively affected. The outcome for Turkish economy in this global crisis case was rapid decline in investment, saving gap, current account deficit, foreign direct investment, portfolio inflows and other external financing. While, current account dropped down due to very weak domestic demand in 2009, net capital flows also contracted due to lower liquidity available in international financial markets.

Current Account Deficit/GDP Ratio (Billion USD)



External Capital Inflows



Source: Central Bank of the Republic of Turkey

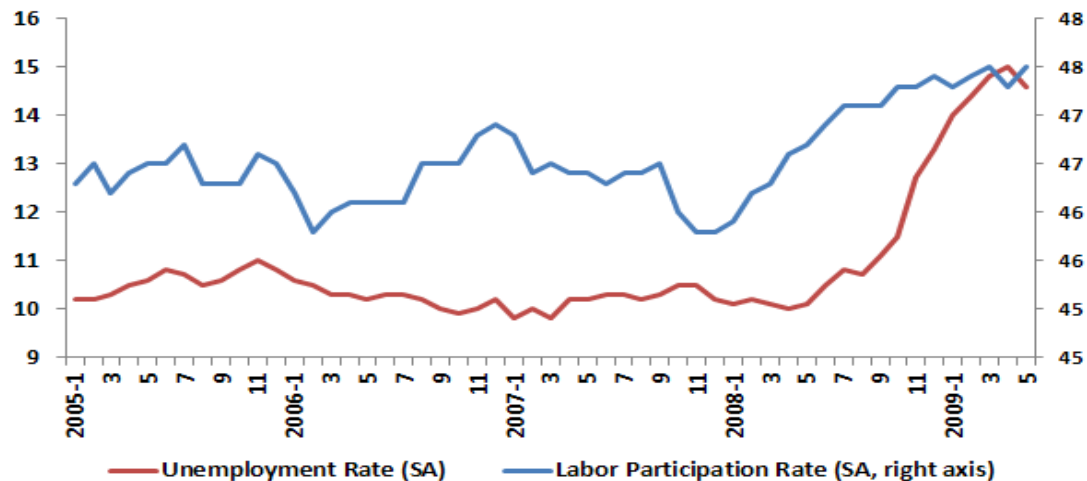
In the current juncture in which the economies are connected well with each other via real sector or financial sector connections and easy transformation of information within and between countries, expectations channel has become an important source of transmission. Especially the recent global crisis created a laboratory case for parallel movements of confidence indicators and global economic situation. Turkey was one of the countries in which consumer, investor and business confidence exhibited rapid deterioration. Nevertheless, as we will see later the recovery of these indicators and their reflections on the real economic data were as fast with the implementation of successful anti-crisis policies.

All in all, three channels worked together in 2009, which led to a contraction of economy by 4.9 percent especially due to rapid decline in domestic demand.

The crisis had also significant impact on Turkey's labor market. The most pronounced effect was seen on the rising labor participation rates, especially that of women. This was thought to be a reflection of domination of "added worker effect" over "discouraged worker effect".

Although Turkey continued to create new jobs even at the peak of the crisis, unemployment rates increased substantially with the rise in participation rates.

Unemployment and Participation Rates



Source: Turkish Statistical Institute

Policies Implemented in the Course of Global Financial Crisis

Macroeconomic stability and fiscal space attained between 2002-2008 in Turkey created room for maneuver to implement active anti-crisis policies. Moreover, strong structure of banking sector and low exposure of the sector to international toxic assets protected the sector from destructive consequences of the global crisis. This also prevented the sector from needing public support during the crisis which made Turkey the only OECD country which did not have to finance its banking sector.

The essence of macroeconomic policies during the crisis was to bring back the confidence in the economy in short period of time. The intention was not provide the economy with continuous support of monetary and fiscal policy. Therefore, Turkey implemented timely, targeted and measured macroeconomic policy mix, and removed the uncertainty surrounding macro policies with an early announcement of the exit strategy from fiscal policies in September 2009 as part of its medium term economic program and exit strategy from monetary policies in April 2010.

Progress in disinflation, decline in inflationary expectations and enhanced confidence in monetary policies provided the Central Bank of Turkey with enough space to ease monetary conditions by decreasing policy interest rates and injecting enough liquidity to the markets. Moreover, floating exchange rate regime that Turkey has been implementing since 2001 enabled the monetary authority to act with significant flexibility. In the process, the Central Bank of Turkey dropped down sharply the policy interest rates and prevented liquidity blockages in credit markets. Total reduction in policy rate amounted to 1025 basis point from November 2008 to November 2009. This reduction in policy rate was the highest in the OECD and among other emerging markets. Moreover, cuts in required reserve ratios for Turkish Lira and foreign currency deposits were instrumental to support liquidity and lending. The Central Bank of Turkey suspended its foreign exchange buying auctions from October 2008 to August 2009 and provided the market with additional foreign exchange liquidity via foreign exchange selling auctions.

On the fiscal side, the fiscal space attained in the pre-crisis period enabled the Turkish government to take some expansionary fiscal measures and tax reductions which helped the consumer demand to recover quickly. A new investment incentive system was put in place to improve investment environment. Moreover, some tax reductions and exemptions were introduced to attract assets held in outside of the country by the residents. Having very well aware of protecting labor market from the detrimental effects of the crisis various tax and

premium reductions and incentives provided the firms and SMEs and exported firms were supported by different credit and credit guarantee schemes.

The following table presents a summary of fiscal stimulus measures implemented in Turkey between 2008 and 2010.

Fiscal Stimulus Measures Implemented in 2008-2010

(Billion Turkish Lira unless stated otherwise)

	2008	2009	2010	2008-10
Revenue Measures	0.0	4.1	1.8	5.9
Personal income taxes(*)	0.0	-0.5	-0.7	-1.1
Corporate taxes	0.0	0.7	1.2	1.9
Indirect taxes	0.0	2.6	0.1	2.7
Other	0.0	1.3	1.1	2.4
Expenditure measures	7.9	17.2	21.1	46.2
Government investment	5.1	6.4	6.1	17.2
Government consumption	0.9	2.5	5.3	8.7
Contributions to social security funds	0.0	4.6	5.5	10.2
Transfers to households	0.0	0.1	0.1	0.2
Transfers to business	0.0	0.5	0.5	1.0
Transfers to sub-national governments	1.3	2.5	3.1	7.0
Other	0.5	0.5	0.5	1.5
Revenue and expenditure measures	7.9	21.3	22.9	52.1
% of GDP in a given year or period	0.8	2.2	2.1	1.7
Measures with no direct or immediate impact on finances	1.5	11.3	0.0	12.8
Guarantee and insurance schemes for financial institutions	0.0	6.8	0.0	6.8
Loans to enterprises	1.5	4.5	0.0	6.0
Total	9.4	32.6	22.9	64.9
% of GDP in a given year or period	1.0	3.4	2.1	2.2

(*) Negative figures associated with personal income taxes reflect additional revenues generated by the voluntary disclosure, tax peace and asset repatriation program.

Source: Ministry of Development

The spending measures mainly focused on to increase infrastructure investments, public wages and transfers to local governments, and to pension and health care funds. These spending measures reached to 1.5 percent of GDP for 2008-2010 period. On the other hand, revenue measures which mainly included temporary cuts in special consumption and value added taxes on selected goods equaled to 0.2 percent of GDP in the same period. Besides these measures which had direct impact on budget, the government also offered the private sector and the financial sector with credit guarantees and insurance schemes amounted to 0.4 percent of GDP.

Due to these expansionary measures public balances was temporarily affected negatively and central government budget deficit to GDP ratio increased to 5.5 percent in 2009 from its level of 1.8 percent in 2008. In parallel, central government total debt stock rose about six percentage point from 40 percent to 46.1 percent in the same year.

Recovery from the Crisis

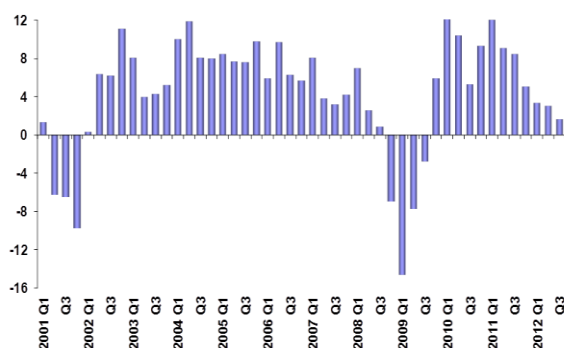
Due to the importance of confidence factor on the agents' consumption and investment decisions, anti-crisis policies had focused on protecting consumer and investor confidence via;

- limiting job losses and fostering employment creation in the labor market by employing instruments such as:
 - reduction in social security premiums for new employment of young, women and disadvantaged group as well as new employment in less developed regions of the country within the context of investment incentives,
 - extension of part time working support schemes,
 - active labor market employment programs by Turkish Employment Agency (ISKUR), and temporary public employment programs through public infrastructure investments,
- extending unemployment insurance both in terms of coverage and duration,
- introducing tax cuts in some consumption goods,
- injecting enough liquidity into the markets so that banking sector can continue its intermediary function,
- easing conditions for the SMEs to access to finance,
- securing confidence in the financial sector via extension of credit guarantee facilities by the government

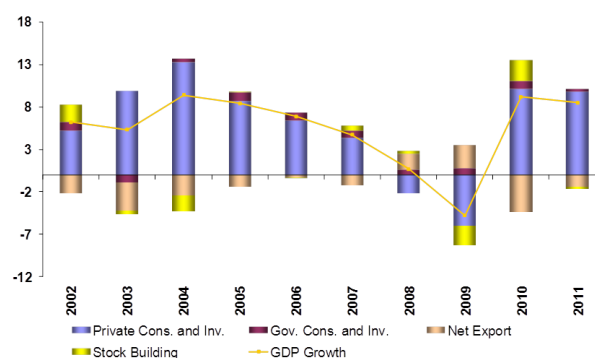
Anti-crisis policies and the longer term policy perspective given by the introduction of the medium-term program at the end of 2009 helped to quick recovery of Turkish economy. After making a dip in the first quarter of 2009, the economy started to recover from the second quarter of the same year. The growth rates turned to positive territory in the last quarter of 2009 by 5.9 percent, and reached to 9.2 percent and 8.5 percent in 2010 and 2011, respectively.

The recovery mainly came from the components of the domestic demand. The contribution of total domestic demand to growth was 11 percent in 2010 and 10.2 percent in 2011. The contribution of private consumption and investment to total 11 percentage point contribution of domestic demand in 2010 was 4.7 percent and 5.4 percent respectively. Similar trend continued in 2011, reflecting private domestic demand led recovery.

Quarterly GDP Growth rates (YoY, %) (pp)



Contribution to GDP Growth



Source: Turkish Statistical Institute

With the help of these policies along with other macroeconomic policies, the impact of global crisis on Turkish labor market was very modest in international standards. Indeed, labor markets started to recover in short period of time, with substantial employment creation. This led to a return in unemployment rates to pre-crisis levels despite the rise in participation rates. Turkey created almost 3 million additional jobs in 2009-2011.

Due to the fall in tax revenues as a result of contraction in the economy as well as a reflection of expansionary fiscal policy, central government budget deficit temporarily moved up to 5.5 percent in 2009 from its level of 1.8 percent in 2008. Nevertheless, it dropped down to 3.6 percent in 2010 and 1.4 percent in 2011 due to the high growth performance and more disciplined budget. The reflection on the government debt stock to GDP was similar; it moved up to 46.1 percent in 2009 from 40.1 initially and then dropped down to 42.4 and 39.2 percent in 2010 and 2011.

Conclusions

Turkish economy faced the global crisis with strengthened fundamentals. Having a sound fiscal position and strong banking sector were the main ingredients of the strength of the economy. High integration of Turkish economy into the global economy led to the transmission of the global crisis into the domestic economy via trade, financial and expectation channels. In this vein, the global crisis had a significant, but a rather short-lived impact on the Turkish economy.

Being aware of the role of confidence in the crisis environment, the policymakers focused on confidence building both on the investor and consumer side, and limiting job losses in the economy when developing anti-crisis policies. The Turkish crisis management experience, therefore, is a case for the importance of protection of stability and confidence in the economy during turbulent times. On the consumer side, temporary tax reductions in selected goods, more extensive use of unemployment insurance and labor market policies to limit job losses were effective tools recovering the confidence. On the business side, public support to decrease wage and non-wage costs of employment, extension of public credit guarantee facilities and selective investment incentives were of benefit. Moreover, the early announcement of exit strategies from both fiscal and monetary policies replenished the confidence for the economic policies by assuring that long term stability in the economy will not be put in jeopardy.

These endeavors paid off quickly and Turkey managed to grow at very high rates in 2010 and 2011, based on strong domestic demand, although external conditions remained weak and fragile. The economy continued to create new employment in the crisis year, and employment creation was more prominent in the following two years, taking the unemployment rates back to the pre-crisis levels.

References

- Banking Regulation and Supervision Agency (BRSA)(2013), Database, Ankara
- Çınar, Barış, Ömer Erdoğan, Tuğrul Gürgür and Tandoğan Polat (2010), "*Global Crisis, Interaction Channels and Turkish Economy*,"(in Turkish) Economy Notes Series, CBRT, Ankara.
- Ministry of Development, (2009)"*Pre-Accession Economic Program*", Ankara.
- Undersecretariat of Treasury (2009), "*Measures and Policies Taken Against Global Crisis*", Unpublished Report, Ankara.
- Undersecretariat of Treasury (2011), "*Turkish Economy during Global Financial Crisis*" (in Turkish), Unpublished Report, Ankara.
- Undersecretariat of Treasury(2013) "*Structural Economic Policy Agenda*" (in Turkish), Unpublished Report, March, Ankara.
- Undersecretariat of Treasury(2013), "*Turkish Economy*", March, Ankara.
- ILO (2008) "*Crisis and Turkey: Impact Analysis of Crisis Response Measures*", ILO Office, Ankara.
- ISKUR Turkish Employment Agency(2012), "*Unemployment Insurance Fund Bulletin*", December Ankara.
- Rawdanowicz, L. (2010), "*The-2008-2009 Crisis in Turkey: Performance, Policy Responses and Challenges for Sustaining the Recovery*", OECD Economics Departments Working Papers, No: 819, Paris: OECD.
- The Central Bank of the Republic of Turkey (2013) Database, Ankara
- Turkish Statistical Institute (2013) Database, Ankara

ECONOMIC INTEGRATION FOR CENTRAL ASIA: PROBLEM DEFINITION

Cooperation between states on a regional level is a natural phenomenon. The factor of strong regional ties guarantees the successful realization of state interests. The modern process of integration should be regarded as a powerful factor of stability, both in separate regions and on a global scale.

At present, the opposing trends of globalization and regionalism can coexist in the global economy. On the one hand, long and complex negotiations resulted in the global framework created under the World Trade Organization. On the other hand, trends toward regionalism have noticeably intensified in the global economy, particularly throughout Western Europe, North America and in the Asia-Pacific. Regionalism has returned to the international agenda and caused a mixed reaction. Some researchers note that it is both a positive and a natural feature of world order in the 21st century. Other ones refer to this phenomenon more skeptically and compare it to the regionalism of the 2^{0th} century, the new version having little visibility. However, it should be agreed that regionalism increases regardless of the level it begins at. Not less important, are the influence which global economic change has had and, transformations in the balance of power, with the end of the Cold War. These and other factors have brought about an increase in new regional groups, as well as the revival of older regional organizations. Thus, the "new" regionalism is more varied and has an impact on economic relations between different regions of the world.

The scope of factors included in the regionalism growth issue is quite wide. These are economic, political, cultural and historic values. The most important is the difference between the regionalism as a description and the regionalism as a prescription, that is, whether the regionalism is a doctrine or provisions, which determine the building of international relations. The main idea is that of interdependence, where countries of given region are within the same "regional

boat" in ecologic, strategic and economic terms. It is emphasized without fail, that they have to limit their national egoism and look for new cooperation ways. All scientific and political discussions clearly state that regionalism in fact is necessary and important process. It is possible to define five basic categories of the regionalism concept. This is an analytical method and correlations among these categories represent the theory and practice of modern regionalism: *regionalization; regional consciousness and identification; regional transnational cooperation; regional economic integration; regional cohesion.*¹

The issues of defining different degrees of integration always play especial part in theoretical discussion on regional integration.

In economic terms, regional integration can be examined as eliminating the artificial barriers to free trade between participating countries and harmonization of different methods of economic development assistance. Member-countries harmonize their economic policies with one another, in economic and political spheres, during the process of integration, and let the market to play the central role during this process.²

Political science points to three main reasons for the creation of regional trade blocks.

- First, the general interest of states in this form of cooperation due to geographical proximity and perceived opportunities for the formulation of common economic, social and cultural interests.
- Second, ideological considerations and motives, which, for instance, can be a facilitator of the idea of a constitutional association.
- Third, rational choice, which simultaneously means a transition to economic aspects. When a cost and benefits analysis is conducted on

¹ Касымова Н. Региональная интеграция: теоретические аспекты.// Международные отношения.- Ташкент: УМЭД, 2005. - №2.

² Joseph Nye (ed.) International Regionalism. - Boston: Little, 1968.-p.xii.

this membership, if the benefits of membership are shown to outweigh the costs, it speeds-up regional integration processes.³

- Fourth reason is national security, regional trade block are created with the hope of discouraging war between member countries.

There is a model that provides for five different stages of regional integration:

- free trade area or zone;
- customs union;
- common market;
- economic union;
- political union.

This model is being used in the European integration process. Furthermore, it was a model for economic integration widely used among developing countries. However, in many cases this approach turned out to be misleading, because these states did not take into consideration the pre-conditions necessary for successful economic integration (e.g., their unique economic and political systems and historical differences). It is possible to formulate three pre-conditions for successful economic and political integration based on the world experience:

- Existence of similar economic structures and industrialization processes. If there are enormous differences in economic structures and the level of industrial output in each country in the region, the risk of direct losses poses a threat. If these losses occur on a long-term basis, they can lead to the stagnation or even collapse of the integration process;

³ De Melo, Jaime; Montenegro, Claudio; Panagariya, Arvind. Regional Integration, Old and New. World Bank Policy Research Working Papers Series No.985. Washington, DC: The World Bank, 1992.

- Common social and political ideologies. It is very important when participating states share common social and political goals, and exhibit willingness to compromise. In addition, long-term political stability is a pre-condition for overcoming opposing viewpoints during the course of the process;
- Refusal to pursue over-ambitious goals and policies of progressive development, where new forms of mutual consultation and cooperation are worked out. First of all, these forms need to be oriented toward practical decisions.

In other words, successful integration processes need time and patience. Primarily, it is necessary to direct states' efforts toward cooperation on concrete projects, in order to establish the pre-conditions for further integration of separate economies or as the basis for greater goals. It is difficult to draw a line of division between the economic and political aspects of regional integration. The main characteristic of «new» regionalism is that it is multifaceted. Extensive political and security goals are achieved through economic integration. Moreover, even if regionalism is based upon economic goals, it is unlikely to prove an existence of serious differences (divergences) in other questions (fields).

The Soviet era's economic, political and military linkages in Central Asia have apparently been broken up. The region was divided into five republics at will during Stalin's time, and this unleashed a potential for international tensions and distrust in spite of the common origins, religion and culture of the local nations. Such tensions grew out of numerous territorial disputes; the competition for control of natural resources, particularly over the control of the water management system; border conflict; trade policy competition, particularly in respect to trade and payments. Solutions to these problems should be

individualized solutions, the activity of numerous actors and institutions, and may require the intervention of a third party (outside actors).

The independence of Central Asian states has opened up enormous prospects for economic development, along with the possibility of finally being recognized as worthy and equal actors in the international community. Central Asian countries have been seeking to establish mutually beneficial and bilateral relations with all countries, in order to gain assistance and cooperation in creating a more economically prosperous and stable Central Asia.

Central Asian states have deep historical, cultural and spiritual roots that unite its people and form the basis for close regional cooperation. Central Asia as a region has great potentials and prospects for cooperation and integration. The idea of integration in the changing post-Soviet context, however, needs to be concretely conceptualized to help discover avenues of inter and intra-state ties. And economic and social aspects play their interdependent role in determining the shape of things to come and also the extent of integration to be established.

Perhaps the necessity for some form of economic union among the region's countries is not so obvious at present, but integration is of great importance for the region's future. However, this must be an evolutionary process, based on the goodwill of member-states, and the realization of the benefits and need for the creation of an economic alliance. A Central-Asian economic alliance will allow for the creation of additional economic advantages for all member states, and will help bring about dynamic economic growth along the way. The advantages of creating such an alliance may include:

- the region is able to produce enough energy, mineral and agricultural resources for its inhabitants without importing these natural resources from outside the region;
- powerful export potential;

- advantageous geopolitical position in the center of Asia, being located between Russia and Europe, on the one hand, and China, South-East Asia, India, Pakistan and Middle Eastern countries, on the other hand;
- high production potential, which is dependent upon cooperation and joint investments to organize highly competitive goods production with high degrees of readiness during short periods;
- increased value-added of human capital, due to a highly-educated and highly-skilled work force;
- low cost of labor;
- possibility for the most rational use of water, like other natural resources, and hence ecological security achievements;
- high scientific and technological potential.

Trends in regional cooperation in Central Asia are based on the understanding that these states really do share a lot of common problems. Therefore, the development of integration processes is defined by shared economic, social and demographic problems.

It is possible to point out four major obstacles to the resolution of these problems that are shared by all 5 states:

- Radical restructuring of inefficient production-commercial structures inherited from the past, destruction of disproportion between mining and processing branches, creation of diversified regional economic complexes, fitted to the world's economic standards;
- Measures to strengthen and diversify exports, and use of the profits received from diversification of exports to finance structural adjustment and social programs;
- Assurance of full employment, reduction in level of unemployment and the creation of a social safety net for those who lose their jobs;

- Agreement reached on the resolution of major ecological problems, first and foremost, the shrinking of the Aral Sea.

Solutions to these problems depend on close cooperation among Central Asian countries.

Only joint efforts can determine which issues are most pressing. The priority directions among these issues are ensuring regional economic and ecological security. Hence, the existing common economic space is being gradually transformed into a unified market economy, step-by-step.

At present, a desire to cooperate and interact, via one form of integration or another, is becoming stronger. However, this is the integration of national economies on a new political and economic basis. Although the present economic position of Central Asian republics is unequal, this does not mean that there are fewer options for possibilities for economic integration, but on the contrary, it requires searching for their intensity.

But it is necessary to stress, the processes for further internal integration of Central Asian states and their integration into the global economy will depend on the nature and depth of economic reforms in these republics, and on the countries' readiness levels.

However, steps toward regional integration of these republics not only reduce, but require joint efforts to search for ways for integration into the global economy. It requires closer cooperation with the already established economic alliances and communities of the global community.

The interests of Central Asian countries determine their priorities. It is a priority for these countries to use their economic potential by speeding-up their social-economic development. It is necessary to maintain these economic relationships, by encouraging countries in this regional trade bloc to engage in the

specialization of the production of those goods in which they have a comparative advantage vis-à-vis other regional trade blocs.

It is possible to expand upon the priority directions for economic cooperation:

- *Rational use of water resources and ensuring ecological security of the region.* Uncoordinated usage of the water supply and pollution of rivers are serious issues which must be addressed immediately.
- *Trade cooperation.* The establishment of economic ties and a common market are the most important steps for the integration of Central Asian states. It is necessary to concentrate states' efforts on creating a framework for the exchange of goods among different parts of the region. This work provides organizations with efficient trade cooperation. In prospect is the question of the formation of a free trade zone within Central Asia.
- *Creation of a common agricultural market.* It is important to preserve the traditional economic relationships on the delivery of agricultural products in these countries. Future prospects include specialization of these countries in the field of agricultural production.
- *Efficient use of fuel and energy resources.* Central Asia's energy resources potential vastly exceeds those of other states. Their balanced, efficient use can and must become a basis for economic development, enabling Central-Asian states to be counted among the newly industrialized states of Asia.
- *Production cooperation in order to produce competitive products with high degrees of readiness.* Great prospects have opened up for the joint use and exporting of minerals and natural resources. Such cooperation can be realized by establishing relationships with IFIs and companies, or through the mutual participation in the stock market that are bounded by the united technological chain.

- *Establishment of a unified transport system with export potential.* The most important direction for economic integration is the development of a regional transport system within Central Asia. In order to benefit from the advantages of its geographical position, the region has to make long-term investments in transport network development, as opposed to short-term investments. This network will be more efficient if there is joint participation of all interested states.
- *Establishment of modern communications and facilities.* Communication development is one of the main conditions for the integration of the Central Asian region into the global economy.
- *Development of a central bank, establishment of a monetary union.* Creation of a Central Bank is the first and the most important step on the path toward the creation of a monetary union. It will serve to enhance the trade-economic cooperation of the region.
- *Development of market infrastructure.* The basis of economic integration is market relations between activity units of the region's countries. It requires the development of a service sector, whose purpose is to support the activities of all market types, i.e. market infrastructure.
- *Establishment of conditions for small business development.* The creation of incentives for the rapid development of small and medium sized enterprises is in the interests of all Central Asian countries. Incentives for business development can include allowing for the free flow of capital. For example, Uzbekistan should quickly make its som convertible on the internal currency market, in order to allow for the free flow of capital. Other conditions which would encourage the development of SMEs would include subsidies provided to infant industries; venture capital for entrepreneurs to start up their business; tax breaks for foreign companies opening up operations in Central Asia.

- *Scientific and technical cooperation.* One of the most important problems of integration is the inefficient use of powerful joint intellectual potential, technologic breakout and creation of scientific and technological basis for the economic development of these states.

One can imagine how the economic integration of Central Asian countries could open up broad possibilities for decisions on a variety of economic, social and ecological problems in this part of the world. Such integration is advantageous for all states in this region, and can become a factor in speeding up these countries' levels of economic development. By establishing a common market, Central Asian states can participate as equal partners in other economic and trade alliances, exert their influence on the current economic and political processes in the world, and emerge as a guarantor of political stability in Eurasia.

Moreover, the integration projects of Central Asian countries would involve much more than economic cooperation. There is a growing need to address political, humanitarian, information and regional security issues. There is a joint effort to make decisions on regional development. However as stated above, the achievement of these projects are determined by the structural reforms carried out in Central Asian economies and is dependent upon the socio-economic development of these countries.

Some countries view regional integration as a threat to Uzbekistan's or Kazakhstan's hegemonic role; however, hegemony is a big political, economic, security and moral burden for any state in the region. Furthermore, Central Asian states have all the necessary political and legal instruments in order to oppose any attempts of over-domination by one of them. Integration is a non-violent process, and participators are able to withdraw from the union at will.

Central Asian states are still active in their attempts to resolve problems of regional stability and security. It is only through the resolution of these issues that deep economic integration can be achieved. It doesn't mean that security issues

need to be resolved first before economic integration can occur, but it must be parallel process. Economic integration creates the conditions for national security via deep economic ties, which strongly discourage member countries of a regional trade bloc from going to various inter-state conflicts.

The establishment of strong regional ties guarantees the successful transition of these states' integration into the global economy. At the same time, globalization, economic interdependence and instant communication have limited the scope of national independence. But the influence of other states bordering Central Asia nevertheless plays an important role, as some of these states are not interested in its integration. In other words, the region is acquiring a new geopolitical status in the New World Order.

Although complete political and economic integration is a long way down the road, our nations can continue down that path. Central Asian integration is complicated and long-come process, and its progress is dependent first and foremost upon region's own efforts.

Analysis of economic integration efficiency of ECO countries

The article presents the method of analysis of the objectives of economic management. It can be used to analyze the development of the region's economy. The purpose of the analysis is to determine the overall capacity of the region, as well as to examine the level of development of market forces of the real and financial sectors of the economy. The analysis provided by the Organization for Economic Co-operation includes three blocks of economic calculation, which allow installing the mutual relationship between the ten indicators of economic development.

Organization for Economic Cooperation (OEC) is a regional intergovernmental economic union formed by the countries of Central Asia and the Middle East. The purpose of the union is the deepening of economic, technical and cultural cooperation among its members. OEC is the successor of organization of Regional Cooperation, which operated on the basis of the Charter - the Izmir Treaty, signed by the three founding countries - Iran, Pakistan and Turkey in 1977.

To date, the Organization for Economic Cooperation includes 10 countries: Iran, Pakistan, Turkey, Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan with a total population of over 400 million people. This organization is in terms of territory and population is the second largest regional association in the world. The total share of the region's trade in world trade is around 2%, in 2000 - 2010 average annual GDP growth rate was more than 6%. In terms of production OEC's GDP in the global economy in 2010 was 1.6%

Methodology of analysis of economic management problems

Methodology of work is based on the work of S. Baizakov [1-2]. It consists of several steps:

Step 1 determines the overall impact of the adopted incentives for innovative investment of economy and for scientific and technological improvement - $c(t)$:

$$c(t) = CDP(t) / (QP(t) + GDP(t)).$$

Step 2 determines the purchasing power of money - $pp(t)$:

$$pp(t) = (c(t) * i_2) / i_1(t).$$

Step 3 determines the price of goods and services - $1/pp(t)$:

$$1/pp(t) = i_1(t) / (c(t) * i_2(t)).$$

Step 4 determines the real growth of economy ($i_3(t)$) on the growth index $i_1(t)$:

$$i_3(t) = pp(t) * i_1(t).$$

Step 5 determines the real growth of economy ($i_3(t)$) on the growth index $i_2(t)$:

$$i_3(t) = c(t) \cdot i_2(t).$$

Step 6 determines the general price deflation - $p(t)$:

$$p(t) = c(t) / pp(t) = i_1(t) / i_2(t).$$

Step 7 determines the net impact of stimulation of scientific and technological enhancements - $\Delta c(t)$:

$$\Delta c(t) = c(t) - 100.$$

In accepted notation $i_1(t)$ denotes the index of GDP growth in the prices of the current year, and $i_2(t)$ is the index of GDP growth at comparable prices, $QP(t)$ denotes the current material costs necessary for the production of GDP ($GDP(t)$).

Formulation of the analysis problem

There is a task of analyzing the development of the regional economy on its broad sector, on the real and financial sectors. The purpose of the analysis is to determine the overall capacity of the region, as well as to examine the level of development of market forces in both sectors of the economy. The analysis includes three sets of economic calculation, which allow installing mutual relationship between ten indicators of economic development.

Analysis of the economy of the region is made on the database of international institutions of the IMF and the United Nations for the period of 2000-2010. The following are the main indicators attracted to the analysis:

- **The volume of production** is the notional amount of products in the natural-material expression (Q).
- **Cost of goods sold** is the amount of cash received from the sale of products ($X = p * Q$).
- **Number of employees** is the indicator characterizing the number of employees at an annual rate (L).
- **Fixed assets** are assets in the monetary expression (K). "Total Number of employees, in thousands" and "Fixed Assets" indicators in monetary units represent production capacity of material goods and its cost volume of sales in monetary terms. These basic indicators reflect market forces of the economy of the region. Therefore, number of employees of the region and fixed assets have market prices as the productive forces of the economy of the region.
- **The average annual salary** is the salary, calculated on the average of an employee, represents the market price of labor (γ), and the ratio of gross profit to fixed assets represents the market price of fixed capital (r).
- **Intermediate consumption** represents the amount of current material cost of goods and services that are used in the production of GDP (QP).
- **GDP at current prices** is the value of final goods and services produced over a year in the state (GDP).

- **Gross external debt** is the outstanding amount of the actual liabilities of residents of the country to non-residents, requiring payments of principal and / or interest at a particular time (GED).

The analysis of development indicators of real sector of economy

The analysis of development of the real sector of the economy of this region includes the following indicators, which are reflected in the matrix of the main indicators of the sector:

- Industrialization indicator (capital-labor ratio – $f=K/L$), thousands USD/person.
- Indicator of managing the market labor price - γ , thousands USD/person.
- Indicator of managing the total factor labor productivity and fixed capital - $\varphi=GDP/L$, USD/year.

Based on processing of database for 2000 to 2010, which is defined by a set of key indicators of all states-participants of the OEC, results were obtained in growth rate of key indicators of management, which are listed in Table 1.

Table 1. The efficiency matrix of market forces development of real sector in the growth rate, 2000=100%

The economic content of indicators, the base unit of measure, unit designation	2000=100%					
	2005	2006	2007	2008	2009	2010
Armament of one working person in the economy with fixed assets of production for, USD / person. (f)	152	183	200	223	218	244
The average annual salary (γ), USD	113	121	145	169	154	181
Total factor productivity of labor and capital (φ), USD/year	162	178	219	248	225	272

One of the key indicators of the effectiveness of market forces development in real sector is **armament of physical labor with the fixed capital**, the economic content of which is defined as **the armament of one working person in the economy with fixed assets of production** (in thousands of USD / person). The dynamics of this indicator is directly related to the degree of industrialization of the real economy. In the future, this indicator will be referred to simply as an indicator of industrialization. Level of its growth is determined not only by the intensity of investment of economy, but also by the increase in the number of employed people in the economy.

As can be seen from Table 1, the growth rate of the indicator of industrialization in all the years outpaced the growth rate of average annual salaries. There is a well-defined trend of outpacing growth rate of total factor capital and labor productivity over the growth rate of average annual salary. But such well-defined trend of outpacing is not observed between the growth rate of labor indicator of industrialization and factor productivity. However, it should be recognized that the degree of intensity of labor is the patron of growth in total factor productivity of labor and capital.

According to the data in Table 1, the level of armament of one working person in the economy of the region with the fixed assets of production increased

2.4 times, while the average annual salary per employee increased 1.8 times and total factor productivity of labor and capital increased 2.7 times.

In this trinity of economic indicators of real sector development the primacy belongs to indicator of industrialization, which serves as a barometer of the driving forces of the economy due to investments. As can be seen from the Table 1, the level of work armament of current year is higher than the level of armament in the past year, although their growth rates are different in the countries of the region. During these years a positive trend was formed respectively in salary levels and productivity. We must assume that of the last two indicators the total **factor productivity of labor and capital** should be considered as a key indicator, **counter of effective functioning of the real sector**. In total, in OEC the level of total factor productivity has increased from \$4,211.1 in 2000 to \$ 11,448.55 in 2010. This is a very good result, even from the perspective of the development of many of the advanced countries of the world.

In this block of economic calculation the harmony in the development of the real sector of the economy can be achieved, if the elasticity of total factor productivity of the capital-labor and the elasticity of the average annual wage of total factor productivity are positive values. The market is the market; the right ratio is not always done in its work. But tracking the market is a condition of the anti-crisis measures.

Analysis of indicators of development of the financial sector

Analysis of the development of the financial sector of the economy of this region includes the following indicators, which are reflected in the matrix of the main indicators of the sector:

- The indicator of economic labor productivity, determined by the ratio of the total factor productivity of labor and capital (q), USD / USD.
- • The return on assets indicator (an indicator of the market price of fixed assets) - r , percentage.
- The return on fixed financial assets indicator - rr , percentage.

The purpose of the analysis in this sector was to assess the dynamics of these indicators of development of the financial sector and in establishing their chain of command, based on their mutual dependence. Table 2 shows the dynamics of the economic indicators of financial sector development, resulting from the analysis of economic aggregates of OEC members for the period from 2000 to 2010.

Table 2. Matrix of effectiveness of market forces development of the financial sector (2000 = 100)

The economic content of indicators, the base unit of measure, unit designation						
	2005	2006	2007	2008	2009	2010
Productivity of units of wages in monetary terms (q), USD / USD	2,45	2,54	2,6	2,53	2,51	2,59
Price of fixed assets (r), USD/USD* 100%	42	39,5	44,8	44,8	41,5	45,6
The return on financial assets (rr), USD/USD* 100%	7	6,7	7,2	7,2	6,3	7,8

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As can be seen from Table 2, the dynamics of indicators of development of market forces in the financial sector represented by the **ratio of the total factor productivity to the average annual wage**, named productivity of economic labor, has an increasing trend. This is a rare event, even among developing countries. As for the prices of fixed assets and financial assets, both indicators over time grow unevenly, but express a positive trend. The overall level of productivity of units of wages within the OEC in 2010 was 2.59, which exceeds the value of the base year 1.5 times; while for 2005-2010 its rate slightly decreased and amounted only 106%.

The dynamics of the second indicator of market forces development of this sector is represented by **the return on capital**, expressed by market **prices of fixed assets**. Amazing thing is that these figures have the same trend as the productivity of units of wage. Thus, over the period from 2000 to 2005 as a whole there was a significant increase in the price of fixed assets in 1.5 times. But then there was a moderate rate growth of the price of fixed assets from 42% in 2005 to 45.6% in 2010. At the same time for the entire period of analysis, the growth rate of this index here was 109%, with a slight excess in comparison with the rate of growth of economic labor.

A positive aspect of financial sector development is the fact that the dynamics of the **return on the fixed financial assets** indicator developed strictly due to the impact of fixed assets. The relevant indicators are located much lower than the return on capital indicator. If in 2005 and 2010 the average level of the return on capital indicator was 43%, the average rate of return of financial assets accounted for 7% of the same years. This ratio allows the real sector to provide self-financing. The causes of the current debt crisis in some European Union countries, as shown by our study, are associated with the violation of this proportion.

In this block of economic calculation, the harmony in the development of the financial sector of the economy can be achieved if the dynamics of the indicator of economic labor productivity, defined by the ratio of total factor productivity to the average annual salary is increasing amount.

But in the conditions of market relations it is unlikely to comply with this ratio. Especially the implementation of this relationship depends on the level of scientific and technological excellence of production areas. But the tracks that ratio is a key condition for the stability of development of the region's economy.

Analysis of indicators of national economic development

Analysis of the economic development of the region includes the following indicators, which are reflected in the matrix of the socio-political development:

- Coefficient of performance of turnover (production technological excellence)– c
- The energy and ecological efficiency indicator (productivity of intermediate inputs) - μ

- The working time indicator (indicator of employment in the total population) – L
- The indicator of competitiveness of the region – B , USD/person

Table 3 shows the results of calculations of these indices for the period 2000 - 2010 within the framework of the OEC.

Table 3. Matrix of effectiveness of development of market forces of the national economy (2000 = 100)

The economic content of indicators, the base unit of measure, unit designation						
	2005	2006	2007	2008	2009	2010
Counter of technological excellence of production (c), USD / USD	0,49	0,49	0,5	0,52	0,52	0,54
Resource productivity (μ), USD/USD	0,98	0,97	0,98	1,08	1,09	1,17
The share of employment in the total population (L/N), person/person	0,34	0,35	0,34	0,35	0,34	0,33
GDP per capita (GDP_N), USD/person	2287,7	2597,2	3158,5	3602,6	3188,6	3810,3

One of the indicators of effectiveness of regional economic development is **the level of technological excellence of production**. This indicator is defined by the ratio of the growth rate of nominal GDP to gross output. It represents the **coefficient of performance of turnover**. This indicator by OEC has a trend of growth from 0.5 to 0.54, which growth rate was 1.08.

The next indicator of the effectiveness of social and political development is an **indicator of energy and ecological efficiency**, which reflects the **productivity of intermediate inputs**. Over the ten-year period there was an increase in value of the indicator of 1.17 times in the OEC, and the sequential increase was observed in the second half of the decade.

It should be noted that there is a functional relationship between the indicator of energy and ecological efficiency and the coefficient of technological excellence:

$$c(t) = \mu / (1 + \mu).$$

Another important indicator of the effectiveness of regional economic development is an **indicator of working time**, the economic substance of which is reflected in **the share of employment in the total population**. Over the decade, the total share of employment in the economy in the total number of people in OEC remained about the same but very low level. The reasons for this negative indicator require the use of other more qualitative research method.

The last key indicator of the effectiveness of development of market forces of national economy is an **indicator of competitiveness of the country**, which is expressed in **GDP per capita**.

Leaders in the level of economic development among the countries - members of the Organization for Economic Cooperation are the Turkish Republic, the Islamic Republic of Pakistan and the Republic of Kazakhstan.

In general in the OEC countries GDP per capita in ten years increased by 2.8 times and amounted \$ 3,810.29 / person in 2010. This level is somewhat higher than the average level of the overall economy of the world. This most important criterion for the countries development is monitored by the UN institutions, and the dynamics of its growth are analyzed.

List of references

1. S. Baizakov. The price of the american dollar and its value: Experience of using in management of economy of regional alliances. =Almaty: NC STI, 2011. -46 p.
2. S. Baizakov. Alphabet of market economy management / / in Kazakh, Russian and English languages. -Kostanay "Shapak", 2013. -28 p.

Afghanistan's geographical significance for the regional economic integration

Landlocked Afghanistan lies in the heart of Asia, and links three major cultural and geographic regions: the Indian subcontinent to the southeast, central Asia to the north, and the Iranian plateau in the west. Geography may not be destiny but it has set the course of Afghan history for millennia as the gateway for both invaders and traders spilling out of various regions. Our twenty-first century world is a highly globalized one that is above all characterized by a great degree of interdependence dominating all malleus of life such as politics, economy, and culture. It is against this background that Afghanistan is rising as a geographically and geopolitically strategic nation in central Asia by bonding together six countries that share its borders: Pakistan, China, Iran and three former Soviet Republics, Tajikistan, Uzbekistan and Turkmenistan.

In the age of rapid shrinkage of physical distance through galloping expansion and occupation of technology, from Afghanistan's capital of Kabul, the capital of Pakistan, Islamabad, is only 235 miles away, via the famous Khyber Pass. The capital of Delhi, India is just 624 miles away, closer to Kabul, Afghanistan than Dallas, Texas is to New York City (Barfield, 2008). Pakistan's road network reaches from Islamabad, along the Indus River Valley, and connects with the ancient Silk Road. China is just a few hours away, bordering both Afghanistan and Pakistan at the Karakorum Mountain Range. Along many of these same roads however, Pakistan's central government controls just the roadway itself, the areas to the right and left of the tarmac have never been controlled, they have and remain the domain of local tribal governance.

Afghanistan's recent history has been one of terrible war and strife, and as a result, utter exclusion from almost all major political and economic interactions. It has been said many times that the country is at a crossroads (Hogg, *et al*, 2013). Today, Afghanistan is taking firm steps towards restoring its past grandeur by

rebuilding its shattered and eviscerated infrastructure and political image. The nation has over the past decade made significant progress in rehabilitating its vast reservoir of forestation, degraded agriculture, opium trade and infrastructures. Development progress since 2001 has shown a mixed signal. A number of major achievements have been recorded, such as rapid economic growth (with large fluctuations), relatively low inflations (after hyperinflation in the 1990s), better public financial management, and gains in basic health and education. Key social indicators, including life expectancy and maternal mortality, have improved markedly, and women are participating more actively in the economy. Afghanistan despite being in the list of the least developed countries, has today a per capita gross domestic product (GDP) of US\$528 in 2010/11, which was just over US\$100 in 2001 (ibid).

Afghanistan is harboring some of the major countries that are connected to the Caspian Sea which is one of the most important source of world's energy resources, after the Persian Gulf and Siberia. But, one of the most serious limitations to the regional development is, in addition to, the lack of a reliable transport and transit system, its geographical location, which has led to serious obstructions for the flow of goods and products among the littoral states over the question of energy exploitation and distribution.

The flow of both goods and services related to oil, gas resources, and other agrobusiness products to and from the Central Asian countries suffers manifold problems. These include its land locked geography, which is a logistical impediment to speedy resource exploration-investment as well as energy transport. The massive distance from major supply centers for exploratory equipment also put the natural resources oriented firms operating in the Caspian in a difficult position, facing shortages of adequate investments, reliable infrastructure, drilling platforms and transportation into the lucrative regional

and international markets. These obstacles prohibit an increase in oil and gas production in the region, despite having resources equivalent to the North Sea.

There is a need for the regional states to consolidate their bilateral and regional cooperation, overcome their disputes and create sound relations with the other regions and countries. Since Afghanistan benefits from a geo-strategic location, it can, therefore, play a major role in facilitating further economic and political integration in the region. This is because an important factor that can precipitate the trade dissonance and rather promote regional economic integration is the development of a reliable and accessible transport link and road infrastructure in the region. Moreover, it can attract investment into major undertakings particularly by the Europeans can further enhance the energy potential of the region.

Landlocked developing countries continue to face difficult transit problems that reduce their competitiveness in the world market. These problems including inadequate transport infrastructure, cumbersome customs and border crossing procedures, remoteness from major international markets, and high transport and trade transaction costs, continue to put these countries at the margin of the global economy. The establishment of a secure, reliable and efficient transit transport system, remains therefore critical for landlocked developing countries to be able to reduce transport costs and enhance the competitiveness of their exports on regional and global markets.

The landlocked developing countries in this sub-region are also party to regional and sub-regional agreements that have helped in facilitating transit transport and trade. It is also very encouraging to note that our efforts are now paying off.

Afghanistan would applaud the efforts made by all regional governments with the support of the IRU, the United Nations Economic Commission for Europe, the United Nations Economic and Social Commission for Asia and the Pacific, the Organisation for Security Co-operation in Europe, the World Bank, the Asian

Development Bank, the World Customs Organisation, the Transport Corridor Europe–Caucasus–Asia and other stakeholders to remove physical and non-physical barriers to land transport transit operations in the region.

Afghanistan is confident that the development programs that are undertaken by these nations will identify additional innovative initiatives to improve transit transport systems and trade facilitation to help landlocked developing countries in this region to reap the full benefit of globalisation. Further investment in physical infrastructure development and maintenance along international corridors is also undoubtedly necessary. However the cost implications of meeting the requirements to establish and maintain an efficient transit transport system are of such magnitude that the landlocked and transit developing countries must be supported by increased international support including increased aid commitments for infrastructure development, Aid for trade, increased FDI flows, Public–Private Partnerships, and increased South–South Cooperation.

On its part, Afghanistan, is endowed with the tremendous untapped natural resources reserves in the region and has made tireless efforts to promote and build a pipeline through Afghanistan as the cheapest route for transporting the oil to Asian markets. Over the past decade, Afghanistan has constructed over 12,000 km of highways which connect the neighbouring states e.g. Pakistan and Iran to the northern Central Asian Republics. Moreover, the country has made intensive investments in constructing railway lines in order to further facilitate transport and flow of goods at relatively lower prices. Afghanistan has thus far managed to build over 124 km railway lines and aims to expand the network further to precipitate the regional economic and also political integration.

In conclusion, the regional prosperity to a great extent depends upon the expansion and promotion of both inter and intra–state cooperation that bears the capacity to facilitate a free and smooth flow of goods and services. The Central

Asian region due to its geo-strategic location depends more than any other region on the regional connection and integration. This requirement is further deemed to gain in significance by the twenty-first century world that is highly characterized by the notion of interdependence and integration. Afghanistan, as a member state occupying the centre stage in the arena has the potential to make large contributions towards regional and international integration.

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Regional Integration Processes and Development of Afghanistan's Economy

The challenges we are facing today are as critical as they are complex and multidimensional. While utterly concerned about complications of the challenges, the world community is firmly determined in finding the ways for Afghanistan out of its systemic crisis. Yet, such crisis remains one of the most important issues of the international polity.

Over the recent past, a number of international conferences, symposia, and formal meetings have taken place. All were mainly on countering the terrorism, extremism, drug proliferation, etc. These are critical issues; if unresolved, they will seriously impede stability in the Afghan society. However, the Afghan challenges have no solution other than in the economic dimension.

Only through the real sector development, employment, and improvement of the living standards of Afghans, the current challenges may find effective resolution. Without the progressive economic revival, the Afghan social challenges would be inflicted even more complications.

The profound and effective intra-regional integration may serve a useful foundation in resolving the above specified economic challenges. All necessary pre-requisites for a deep intra-regional integration are in place: most of our member economies have in the past been under a single economic system, common energy grid, common history, cultural inheritance, traditional life and shared commonality in peoples' mindset, economic interests as well as those in regional security.

So far, the integration processes have proved effective. Yet, these have narrowed themselves down through a binary interrelationship between regional countries. One of the reasons behind Afghanistan's staying out of the integration process has been the prevalence of 'bilaterals' within a common integration frame.

Afghanistan's effective integration with member states of ECO, Eurasia, and other regional organizations would undoubtedly speed the country's economic revival up and facilitate its exit from the systemic crisis.

Afghanistan is of important geopolitical significance for ECO. Over the past, the increasing attention of ECO to the resolving Afghanistan's challenges has been conspicuous. There were a number of reasons for that. Today, the world has no 'hot spots' more critical than ones in Afghanistan. Not only the threat of internal and external instability is still there but also is proliferation of international terrorism as well as increasing scales of drug smuggling. Drug production and

trafficking pose a serious threat not only for Afghanistan but also for world's regions that interact with the country.

Over the past years, activation of the Taliban movement in Afghanistan's northern Kunduz Province which borders with Tajikistan may have caused a real tension in Central Asia in infiltrating the movement into Tajikistan. Such attempts did take place in the past.

Tajikistan shares common 1400 kilometer common borders with Afghanistan. Similarly, Uzbekistan does the same. So, Afghanistan's stability will have direct impact to neighboring countries. In this regard, the interest of world community in the situation in Afghanistan has reasonable background.

In 2008, the Issyk-Kul International Conference: "Afghanistan, Eurasia, Security and Geopolitics in Central Asia" has concluded to activate entrepreneurship and bring in foreign investments for Afghanistan's economic revival.

Tajikistan initiated the International Conference on Afghanistan on 21-22 October 2008 in Dushanbe. The Conference stressed the need for a multilevel system of international cooperation as an important step for effective countering the terrorism, drug production and trafficking. A joint partnership declaration reflecting the intention of the conference participants to strengthen regional cooperation against international drugs smuggling was adopted. The Conference supported the project to establish the OSCE College in Tajikistan and Afghanistan for training border specialists and law enforcement experts.

The London International Conference adopted the decision to provide US\$10.5 billion financial assistance to Afghanistan for economic reconstruction.

Earlier, the Berlin and Tokyo Conferences had pledged US\$9.0 billion financial assistance to Afghanistan. According to some information sources, however, such assistance did not result in the betterment of social and economic situation of the country.

The International Forum: "Afghan Drug Production: *a Challenge to the World Community*" on 9-10 June 2010 discussed the threats associated with growth in production and consumption of drugs and the security of Central Asia and also of countries of Asia and Europe. Similarly, last year, Istanbul hosted an international conference.

All the above mentioned international fora have discussed the challenges of the Afghan society from the viewpoint of countering the terrorism and drug trafficking. Undoubtedly, such stance is important. However, without resolving social and economic challenges, namely, developing Afghanistan's real sector economy, generating employment, resolution to the Afghan challenges will be impossible, which means that drug production will grow as ever before.

The major stabilizing factor in Afghanistan's economic revival will be the development of the country's economically competitive sectors which promise the Afghan people real economic gains.

In spite that Afghanistan's economy has rapidly been developing at 12-13% rates over the past decade, the per capita income accounted to a modest US\$470. External trade turnover has not exceeded US\$4 billion mark whilst donor assistance hit US\$13-14 billion.

At the same time, revenues from drugs proliferation made over US\$300 billion, according to some sources. Over the past ten years, the profit from drug sales has increased 40 times. Of the total US\$65 billion, annually generated from drug production, only US\$5 billion remains inside the country. The conclusion is that revenues generated from drug sales tens times exceed the size of financial donor assistance and the country budget. Therefore, not only international '*drug lords*' but also farmers do have a strong interest in furthering drug production. Such layout of market interests places the need for rapid development of vital economic sectors as first priority.

The country's real sector economy, especially manufacturing is underdeveloped. A significant 36% of the country's population lives beyond poverty line, the unemployment rate is high at 40%. The economy is much dependent on foreign aide. The trade balance is in deficit. *Example*, in 2009, the overall external trade was in US\$ 2.5 billion deficit, marking 18% of GDP, which by 9.6 times exceeded the country's export volumes.

Afghanistan is an economy specializing in agriculture which accounts to 38% share of GDP. Over half of the country's poor live in rural areas. Most arable land with low soil fertility is in the ownership of small farms.

Despite such constraints agriculture is still a priority for the economy. Specialization of this sector has been towards the manufacturing base for textile, food processing, and re-processing agro industries. Production should target the finished agricultural products. For this, urgency is to develop small and medium sized industrial businesses for processing agricultural resource produce.

For the country, it is vitally important to shift its agriculture sector to manufacturing, namely, to initiate a *green revolution*, to ensure food security for the country's population. Most economies have ensured food security primarily owing to the implementation of the afore-mentioned economic measures.

Besides, it needs to be borne in mind that small farms do not have the required capacities in order to get simultaneously involved in production and in sales of agricultural produce.

In this regard, useful is the experience of Switzerland in establishing the farmer cooperatives or that of Tajikistan in setting up agricultural machinery equipment stations.

Nevertheless, the agricultural model of economic development is a deadlock for any economy. The common world experience has proved it. Therefore, in order to generate employment and increase economic efficiency, the development of the industrial production capable of ensuring an economic breakthrough of the country, is a must. The economy should target the industrial-agricultural model of its economic development based on innovative technologies. In this regard, I would strongly recommend developing the program of production-innovations development as the main priority in integrating of Afghanistan with ECO.

In the program, creating the production zones should serve as favorable strata for the process of integration. Production growth may be able to resolve the country's economic and technological backwardness. Modernization of the real sector economy without adequate development of energy sector is impossible.

Energy is the fundamental basis for the development of any economy. Just as an example, the core pillar in Russia's experience in industrializing its economy was energy. It was the development of energy sector and electricity supplies of the entire economy that made the 'GOERLO' Plan feasible.

In this context, electric power supplies are a weakness of Afghanistan's economy. To this end, it is necessary to develop the short, medium, and long term plans of development of the country's own energy system. Such task should be preceded by a tedious compilation of the country's energy balance sheet. The future energy insufficiency which would result from expansion of production and population growth would pose a serious challenge for the economy, should it face the need to offset the challenge by energy imports from neighboring countries.

Tajikistan, whose energy potential 4.8 times exceeds those of regional economies, may provide essential support, in this regard. Tajikistan's annual electric power production is at 527 billion kilowatt hours. The volume is sufficient enough to meet domestic demand and outstanding needs in electricity of regional countries, including of Afghanistan, in the first place. The hydropower resource is Tajikistan's competitive advantage. It means that the country should use it as primary base for its further economic improvement. In reality, during 2011, this resource has been utilized by 3.1 percent of its total capacity, only. Even after the Rogun and other small sized hydropower stations have become operational, utilization of electric power stands at 8.0 percent.

If Afghanistan's production develops, the economy will become one of the main electric power consumers in the region as its territory is a single gateway for Tajikistan to Pakistan and Iran.

Currently, Afghanistan has developed a program on transit of Tajik energy. In addition, an Indian company has started construction of electric transmission lines in both the countries to link them. In the past, Tajikistan's energy ministry and of Afghanistan have concluded the construction agreements on the 220 kilowatt hours electric transmission lines in Kunduz. The lines will trespass the Puli Khumri city to the Takhor Province. Today, the 10 megawatt/hours electric power supplies are being transmitted to Kunduz. In future, these volumes are projected to reach 40 megawatt hours. Afghanistan buys electric power resource from Tajikistan's Pamir Energy Company, established in the framework of the Agha Khan project.

Construction of the Dasht-e-Dzhumskii hydropower power station is of paramount importance for deployment of Afghanistan's production capacities and energy security of both, Tajikistan and Afghanistan. It also important for mass land handling as well as resolving the Afghan society's other socio-economic challenges. This task will not only help facilitate greater energy conservation but would also enable handing of existing huge unutilized land mass.

Afghanistan has an interest in construction of railways in Central Asia. The railway connecting Uzbekistan with Afghanistan through Mazar-e-Sharif has already been built. The IMF had allocated US\$750 million for implementation works. In plans are railway construction works to link Tajikistan's Lower Pyandj city with the Afghan Sherkhon port where the railway line will split into two, one to stretch further through Kabul to the Ainak copper deposit; the other through Mazar-e-Sharif to the Uzbek railways. To that end, the railway line will run from Mazar-e-Sharif to the Faryab province and from Herat to Iran. Connection from Iran to Herat already exists. The next step is to link the existing lines from within to Pakistan's railways. Such development will favor fruitful development of economic cooperation between Afghanistan and countries of ECO.

Of no less importance are bridges that exist between Tajikistan and Afghanistan. These are in Ishkamysh, Khorogh, the Lower Pyandj, and Darvaz. They are crucial for transportation and trade. Cross border trade in the free economic zones is ongoing, namely, in Ishkamysh and the Lower Pyandj. All these developments would further facilitate Afghanistan's economic development.

Tajikistan is also strengthening its cooperation with Afghanistan in such other directions as: trade, transport infrastructure, cooperation in the free trade zones, entrepreneurial activities. In 2011, external trade has increased by 45.4 percent.

Serious assistance and support in revival of Afghanistan's economy could be from other countries of ECO. It is important to bear in mind the commonalities in the interests of Afghanistan and ECO countries. The concept framework of partnership-based mutually beneficial economic cooperation is needed. Therefore, in order to formulate a strategy of effective regional economic cooperation

between Afghanistan and ECO countries, a detailed analysis of Afghanistan's real sector economy through comparing its economic interests with those of ECO is required.

Speaking of world's big developing economies, China and Russia have considerable investment and technological potential. China is developing the Ainak copper deposit. In view that Chinese investment is far reaching and already covers the African continent, China could have increased its presence in Afghanistan's mining and transport infrastructure.

As with Russia-built 142 production units in Afghanistan, in the past, of which most have now been destroyed, construction works have been started on Naglou hydropower station and a series of small sized hydropower stations. The listing of future construction units has been prepared, with the Kabul residential housing construction complex, Mazar-e-Sharif fertilizer plant, Djalal-Abad hydropower station, Djambul-Saradj cement factory enlisted. Russia intends to take part in construction of electric power transmission lines—500. The Russian-Afghanistan trade dynamics is growing. Over the period 2005-2010, bilateral trade volumes increased 5.3 times from US\$108.3 to US\$571.5 million, of which 96.2 % accounted for Russia's exports to Afghanistan.

The large scale modernization of Afghanistan's economy requires a rigorous training of specialists and firm capacity building. Of all resources, the most valuable are human resources. Such countries as Finland and Japan do not avail natural resources, owing to high quality labor force, however, they were able to upgrade their economies to a much advanced level.

Training of highly qualified work force, to meet production demand, could trigger Afghanistan's urban development, an important historical process.

In this process, Tajikistan is already providing significant support to Afghanistan. Training of Afghan experts at all levels is taking place in Tajikistan's educational institutions. The possibility is there to further increase the scope of such activities.

It is likely that Afghanistan's economic revival may take years if the world community will not work out decisive measures, for this matter. Afghanistan's economic development has serious impediments: the economy has historically been underdeveloped with poor manufacturing infrastructure, low human capacity. Else, it is landlocked and much dependent on external financing.

To remove the above impediments, a set of economic measures to be laid down in the country's comprehensive long term economic development program is needed. Such document could be for 20 years span with defined priorities, distinct phasing out of step-by-step activities, and clear budgeting.

The above described measures must target the establishment of healthy economic system, the only right way to stabilize economic situation in Afghanistan and its exit from the systemic crisis. There is no other way out of it.

For another, Afghanistan and donors should rigidify the oversight on expenditures originating from all financial sources. Impermissible is the non-targeted use of investments, which are primarily designed for Afghanistan's economic revival, of which over 50% are in the form of technical assistance. According to the government, of US\$9 billion inward investments, 22% has been used for economic development, 50% went to NGOs. The latter received financial assistance bypassing the government. Of the 2355 NGOs, existing inside country, 1950 are involved in money laundering. As a result of re-registering the NGOs, 1620 have vanished, of which 333 were foreign.

The financial assistance of the world community that target Afghanistan's economic revival does not achieve its prime target rather it is misused by mafia.

Therefore, solution of Afghanistan's systemic crisis needs to be supported by a multilateral socio-economic strategy. In this regard, I am confident that Afghanistan does avail of the essential prerequisites for resolving its geo-economic challenges.