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FINANCIAL AND ECONOMIC IMPACTS OF TRADE OPENNESS IN CENTRAL ASIA

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ABSTRACT

This research paper questioned how the trade openness index correlated with local stock market and currency volatility in Central Asian countries (Uzbekistan, Kazakhstan and Kyrgyzstan), along with other economic key factors in country growth, the fundamental implication of trade openness in developing countries. Traditional variables of gravity models such as GDP, inflation rate, geographical location, remittance, natural resources, unemployment rate, and political stability are significant explanatory variables. This paper also reviewed the impact of trade openness on consumers’ spending, based on the history and culture of Central Asian countries.

In order to analyze the trade openness index’s impact on the stock markets index and local currency exchange rate, I observed the weekly historical data analysis of each country’s financial and economic performance before (2005-2007) and after the 2008 global economic downturn. Moreover, I observed geographical location, political stability, and remittance contribution variables and confirmed their high correlation with trade openness index.

The research holds a cross-country time series analysis of key economic factors in order to better argue and translate the numbers into reasons of impact. Findings suggested that in these countries the trade openness index has a significant impact on domestic equity markets, domestic economic volatility and size of economy, international trade integrations, and contribution of remittances on local currency exchange rates.
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CHAPTER I: INTRODUCTION

In the 21st century, the trade openness process strongly promoted growth and an increase of capital flow among countries. A number of scholars reviewed how trade openness affects growth on the local economy development in developing countries. Trade openness allows the dissemination of knowledge and technological progress and encourages competition in domestic and international markets. The recent theoretical models add a long-run growth effect when countries or regions are promoted by trade-increased returns on the scale which illustrated in the growth models by Rodrigues and Robrik (2000). If market imperfections exist, trade openness can lead to sub-utilization of capital resources. According to the Grossman and Helpman (1991) model, despite their openness, a country’s technological weakness still affects the outcome, thus losing out on the benefits of increasing returns.

Sachs and Warner (1995) suggested in their model that natural-resource sectors may prevent a country from the type of technological progress that eventually leads to long-term growth. In this case, institutional imperfection is an institutional weakness that encourages the diminishing of natural resources and quick gains by certain groups in society. Harrison (1996) has cast uncertainty on the significance and robustness of the growth benefits of openness in any country. With these openness measures used in practice, indicators reflect general economic management, such as black market premium or geographical characteristics.

This research paper observes that increasing the trade openness index was beneficial to developing countries’ economic and financial markets, although by using 2008 global economic downturn data, this has since changed. Trade openness varies considerably across countries, including the Central Asian region, and depends on a variety of conditions related to the structure
of the economy, industry, geographical locations, and financial instruments existing in each
country. By using panel data regression from different country samples, I employ regression
 techniques in order to provide comprehensive country analysis of the effects these variables had
on volatility in my established model. Moreover, for this research the following dimensions are
important to note: a) capital investment, b) public infrastructure in country, c) quality of
governing government interests, d) labor market flexibility. Each of those dimensions has an
impact during the trade openness observation period from the years 2005-2007.

In this paper, I focus on the links between trade openness index and national equity
markets in order to see the performance of local equity markets in high openness trade index and
lower trade index respective impact on stock indexes. Also, I consider the effects of openness
trade index in two components: the effect of trade openness index on stock index’s (Uzbekistan
stock index-TASIX and Kazakhstan stock index-KASE) and currency volatility with other
Central Asian country economic performances, such as Kyrgyzstan local currency, which has
been in high trade openness index for a number of years already.

Correlation analysis of countries in this region include Kyrgyzstan, which has been open
to the global market as a member of the World Trade Organization (WTO) since 1998, and other
countries such as Kazakhstan and Uzbekistan, which are still in the process of becoming
members of the WTO, and have higher trade barriers compared to the Republic of Kyrgyzstan.

In order to run a correlation analysis trade openness index impact on stock markets
indexes I will look at historical four year (2005-2008) weekly data analyses (627 total
observations) of each countries’ national stock indexes with openness trade index. Moreover, I
will consider other variables such as inflation rate, unemployment rate, geographical locations,
remittance and political stability, as dummy variables in order to understand the impact of these
parameters for my outcome variables and the correction between each factor. I then present some cross-country empirical evidence on how the growth effects of openness trade index on the previously mentioned characteristics by analyzing and implying OLS regression between trade openness index and national stock markets.

Some research, such as Romer (1993), finds that there is a negative link between trade openness and inflation in countries and currencies for a large cross-section of 114 countries over the period of 1973 to 1988. Romer’s model shows that the output-inflation tradeoff worsens if an economy opens up to trade; doing so will reduce interest for monetary authorities of local governments to inflation.

One of the main questions I explore in this paper is of trade openness as an important determinant of local Stock market Index (based export/import turnover) and it is capitalization associated with trade liberalization, particularly trade openness index’s increase or decrease direction.

My second aim in this research paper is a comprehensive assessment of the correlation between trade openness index and local currency exchange volatility, using similar regional cross-country analysis and by using historical weekly data from the past four years.

In this research we also review the benchmarking of countries in regions with high openness trade index and lower trade openness index. The dummy variables we will consider include inflation rate, GDP, unemployment, natural resources (of that particular country), geographical locations, and political stability the dummy variables in stability, in order to understand the impact of these parameters for our outcome variables trade openness index and correlation between each factors (time unobserved) and country specific effects.
Using a series of cross-country time series analyses will help us to examine the relationship between trade openness index, financial and trade policy factors. This analysis will help us to understand relatively to translating the numbers to reasons of impact. I then present some cross-country empirical evidence on how the growth effects of openness trade index on the characteristics I reviewed above, by analyzing the implied relations between trade openness index and national stock market and local currency volatility.

The remainder of this paper is organized as follows: Chapter 2 describes recent academic developments of stock markets in developing countries, with an emphasis on the impact of globalization and currency volatility with regards to countries trade openness indexes. Chapter 3 provides current measurement methods of trade openness index, discussed through cultural and geographical impact in Central Asian countries. In Chapter 4, I observed the methodology and data description used in empirical analysis, followed by presentation of the empirical results. Chapter 5 provides empirical examination of trade index correlation of local currency volatility and domestic stock index. The outcome of my findings stated that trade openness impacts local stock market and currency volatility. Finally, I conclude with some closing remarks.

Globalization: Trade and Financial Openness

Some scholars consciously limit the historical scope of globalization to the last four decades of post-industrial periods in order to capture its contemporary features; others are willing to extend this timeframe and include the ground-breaking developments of the 19th centuries. Few remaining researchers refuse to confine globalization to time periods measured in decades or centuries. This brief historical drawing identifies five distinct historical periods that
are separated by time periods, by significant acceleration in the pace of social exchanges, and by a widening of geographical locations.

In the initial period of globalization about 12,000 years ago when small groups of hunters spread all over the world, the geographical range was limited and mostly coincidental. Over time, food surpluses were achieved by early farmers and led to population increases and the establishment of permanent villages (Steger, 2003).

A geographical aspect had already impacted the rapid spread of crops suitable for food production. The importance of these inventions could be seen in the future as first steps for the growth of the globalization process. After the establishment of law and the fixing of weights, measures and values of coinage fostered the expansion of trade. The most extended trade route was the Silk Road; it started from China and ended in the Roman Empire. During the 15th century, China’s hundreds of ships crossed the Indian Ocean and established trade on the east coast of Africa. After a number of years, existing global trade networks consisted of interlocking different regions such as Eurasia, Africa, and Central Asia. Using existing networks of economic and cultural exchange triggered massive waves of migration, which in turn led to further population increase and the rapid growth of urban centers. The outcomes of cultural clashing were transformed into major ‘world religions’ known as Christianity, Islam, Buddhism and Judaism (Steger, 2003).

In the early 18th century, the countries located north of the Alps greatly benefited from the distribution of technological innovations originating in Islamic and Chinese cultural spheres. The rise of European urban cities and the growing merchant class of society represented an important factor of responsibilities for strengthening global tendencies, and established economic entrepreneurs for the ‘capitalist world’ during the early modern period of globalization. During
the modern period (1750-1970), Australia and the Pacific Islands integrated into European political, economic, and cultural networks. During 1850-1915, the world’s trade balance increased rapidly; capital, goods and services flowed across national borders. Sterling-based gold made possible the worldwide circulation of national currencies like the British Pound and Dutch crones. Global pricing systems facilitated trade commodities such as cotton, gold, and other materials (Steger, 2003).

The development of railways, intercontinental air-transportations, and mechanized shipping in the 20th century overcame the last remaining barrier of geographical location, as new transportation management and technology lowered the cost of the transportation of goods. During the contemporary period of globalization (from 1970), new forms of technology have been one of the bases of a new phase of globalization. The technological processes extent during the 20th century is a good indicator for occurrence reflection of social transformation. Cross-border flow of capital and technology has inspired the trade of goods and services. Markets have been extended throughout the world, and International Financial Institutions, Economic and Trade Institutes, Transnational Companies, and regional trade blocs were established.

During 1989-91, new global economic order came after the collapse of communism in the Soviet Union and Eastern Europe. Since then, three main international institutions came to be main players of globalization and trade liberalization in the world, such as the IMF, World Bank, and WTO. Comparison of the total value of world trade exploded in 1947 to $57 billion, and in 1990 global trade balance was estimated to have grown to $6 trillion growth of global trade balance (Steger, 2003).

In Europe and North America, countries have increased their efforts to establish a single global market through regional and international trade-liberalization agreements such as NAFTA
and GATT. Internationalization of trade has a close link with the liberalization of global financial institutions, influencing such components as: interest rates, the removal of credit control, and the privatization of banking and financial institutions. International trade financing allows for the increasing mobility of different segments of the financial industry with fewer restrictions and greater investment opportunities.


Transnational corporations and firms with subsidiaries in several countries saw their numbers skyrocket from 7000 in 1970 to about 50,000 in 2000. Enterprises like General Motors, Wall-mart, Exxon-Mobil, Mitsubishi, and Siemens belong to the 200 largest Transnational Corporations (TNC), which accounted for over half of the world’s industrial outputs. TNC’s controlled much of the world’s investment capital, technology and access to international markets, in order to maintain their prominent positions in the global marketplace. Cheap labor, natural resources and favorable production conditions in the global southern hemisphere has enhanced corporate mobility and profitability. Over the 70 per cent of world trade, transnational corporations have boosted their foreign direct investments by approximately 15 per cent annually during 2000 (Steger, 2003).
For example, I can review (Appendix Table 1.1) Nokia’s development and role in the Finnish economy. Today its products connect one billion people in an invisible web around the globe. Nokia’s gift to Finland was the distinction of being the most interconnected nation in the world, which came at the price of economic dependency. Nokia is the engine of Finland’s economy, representing two-thirds of the stock market’s value and one fifth of the nation’s total export (Fortune 31, July 2000).

During the developing global trade economy, three main international economic institutions are most frequently mentioned: the International Monitory Found (IMF), the World Bank (WB) and World Trade Organizations (WTO). Those three institutions have the privileged market position of enforcing the rules of the global economy that has sustained significant power differentials between North and South countries. Since the 1970’s and especially after the fall of the Soviet Union, the economic agenda of the IMF and WB has synchronized the neo-liberal interest of integrating and deregulating markets around the world. Unleashed on developing countries in the 1990’s, this set of neo-liberal polices is often referred to as the ‘Washington Consensus.’ The official purpose of this document was to reform the international economic mechanisms of debtor countries in the developing world so that they would be in a better position to repay their outstanding national debts. In practice, the ‘Washington Consensus’ program spelled out a new form of colonialism (Steger, 2003).

The ten points of the ‘Washington Consensus’ as defended by John Williamson, required local governments to implement the following structural adjustments in order to be qualified for receiving WB and IMF loans. The ‘Washington Consensus’ required that developing countries implement requirements in order to receive loans. Adjusted restructures in developing countries increased debtor societies because they mandated cuts in public spending. This translated into
fewer social programmers, reduced education funding and opportunities, reducing funding for environment projects, increased pollution, and the cutting of various social projects; all of which findings greatly increased poverty for the vast majority of people in low received countries. In other words, the largest share of the national budget in those countries was spent on servicing outstanding debts. For example, combined debt for developing countries in 1997 developing countries combined amount in debt was US $292 billion, and the amount they received from the International Financial Institution was only US $269 billion in loans (Steger, 2003).

Trade openness and the integration of global markets is a natural phenomena that furthers individual liberty and material progress in the world, but problems in trade openness and integration markets are only realizable through political projects. Those must be prepared and utilized by the powers of local governments through social and institutional polices. Only strong governments are up to this ambitious task of transforming existing social arrangements; the successful trade openness of emerging markets depend hinges upon the intervention and interference of centralized state of power. Trade openness and integration of stronger markets relies on what is actually a contingent political initiative.

The Silk Road Contribution to Globalization

In the introduction section I have mentioned that one of first global trade elements could be seen as the Great Silk Road. In this section I review more closely the Silk Road’s impact on the cultures and nations levied in Central Asian regions, such as Uzbekistan, Kazakhstan, and Kirgizstan.

The Great Silk Road has been a main trade link during VI-XIV centuries between East and West, passing a number of countries among those geographical locations. Through the Silk
Road link, trade caravans delivering clothes, eastern goods, silks, rugs and spices to other countries. The Great Silk Road helped to establish towns and cities alongside, developing the cultural values of people living in these areas. Those towns developed science, education, and people who worked on agriculture, as well as various centers for national crafts, art schools, while also developing religion, madrasahs, palaces, and mausoleums. Traders, missionaries, and refugees who were traveling together brought along new religions, customs, products like glass, porcelain, soap, and gunpowder, and most importantly a different culture.

For more than thousands of years the Great Silk Road linked geographical locations in Byzantium, Arabia, Africa, Indian and Russia. It linked its people by means of peaceful activities such as trade, culture and spiritual exchanges that were unique to all mankind. The Great Silk Road routes started from a small town in China called Lan Chjou and stretched to Mediterranean ports which acted as a junction between the East and West. This old East-West trading trail transplanted culture, customs and religion from one center to the next and vice-versa.

For many years luxury goods besides silk were transported along Silk Road from Asia to West. New inventions like gunpowder and paper first travelled from China to Europe along the Silk Road with many other products. Shipped from China to east were, silver, gold, amber, carpets, perfume and ceramics from Europe, Central Asia, and other parts of world. Along with goods on the Silk Road, travelers carried their culture, art, philosophies and beliefs with them, such as Islam. These came into Central Asia; Buddhism came to most parts of China while Christianity and even Confucianism all had their itinerant proselytizers. Goods and ideas were exchanged in cities with exotic names like Antioch, Bukhara, Samarkand, Khiva, and Kashgar others. Due to the broad implication of the Great Silk Road for each of the Central Asian nations, I will mainly focus on the cultural impact of the Great Silk Road in the Uzbek nation.
The majority of populations in past centuries in that region were Uzbeks. Emperors like Tamerlane, Bobur and Samkand, Khiva, and Bukhara hons ruled most of the Asian continent during the Great Silk Road era.

When king Changes died in 1227, his empire was split among his successors. It took more than a century for a new unifying force to emerge in the person of a Central Asian named Timur from the city of Kish (the old name for Shahrisabz in present-day Uzbekistan). Seizing control of Turkestan, where he made his capital in Samarkand, Timur administered crushing blows to the nomads and led invading armies into Persia, southern Russia, India, and Asia Minor, defeating and capturing the Ottoman sultan at Ankara in 1402 (http://portal.unesco.org).

Moreover, non barrier trade and free immigration movement through the Silk Road impacted countries and achieved rapid growth in many civil areas of living. This can be seen in the population’s education by an increase of schools, and the development of agriculture, metal chasing, jewelry, painting and science of that period. To evaluate their impact I recommended reviewing Central Asia scientist’s achievements during the Great Silk Road period, and their contribution to global science.
One of most well-known scientists was Abu Arrayham Muhammad ibn Ahmad Al-Beruni. Born 973 in Khorezm, Uzbekistan, Al-Biruni is one of major figures of Islamic mathematics, physics, medina and history. Among a number of Al-Beruni’s achievements was mathematical major: theoretical and practical arithmetic, summation of series, the rule of three, ratio theory, algebraic definitions, and method of solving algebraic equations. His important contribution in geodesy and geography were introducing techniques to measure the earth and distance using triangulation. He found in X centaury the radius of the earth to be 6339.6 km (which is deviation is only 17.4 km compared to XXI centaury calculations); those scientific achievements were not obtained in the West until the XVI centaury.

Among a number of famous of Uzbek scientific people, another one is Al–Khorezmi. Due to his achievements and contribution to mathematical sciences in the modified form has turned into a nominal word "algorithm," and all over again meant a system of decimal item arithmetic’s. We have seen only two of a number of scientists who levied and contributed to worked sciences during the Great Silk Road era.

Researcher reviewed development of sciences at the Great Silk Road area because any achievement in sciences requires peace, the growth of that respective nation during a number of years, establishing libraries and gathering scientists to new achievements. During the Silk Road era we can review any other sectors of civilization in those regions and find other improvement and achievements. As a result of open trade policy, the impact of the Great Silk Road in the Central Asia region established peace, and contributed to the development of culture and science during a number of centuries.
CHAPTER II: LITERATURE REVIEW

Trade openness appears to have powerfully positive effects on the growth of an economy in the long run. To access financial sources abroad reflects the opportunities for any firm to obtain financing for sound investment projects; this particular result is highly supportive of the Rajan and Zingales (2003) simultaneity hypothesis.

Stock market capitalization and value traded respond positively to capital account openness but not at all to trade openness. Arguably the strongest result in terms of its support for the simultaneous openness hypothesis relates to the stock market capitalization indicator. Research findings suggest that trade openness on its own does not spur capital market development at all when the financial system is repressed. When the trade account is closed the effects of financial liberalization are almost negligible (Financial Development, Openness and Institutions: Evidence from Panel Data” (Badi Baltagi 2005)).

In trade openness, mainly three direction hypothesis influences are named, the law and financial development and the political economy hypothesis. Political systems or political orientations are unlikely to capture the intrigues that help to shape policies that affect financial development. Abrian and Mode’s (2006) research shows that political factors are not statistically significant determinants of the probability of financial reforms. Based on empirical, is whether the evidence is consistent with the economic implications of the ‘political economy’ hypothesis, such as:

a) Does trade and financial openness matter for countries (financial) development,

b) In what extent does the simultaneous opening of trade and capital accounts necessary for the financial development of country,
c) Is trade openness without financial openness conducive to financial growth?

Those hypotheses are based on Rajan-Zingales (2003) hypothesis, which means that if either trade or financial openness is not a statistically significant determinant of financial development, then the Rajan-Zingales hypothesis can be rejected. An important element of this hypothesis is the supposition that trade openness without financial openness may result in greater financial repression of new firms, as well as loan subsidies. Financial openness can be evaluated through capital flowing of foreign funds by large companies. Another hypothesis is based on trade exposure degrees, such as: the high degree of trade openness exposure which impacts the following consequences: total volatility determined externally, that is by international markets, will be a larger proportion of the economy accounted for by sectors oriented as export and import components. However the higher degree of trade openness, the smaller the proportion of domestic economic volatility determined internally; in other words non-export oriented and non-import competing sectors volatility generates shock in domestic markets. Most important of all, a lower level of volatility might ensure from a greater degree of trade exposure. The size of the market and the number of buyers and sellers present in that market is a fundamental determinant of market volatility. The greater the number of buyers and sellers, the greater the likelihood that shocks will be eliminated from one source by another. Moreover, with a greater number of market participants, smaller economies will be total volatility then any single participant market (Badi Baltagi 2005).

Greater trade openness entails a greater degree of domestic production and consumption oriented towards larger, more stable international markets and away from smaller, more volatile domestic markets (Rajan-Zingales, 2003).
Some hypotheses are based on a high correlation between government size and the trade openness of that country. This has been reviewed by Lesina and Spolaore (2003) and argues that the most open economies are also the smallest. Fixed costs and economies of scale in the supply of public goods might expect small countries to have a larger share of government GDP than big countries. This is important because small economies are simultaneously, for related reasons, the most open economies, and greater volatility in small economies may not be a function of international economic exposure. In other words, the international market increases economic insecurity via greater economic volatility and so the size of domestic markets should matter in these cases.

Those debates are partially over the distribution of the cost and benefits of globalization by newly entered former Soviet Union Republics. Globalization, which has been defined by Fischer as “The ongoing process of greater economic interdependence among countries, reflected in the increasing amount of cross border trade in goods and services, the increasing volume of international financial flows and increasing flows of labor” (Fisher 2003, p.3). Since 1950 the second era of globalization by Fisher’s definition is characterized much less by flows of permanent migrants than the first era of globalization, which is 1870-1913.

Research shows that a high openness trade index is good for economic growth but local economic social infrastructures, such as ruled “governance” or “institutional quality” have been big challenges and heavily argued in the development of economics. Those ideas have been discussed in “Institutions Rule: the Primacy of Institutions over Geography and Integration in Economic Development” (Rodrik 2002).

Also from the high trade openness index it can be seen how domestic producers utilize economics of scale and economic specialization. If specialization stimulates productivity growth
then growth can be dynamic rather than static. Romer (1990) suggested: openness trade gives domestic producers access to a wider variety of capital goods which effectively expands productivity and knowledge, by extending knowledge and greater differences in intermediate goods. From the Organization for Economic Co-operation and Development (OECD) countries having a trade openness policy impacted faster productivity growth than predicted in open trade economies. Empirical research shows that the total factor of productivity increases when a country trades more. Countries that have a high level of “social capability” implement technological development in order to be successful in more advanced economies, while countries below that level of development may have difficulties utilizing technology (www.oecd.org).

Countries engaged in more foreign trade have superior economic performance then countries with less in foreign trade. High trade openness might result in a combination of policy openness with easy access to foreign markets, and in a small internal market a positive association between openness is measured by economic growth (Dollar and Kraay 2003).

The open economics experienced fast growth in real GDP per capital over the period of 1970-1989. An analysis of 150 developing countries shows, measured by GDP per person shows that a 10 per cent point increase in trade integration raises the level of income per person by 20 per cent points, as measured by GDP per person (Frankel, Romer 1999). Another researcher found that constructing openness to analyses growth of per capital GDP shows doubling trade integration, while annual growth rates can be increased by 2.5 per cent points (Dollar & Kray 2003).

A few studies show that not all countries share equally in dynamic growth from trade: specialization in export primary products is bad for growth, but Sachs and Warner (1997)
confirm that open economics grow substantially and significantly faster than closed economics over the period 1960-80.

During the last few years a large number of countries, both developed and developing, through trade openness and the globalization of trade, have implemented significant capital market reforms. These include stock market liberalization, improvements in securities clearance and settlements systems, and the development of regulations. These reforms, together with improved macroeconomic fundamentals and related reforms, such as the privatization of state-owned enterprises and the shift to privately managed defined contribution pension systems, were expected to foster domestic financial development (Schmukler, 2007).

Cashin, P., and Pattillo, C. (2001) stated that, capital market reforms impact domestic market development through their impact on the stock markets internationalization process. Based on this argument, poor domestic environments persuade firms and investors to use international markets more intensively. A poor domestic environment has long been considered one of the main reasons for capital flight and greater use by domestic residents of financial services offered abroad. This may have significant implications for domestic market development, as the migration of trading to international financial centers can have negative spillover effects on local markets.

Torre and Schmukler’s (2006) research in the Latin American evolution of capital markets over the last decade shows that performance of local capital markets in many developing countries has been disappointing. Although a few countries experienced some growth of their stock markets, this growth was not as significant as the kind witnessed by more advanced nations. Other countries experienced an actual deterioration of their domestic capital markets.
Stulz (1999) research shows that stock market internationalization is a decision based on the government’s willingness to allow foreign investors to procure shares in the local equity market, and thus allow local investors to purchase shares of international equity markets. International asset pricing models predict that integration with other markets could lead to a reduction in the cost of capital. A number of papers, such as Henry (2003) assess the impact of stock market internationalization on the cost of equity capital, and found evidence of an increase in share prices of the liberalization and a reduction in the cost of capitals. Other papers analyze the impact of stock market internationalization on real variables, reporting significant increases in investment and economic growth following openness.

During the last years the financial globalization and flow of free capital among countries has been increasing. Moreover, financial globalization has been one of most important aspects of the global economy in the last few decades. Increase of export and import trade balance directly impacted each local currency; in addition, financial globalization has allowed currency movements out of boards. Of course currency movement cannot be viewed without an international investment position, since the shift of assets and liabilities are important derivatives of financial returns and exchange rates. As we know, there is a direct link between the financial and trade accounts of each country and the other side of this link is assets positioning and exchange rates of local currencies. Lane, P.R. and Milesi-Ferretti, G.M. (2006) stated that based on research into international financial markets, long-time debtors may require real depreciation in order to generate the trade surpluses that are the counterpart of sustained net investment income outflows.

The dynamics of net foreign assets and the exploration of the contributions of currency movements factors has been investigated by Tille (2003), such as how the impact of an exchange
rate depends on gross foreign asset and liability of holdings. These factors vary across countries depending on the level of development of country, size, export and import balances.

Lane (2002) considers problems that affect exchange rates and trade balances based on country conditions like trade openness, size and level of development. Important findings in the financial globalization are that the transfer problem is smaller in the absence of current and capital account restrictions, and that equity financing reduces the size of debt financing. In developing countries, immigration has a strong influence on the exchange rates in county. Country migration remittances are a significant source of external finance for local currency stability; in some countries it exceeds some capital sources, like foreign direct investment or foreign bank lending funds. Singer’s (2008) research shows that with immigrant payment in some countries, all capital flows in and moves counter-cyclically relative to the receiving country’s economy. As the result of immigrant transfers, cost increases on developing country monetary policy will adopt fixed exchange rates.

The empirical analysis of trade openness also measures the restriction of trade tariffs policy and barriers. Tariff rates could be deferent, but it can impact differently in different countries; higher tariffs on one product may have a lower benefit cost than lower tariffs on all goods. When a country is not wholehearted about its trade openness, a different of measurement problems accrues. Sachs and Warner (1995) built construction of a dummy variable that takes a value of one for each country that passes each of five tests, by breaking an average tariff rate below or higher percentages of reviewing countries. It showed in observations a successful way of measuring the overall importance of trade openness policy restrictions.

Some researchers, including Krueger (1978), argued that the major costs of protection are linked with macroeconomic disequilibria. This represents the problem of econometric efforts and
differentiates from the influence of macroeconomic stability and openness. As Alcala and Cincone (2001) described, the traditional openness measure has a drawback: productivity gains in traded goods rise in price of non traded services, which may decrease measured openness. More trade leads to growth which reduces measured openness, and ‘real openness’ is defined as imports plus exports as a share of GDP in purchasing-power-parity of currency. Measures of openness can be calculated as exports plus imports as a share of purchasing-power-parity GDP.
CHAPTER III: RESEARCH QUESTIONS AND HYPOTHESES.

During the last century, the trade openness of markets strongly promoted growth and positively impacted financial institutions in western and Asian markets, such as North America, Europe, and Asia. Liberalization of trade impacted the development of a global trade market.

This research paper’s objective is to identify major factors behind the changes in trade openness in Uzbekistan, Kazakhstan and Kyrgyzstan, so as to local equity markets and their local currency exchange rate gains in USD. The fundamental implication of trade openness in Central Asia countries are traditional variables of gravity models, such as: GDP, inflation, geographical location, unemployment, natural resources, and common border. All of these are significant explanatory variables. Researcher mainly questioned how the openness of their trade index correlated with their local stock market, currency volatility (exchange rate), and other key economic factors in country growth. Trade openness index how impacted on financial institutions of peoples in Central Asian countries also reviewed, in terms of consumers spending.

This research focused on the impact of openness trade index to Central Asian country-specific growth, stability inflation and stock market development. We consider the effect of openness of such areas as unemployment and geographical locations. By using panel data regression for different country samples, we employed regression techniques in order to provide comprehensive analysis across country effects for our variables on exchange rate and stock index volatility.

Researcher analyzed links between trade openness index and the stock market, as well as currency exchange rates against main currencies used worldwide such as the US Dollar (US$).
Moreover, researcher looked at how the geographical and political conditions of these countries impacted their respective immigration and labor markets.

In order to observe correlation trade openness index impact on stock market index \((STOCKI)\), we will look at the past four years’ historical weekly data analysis of each country national stock index with openness trade index. Moreover, we will consider other variables such as the Inflation rate in each country \((INFLAT)\), unemployment rate \((UNEMPL)\), trade openness index \((TROPIN)\), geographical locations \((GEOGRA)\), and political stability \((POLITS)\) as dummy variables in order to understand the impact of these parameters on our stock markets index, and the correction between each factors. The second aim of this research paper is a comprehensive assessment of correlation trade openness index and local currency \((LOC\text{EXC})\) exchange volatility using the same regional cross-countries analysis and by using weekly data for the duration of the last four years.

In this research question, I also review the benchmarking of countries in regions with high openness trade index and lower trade openness index. We will consider unemployment rate in each country \((UNEMPL)\), inflation rate \((INFLAT)\), trade openness index \((TROPIN)\), geographical locations \((GEOGRA)\), remittance inflow \((REMITT)\) as dummy variables in order to understand the impact of these parameters for our local currency \((LOC\text{EXC})\) exchange volatility correction between each variable and country specific effects.

Using cross-country time series analyses, it will help us to examine the relationship between trade openness index and financial and trade policy factors. Then I will present some cross-country empirical evidence on how the growth affects of openness trade index through the characteristics which we reviewed above, by analyzing through implying OLS relations between trade openness index and national stock market and local currency volatility.
The importance of this research topic highly contributed to the selection of regional countries, in order to analyze economic performance for the past four years, through stock index and currency volatility. Those countries selected are in the process of becoming members of the WTO and holding bilateral and multilateral talks with WTO member countries in order to meet organization standards, as well as global market trade and finance policy standards. As we already mentioned, those countries establishing free market tools in each sector of their economy and developing strong fiscal policies as well as monitory policies are all essential elements of further development through local macroeconomic and microeconomic key factors. With this research, I will look back and benchmark trade policy and financial institutional performance for the last 3-5 years by a correlation of their trade openness index. Gradually extending the openness index will avoid the shock of an economy based on all of the above referenced research. Moreover, I focused some of my conceptual questions about the relationship of the openness trade index and the growth of each country based on previous research results. It can be reviewed reasons why openness trade index may contribute to growth. Theoretical development over the past 20 years has raised the presumption that a high openness trade index contributes to growth, but empirical analysis has not been done regarding this region. I want to know how it will reflect the high openness trade index in Central Asian countries, based on specifications of economy, natural, social and cultural specification not yet performed.

In theory, the openness trade index is linked to relative international prices and reflects the international competitive economy. Other resources stated that its affect on growth can also be seen through different channels, such as: a) increase of investment, particularly given the importance of imported goods in developing countries, b) ability to expand new markets, c) higher real return to capital in unskilled labor-abundant countries that exploit their comparative
advantages, d) foreign capital inflow that may be attracted by an increased efficiency of investment, or larger market expansions, and e) openness to ideas and innovation generated by openness to trade (Ventura 1997). Researcher considered the trade openness index measure a feasible set for the purpose of measuring growth rates.

Measurement of Trade Openness Index

During the last two decades, a number of researchers observed a measuring of the trade openness index, important examples include Frankel and Romer (1999) and Dowrick (1994). In those researches, trade openness measures are included as additional explanatory variables in the regression model. Trade openness measurements typically used include either X/GDP, M/GDP or (X+M)/GDP in most cases described as trade intensity (TI). Moreover (Appendix Table-3.1) provides a summary list of several of the mostly common measures of trade openness which have been done during the last few years.

The most common measure of trade openness index is the ratio of actual exports plus imports to GDP ((X+M)/GDP). The figures in the numerator and denominator are in current prices, which is one difficulty with this measure. Over time, the prices of goods and services traded internationally and those of goods and services produced domestically may diverge because of changes in the exchange rate or other relative price movements. A second and more substantial problem is that this measure of openness depends on two quite distinct sets of factors: One set is the resource endowments, country size, tastes, technology, and other determinants of comparative advantage, and the other set is the levels of trade restrictions. The former are non-policy variables, whereas the latter are policy variables. A country may have a high trade ratio because it is small or has resources that are valuable to other countries or perhaps because its
residents have a preference for foreign goods, rather than because it has low restrictions on trade with other countries (Lloyd, MacLaren 2000).

Some researches such as Lemer (1998), approach trade ratios with a model that can be used to predict the pattern and volume of trade and then compare the actual and the predicted trade ratios. Reviewed equations could be used with number of variables, such as size. Trade openness measures can be used with various variables to determine how open an economy is to world trade and the income growth from inflow of that trade. Basically, the higher the index for particular countries, then the more open that country is to trade with other countries in the global market. In (Appendix Table-3.2) provides results of ranking three Central Asian countries by using trade and income data for the year of 2000, obtained by the Penn World Table (PWT) (Squalli. al 2006).

The empirical analysis of trade openness measures the restriction of trade tariffs policy and barriers. Tariff rates could be deferent but it can differently impact different countries; a higher tariff on one good may have lower benefit costs than a lower tariff in other goods. When a country is not wholehearted about its trade liberalizations, different measurement problems can accrue. Sachs and Warner (1995) attempt to build the construction of a dummy variable that takes a value of one for each country that passes each of five tests, by breaking an average tariff rate below or higher percentages of reviewing countries. This showed in observations to be a successful way of measuring the overall importance of trade openness policy restrictions.

As Alcala and Cincone (2001) described, the traditional openness measure has a drawback: productivity gains in the traded–goods rise in price of non-traded services may decrease measured openness. More trade that leads to growth reduces measured openness, and
‘real openness’ is defined as imports plus export as a share of GDP in the purchasing-power-parity of currency.

An alternative way of approaching the measurement of trade openness is by following a hypotheses (Squalli. al 2006) that is mainly focused on how important the particular economy is to world trade. In other words, failure of this particular country’s economy relatively impacts world trade through its openness to total world trade, seen by its relative share of international trade. This measure can be obtained by the relative world trade intensity equation model:

\[(1)\]

Where \(j = \{1, 2, \ldots, n\}\) set of countries (Squalli 2006, p.6).

The above equation represents countries’ total trade relative to total world trade. Latest research shows that countries with a low trade openness index (based on most common measure ratio of actual exports plus imports to GDP ((X+M)/GDP)) may have heavy trade with the rest of the world. For example it can be the USA which large trading countries can’t have a high trade openness index based on the (X+M)/GDP method of calculation. USA and Germany are very large trading countries in the global market and only the USA shares between 10 per cent to 17 per cent of world trade and openness economy but this is based most commonly on a measure ratio of actual exports plus imports to GDP ((X+M)/GDP). Because of this, the USA can be described as closed country (Squalli 2006).

In this research paper, the researcher used trade industry measurement methods in order to measure trade openness for Uzbekistan, researcher used trade industry measure methods and for other countries (www.weforum.org).
Geographical Locations Impact on Trade Openness

With no direct access to the sea and to the world’s major markets, transformation and economic development have been particularly challenging for landlocked countries. In today’s globalized world, where international trade and transport play an increasingly vital role, this been a major disadvantage for landlocked countries. Each Central Asian country has put great effort into expanding the openness of their trade regimes and upgrading physical infrastructure, such as implementing TRASICA transportation projects. Despite these efforts, market access for Central Asian landlocked countries is still in a weak position by bottlenecks to trade, such as non-transparent trade and customs procedures, duplicated inspections, inadequate fees and charges, and poor inter-agency coordination as well as regional infrastructure. In this section we review one of the main critical elements for each country in the Central Asian region, looking at how being landlocked affects the trade policy of countries in that region. Uzbekistan, Kazakhstan and Kyrgyzstan are all located in regions without access to the sea, and must transit most of their exports and imports across foreign territories. For all landlocked countries in the world, the average distance to the closes sea port is 1,370 km. Most of the Central Asian countries belong to the most remote regions of countries among all landlocked countries (Table-1).

Table 1  Distance from the landlocked countries to their closest seaports

<table>
<thead>
<tr>
<th>Countries</th>
<th>Km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kazakhstan</td>
<td>3750</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>3600</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>2950</td>
</tr>
</tbody>
</table>

Source: ESCAP secretariat.

Central Asian countries: Uzbekistan, Kazakhstan and Kyrgyzstan used to play an important role in international trade. By linking China and Roman Empire, the Silk Road passed through the Central Asian region and was an important trade route between the East and the
West. At that point in time, the sea route connecting the East and the West was not yet discovered. These Central Asian countries are over 3800 km from the nearest open sea port, making them the most remote of all landlocked countries in world.

Despite achieved macroeconomic stability, Central Asian countries still face challenges in finding comparative advantages and a suitable niche in world markets. With the rapid economic growth in China and the recent economic rebound in Russia, Central Asian countries: Kazakhstan, Uzbekistan and Kyrgyzstan should be naturally positioned to take advantage of increased demand from these large neighbors. The land route between East Asia and the European Union (EU) can be a potential trade corridor that could remake those countries as an important world trade route. Trading with larger neighbors presents a great opportunity for a country to enter into a stage of potentially strong economic growth, when the trade patterns between the countries and its neighbors are largely complementary.

In addition, Central Asian countries are transforming from centrally planned to a free market based system with a high trade openness policy. Such a transformation requires tremendous political, economic, social, and infrastructural challenges. These challenges impact macro and microeconomic difficulties as well as legislative, monetary, financial and tax systems rebuild from the bottom up. As we see from:
Landlocked countries can be divided into another sub-category of countries called “doubly landlocked,” in which such a country has to cross at least two boarders to reach a coastline. There are currently two countries in the world with double landlocked status: Lichtenstein in Central Europe and Uzbekistan in Central Asia. Uzbekistan has borders with Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan, with those countries also being landlocked countries. Moreover, the closest seaports for these countries would be Caspian Sea ports, where transport ships can reach the Sea of Azov by using the Volga-Dan Canal and then go onto the Black Sea and Mediterranean Sea and ocean ports.

As we see, geographical location and being landlocked as a county has a direct impact on the export/import balance, as transportation and tax costs add onto the cost of goods and commodities. Absence of direct access to sea ports imposes additional barriers and costs for international trade for each Central Asian country. Remoteness from trade centers, being landlocked and surrounded by high Tien-Shan Mountains add to increased transportation costs, difficult cross-border migration, and poor infrastructure development (Gallup et. Al.1999). Empirical research in landlocked countries shows that a median landlocked county has a
shipping cost 50 per cent higher than similar coastal countries (Limaö and Venables 2001). The largest trade proportion of all Central Asian countries consists with former Soviet Union states. The dual roles of Russia and China as the two biggest trade partners are gradually increasing both export and import trade balances with each of these Central Asian countries we are reviewing.

Commodity materials such as gold, cotton, oil are main export components for countries in the region, although import components are diversified in areas of machinery, heavy industry or energy sources. The concentration of exports on a few primary commodities makes these countries extremely vulnerable to changes in global market prices for those raw materials (Elborgh-Woytek 2003).

Kazakhstan is the 9th largest country in the world and the largest in the Central Asian region. This country is considerably rich with mineral and oil resources. Kazakhstan’s economy is heavily dependent on a few commodities and faces the daunting challenge of diversification. Oil extraction and oil-related construction, transportation and processing accounted for 16.6 per cent of GDP. Fuel and oil products made up 69 per cent of Kazakhstan exports. Another significant export product in the country is ferrous and non-ferrous metals. While the export of extractive commodities increased considerably during the last few years (2006-2008), the share of manufacturing exports fell to half of their total in 1999.

Kyrgyzstan borders with Kazakhstan in the north, Uzbekistan in the west and China in the south and south-east. Kyrgyzstan has 6.3 million people (2007). The country’s economy has gradually stabilized in recent years. Growth has occurred in the traditionally strong agriculture and mining sectors. In addition, healthy growth has occurred in the construction and power sectors. The Kyrgyzstan economy is still predominantly agricultural, although services are
becoming an increasingly important component of GDP. The main agricultural exports are cotton, wool and meat. Industrial exports include gold, mercury, uranium and electricity. Kyrgyzstan’s most valuable asset is water and it exports hydroelectric power, although Kyrgyzstan is still heavily reliant on oil and gas from Kazakhstan and Uzbekistan for economic energy needs, especially in times of drought.

Kyrgyzstan was the first Central Asian country to join the WTO (1998). It is eliminating tariffs and other barriers and promotes trade without discrimination, because Kyrgyzstan is landlocked and heavily dependent on trade with and transit through neighboring countries; its national trade facilitation policy should be in congruence with any regional initiative or grouping that implements similar cross-border trade facilitation measures. Transportation has been a key industry in Central Asia. Most of the transport roads in Kyrgyzstan are based on routes of the ancient Great Silk Road, which was the main transportation and communication link between China and Europe. Kyrgyzstan benefited from the development of major towns and cities along this route, which goes through neighboring countries such as China, Kazakhstan and Russian to reach sea ports.

Based on UN calculations, transport costs for transit through Kazakhstan could cost as much as US$ 1,500 in transit fees for each truck. It is hoped that, with the accession of Kazakhstan and Uzbekistan to WTO, the fees could be reduced to 10 per cent of their current level. Similarly, passage through Uzbekistan requires visas for the truck drivers. Moreover, truck drivers are required transit cards for passage through Kazakhstan. Although bilateral and regional agreements are in place, the practice does not always conform to the spirit of the arrangements (www.undp.org.).
One of the complex issues in Central Asia region is the transportation and transit of goods. In July 2003, an agreement was reached by the heads of the Kyrgyzstan, Russia and Kazakhstan on a common procedure for security deposits for in-transit shipments.

All Central Asian countries are part of the TRACECA project. Established by the European Commission, it’s goals are to support Central Asian countries by enhancing their access to European and global markets through alternative transport routes and linking the TRACECA route with trans-European transportation networks (www.undp.org). Uzbekistan is one of two double-landlocked countries in the world. This means that market access, trade facilitation, infrastructure development and regional cooperation are all key to Uzbekistan’s development. Agriculture is a mainstay of their economy, which also produces oil and gas, gold, industrial products, and processed food. Uzbekistan is also one of the world’s biggest suppliers of cotton. Neighbors and other transit countries in the region play an important role in Uzbekistan foreign trade, due to their geographical locations. Uzbekistan is heavily dependent on the trade and transit conditions for transportation linkage (www.undp.org).

Impact of Trade Openness on Cultural Dimensions

Trade openness and market integration will exam cultural dimensions of each country. Trade openness will impact the intensification and expansion of cultural flow across the globe. Obviously “cultural” is a very broad concept, one that is frequently used to describe the whole of human experience. In order to avoid the problem of overgeneralization, it is important to make analytical distinctions between aspects of social life. For example when we talk about economic implication we mean production, exchange rates, increase of GDP or local economy consumption of commodities. When we talk about political implications, we mean practices
related to the generation and distribution of power in societies and the role of political parties. If we talk about culture we are considering the symbolic constructions, articulation and historical values of nations and languages.

Trade openness impacts a network of cultural interconnections and interdependencies, and it has been suggested that cultural practices lie at the very heart of contemporary globalization. Trade openness in Central Asian countries may not start with the dissemination of rock ‘n roll, McDonalds, or American football. But still the volume and extent of cultural transmissions in the contemporary period have far exceeded those of earlier years. Assisted through the World Wide Web and other new technologies, the dominant symbol of systems of meaning of the age - such as individualism, consumerism, religious discourses -circulate more freely than ever before. As ideas can be more easily and rapidly transmitted from one place to another, this change is seen in the management styles of leading business companies in Uzbekistan and Kazakhstan. Business management uses a more western style of management style approach with clients and partners.

Today, cultural practices often run off fixed localities such as towns and nations, and eventually acquire new meaning in interactions with the global market. Does trade openness make people in Central Asia want to be like to people living in other parts of world? This question is most frequently raised in discussion on the subject of the impact of trade openness on cultural and national values. Some scholars argue that we not moving towards a cultural rainbow that reflects the diversity of the world existing cultures, but rather witnessing the rise of increasingly homogenized popular culture, mostly the by western culture industry, seen in Hollywood, London or Milan fashions. As evidence for their interpretation, these commentators point to the proliferation of Nike training shoes, New York shirts with “Love NY” sign, US
baseball caps, or other elements of westerns culture. The opponents of cultural homogenization argue that western lifestyles are overwhelming more vulnerable cultures, such as Asian countries, which have different cultural and religion histories.

Some scholars argue that cultural connectivity generates more similarity and they consider this outcome to be a good thing for some countries in the region. For example, more and more young couples in Central Asian countries are taking honeymoons right after their wedding and traveling to other countries, adapting a style already seen in Western lifestyles. Another example can be found in younger families trying to be separate from their older parents, when traditionally Central Asian culture has been structured as a family-oriented society.

With an increase of trade openness, the global cultural flows of our time are generated and directed by global media empires that rely on powerful communication technologies to spread their message. This can be seen in almost every small and big city region by visiting bars, restaurants and night clubs. Global culture TV shows and advertisements shape people’s identities and the structure of desires around the world. TV programs increasingly turn to world audiences, presenting American celebrities like Jennifer Lopez, Britney Spears and others, while people all over the world are watching with interest; numbers suggest that people are watching TV programs more than ever, year after year. For example, in Central Asian countries each year local TV stations (commercial and non-commercials) purchase MTV, Eurovidinya, and worldwide musical shows based on an increasing local demand and interest based off of TV broadcast questionnaire results.

During last year’s mainly developed two hypotheses among scholars: one of is defends that clear correlation between the growing global significance of a few languages-particularly English, Chinese, German, and Spanish, and the declining number of other language around the
Another hypotheses suggests that the globalization of languages does not necessarily mean that our descendants of languages does not necessarily mean that our future generations to utilize only a few languages.

This tendency can be observed in Central Asian countries with an increase of openness in a number of countries, such as Uzbekistan, Kazakhstan and Kyrgyzstan, who opened branches and campuses of USA and UK universities and educational institutions based on business demand for new style professions. For example, Kazakhstan opened The Kazakhstan Institute of Management, Economics, and Strategic Research, which was formally, established 1992. Uzbekistan opened the Westminster International University in Tashkent in 2002, and the Management Development Institute of Singapore opened in Tashkent in 2007. Kyrgyzstan in 1999 established the American University in Central Asia in Bishkek. All of those educational institutions hold classes in English and award Western degrees. Also, it can be observed that unemployment among young generation’s increases among those who do not have any language or cross-cultural experience in Central Asian job markets.
CHAPTER IV: METHODOLOGY

Data Collection and Description

Researcher reviewed the last four years worth of weekly data cross-country (for Uzbekistan, Kazakhstan, and Kyrgyzstan) analysis for unemployment percent in each country, Gross Domestic Production (real, percent), Inflation rate, Import and Export turnover, and local market stock indexes. It is important to admit that during data collection some adaptations were employed, such as in the case of Uzbekistan, whose trade openness index was only available for the year 2007, giving data on where Uzbekistan stood in relation to worldwide trade openness index surveys. Therefore the researcher established import plus export over GDP methods of calculations (Berg, Krueger 2003) in order to calculate the last three year period by accepting one measure of trade openness for country data collection. Total observation 418 for the Uzbekistan, Kazakhstan, Kirgizstan to evaluate the impact of trade openness to local stock markets and currency exchange rate, we hold 627 observations based on nine variables from on weekly data. Some variables for instance GDP, Import, Export, Inflation rate Unemployment rates are based on specification of Central Asian countries publically available only on a quarter basis, therefore the researcher uses Arithmetric Mean Interpolation methods in order to calculate a new point between two existing data points. Researcher used interpolation by taking the arithmetic mean of the value of two adjacent existing points to find the midpoint. This will give the same result as a linear function evaluated at the midpoint.

The below equation demonstrates an arithmetic mean interpolation, where \( n \) distinct numbers \( x_k \) called nodes and for each \( x_k \) a second number \( y_k \), we are looking for a function \( f \) so that
A pair \( y_k x_k \) is called data points where \( f \) is called interpolate for the data points. When the numbers \( y_k \) are given by a known function \( f \), we sometimes write \( f_k \) (Cheney 2002).

Based on equation (2) we are able to interpolate our quarterly data of instance GDP, Import, Export, Inflation rate Unemployment for all researching countries. During data collations, researcher had to accept some changes in empirical search due to the unavailability of existing data at the Kirgizstan stock market KSE index on a weekly basis. Through stock index sites (www.kse.kg) and other publicly available sites, KSE index is given with discrete historical data for the last 156 week period, which was not acceptable in our researches. Moreover we found that during the last 3 months of 2009, KSE stock index stayed at an unchanged (93.14 point) level. Through local press I was not able to find any reason for the stock index behavior. Therefore we focused in further empirical analysis using only the Kyrgyz local currency exchange rate volatile with trade openness index during the last 156 week period. During data collection the researcher came across Kirgizstan’s unemployment rate, where from 2005 unemployment rate changes 2.56 times compared to the last quarter (from 7.2 percent to 18.4 percent). Due to unemployment data and regulation and rules that were not available online, our investigations stayed unsolved, although in the summer of 2004 parliament accepted some changes in labor regulation and social benefits law which may have an affect on calculation and statistical (Slava Kyrgyzstani 2005).

In order to understand the relationship between explained variable Y and an explanatory variables Xi, we have to apply a multi-regression model. In a Multi-regression model we can
study the relationship between $Y$ variable and a number of our explanatory variables $X_1, X_2, ..., X_k$

$$Y_i = f(X_1, X_2, ..., X_n)$$
$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + u_i$$
$$i = 1, 2, ..., n, \hspace{1cm} (3)$$

The error of $u_i$ is due to measurement errors in $Y$ and errors in the specification of the relationship between our $Y$ variable and $X$ variables (unemployment, interest rate etc.); we assume that our measurement error $u_i$ has to meet following requirements:

a) Zero mean $E(u_i) = 0$ for all $i$

b) Common variance, $\text{Var} (u_i) = \sigma^2$ for all $i$

c) Independence, $u_i$ and $u_j$ are independent for all $i \neq j$

d) Independence of $X_j$. $u_i$ and $X_j$ are independent for all $i = j$.

e) Normality. $u_i$ are normally distributed for all $i$. in conjunction with assumption 1,2 and 3 this implies that $u_i$ are independently and normally distributed with mean zero and a common variance $\sigma^2$. (p65. Maddala 1992)

Under first four assumption we can see that estimators

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + \varepsilon_i \hspace{1cm} (4)$$

$\beta_0, \beta_1, \beta_2, \ldots, \beta_k$ are unbiased and have minimum variance among the class of linear unbiased estimators. In addition, we assume that $X_1, X_2, ..., X_k$ are not deterministic linear relationship among them. When we analyze the effect of several variables $X_1, X_2, ..., X_k$ on $Y$ we have to distinguish between joint effects and partial effects. In order to analyze the
correlation of trade openness index’s impact on stock market index (STOCKI), we will look at the past four years of historical weekly data analysis from each country’s national stock index with openness trade index.

\[ STOCK = \beta_0 + \beta_1 INFLAT + \beta_2 UNEMPL + \beta_3 TROPIN + \beta_4 GEOGRA + \beta_5 POLITS + \varepsilon \]  \hspace{1cm} (5)

Moreover we will consider other variables, such as the Inflation rate in each country (INFLAT), unemployment rate (UNEMPL), trade openness index (TROPIN), geographical locations (GEOGRA), political stability (POLITS) as dummy variables in order to understand the impact of these parameters on our stock market’s index and correction between each factors.

As a second aim of this research paper is the comprehensive assessment of the correlation of trade openness index and local currency (LOCEXC) exchange volatility, using same regional cross-countries analysis and by using weekly data for the duration of the last four years.

\[ LOCEXC = \beta_0 + \beta_1 UNEMPL + \beta_2 INFLAT + \beta_3 TROPIN + \beta_4 GEOGRA + \beta_5 REMITT + \varepsilon \]  \hspace{1cm} (6)

In this research question we also review benchmarking of countries in regions with high openness trade index and lower trade openness index. We will consider unemployment rate in each country (UNEMPL), inflation rate (INFLAT), trade openness index (TROPIN), geographical locations (GEOGRA), remittance inflow (REMITT) as dummy variables in order to understand impact of these parameters for our local currency (LOCEXC) exchange volatility correction between each factors, \( \varepsilon \) (time unobserved) and country-specific effects.
Stock Indexes: KASE, KSE, TASIX

One of the main functions of the Uzbek stock market is to create a business opportunity for small investors. In fact, the Uzbekistan government at times borrows money to finance infrastructure projects from the stock exchange as well. One of the important indicators of any stock market is market turnover, which will affect the growth of the stock market; if we benchmarked with other markets, such as is relatively small in Uzbekistan-about 5per cent - whereas the same indicator is about 280per cent in South Korea. During the last few years Uzbekistan has been implementing an import substitution policy by aggressively protecting domestic firms through a high rate of tariffs on imports, which can be seen in the figure below.

Figure 3  Transition indicator

![Transition indicators, 2008](image)

Source: ¹ EBRD Country Fact sheet, 2008

This and other reasons impact the flow of FDI to Uzbekistan by decreasing and losing attractiveness in comparison with other countries in the region, such as Kazakhstan and Russia. Uzbekistan’s foreign economic policy mainly focused on the protection and promotion of domestic producers. This policy has had other negative implications, such as a reduction of

competition, limited financial resources, and in some cases it has created corruption as well. At the Uzbekistan equity market, companies do not retain earnings in market institutional investors, such as insurance companies, investment funds and pension funds. These originate funds, provided to companies that do not have a sufficient flow of retained earnings.

Until 2008 the Uzbekistan inflation rate was higher than Kazakhstan and Kyrgyzstan, so all investors tended to keep their money in less risky markets. Another important factor is that the size of the market also plays a big role in determining its long-term capability. Based on stock index TASIX, we can see that development of the Uzbek stock market depended on the level of macroeconomic factors, as well as the assets accumulated by institutional investors. Based on (Appendix Table 4.1) we can see that as S. Claessens (et al. 2000) research shows, Uzbekistan has one of the lowest ratings in business shareholder protection among other developing countries. This has direct implications for the challenges investors may face in daily business.

During 2002-2003, the volume of turnover at the UZSE boomed rapidly, and in 2005 it experienced stagnation (see Figure-4.3). The volume of turnover that took place last year is greater than the sum of the total amount previously traded during the past four years (see Appendix Table-4.2).
The Appendix Table-4.2 shows that the number of stock-issuers increased from 166 to 392 units during the past three years, while trade-turnover was increased by USD 1834.9 million. It doesn’t mean that this is all due to the strength of potential issuers getting bigger or foreign investors taking part in stock exchanges, but there is other evidence related to the amount of inflation and bankruptcy. In the past, trading was forced in order to pull the securities market forward, to let people know that another aspect of allocating and distributing excess wealth existed, and it was used to advance projects (Security Market in Uzbekistan 2007).

During 2008, the secondary stock market share of secondary securities has increased from 75.2 percent to 83.7 percent, compared with that of last year. The rate has also doubled compared to 2007. Analysis of Corporate stock market exchange during January 2007 showed that the number of stock market participants was 2017, holding 2.98 billion Uzbek sums, as illustrated Figure-4.3a and 4.3b. These show that the number of participants declining by 1.47 percent quarterly from the beginning of 2005, but for the same time period the issued stock volume has been increasing by 3.98 percent on average.
During recent years with an increase of trade balance, securities markets started to grow; the amount of bonds and stocks in 2007 was UZS 354.8 billion Uzbek sums, which is almost equal to the turnovers during the past three years (UZS 356.03 billion). The increases in the liquidity of the secondary stock market performance is particularly important; if increased liquidity was not positive then the issuers would have to increase their rate of return, or create problems for investors selling and buying in that market. In Uzbekistan, rating a particular stock or stock issue is practically difficult. The first reason is that the number of stocks available and quoted is limited, whereas prices observe high volatility, an unexplained objective factor. Second, it is very hard to get reliable information about the issuer, since there is no formal financial information available about them. The development of secondary markets varies region to region in the republic; information transparency is one the main reasons for inequality in their development (Security Market in Uzbekistan 2007).

Figure 5  Stock market turnover (1999-2006, unit: UZS billion)

Source: www.uzse.uz

Comparing between Kazakhstan and Uzbekistan we can see that the secondary markets in Uzbekistan are quiet quite low and investors, participant organizations, issuers, and controlling
organizations, such as the ministry of finance and the Uzbekistan central bank, provided information transparency and liquidity.

Country should promote direct foreign investment and support the establishment of joint-ventures, so that at least advanced managerial skills could be obtained from outside sources. For Uzbekistan, the “First-mover advantages” (Kimberly C. G. et al. 1999) didn’t work, due to the fact that the country established strict exchange rate and foreign economic policies, to protect their domestic market’s hold and control of the exchange and inflation rates.

Figure 6  TASIX Stock Index

![TASIX Stock Index](https://www.uzse.uz)

Source: www.uzse.uz

In the finance sector of Uzbekistan’s economy, the Tashkent Stock Exchange plays an important role. At the Stock Exchange, market trading of Uzbekistan company stock and other securities are performed. If we look closely at Uzbekistanis foreign policy compared with the TASIX stock index, we can find a reflection of both areas of government policy.

After 2005 Uzbekistan broke business and political ties with the European Union countries and the USA, so their trade balance and stock index dropped to low levels. What is interesting is that when Uzbek-USA and EU relations improved with a new administration in the US White House, the Uzbek stock index moved slowly back up to higher levels; this can be seen as a justification of doing business locally and internationally, through an increase of trade.
From the historical chart of TASIX (Figure 4.6), we can see that by the end of 2008 and early 2009, there were two political visits to Uzbekistan by the EU High Commissions and US State Department. The outcome of this meeting was reflected in the stock market index by changing to positive side 9090 point bases. In order to analyze this observation, the researcher performs a regression model analysis; please see the “Empirical examination” chapter.

The main markets where stock exchanges take place are the bank capitals markets, which are composed of a leasing market, foreign currency market, and insurance and pension funds markets. Free movement of capital among these markets depends on 1) market rate of return; 2) market tax rate; 3) the level of risk and rate of lost; 4) market structure and level of freedom in joining; 5) the level of information transparency about that market (TASIX annual report).

Therefore, due to lack of information about the Uzbekistan stock market, empirical analysis has not been performed by the academic world. One of our main purposes in this thesis research is to shed some light on issues such as these that have never been covered.

Calculation of the Kazakhstan Stock Index (KASE index) based on their liquidity degree index became reasonable to apply to shares from a list in the same trading mode. A trade’s method application established values not only among the most popular listed shares, but also those shares which were included into the representative list for the KASE index calculation. (www.kase.kz, annual report 2007).
KASE index is based on the trade statistics for the established period, by applying two indicators: the trades volume (the new indicator, reflecting the total gross volume of deals) and exchange turnover. The two indicators may differ on repo and currency swap transactions markets, as each such transaction consists of two deals - opening and closing. Calculation of the exchange turnover in KASE is based on the Kazakh Tenge (local currency) with further re-calculation into the US Dollar equivalent. This is intended to consider all volumes of repo and currency swap transaction deals closing; given that this will be considered only those deals which fall into the reporting period. The calculation methods are aimed at bringing the KASE data reporting in line with standards more frequently used in international exchange practice. Research shows that KASE implemented exchanges often used at publishing statistics in the trades’ volume. (KASE annual report 2008)
Figure 8  KASE Turnover and GDP

![Graph](image.png)

Source: [www.kase.kz](http://www.kase.kz)

Figure-9 reflects the impact of global economic recession in 2008, the inflation surge impacted practically in exchange market sectors and primarily on the money market. In August 2008, rates on the "automatic" repo "overnight" transactions increased up to the quadrennial maximum level. More long-term money indicators increased in price during the second half of 2008 by 750 bp, up to 11.8 percent of the annual percentage rate. Under the influence of panic moods, formed in the population by messages of crisis considering the rapidly growing deficiency of the current Kazakhstan account, the US dollar rate increased during two weeks of August from 123.51 to 126.30 tenge. But the Kazakhstan National Bank had a dampening influence on the market that restored the previous exchange rates. The market capitalization decreased from USD 70 bn. in July 2008 to USD 52 bn. in December of the same year. The Index fell more than 15 percent during the same period of time (KASE annual report 2008).

The financial year 2008 became crucial due to the world economic events in the USA and Europe, especially defaults on the mortgage sector in USA causing a worldwide panic, which served as the start of a lingering financial crisis. Immediately foreign investors concerned
with the high dependence of Kazakhstan banks on foreign funds, with the fall of oil and other commodity prices in the global market, as well as with their assets quality, started closing long-term positions on Kazakhstan securities, having thereby caused a collapse of the prices of shares and bonds of local banks abroad and in Kazakhstan. The market breakdown was somewhat impeded by investors’ enthusiasm, who bought up the fallen price shares. Of course they failed to reverse the world tendency of the "flight to the quality", but their actions perceptibly stabilized the Kazakhstan market. Due to problems in the banking and construction sectors of the country, balance of payments relating to the situation of world rating agencies responded to the economic downturn in Kazakhstan, through a country credit rating decrease and a decrease in ratings of leading Kazakhstan companies. These actions intensified disturbances on the Kazakhstan stock market, which resulted in shares of market capitalization decrease on KASE in 2008, and the KASE index growth did not exceed 9.1 percent. At the Kazakhstan stock market, leaders in the banking sector fixed the largest losses such as:–Kazkommertsbank JSC, Halyk Savings Bank of Kazakhstan JSC and Bank Turan Alem JSC – the decline made up 46.1 percent 18.6 percent and 47.3 percent accordingly. Given this, the financial sector equity instruments accounted for 83.4 percent of the turnover (in 2007-76.2 percent) and 49.11 percent of the exchange shares market capitalization (in 2007–34.0 percent). Growing prices for energy resources such as oil and gas made shares of oil-production companies the most attractive in the KASE stock market for investments. Common shares, such as the KazMunaiGas Exploration Production JSC, became the liquidity leaders in 2007, having left behind common shares of Kazkommertsbank JSC and Bank CenterCredit JSC (KASE annual report 2008).

Corporate Bonds Market: The Corporate Bond Market at the KASE, based on the above-mentioned crisis, influenced the shares market and became the main peculiarity of this past year.
In August 2008, the exchange transactions volume was minimal. Increased inflation rate and risks forced bonds buyers to hope for low prices, whereas sellers set hopes upon shortness of the crisis. At the last business quarter of the year, corporate bonds exchange turnover had low volatility levels. Based on that, primary market performance can be predicted to be more active in the following business months and local banks which lost refinancing from abroad will look to borrow in local investment market. However, the current inflation level did not allow doing this at an acceptable price (KASE annual report 2008).

Figure 9  Market Capitalization of KASE (USD bill.)

Source: www.kase.kz

Government Security Market: During last year’s recession, the Government Securities markets in Kazakhstan underwent significant changes due to the above-mentioned global impact on the local economy and stock market. During the first half of 2007, the National Bank started issuing discount bonds, the life of which exceeded the accustomed 28 days. However in August 2008, the situation had cardinally changed. The Central Bank of Kazakhstan shifted pro-rates towards the support of liquidity in the financial market. The implication for the National Bank of Kazakhstan was to repay its bonds before maturity time by re-purchasing them on the secondary market (KASE annual report 2008).
Foreign Currencies Market: As in previous years, this exchange market sector was represented by the US dollar turnover by more than 99.9 percent. This currency market’s condition on KASE before the end of the first decade in May 2007 had been formed under the influence of traditional factors. Among them, the significant volume of foreign currency borrowings by Kazakhstan banks abroad, with a further partial conversion on the country’s internal market, and selling currency earnings from exporting enterprises on the KASE.

The world stock market’s collapse formed the additional demand for USD on the KASE currency floor among non-residents, closing positions on the Kazakhstan securities market. Beginning the second decade of May 2007, the market traditionally started making adjustments, releasing itself from the excessively sold US dollar, which occurred during the budget payment results of 2006. Speculations of traders were successful against the background of the need to repay international sovereign bonds, the record high volume of conversion by the National Bank of the National Fund tenge resources, and the needs of banks in the USD currency to serve as external liabilities. The adjustment went so far that it simulated the global market turn and resulted in the fact that the National Bank had to damp the market in the middle of July. In fall 2008 the National Bank of Kazakhstan published "On Changing Minimum Reservation Requirements Norms", which informed its intention to introduce new reservation rates, including a 10 percent rate on external borrowings, and liabilities on any debt securities. The global crisis escalation among the public in Kazakhstan caused many people and legal entities to withdraw their deposits from their bank accounts, trying to convert received money into US dollars or euro. The change of rates within the country dropped from 120.79 Tenge/USD to 151.35 Tenge/USD (KASE annual report 2007-8).
KSE–Kyrgyzstan Stock Index can’t reflect reliable historical data, as the information is not available for researching discrete amounts during the last four year period; moreover, during the last three month period the KSE stock stayed at an unchanged level. This type of staged stock market cannot be fully understood by academic researchers, due to the lack of information which makes it impossible to perform empirical tests.

Macroeconomic Factors and Trade Openness.

The global downturn is now affecting Central Asian countries such as Uzbekistan and Kazakhstan, which are the main oil and gas exporters in the region, as well as oil and gas importers such as the Kyrgyzstan Republic. In this region, each country has deferent macro and micro economic indicators, such as per capita GDP, which ranges from $2000 in Kyrgyzstan, Uzbekistan $2200 to $10,400 in Kazakhstan (www.indexmundi.com). Although linkages to international financial markets are relatively weak in most countries, the global economic crisis has caught up with the region via falling commodity prices and lower export demand and remittance inflows, especially from Russia. (www.imf.org, a press release).

The Russian economy is now sharply slowing both trade and remittances, but the Russian Federation remains a key economic partner for Central Asian countries. In the later months of 2008, trade flows with Russia have declined, financial linkages have increased, and a number of countries in the region are heavily tied with economic and industry links with Russia. Falling commodity prices in the global market negatively impacted the regional economy due to the fact that most of the trade balances of those countries have been based on the export of commodities to the global market. Moreover, oil and gas exporters in the region (Uzbekistan and Kazakhstan) are being affected by lower world oil prices, although they may use their accumulated reserves to
moderate the downturn for a certain period while prices remain low in the global market. Kazakhstan has accumulated financial assets during the boom years which it can draw upon to provide a fiscal stimulus to domestic demand and counteract the decline in economic activity. Only the Kyrgyz Republic, with gold as its main export commodity and gold prices up, is maintaining high export receipts.

In recent years in Kazakhstan, pressures in the non-oil private sector have increased, with national bank systems being challenged to secure funding and keep satisfactory levels of liquidity, which affected credit availability and growth prospects. Furthermore, this may also put pressure on the Kyrgyz Republic’s banking system, which is one-third owned by Kazakhstan banks. Kazakhstan is also a destination for migrant workers from countries in the region, so the slowdown in Kazakhstan will contribute to a lower income of the other countries in the region.

Table 2  IMF Growth Projection for Central Asia: (Real GDP, percent change)

<table>
<thead>
<tr>
<th>Countries</th>
<th>2008</th>
<th>2009 (Proj.)</th>
<th>2010 (Proj.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uzbekistan</td>
<td>9.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>3.2</td>
<td>-2.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>7.6</td>
<td>0.9</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Source: www.imf.org

The impact of the global economy downturn can be seen in regional GDP growth rates that dropped from 6 per cent in 2008 to 2 percent in 2009 (proj.), deepening the global crisis that hit the region hard (www.imf.org) according to the latest regional forecast.

Due to the global financial crisis, economic conditions in Central Asian countries-comprising Kazakhstan, the Kyrgyz Republic and Uzbekistan- have declined sharply. Countries hit hardest by the crisis are those that are very reliant on Russia or have large external financing
needs. The slowdown in Russia is hurting growth via trade and remittance channels, spilling over to a reduction in domestic demand.

As a result of these large external shocks, the pace of economic growth in the region is already estimated to have slowed considerably to 6 percent in 2008, down from 12 percent in 2007. It is projected to fall well below 2 percent in 2009, with risks clearly on the downside, particularly if the situation in Russia worsens. Meanwhile, the drop in growth and lower commodity prices are dampening inflationary pressures across the region (www.imf.org).

The difficulty of obtaining foreign capital has a large impact most easily observed in Kazakhstan, because of their large share of private external financing in their banking sector.

Lower oil and commodity prices- the impact of which is most pronounced in the four energy exporting countries: Azerbaijan, Kazakhstan, Turkmenistan, and Uzbekistan- have seen a sharp turnaround in both their external and fiscal balances. Lower remittances, primarily from Russia, have impacted countries in the region, where remittances used to account for at least 20 percent of their GDP. With less work available for migrant workers in host countries, some of them will return to their home countries, contributing to a worsening in social indicators and putting additional pressures on social spending (www.imf.org).

Country Data Analysis: Uzbekistan

The Republic of Uzbekistan is one of a number of resource rich countries in the region that has taken a gradualist approach to reforms. It has abundant natural resources- including hydrocarbons, gold, copper, and uranium-, a strong agricultural base, and a young and educated labor force. Since independence, the authorities have implemented a strategy of achieving self sufficiency through a “localization program”, extensive intervention, and state-led industrialization, while cautiously introducing features of an open trade and market economy.
The Uzbek economy has performed well in recent years. The favorable external environment and improved macroeconomic policies resulted in high growth rates, large current account surpluses, a significant decline in the debt burden, and more than quadrupling of foreign exchange reserves from 2003 to 2007 (www.imf.org, 2008).

Official statistics indicate that GDP grew by 8.0 percent in 2008 and 9.5 percent in 2007, driven by trade, transport and communications, industry, and services. During this period, data available from EBRD suggests that private investment rose as enterprises benefited from lower taxes and moderate improvements in the business environment. Consumption was supported by higher wages and salaries as well as increased remittance inflows.

Figure 10 Uzbekistan Real GDP

The current account surplus rose during 2008 aided by fast-growing remittance inflows, booming prices of commodities (gold, copper, and energy), and a buoyant partner demand for Uzbek exports. Non-commodity exports grew by more than 40 percent during the last two years in a row. FDI inflows - mainly for hydrocarbons, textiles, and food processing - picked up, but from a
low base. As the Central Bank of Uzbekistan continued to intervene to steadily depreciate the total sum, their mostly public external debt fell further, to 17½ percent of GDP (www.stat.uz).

The country has become a net exporter of food in the last two years, while large energy exports have contributed to their external surplus. Prices of basic food items and energy products are controlled. Figure 4.11 shows a price history for the period of 2003-2007, displaying that retail prices for flour, bread, and cooking oil increased by 16½, 17½, and 22½ percent, respectively. At the same time, controls on the export of some food items (e.g. wheat, rice, flour, meat, vegetable oil) helped to secure a supply of low-priced foodstuffs for local markets (www.imf.org).

Figure 11 Uzbekistan food, energy and other trade balance 2003-2007

Source: www.imf.org

Investments for oil and gas exploration and production are rising, but these will take time to translate into greater output volumes. Fiscal policy was prudent and the outcome better than budgeted. The augmented fiscal surplus remained unchanged from 2008 at about 6.5 percent of GDP, compared with a budgeted deficit of 1.7 per cent of GDP (2007). The impact of the tax cuts and higher wage and salary expenditures was offset by increased revenues- from higher
international commodity prices, VAT collections, and social security contributions-and a continued decline in public investment. In an encouraging development, the statistical discrepancy between above-the-line fiscal data and budget financing data declined significantly, suggesting some improvement in data coverage and classification. Growth prospects for most of Uzbekistan’s trading partners are strong, despite downside risks, and commodity prices are expected to remain buoyant. The Uzbek economy remains insulated from developments in global financial markets because of its limited integration. Analysis of vulnerabilities suggests that a 10 percent decline in international commodity prices would reduce the current account surplus and government revenues by only about 1 percentage point of GDP each. In case of such an adverse shock, the authorities expect a slower accumulation of assets in the FRD, with the budget position excluding the FRD remaining broadly unchanged. Analysis based on current policies assumes that growth would slow down gradually to about 6 percent as export growth slows and the economy faces capacity constraints, and the current account surplus would decline gradually to 8 percent of GDP. With low and declining external and public debt levels, the debt outlook is resilient to adverse shocks (www.imf.org).

Inflation is a major near-term challenge and tends to tighten monetary conditions significantly. Countries intend to limit reserve money growth in 2008 to about 12-15 percent by offsetting about three fourths of the projected increase in official reserves, through indirect monetary policy instruments and higher government deposits, including into the FRD. Domestic inflationary pressures would be reduced, even though inflation would decline only marginally, because higher imported inflation would partly offset the impact of the tighter monetary policy stance.
Trade openness is not on the authorities’ reform agenda in the near future. Consistent with the “localization program”, customs tariff rates are among the highest in the region and there are higher excise taxes on imports relative to similar locally produced goods. The import process requires heavy documentation and is time consuming. The authorities noted that imports of raw materials and capital goods are subject to low tariffs and indicated that a reduction of high tariffs on consumer and luxury goods is not envisaged.

Figure 12  Imports are low as a share of GDP (2008)

Source: IMF Country Report

Trade liberalization is critical if the Uzbek economy is to sustain high growth through private sector development. The IMF analysis shows that Uzbek authorities need to lower and unify tariffs for all economic agents, eliminate differences in excises on imported and domestic goods, remove restrictions on exports (including food items), reduce administrative costs in international trade, streamline customs procedures, and accelerate efforts for WTO accession.

Country Analysis: Republic of Kazakhstan

Global economic recession and difficulties in the domestic banking sector negatively affected Kazakhstan’s economy during 2008. Higher oil prices could lead the Kazakhstan

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economy to stronger growth, particularly in 2010, while the failure to deal forcefully with the problems in the banking sector, or a more protracted global recession, would lead to a deeper and longer contraction. Nevertheless, despite the current problems, medium-term prospects remain favorable, with a significant expansion in oil production expected over the next decade.

The Kazakhstan economy will remain stable as there are sound reasons to believe the following:

a) The non-oil sector has been booming since recently.

b) The international reserves of the country have steadily risen and have reached 40 percent of GDP.

c) Record high prices for key exports underlie the economic stability in the global turbulence when liquidity has dried up.

d) Ongoing significant inflow of foreign direct investments covers the current account deficit. (www.kznews.kz)

Inflation in Kazakhstan has continued most of 2008 and in the first quarter of 2009, this can also be seen in the steps taken by the government in the area of current monetary policy. Given the weak demand environment, inflation may be contained to 9-14 percent by year-end. When inflation is established on a downward path, there may be scope for some further easing of policy, although it is important to keep real interest rates at positive levels to support domestic deposits and help banks move towards a sustainable funding base (www.imf.org).
The monetary expansion slumped from 78.1 percent in 2006 to 25.5 percent in 2007 because bank liquidity shrunk in the second half of 2007, due to the volatility of foreign loan markets. Decelerated monetary offers in 2007 could be healthy for inflation in 2008. The monetary policy of the National Bank for 2008-2009 is being formed, bearing in mind the pre-set inflation parameters. Moreover, measures taken by the government in 2007 and 2008 should flatten out prices as well. These include increased rates of customs duties for petrochemical exports and a temporary cut in customs duties so as to import a number of food products (www.kzstate.news.kz).

Consumer prices raised inflation in Kazakhstan from 7.6 percent in 2006 to 8.6 percent in 2007; the fastest rates since 2001. The main factors behind the acceleration in inflation were higher food prices and the rapid growth in monetary aggregates. Annual average consumer price inflation in Kazakhstan accelerated in 2008 (10.8 percent) due to demand-side pressures, such as public-sector wage hikes, rising social expenditures, and the continued impact of high food prices. Tighter monetary and credit policies, together with a strengthening of exchange rates, could encourage disinflation and reduce the average rate to around 9 percent in 2009.
The Kazakhstan government announced that one of the top policy priorities during the global economic down-period would be limiting the rising unemployment rate impacted by the recession and the fall of oil and gas price on the global market. Their intention is to ease the burden of regulation on businesses, particularly in the small business sector, to support efforts to create employment. Initiatives to broaden job re-training programs, together with a strengthening of the social safety net, may also help to ease the burden of adjustment for those who are laid off.

Figure 14  Kazakhstan unemployment rate

Source: http://www.indexmundi.com

The banking system in Kazakhstan will likely be more constrained in their ability to replace maturing external borrowing in the current market environment, which means real credit growth will continue to decline, and the drop in oil prices will weaken a key support that the economy enjoyed during the first half of 2008. Projection of real GDP growth is estimated to be about 4.5 percent in 2008 and 5.3 percent in 2009 (www.stat.kz). There is considerable uncertainty around these projections, given the rapidly evolving global economic and financial situation, but on balance, risks are on the downside. Falling oil prices on the global markets will certainly slow down replenishment to the National Fund; however, it will not drastically effect
the re-charging of the state budget. Over the past several years the country’s budget has been striving to live within its means; the state spends only regular income, which is revenue from the non-oil sector, to exercise its functions. Therefore, economic diversification is set as a main goal for next few decades. In the future, a stable economy not exposed to the inherent factors of the world oil market must yield stable funds for the state to finance its costs. The glasshouse conditions created due to employment of non-renewable resources must be efficiently directed towards deep transformations of the economy (http://kazakhstaneconomy.blogspot.com).

Kazakhstan’s growth is expected to slow from an estimated 9 percent in 2007 to an average - 2.0 percent annually in 2009, due to rising inflation and banking sector liquidity problems, plus the fall of oil prices in the global market. However, spill-over effects from the development of the oil sector should continue to benefit services sectors, such as communications and retail trade.

Trade Performance: Kazakhstan owed its substantial foreign trade surpluses in 2008 to the rising volumes of oil and gas exports and high global hydrocarbon prices. The economy recorded a $10.1 billion merchandise trade surplus in the first nine months of 2008 (compared with $11.9 billion for 2007). The surplus on trade in goods was expected to grow further in 2009-2010, as a result of falling oil prices and dropping oil export volumes. Kazakhstan will have an impact on trade performance for the next 1-4 years, until demand for oil and gas recovers in the global market. Kazakhstan’s recorded account deficit of 2.2 percent of GDP in 2007 is set to widen to 3.2 percent of GDP in 2008, due to higher invisible transactions and stronger profit and dividend outflows from foreign investors (www.unescap.org).
Country Analysis: Republic of Kyrgyzstan

The outlook of the Kyrgyz economy has worsened in the region because of the global economic crisis. Among Central Asian countries, Russia and Kazakhstan remain as key foreign trading partners and Kyrgyzstan’s main source of financial-economic stability. The regional economic slowdown is reflected in the Kyrgyz economy via trade and financial links. Because of these results, the local economy slowed sharply to 7.5 percent in 2008, and expected growth in 2009 fell to less than 1 percent (IMF reports). Effective policy actions of the Kyrgyz government and central bank in relation to declining international commodity prices (as gold is the main export component of the country) and slowing demand, has caused inflation to come down sharply by about 30 percent in mid 2008. Inflation in Kyrgyzstan fell to 16.7 percent in February 2009 and is expected to continue rest of 2009 (www.imf.org)

As a result of this, Kyrgyzstan has a strong economic growth level: in 2008, real GDP growth was 6.5 percent and growth almost reached 7 percent, excluding gold production. The poverty rate declined from 46 percent in 2004 to 32 percent in 2008, with an even stronger reduction in extreme poverty. GDP per capita increased from US$ 1600 in 2004 to US$ 2000 in 2008. (Appendix 4.7)

The current global economic crisis and the drop of commodity prices puts the Kyrgyz government under pressure. The current account deficit widened substantially in 2008 due to higher import prices for food and fuel, although mitigated by higher exports and remittances. In 2009, the current account deficit is expected to remain high as the reversal in food and fuel prices will be more than offset by a drop in exports and remittances. The slowdown in economic growth, especially in trade, is causing government revenues to fall sharply.
At the beginning of 2009, sizable and timely support was being offered by the Russian Federation, including a substantial amount in confessional budget support which may help to cushion the impact of the crisis. The Kyrgyz authorities intend to use this budget support in a medium-term fiscal framework, with part of this used to finance the 2009 budget. Kyrgyzstan’s trade balance during last year’s increase in trade has been accompanied with two notable developments: 1) Trade shares of the European Union and China have risen at the expense of the CIS; 2) The concentration of exports in primary products has further accelerated. (Appendix Figure 4.8)

Despite macroeconomic volatility, Kyrgyzstan remains the most open trade policy country in the Central Asian region; however, it still faces challenges in finding its comparative advantages and its niche in the world markets. With the rapid economic growth in China and the recent economic rebound in Kazakhstan and Russia, Kyrgyzstan should be naturally positioned to take advantage of increased demand from its large neighbors. The land route between East Asia and the EU can be a potential trade corridor that will remake the country as an important trade route in the world. Trade with its large neighbors presents a great opportunity for the country to enter into a stage of potentially strong economic growth, as long as the trade patterns between the country and its neighbors are largely complementary.

During 2009 inflation will most likely remain high, at close to 20 percent above the original 12–15 percent target inflation range defined by the Joint Statement of the Government and the National Bank of the Kyrgyz Republic regarding economic policies for 2008. Monetary policy will focus on its primary objective, which is to achieve price stability, while also giving consideration to its secondary objective, supporting growth (www.imf.org).
The key goal of our monetary and exchange rate policy for 2008-2010 will be to regain control over inflation and to bring it down to about 20 percent by the end of 2008, and further to about 12 percent by the end of 2009, with a view to returning to single digits thereafter, recognizing that there are significant downside risks. The Central Bank of Kyrgyzstan will not be constrained by profitability consideration in the conduct of its monetary and exchange rate policies (www.centralbank.kz).

According to the National Employment Agency of Kyrgyzstan, in order to meet the unemployment rate in the county necessary to grow annually GDP at 7 percent, it is important to keep the employment at the same level; the GDP growth should be equal to 5 per cent annually. However, the growth prospects have been reflected by several other factors, such as political instability, a deficit of good governance, and the impacts of the global economic recession.
Kyrgyzstan remains at relatively high levels of adult unemployment; for example, the situation for youth aged 16-24 years in Kyrgyzstan was an unemployment rate of 26 percent, while their total share of the population is lower than 20 percent (www.imf.org). The poverty and population growth in poorer regions trigger the process of both internal and foreign labor migration. Foreign migration is substantial and mainly driven by the search for employment abroad, mainly in Russia and Kazakhstan.
Local Currency Volatility and Trade Openness

In this section I empirically examined the consequences of the impact of trade openness on the change of exchange rate in Central Asian countries. As I briefly mentioned in previous chapters of this thesis, one of the main factors in currency stability is the trade balance (import/export) of each developing country. Moreover, when trade openness increases, the free flow of investment and labor capital also increases between economies. For Kazakhstan, Uzbekistan and Kyrgyzstan, migrant worker remittance is one of the main sources of external finance for their economies. I focused on this idea in more detail to analyze the impact and correlation of remittances with local currency stability before and after the 2008 global economic downturn.

Exchange rate policy is the most important macroeconomic factor in developing countries (Cooper 1999). The local currency exchange rate against international currencies is the most important price in an openly traded economy, which has an influence on all of the other goods and services, as well as custom fees, in that country. Moreover, the exchange rate regime may be fixed, as floating has important influences on inflation, trading, private investment environment, currency stability and the economic growth of a country. Some previous research shows that openness limits the local currency exchange rate policies: a country that is more open is more likely to float their currency, because to do otherwise implies a loss of domestic monetary policy autonomy (Broz 2002).

My results confirmed previous findings, that economies with an income based in primary export commodities is bad for local currency volatility. For example, during the global economic downturn each country’s local currency depreciated uniquely, but the Uzbek sum was less
volatile then the Kazakh (25-34 percent) and Kirgiz (32-37 percent) local currencies. If we see the correlation results of trade openness index with variables: local currencies exchange rate, geographical location, and remittance cash inflow are highly correlated with each other. For example: Trade openness index correlated with Exchange rate with coefficient=0.911531, geographical location dummy variable =0.93949, remittance inflow = 0.720349, Political dummy variable =0.72035. This shows that model is perfectly fitted and selected variables are critical for the performance of trade openness index in observing Central Asian countries. We can also observe a high correlation between other variables and trade openness in the following table.

Table 3 Trade Openness Index Correlation Coefficient

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex. Rate</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade Ind.</td>
<td></td>
<td>-0.911531</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>0.216739</td>
<td>-0.17822</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemploy.</td>
<td>-0.231833</td>
<td>-0.12728</td>
<td>-0.07768</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geog. Dum</td>
<td>0.9941579</td>
<td>-0.93949</td>
<td>0.212136</td>
<td>-0.1662701</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remittance</td>
<td>-0.440841</td>
<td>0.720349</td>
<td>-0.04803</td>
<td>-0.76686614</td>
<td>-0.5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Political</td>
<td>0.4408413</td>
<td>-0.72035</td>
<td>0.048028</td>
<td>0.766866141</td>
<td>0.5</td>
<td>-1</td>
<td>1</td>
</tr>
</tbody>
</table>

Durrand’s (1986) observation in the Mexican economy showed that each dollar brought by local labor forces working in other countries back into Mexico generated four dollars in demand for goods and services. Similar effects were observed in the Uzbekistan case, during last year’s boost of construction projects and increasing consumer price index, the increasing inflation made prices for real estate in the main cities such as Tashkent, Samarkand jump sky-high, up 38-55 percent compared with the price of the last 2-4 years (www.uzproperty.com). Correlation between inflation and time series shows in the figure below, when an increase of
remittance inflow impacted the consumer price index increase, which was then reflected in the rise of inflation.

<table>
<thead>
<tr>
<th></th>
<th>Time</th>
<th>Time^2</th>
<th>Time^3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>0.676362248</td>
<td>0.715725072</td>
<td>0.722288511</td>
</tr>
</tbody>
</table>

I observed a high correlation of domestic inflation with time series by including in my equation model a number of macroeconomics variables, such as exchange rate, cash inflow from remittance, and trade openness index. Increase of remittance inflow was observed to be beneficial as seen in the following areas: construction workers and day laborers benefit if remittances are used for home building. Even remittances to rural and remote village areas have a broader economic impact, as the secondary beneficiaries of these capital inflows include goods and labor markets in urban areas.

When I analyzed the correlation between currency volatility and trade openness index in the countries I observed, it showed that local currencies were highly volatile (see figure 17) in countries with a high trade openness index. Although the local currency of Uzbekistan stayed stable during the global economy downturn and drop in the country’s main exporting commodity prices on the international market. Observations show that the Broz (2002) hypothesis, where trade closure in an economy allows the government to gain the benefits of controlling exchange rate of their local currency against the international currencies, without sacrificing domestic monetary policy autonomy. On the other hand, a higher trade openness index makes the adaptation of a fixed exchange rate less attractive for foreign investors, as proved in the Uzbekistan economy, where international investors are chased for the highest rate of return. Among regional developing countries that have private bond investments, bank lending and equity investment is responsive to differential rates of return. Results show that a higher degree
of trade openness increases the volatility of local currencies against leading global market currencies; this can be seen in Kazakh and Kirgiz currency volatility during Mar.2008-Mar.2009 periods.

Figure 17 Exchange Rate of Kazakhstan Tenge vs. US dollar (2 Jan.08-12 Feb.09)

Alesina A, and Spolaore E. (2003) hypothesize that based on a high correlation between government size and the trade openness of country, most open economies are also the smallest countries in the world. This has been reviewed in the case of the smallest country in the Central Asian region, Kirgizstan; it has been proven as a WTO member since 1998 and has fewer barriers to global trade. This could be justified; fixed costs and economies of scale in the supply of public goods might expect small countries to have a larger share of government GDP than big countries such as Uzbekistan and Kazakhstan. This is important because small economies are simultaneously and for related reasons, the most open economies; greater volatility in small economies may not be a function of international economic exposure. In other words in international market increases in economic insecurity via greater economic volatility and the size of domestic markets should matter in these cases.
As I observed in the section on literature examination, the flexibility of a country’s exchange volatility agents on other international currencies impacts the trade openness of each economy, moreover in developing trade openness it counters the additional inflow of remittances. I entered as a dummy variable *(REMITT)* into the equation model in order to analyze the probability of remittances impacting the local currencies of the countries I observed.

For an analysis of this hypothesis I used a time-series cross sectional data analysis to test the established model (equation 6). Results of my regression show that Central Asian country economies and currency volatility are heavily dependent on trade balance and remittances inflow; those countries are less concerned with monetary policy autonomy.

The increase of the price of goods and services automatically increased consumer spending; the increase of positive trade balances as well as the growing inflow of remittance affected the respective country’s economy and existing investment projects. My observation of currency volatility with trade openness index proved that the inflow of remittance was clearly critical for Uzbekistan and Kirgizstan. This proved previous research, which stated that developing countries have a high dependence on remittance inflow as a source of currency stability. Based on established OLS model I rejected the null hypothesis.

Results confirmed the previously stated hypothesis, and showed the application for developing countries with a confidence level of 99 percent degree in 627 observations, R square 0.99800, Adjusted R 0.997979.
Table 4  Trade Openness Index Correlation with Currency Exchange Rate

<table>
<thead>
<tr>
<th></th>
<th>Coefficients</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
<th>Lower 99.%</th>
<th>Upper 99.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>783.8752407</td>
<td>37.30267609</td>
<td>21.01391436</td>
<td>2.2074E-74</td>
<td>687.4922865</td>
<td>880.2581949</td>
</tr>
<tr>
<td>Trade Index</td>
<td>40.2990186</td>
<td>6.292505176</td>
<td>6.40428851</td>
<td>2.9927E-10</td>
<td>-56.5576440</td>
<td>-24.0403932</td>
</tr>
<tr>
<td>Inflation</td>
<td>-6.63356777</td>
<td>0.334059556</td>
<td>-19.8574405</td>
<td>3.0368E-68</td>
<td>-7.49671353</td>
<td>-5.77042201</td>
</tr>
<tr>
<td>Geog. Dum</td>
<td>736.9501044</td>
<td>23.85955031</td>
<td>30.88700729</td>
<td>2.114E-127</td>
<td>675.3016065</td>
<td>798.5986022</td>
</tr>
<tr>
<td>Remittance</td>
<td>478.219669</td>
<td>26.99887228</td>
<td>17.7125794</td>
<td>4.4185E-57</td>
<td>-547.979579</td>
<td>-408.459767</td>
</tr>
</tbody>
</table>

Based on large \( T \) statistics \( \in \) we can reject the Null Hypothesis with a 99 percent confident level for all variables included in the model. Standard Error shows our ability to predict with a deviation of 24.49 per unit.

The results from this model support the hypothesis that remittance inflow increases the fixing of the exchange rate in each of my observed countries. The coefficient for remittances is positively and highly statistically significant. The dependent variable has large and significant coefficients including the exchange rate; the coefficient for trade openness index is positive and significant. Note that exchange rate and cash inflow as remittance has a positive direction, which means that it supports the argument that additional capital sent into the country as remittance influence requires additional studies on the impact of exchange rate volatility and government policymaking process.

At the end of 2008 and beginning of 2009, statistical data showed that due to the global economic downturn and the drop of oil, gas, and commodity prices in the global market, there was a significant impact on Central Asian economies. The downturn forced up to 20-25 percent of Central Asian labor forces to work abroad in EU, Russian and Asian countries, sending significant cash flow remittances back home to support their families and relatives (www.vesti.ru). Moreover, during the last few years each of the Central Asian countries did not create sufficient employment growth, due to the fact that their economies mainly focused on the export
of commodity and raw materials to the world market. Low payroll forced some percentage of labor forces in this region to look for job opportunities in other countries, so as to support their families back home. Due to an increase of foreign currency inflow to each of those countries, we can see sufficient development of the banking system through the establishment of new banks to collect these remittances. For example, we can see this in the case of Kazakhstan; in 1998 only 11 banks were considered as meeting international standards (Banking and Finance in Kazakhstan 2000), while in 2008 we can see that 47 first-rated banks such as Citibank, HSBC, and ABN Amro Bank operated in Kazakhstan (www.nbkz.kg). The same is true in Uzbekistan and Kyrgyzstan, a number of private banks opened, operating with international standards. Moreover, money transfer businesses such as Western Union, MoneyLine, and Quicklink services developed along with the increased migration of the labor forces in these countries. Developing financial institutions positively impacted currency stability with the increase of additional financial investment into these countries. Regression analyses confirmed that trade openness index and currency volatility significantly correlated.

Stock Markets and Trade Openness

My studies show that trade openness has a significant impact on each developing country’s local stock markets. A high trade openness policy significantly forced increases in domestic market capitalization and the raising of capital. Local equity markets experienced increased shock from the activity in world equity markets, as a reflection of global economic performance. One of the main questions of this paper was to analyze the impact of trade openness on local equity market indexes, like KASE and TASIX, and to find out how those stock markets performed during the last four years while increasing the trade openness of each country.
for global trade. Based on cross-country panel data, the results suggest that an increase in trade openness index has significantly correlated with domestic stock index and macroeconomic factors.

Table 5  Trade Openness Index Correlation with Macroeconomic Factors

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock In.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade Index</td>
<td>0.78614011</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.33415378</td>
<td>0.02224399</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>0.0755556</td>
<td>-0.36007033</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>-0.6054769</td>
<td>-0.95656268</td>
<td>0.486024162</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Polit.</td>
<td>0.76692683</td>
<td>0.993157635</td>
<td>-0.33943603</td>
<td>-0.96497545</td>
<td>1</td>
</tr>
<tr>
<td>Natural.</td>
<td>-0.7669268</td>
<td>-0.99315763</td>
<td>0.339436032</td>
<td>0.964975454</td>
<td>-1</td>
</tr>
</tbody>
</table>

Results of my OLS regression model shows that trade openness index significantly correlated with domestic stocks=0.78614011, unemployment=0.95656268, political stability in country=0.993157635, and available natural resources=0.99315763 in each country. Positively related (correlation coefficient 0.7861) domestic stock index performance is explained by the increased capitalization of markets, the internationalizing of local stock markets and through linking with other leading global equity markets. Trade openness increases impacts on GDP and promotes domestic business so as to access international stock markets just as local stock turns to be available in international equity markets. Regression results compared with Kazakhstan and Kirgizstan stock markets (KASE and KSE) based on last year’s stock market performances data shows that stock index capitalization increased more than TASIX.

Table 6  Stock Index significant coefficients

<table>
<thead>
<tr>
<th>Regression Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple R</td>
</tr>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>Adjusted R Square</td>
</tr>
<tr>
<td>Standard Error</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>
Moreover, there was a high correlation between local stock indexes KASE, KSE and international business cycles. In order to address these issues we controlled for domestic macroeconomic variables, such as unemployment and the inflation of each country, so that the outcomes are confirmed on our OLS regression model.

Standard Error shows our ability to predict with a deviation of 276.56 units in our established model. Where R Square =0.92977978 shows the model perfectly fitted, within R Square shows the gain in 0.929 amount of variation of \( Y(Stock\ Index) \) that we have expected, by including additional \( X_k \) variable in our model. Our regression model between trade openness index and stock index results in the following:

| Table 7  Stock Index and Time Series Analysis |
|-----------------|-----------------|-----------------|-----------------|-----------------|
|                | Coefficients    | Stand. Error    | t Stat          | P-value          | Lower 99.0%     | Upp 99.0%       |
| Trade In.      | 868.769641      | 130.804878      | 6.641722018     | 9.89968E-11      | 530.2592816     | 1207.28         |
| Time^2         | 0.23080537      | 0.02859937      | 8.070295019     | 7.88725E-15      | 0.156792964     | 0.30481777      |
| Time^3         | -0.0008475      | 8.6845E-05      | 9.75958434      | 2.28928E-20      | -0.00107232     | -0.0006228      |

Significantly high \( T \) statistics and very low \( P \) values shows that Null Hypothesis will be rejected with a confidence level of 99 per cent. In order to address the business cycles effect on domestic stock markets indexes over time, I controlled for macroeconomic variables. The regression model found that through time series variables \( Time_1, Time_2, Time_3 \) remain statistically significant with positive \( T\)-state value and a rejection of the Null Hypothesis.

It suggested that local stock market activities are strongly associated with international markets by an increase of trade openness index in each country I researched. My findings also
suggest that financial internationalization of domestic markets could create a significant
difficult for developing Central Asian countries based on a high dependence on international
finance sources for further growth and investment projects. Further effects would be seen in the
corporate bond market, or capitalization of domestic stock indexes; moreover, trade exports of
Central Asian countries are mostly dependent on commodity and energy sources, which increase
the impact of international shocks. Furthermore, research shows that it is necessary to understand
that country’s stock markets performances have different effects among regional trade and
economic performance in stock market developments over time.

Elborgh and Woytek (2003) state that the concentration of exports on a few primary
commodity materials, like gold, cotton, and oil (which are main export components in Central
Asian countries), can make countries extremely vulnerable to changes in global market prices for
those row materials. This is clearly proven in the stock markets of Kazakhstan and Kirgizstan,
where commodity markets like oil and gold are the main derivative of capital inflow in their
respective stock markets. When commodity markets dropped, shocked country growth and other
main macroeconomic factors, increasing unemployment, high inflation rates, capital out-flow,
stock index decreases, decreasing corporate bond markets, and the depreciation of local company
stocks from 46,1per cent -49,7percent. Similarly, bond investors withdraw their funds from
countries experiencing high inflation and fiscal difficulties, by a decline of FDI (Mosley 2000).
This can be seen in one particular Kazakhstan financial market where the corporate bond market
dropped from 15.1 bn. USD (01.08) to 11.6 bn. (06.09) remarket after the 2008 economic
recession in global markets (see Figure 10).

When I reviewed the identical period of time in the Uzbekistan stock market, which has
the least open trade economy in the region, the TASIX stock index was less volatile and shocked
by global economic downturn; corporate stock performed about the same as before stable growth. By holding regression, I discovered that the TASIX Index is most sensitive to foreign country policing, unemployment and inflation, increasing the trade balance of that country.

Table 8  Dummy Variables Correlation with Stock Index

<table>
<thead>
<tr>
<th></th>
<th>Coefficients</th>
<th>Stand. Error</th>
<th>t Stat</th>
<th>P-value</th>
<th>Lower 99.0%</th>
<th>Upp 99.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>40.6611735</td>
<td>13.00179173</td>
<td>3.127351552</td>
<td>0.001889977</td>
<td>7.013795539</td>
<td>74.3085516</td>
</tr>
<tr>
<td>Unemploy.</td>
<td>498.585314</td>
<td>26.15723185</td>
<td>19.06108861</td>
<td>1.99834E-58</td>
<td>430.8929309</td>
<td>566.277697</td>
</tr>
<tr>
<td>Polit.</td>
<td>2055.50121</td>
<td>430.4376</td>
<td>4.775375592</td>
<td>2.50302E-06</td>
<td>941.5703801</td>
<td>3169.43204</td>
</tr>
<tr>
<td>Visits</td>
<td>643.405572</td>
<td>131.2182461</td>
<td>4.903323976</td>
<td>1.36168E-06</td>
<td>303.8254574</td>
<td>982.985687</td>
</tr>
</tbody>
</table>

By analyzing the TASIX index chart, I found that at the end of 2008 and first quarter 2009, there was a jump stock index for 550bp. I did not find any specific economic or trade news in the regional stock market, but the local press reported that top U.S. and European Union delegations visited during those days. I hold regression analysis by entering Visits as a dummy variable for those days and the regression model showed that the TASIX stock index significantly correlated with Foreign Visits and Foreign Policy of the local government. This theory was confirmed with positive coefficient $=643.4055$ and high $T$ statistic $=4.90$, very low $P$-value$=1.361E-06$. It proves statement that, the Uzbek economy remains insulated from developments in global financial markets because of its limited integration. Analysis of vulnerabilities suggests that a 10 percent decline in international commodity prices, namely cotton, natural gas, or gold, would reduce the current account surplus and government revenues by only about 1 percentage point of GDP each. In the case of such an adverse shock, as well in the expectation of a slower accumulation of assets in the FRD, the budget position excluding the FRD would remain broadly unchanged (www.imf.org). In the cases of Kazakhstan and Kirgizstan, which are more globally integrated and have higher trade openness, a negative
change of 10 percent in global market commodity prices such as oil and gold, would drop their GDP more than 6-9 percent, which we observed in Kazakhstan and Kirgizstan GDP charts Figure 11.

As a result of these large external shocks, the pace of economic growth in that region has already been slowed considerably, down to 6 percent in 2008, from 12 percent in 2007. It is projected to fall well below 2 percent in 2009, with risks clearly on the downside, particularly if the situation in Russia worsens. Meanwhile, the drop in growth and lower commodity prices are dampening inflationary pressures across the region. Our empirical analysis shows that trade openness impacts capital markets and related reforms in stock market developments and internationalization; in countries with a higher trade openness index reform is frequently followed by increases in capitalization, trading and capital reigning in the local markets. Evidence in the below chart compared three stock market index amounts observed in those Central Asian countries.

Figure 18  Capitalization of Central Asian Stock Markets

Source: http://www.feas.org/member.cfm

The internationalization of local stock markets is linked domestic business activity and the GDP of each country. By increasing trade openness, local stock markets will access international business, which improves a poor domestic business environment and reduces local
labor migration abroad. Researcher analyzed to address the impact of trade openness to local stock markets by controlling the time effects in regressions of variables that remain statistically significant and have a positive correlation. My findings also suggest that increasing trade openness may have another implication on domestic markets by possibly creating some challenges in domestic law (business law), in order to meet the internationalizing of local stock markets. Moreover, the increase of the trade openness index will positively reflect the local stock market if the economy can successfully transfer from a commodity export orientation to a technology production based economy.

Concluding Remarks

Using 627 weekly historical data, I analyzed the correlation of trade index to domestic stock markets and local currency volatility. My investigation was split into two simple stages, seen through the initial samples. First, I analyzed the trade openness index and local currency. Then I developed an equation model by using a number of variables and tested those with the historical cross-country weekly data I collected on a sample OLS model. A similar empirical stage was done in order to analyze the impact of trade openness on local stock markets in Central Asian countries. Table 4, shows the result of the estimation of my equation (6) for the panel of three year weekly historical data. I used two dummy variables (remittance, geographical location) in order to correctly assess the impact of variables in trade index and currency volatility.

The results show that countries with high trade openness have a positive impact on local currency by law volatility and stability of local fiscal policies in the domestic market. I have not found clear results in terms of each unit increase of trade index as determinant of currency
volatile in each economic zone, such as among Kazakhstan and Kirgizistan. But results show that
less open countries are less sensitive to global shocks, and the correlation between currency and
trade openness index is not quite so significant. The contribution of these variables to currency
volatility requires additional study, with longer observation simples because inflation has a
negative sign, and the dummies variable coefficients are significant. Exchange rate volatility is
highly significant with a positive sign. The coefficient on openness index is always positive,
though significant in the regression model.

Previous global empirical evidence proved that when trade openness increases in Central
Asian countries, it will have an impact on domestic stock markets. When a country removes
barriers to trade openness as recommended, accompanied by complementary reforms in other
areas of the economy- such as improving productivity, promoting the establishment of new
technology businesses- they avoid becoming dependent on commodity trade income. The cases
analyzed the Kazakhstan and Kyrgyzstan stock market in more detail, finding a drop in their
stock markets as a reflection of the price drop of global commodities. I believe that my findings
provide fresh support to the view that trade openness tends to enhance growth in an economy. As
a result, it confirms that trade openness impacts the capitalization of stock markets, increased
trade internationalization, and the adoption of international regulations.
REFERENCES


EBRD 2007 Country Fact sheet.


http://www.uzse.uz Official web-site of Republican Tashkent Stock Exchange
## APPENDICES

Table 1.1: Developing Countries GDP vs. TNC budget

<table>
<thead>
<tr>
<th></th>
<th>Country</th>
<th>GDP</th>
<th>Corporation</th>
<th>Sales (USD Mill)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Denmark</td>
<td>174,363.00</td>
<td>General Motors</td>
<td>176,558.00</td>
</tr>
<tr>
<td>2</td>
<td>Poland</td>
<td>154363</td>
<td>Wal-Mart</td>
<td>166,809.00</td>
</tr>
<tr>
<td>3</td>
<td>South Africa</td>
<td>131,127.00</td>
<td>Exxon Mobil</td>
<td>163,881.00</td>
</tr>
<tr>
<td>4</td>
<td>Malaysia</td>
<td>74,634.00</td>
<td>Siemens</td>
<td>75,337.00</td>
</tr>
<tr>
<td>5</td>
<td>Pakistan</td>
<td>59,880.00</td>
<td>Sony</td>
<td>60,052.70</td>
</tr>
<tr>
<td>6</td>
<td>New Zealand</td>
<td>53,622.00</td>
<td>Honda Motor</td>
<td>54,773.50</td>
</tr>
<tr>
<td>7</td>
<td>Hungary</td>
<td>48,355.00</td>
<td>Credit Suisse</td>
<td>49,362.00</td>
</tr>
</tbody>
</table>


Table 3.1: Measures of Trade Openness

Source: Squalli 2006, p.22.
Table 3.2: Penn World Table Trade Openness Measures and Ranks, n=136, 2000

<table>
<thead>
<tr>
<th>Countries</th>
<th>(X+M)/GDP</th>
<th>Rank</th>
<th>RWTI</th>
<th>Rank</th>
<th>CTI</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kazakhstan</td>
<td>105.36</td>
<td>52</td>
<td>0.129</td>
<td>58</td>
<td>2319.73</td>
<td>54</td>
</tr>
<tr>
<td>Kirgizstan</td>
<td>89.43</td>
<td>72</td>
<td>0.008</td>
<td>135</td>
<td>125.11</td>
<td>130</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>46.11</td>
<td>144</td>
<td>0.042</td>
<td>91</td>
<td>335.04</td>
<td>106</td>
</tr>
</tbody>
</table>


Table-4.1

**Shareholder Protection in Transition and Comparator Economies**

<table>
<thead>
<tr>
<th>Country</th>
<th>Shareholder protection rating</th>
<th>Effectiveness of shareholder protection (United States=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>4</td>
<td>62</td>
</tr>
<tr>
<td>Croatia</td>
<td>2</td>
<td>45</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>3</td>
<td>51</td>
</tr>
<tr>
<td>Poland</td>
<td>3</td>
<td>69</td>
</tr>
<tr>
<td>Romania</td>
<td>3</td>
<td>44</td>
</tr>
<tr>
<td>Russia</td>
<td>5</td>
<td>49</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>Slovenia</td>
<td>3</td>
<td>40</td>
</tr>
<tr>
<td>Ukraine</td>
<td>2</td>
<td>54</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>3</td>
<td>28</td>
</tr>
</tbody>
</table>

Source: www.avestagroup.uz

Figure-4.3a: Trend in participant number

Figure-4.3b: Trend in issued stock (UZS,bln)

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4 Ibid.
Figure 4.4. Uzbekistan interest rate and inflation

Source: Uzbekistan Economic overview 2008, EBRD.

Figure-4.6: Industrial Structure of KASE

Source: www.kase.kz
Figure-4.7. Kyrgyzstan - GDP per Capital

Source: http://www.indexmundi.com

Figure-4.8. Kyrgyzstan Exports

Source: http://www.indexmundi.com