This paper analyses the implications of the potential accession of the Republic of Azerbaijan to the Customs Union of Belarus, Kazakhstan, and Russia, combining qualitative and quantitative approaches. The qualitative approach employs stakeholder and sectorial analysis, while quantitative methodologies include Hedonic Estimation and Linear Regression Models. The stakeholder analysis discusses the implications of accession for different interested parties, namely businesses, citizens and international partners of Azerbaijan. The sectorial analysis assesses the varied probable impact of accession on different economic sectors. The quantitative methods are designed to answer the question following question: How much would the Azerbaijani economy benefit if it had joined the Customs Union when it was established in 2010? Although CESD finds a number of quantitative benefits to accession (for example, an additional two to five percent growth in GDP), qualitative analysis reveals disadvantages that were not captured by quantitative methodologies and helps provide a more comprehensive picture that disfavors accession, namely the long-term disadvantage of ceding independence vis-à-vis Azerbaijan’s energy policy. Accordingly, the Center for Economic and Social Development strongly recommends against accession. However, considering economic, social and political pressures, Azerbaijan may be persuaded to accede. In this scenario, CESD would recommend learning from the experience of the UK while acceding to the European Union and attaining several key exemptions from the rules and regulations of the Customs Union.
Accession to the Customs Union:
Shaping the strategy for Azerbaijan

Ziya Alili, MSc; Tural Abbasov, MPA; David N. Chang, JD; Max Hoyt

Edited by
Dr. Vugar Bayramov

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ACCESSION TO THE CUSTOMS UNION:
Shaping the strategy for Azerbaijan

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1 Introduction
The Customs Union of Belarus, Kazakhstan, and Russia (“CU,” the “Union,” or “ECU”) is a hot topic in almost all post-Soviet and related countries, which must keep in mind Russia’s integrative plans when making economic and political decisions. Russia’s ambitious plans to form a Eurasian Economic Union by 2015 makes political and economic decision making even more tortuous.

Azerbaijan’s potential accession to the Union is another topic of great importance. As a post-Soviet country with substantial oil reserves and strategic location, Azerbaijan is important for both existing Customs Union members and non-Union members. There are strong parties interested in Azerbaijan’s accession to the Union, whose objectives often contradict those of other powerful stakeholders. Accordingly, researchers felt the need for an in-depth study of the Customs Union, its policies and its implications for member countries and potential members. The Center for Economic and Social Development is honoured to take a pioneering position on this topic and contribute this paper to the discussion among Customs Union stakeholders, policy makers, academics, and all other parties with an interest in the topic.

1.1 The Researcher
The Center for Social and Economic Development (CESD), a respected and leading think tank not only in Azerbaijan but also in the Caucasus and Central Asia, has, since its establishment in 2005, accumulated substantial experience researching economic developments in Azerbaijan. Its mission is to promote research and analysis of socio-economic issues in order to positively influence the public policy decision-making process. The Center positions itself in the center of the civil society, having close relationships with media, 24 communities spread around the country, NGOs providing services at the grass-roots level, international think-tanks, financial institutions and donors, and virtually all other think tanks in Azerbaijan. The Center has been ranked as a top think tank by Harvard University and the University of Pennsylvania and has the insight and experience to analyze sector development under different scenarios in Azerbaijan and neighboring countries.

1.2 Research Questions
This research paper seeks to answer the overarching question: “Would accession to the Customs Union benefit Azerbaijan?” Thus, by the end of the paper, researchers aim to answer the following supplementary questions:

1. What would be the implications of Azerbaijan’s accession to the CU for different stakeholders, including but not limited to, Azerbaijani businessmen, farmers, existing Union members, and the international community?
2. How would Azerbaijan’s economy be affected by accession?
   a. How would different economic sectors of Azerbaijan be affected by accession?
3. How did accession to the CU affect its existing member states?

1.3 Research Objectives
The objectives of this paper are:

- To provide interested parties with a detailed analysis of the forecasted economic consequences if Azerbaijan joined the Customs Union of Russia, Kazakhstan, and Belarus.
- To provide interested parties with CESD’s research-based policy recommendations regarding potential accession to the Customs Union and supporting quantitative data and qualitative analysis.

1.4 Structure of the paper
Section 2 provides general background information on policies, rules, and principles of the Customs Union and Azerbaijan’s experience with integrative projects of different world communities, like the WTO, CIS, EU, etc.
Sections 3 and 4 describes general economic trends and trade turnover of Azerbaijan, Russia, Kazakhstan and Belarus. The description is more in-depth for Azerbaijan than for Customs Union members, whose economic situations have been analyzed mainly based on import/export figures, GDP growth rate and unemployment. Their international positions are also provided.

Section 5 explains the procedures and task flow used to analyze and process the relevant data. Section 6 presents the findings of CESD’s research. Finally, Section 7 concludes with a summary and CESD’s policy recommendations.

2 Background Information

Azerbaijan, situated in the Caucasus region along the western shores of the Caspian Sea between Russia and Iran and bordered by Georgia, Armenia and Turkey, is a country rich with natural resources and fertile agricultural lands. These factors have attracted foreign invasion throughout Azerbaijan’s history. Azerbaijani people have lived under the occupation of Arabs, Mongols and Russians until independence after the collapse of the Soviet Union (and briefly between the fall of Tsarist Russia and Soviet occupation). The late 1980s and early 1990s were one of the most important historical periods in Azerbaijan. (Abbasov, 2013)

After Azerbaijan declared independence in 1991, the country started to exercise its autonomous rights to implement independent economic and political reforms. The government’s economic policy prioritized creating an economy based on private property forms, market principles, and integration into the international community. However, political and economic reforms were not easy to realize due to ongoing war between Azerbaijan and Armenia. Moreover, in the early years of independence, loss of former Soviet trade connections harmed the economy and created crises in all spheres of administration. Therefore, the first phase of economic development in modern Azerbaijan is characterized as a period of chaos and instability between 1991 and 1995. The second phase is associated with macroeconomic stability and dynamic development. The primary goal of the government in 1992 was to preserve the established state structure to avoid the abuse of state property and re-establish lost economic relations with the international community. On the other hand, after 1995 priorities shifted to establishing sufficient oil infrastructure to transport Azerbaijani oil to the international market. Opening the Baku-Novorossiysk (1996) and Baku-Supsa (1999) pipelines enabled the government to diversify oil routes. Furthermore, an agreement was achieved to construct Baku-Tbilisi-Ceyhan, which is currently the most important oil exporting pipeline of Azerbaijan.

Diversification of oil and gas routes created opportunities for further economic and political reforms in the country. However, other sectors of the economy are heavily dependent on the oil and gas sector. New measures have been taken to improve the non-oil sector of the economy. In the last two years net growth of non-oil in GDP has accelerated. In 2012, for the first time after oil boom in Azerbaijan, the non-oil economy bypassed oil sector, containing 52.7 percent of GDP in 2012. In the first quarter of 2013, growth of the non-oil sector reached 11.4 percent. (SSC, 2013) To realize the targeted goals, a number of presidential decrees and legislations were adopted (“The State Program of Socio-Economic Development of the Regions of Azerbaijan (2009-2013)”, “the State Program of Poverty Reduction and Economic Development in the Republic of Azerbaijan (2008-2015)”). (Azerbaijan.az, 2013)

2.1 Strategic Partnership with neighboring countries

2.1.1 Turkey

Turkey is a strategic ally and the first country that recognized Azerbaijan’s independence after the collapse of the Soviet Union. Common cultural, historic, and ethnic heritage continue to foster a good relationship between both countries. Turkey is Azerbaijan’s most staunch champion regarding integration into western political and economic
institutions. Moreover, Azerbaijan and Turkey cooperate to modernize Azerbaijan’s military and bring it up to the level of NATO nations. Turkey and Azerbaijan also have a strategic partnership on energy security. Caspian hydro-carbon resources go through Turkey into Europe. The Baku-Tbilisi-Ceyhan benefits not only Turkey and Azerbaijan but also Georgia. In the future, energy partnership will further increase after launching the Baku-Tbilisi-Erzurum gas pipeline. Both Azerbaijan and Turkey are determined to further develop their strategic alliance and look for new opportunities to increase economic collaboration.

2.1.2 Russia
With a long history of economic and political ties between the two countries, Azerbaijan and the Russian Federation are strategic partners. In fact, Russia is still Azerbaijan’s main trading partner. Russia is a co-chair of the OSCE Minsk group and can influence the search for a peaceful solution to end the Nagorno-Karabakh conflict. After the collapse of the Soviet Union, many Azerbaijanis became migrants working in Russia and transfer a lot of capital into Azerbaijan, particularly rural areas. However, occasionally Azerbaijan becomes uncomfortable with Russian and Armenian military cooperation.

2.1.3 Central Asian countries
Central Asia is strategically important to Azerbaijan, with whom there are strong linguistic, cultural and historic ties. Cooperation with Kazakhstan relies on friendly neighbor relations. Azerbaijan seeks Kazakhstan’s involvement in energy-route alternatives to the Baku-Tbilisi-Ceyhan pipeline. Turkmenistan is also an important trading partner of Azerbaijan and strives to include Turkmenistan gas in potential energy pipelines.

2.2 Relations with International Organizations
Since independence, Azerbaijan has become a member of 32 international and regional organizations such as the United Nations, Council of Europe, European Union, Organization of Economic Cooperation, World Bank, Red Cross, UNICEF, UNESCO, the CIS, etc. The fundamental basis of Azerbaijan’s foreign policy is to maintain and strengthen national sovereignty, preserve its territorial security and create mutually beneficial relations with other countries. Among the international organizations, the European Union (EU) and Commonwealth of Independent States (CIS) are particularly important. (Administrative Department of the President of the Republic of Azerbaijan, 2013)

2.2.1 CIS
During the early years of economic and political instability, Azerbaijan joined the Commonwealth of Independent States on 21 December 1991, together with Kazakhstan, Kyrgyzstan, Moldova, Turkmenistan, Armenia, Tajikistan, and Uzbekistan. The CIS had been established on 8 December 1991 by three former Soviet countries, Ukraine, Belarus and Russia. The primary goals of the CIS are to boost coordination of member states on trade, lawmaking, finance, democratization, security and cross-border crime prevention.

Since it joined the CIS, the government of Azerbaijan adopted a number of agreements for various purposes. One of the most important economic agreements is the Free Trade Agreement (FTA) signed in 1994 with CIS countries, with the exception of Armenia. The FTA allowed Azerbaijan to export its products to CIS countries. As a result of the FTA, Azerbaijan committed to develop mutual economic cooperation, practically implement free-market principles, create better conditions for free transition of goods and services, improve mutual trade balance, maintain development of domestic economic conditions and develop living standards of the population of Azerbaijan. Although the CIS has been Azerbaijan’s main economic partner, the ratio of partnerships is changing in favor of the European Union.
2.2.2 EU
Cooperation with the European Union is one of the foreign policy priorities of Azerbaijan. Both Azerbaijan and the EU are interested in partnership. The strategic location of Azerbaijan at the crossroads of Asia and Europe makes it a valuable strategic partner for EU countries to transport energy resources from Central Asia. At the same time, Azerbaijan is interested in developing its political and economic situation by getting technical assistance from the EU. The EU representative appointed to the South Caucasus has five goals: 1) to help implement democratic reforms; 2) to preclude conflict in the region by assisting in conflict resolution and promoting the return of refugees and IDPs; 3) to partner constructively with neighboring countries; 4) to promote further cooperation between the countries of the South Caucasus; and 5) to develop the EU’s effectiveness in South Caucasus.

According to the Administrative Department of the President of the Republic of Azerbaijan (2013), since 1991 the country received EUR 333 million in technical, humanitarian, emergency and food assistance. The Partnership and Cooperation Agreement (PCA) entered into force between EU and Azerbaijan and contributed to further cooperation between the parties. The main objectives of PCA are promoting political and economic dialogue, supporting Azerbaijan to develop its political and economic situation, accelerate the transition to a market economy, and encourage trade, social, financial, technological and cultural cooperation.

Through the TACIS program (Technical Assistance to the Commonwealth of Independent States), which started in 1991 and provides technical assistance to 12 former Soviet countries and Mongolia, the EU reinforces economic reforms in Azerbaijan by providing necessary technical assistance and expertise. The priority of the TACIS program in Azerbaijan is to improve infrastructure, human resources and the private sector.

Two of the multi-country projects of TACIS are related to Azerbaijan—TRACECA and INOGATE. TRACECA (Transport Corridor Europe-Caucasus-Asia), which began in May 1993, reinforces partner countries’ political and economic independence by promoting their capacity to integrate into international markets through regional cooperation and finding alternative transport routes. Within the framework of EU assistance to CIS countries, INOGATE (interstate oil and gas transportation to Europe), which is based on international treaties on transit of hydrocarbon resources, creates opportunities for Azerbaijan to transport its resources to international markets and attract foreign direct investment in Azerbaijan. Azerbaijan and EU relations are evolving at a fast pace and both parties are committed to further cooperation.

2.2.3 Customs Union of Russia, Kazakhstan and Belarus
Since the collapse of the Soviet Union, Russia has made several attempts to reintegrate the independent states of the Former Soviet Union (FSU). These attempts have manifested in various unions and treaties ranging from political to economic to security agreements.

The most widespread project is the Commonwealth of Independent States (CIS) whose official membership extends to nine former Soviet republics, including Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, and Uzbekistan, and unofficial membership extends to Turkmenistan and Ukraine. (Georgia withdrew its membership in August 2008.) However, the CIS is often only a nominal association of post-Soviet states as its member states differ vastly in terms of governance, economy, and population. Owing to these differences, CIS member states have struggled to strengthen their union since its inception. Head-of-state meetings regarding economic treaties often stretch over the course of several years before an agreement can be reached. CIS member states have, however, succeeded in agreeing upon several free trade agreements since the first attempt in 1994; the most recent trade agreement was signed by eight member states in 2011 (Radio Free Europe, 2013). Unfortunately, these agreements, while good on paper, are, in practice, plagued by all the usual systemic problems endemic to much of the post-Soviet world. Instances of customs corruption and inefficient bureaucracy often render them woefully ineffective even if they are successfully ratified by the participating governments (The Economist, 2013).
Three CIS member states, Belarus, Russia, and Kazakhstan, have, however, successfully established the CU as of 2010. This CU has actually grown out of a greater supranational entity – the Eurasian Economic Community (EEC) – which was signed into existence by Belarus, Russia, Kazakhstan, Kyrgyzstan, and Tajikistan in October 2000. (Uzbekistan joined in 2005, only to then suspend its membership in 2008.) The greater EEC treaty actually includes stipulations for the creation of a Customs Union, a Single Economic Space, and further integration in economic and humanitarian spheres, making the CU just the first step in a much greater project (World Trade Law, 2013). The CU, first committed to in June of 2006 by Russia, Belarus, and Kazakhstan and, subsequently, officially signed in October of 2007, is regulated by a Customs Union Commission composed of one representative from each member state (Eurasian Economic Commission, 2010). This commission met regularly in the next two years to negotiate and draft the necessary regulating agreements for the ECU. In November of 2009, two years since the original agreement, Russia, Belarus, and Kazakhstan signed an agreement regarding a common customs code for the ECU (Eurasian Economic Commission, 2009). In the following year, 2010, the common customs tariff, customs union code, and the common customs territory, all came into force (Eurasian Economic Commission, 2013). Then, after another two years, the three member states launched the Common Economic Space, which included instructions for the development of extensive supranational institutions (Eurasian Economic Commission, 2011). The legal establishment of the Common Economic Space birthed a new ruling body for the customs union, the Eurasian Economic Commission (EEC). The EEC breaks down into the Council of Commission, including one representative from each member state, and the Board of Commission, including nine seats (including one chairperson) with equally divided representation. Each representative on the Council of Commission receives one vote, meaning there is a “one country, one vote” basis for all decisions. Furthermore, the Commission’s decisions are legally binding for all member states and the commission representatives themselves are forbidden from operating under recommendation from their respective national governments.

### 2.2.3.1 Customs Changes

Mechanically, membership in the ECU impacts several aspects of a member-state’s border control. First, the member states agreed to adopt the same Customs Code. This code is based on the harmonized commodity description and coding system with 21 sections divided into 97 different groups of goods¹. Following this change, member-states all agreed to accept a common external tariff (CET.) The CET was largely based on Russia’s prior tariff structure, forcing Kazakhstan to make significant changes to their tariff regulations. Belarus did not alter its tariff structure as significantly as Kazakhstan because their code already experienced a significant overlap with Russia’s code. Due to the considerable changes required to Kazakhstan’s tariff regulations, Kazakhstan was granted a transition period lasting until 2015 during which they will slowly harmonize their CET with that of the other two countries. Additionally, revenue generated from the CET is divided between the three member-states on a predetermined percentage basis. Russia receives 88 per cent of the revenue, Kazakhstan 7 per cent, and Belarus 5 per cent (Eurasian Economic Commission, 2010). These numbers, despite closely matching the share of trade provided by the three countries to the ECU, are not founded on a proportional basis, meaning that were the balance of trade of the three countries to alter for an unforeseeable reason (such as a natural disaster) each country would still receive the above percentages of revenue.

Additionally, internal customs between the three countries were simplified. The number of customs documents required has been decreased, and internal customs control points have been withdrawn altogether from the internal borders between the member states. This change should, in theory, reduce harmful rent-seeking behavior that has allegedly plagued trade amongst ECU members in the past. The three countries have successfully enacted laws which facilitate the free movement of labor. Citizens from Russia, Belarus, and Kazakhstan are not required to apply for work permits before seeking employment in another

¹ For the details regarding the customs code please see the official website of Customs Union at www.tsouz.ru
CU country. This change in regulations provides not only a benefit to current members, particularly to the large population of migrant works from Kazakhstan who seek seasonal or long-term in Russia, but also an incentive to other Central Asian countries to join the CU.

In contrast to the changes in customs regulations, export duties, on the other hand, have remained largely unchanged by CU regulations. This is significant due to the vast amount of revenue generated by export duties on the resource extractive industries of ECU countries. Petroleum products dominate the export charts of both Russia and Kazakhstan, and even represent a plurality of Belarus’ exports, making the exclusion of export duties on such an important industry a logical, albeit selfish, decision for the ECU member states. Despite this agreement, member states have recently voiced that this exemption on energy trade must be re-addressed (Zhandagulova, 2013; Wiśniewska, 2013).

2.2.3.2 Expansion of the Customs Union:
Since its establishment in 2010, member states have discussed the possible expansion of the ECU to other FSU countries. The two primary targets for expansion are Kyrgyzstan and Tajikistan. Since 2012, Tajikistan, the largest trading partners of which are Russia and Kazakhstan, has actively sought membership in the ECU. Tajikistan’s accession to the union has, however, stalled because without Kyrgyzstan holding membership in the ECU it does not have a shared border with the ECU (Gazette of Central Asia, 2012). Initial analysis by the Eurasian Development Bank\(^2\) indicates that Tajikistan stands to experience a positive economic impact from accession to the CU\(^3\).

Conveniently for Tajikistan, Kyrgyzstan has finally committed to joining the Eurasian Customs Union, with Kyrgyz Economy Minister Temir Sariev stating that his country aims to join by 2014 (Radio Free Europe, 2013). Kyrgyzstan’s accession to the CU is a very complicated matter economically due to their geographic - and economic - closeness to China. Kyrgyzstan has historically profited from the re-export trade of cheap Chinese goods to other FSU countries; this re-export trade mainly had the eventual goal of Russian markets and used Kazakhstan as a transit state. However, since the initiation of the new customs regulations of the CU, this re-export trade has become less effective, in turn strengthening Kyrgyzstan’s desire to join the Customs Union\(^4\).

In the following sections, the overall Azerbaijan economy is examined and quantitative calculation is performed to assess advantages and disadvantages if Azerbaijan were to accede to the Custom Union.

3 Economic Trends and Trade of the Republic of Azerbaijan
As mentioned above, the economy of Azerbaijan is an oil-dependent, under-diversified economy with potential agriculture and tourism resources. The evaluation of Azerbaijan’s macroeconomic conditions focuses on the dynamics and composition of GDP for the last 5 years, the development level and trends of the economy, its structure and diversification, and future growth opportunities.

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\(^2\) A bank established by the Russia and Kazakhstan in 2006, currently having Armenia, Tajikistan and Kyrgyzstan as its shareholders apart from the existing CU members.

\(^3\) For more information on the economic impact of Tajikistan’s accession please refer to the Eurasian Development Bank’s report (Eurasian Development Bank, 2013).

\(^4\) For more information regarding Kyrgyzstan’s accession to the customs union please refer to the essay by Alexander Pavlov “Assessing the Economic Effect of Kyrgyzstan’s Accession to the Customs Union”, (Pavlov, 2012)
There is an almost direct, positive relationship between the non-oil sectors and total GDP until 2005 (not shown in the figure). In the following years, starting from 2005/2006 the substantial discrepancies between those two numbers was due to increases in oil extraction and fluctuations of oil prices. Thanks to this trend, as observed in Figure 1, since 2005 the oil sector has overtaken the non-oil sector. However, in 2001, 61 per cent of GDP was attributable to the non-oil sector; in 2008, this declined to 38 per cent. According to the IMF (2010) this reflects an increased dependence of the economy on oil to dangerous levels. The negative consequences of one-sided economic development were almost impossible to prevent, because Azerbaijan’s economy was highly vulnerable to oil price changes. Despite this, Azerbaijan maintained its positive economic growth of 9.3 per cent whereas the world economy suffered economic by decline 0.6 per cent according to the IMF (2010, p. 1) in 2009. This instance resulted in a change of the government’s economic policy. The IMF describes this procedure in more detail:

“First, [the GOA] limited the budgetary impact of the large drop in oil prices by allowing the oil fund to still transfer the budgeted amount of resources to the state budget. Second, it provided a large capital injection and government-guaranteed loans to help the state oil and aluminum companies stay current on their foreign debt obligations. Third, the government adjusted for the fall in revenues by cutting non-priority spending and by financing only on-going capital investment projects. As a result, the government managed to keep the non-oil fiscal deficit broadly stable and was still able to increase social spending. The 2010 budget targets a narrowing of the non-oil deficit, while allowing for cuts in profit and income taxes.”
(International Monetary Fund, 2010)

3.1 Migrant workers in Russia

As of the last census (2010) about 603,070 Azerbaijanis are officially registered in the Russian Federation. Of this, 444,890 are urban; 158,180 are rural (Statistics Service of Russian Federation, 2010). These figures are a small portion of the unofficially claimed figures of 1.6-2 million Azerbaijanis living in Russia. Considering the population of Azerbaijan (9.30 million), the unofficially claimed figures are quite significant to consider for analysis. There are rumors about tightening migration rules of the Russian Federation. If undertaken, these rules would, in the worst-case scenario, force immigrants to close their business and quit their jobs. Experts take different views on this issue: Alovsat Aliyev, Head of the Centre for Legal Assistance to Migrants of Azerbaijan,

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5 The first serious sign of this danger was observed when the oil prices dropped to low points in 2009, due to which the GDP of Azerbaijan decreased by around 4.5 billion (10 per cent) in current prices, the first decrease in GDP since 1995.
6 IMF calculations were based on the constant price approach.
believes there is no chance for adoption of such an amendment to the law. Political expert Leyla Aliyeva takes a contrary view to Alovsat Aliyev. Experts provided no specific argument to support these views, and merely expressed their subjective opinions. Nevertheless, while assessing the implication of the Customs Union to Azerbaijani economy one should consider these points, which will be addressed below.

3.2 Foreign trade of Azerbaijan

According to the State Statistics Committee (2013), Azerbaijan’s foreign trade has increased considerably since the country gained independence in 1991, with trade turnover increasing from USD 4 billion in 1991 to USD 33.6 billion in 2012 (SSC, 2013), a decline of 7.61 per cent since 2011. Of this turnover, 71.3 per cent was derived from exports, the vast majority (around 93.10 per cent) of which was generated from mineral exports, namely natural gas, oil, and petroleum products. Azerbaijan’s top five trading partners by overall turnover are Italy (17.31 per cent of turnover), Russia (6.97 per cent of turnover), the USA (6.90 per cent of turnover), Turkey (6.32 per cent of turnover) and France (5.84 per cent of turnover); top three by value of exports: Italy (23.21 per cent of exports), India (7.91 per cent of exports) and France (7.43 per cent of exports); top three by value of imports: Turkey (15.75 per cent of total imports), Russian Federation (14.28 per cent of total imports) Germany and (8.08 per cent of total imports).

Energy sector exports, or more specifically oil exports, have dominated Azerbaijan’s foreign trade since they reached a majority in 1995. Values of mineral exports, however, did not truly begin to take off until 2004 when the reported value jumped from 138 million USD in 2003 to almost 3 billion in 2004. The weight carried by energy sector exports in Azerbaijan is such that it is, in fact, possible to track overall turnover in Azerbaijani foreign trade by examining the volume of oil exports. This reliance on energy exports, however, has the significant drawback of making Azerbaijan’s turnover in foreign trade overly susceptible to volatility in the energy sector; a relationship clearly illustrated by the spike in exports experienced in 2008 when mineral exports increased by almost 940 per cent from 2007 to 2008, only to fall to 30 per cent of that 2008 value in 2009. This radical increase in 2008 caused a 466 per cent increase in turnover of foreign trade (54.9 million USD, of which 87 per cent were generated from exports) for that year; a number that quickly normalized in 2009. Outside of mineral exports, Azerbaijan’s next five leading exports fall into the following customs categories:

1. Animals and vegetable fats and oils (13.63 per cent of non-oil exports)
2. Sugars and sugar confectionery (13.21 per cent of non-oil exports)
3. Edible fruit and nuts, peel of melons (12.78 per cent of non-oil exports)
4. Plastic and articles thereof (6.69 per cent of non-oil exports)
5. Aluminum and articles thereof (5.83 per cent of non-oil export)

In 2012, these groupings of exports made up 52.15 per cent of Azerbaijan’s non-mineral exports (non-mineral exports are divided into 19 different categories,) but constituted only 3.55 per cent of Azerbaijan’s total exports in that year.

Imports to Azerbaijan have, on the other hand, experienced strong increase since independence, rising from USD 1.9 billion to USD 9.65 billion in 2012, down by 1.06 per cent since 2011. Unlike its exports, Azerbaijan imports a more balanced variety of goods (it also imports 3 additional groups of goods which are not exported from Azerbaijan.) The largest five categories of imports in 2012 constituted 51.18 per cent of imports:

1. Boilers, machinery and mechanical appliances and parts thereof (19.40 per cent of imports)
2. Vehicle other than railway or tramway rolling-stock (10.37 per cent of total imports)
3. Articles of iron and steel (9.02 per cent of total imports)
4. Electrical machinery and equipment, parts thereof (7.84 per cent of total imports)

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7 For further reading please consult CESD’s publication on the foreign trade of Azerbaijan.
5. Iron and steel (4.56 per cent of total imports)

Azerbaijan is, however, a net importer of 77 groups of its 95 different groups/subgroups of products imported. Also included in this list of net imported goods are Azerbaijan’s top three leading groups outlined above. Thus, Azerbaijan functions with a rather substantial trade deficit if one were to ignore the turnover in trade generated from mineral exports (8.0 billion USD in 2012.) (SSC, 2013)

3.2.1 Trade with European Union

When measured as a group, the EU 27 is by far Azerbaijan’s largest trading partner. In 2011, the EU 27 received almost 46.85 per cent of Azerbaijan’s total exports and provided 32 per cent of the goods imported into Azerbaijan. Within the EU, Italy, France, Germany, Greece and Bulgaria are Azerbaijan’s most important partners, with the main commodity traded to these countries unsurprisingly being petroleum. As for imports, Azerbaijan receives a diverse set of goods from its EU partners with leading imports including everything from ‘Machinery, Electrical,’ and ‘Transportation,’ to ‘Food Stuffs,’ and ‘Textiles.’

3.2.2 Trade with Customs Union

Trade with CU countries, Belarus, Russia, and Kazakhstan, represented 18.51 per cent of Azerbaijan’s imports, a 1.5 percentage points decline since 2011; and 4.28 per cent of the country’s exports in 2011, a 2.72 percentage points decline from 2011. Unsurprisingly, trade conducted with the Russian Federation represents the lion’s share of the trade with the Customs Union (as noted above, the Russian Federation is Azerbaijan’s leading import partner.) It is also unsurprising that trade with the Customs Union only occupies 4.28 per cent of Azerbaijan’s total exports. This small figure is owed largely to the fact that the main target market of Azerbaijan’s predominate export goods (i.e. oil and gas) is Europe and not Azerbaijan’s neighboring CIS countries. In light of these figures, it is important to note that gas exports from Azerbaijan to Russia are increasing with a new deal signed in 2012 between SOCAR and Gazprom to double Russia’s gas purchases from Azerbaijan to 3 billion cubic meters a year (UPI.com, 2012). Outside of mineral products, both agricultural goods and food stuffs are leading exports from Azerbaijan to the Customs Union members.

Consistent with the commodity structure of imports for Azerbaijan as a whole, Azerbaijan imports a diverse variety of goods from the Customs Union. However, much of this diversity is solely represented by Russian goods as the comparatively low volume of imports from Kazakhstan and Belarus are dominated by ‘Wheat and meslin’ and ‘Transportation’/’Machinery, Electrical’, respectively.

3.2.3 Trade with Turkey

Turkey is the leading country of origin for goods imported to Azerbaijan and is the critical final destination for Azerbaijan’s BTC pipeline. Furthermore, Turkey and Azerbaijan have a special political relationship due to their strong cultural and linguistic bonds. These ties are often considered to be so close that many Azerbaijanis actually see themselves as being a part of the Turkish nation instead of the albeit already close tie of brother nation. Thus, trade relations between Azerbaijan and Turkey warrant closer examination despite the fact that Turkey is neither an EU member nor a Customs Union member. Turkish goods, in particular Turkish textiles, have a special cultural significance in Azerbaijan. Regardless of real market factors, Turkish goods are perceived to be both of higher quality and more prestigious than equivalent Russian goods. Thus, it is safe to say that Turkish goods occupy a special niche in Azerbaijan’s commercial market that are unlikely to be superseded by increased competitiveness of Russian goods.
3.2.4 Ease of Trade

According to the World Bank’s Doing Business report from 2013, Azerbaijan ranks 169th out of the 183 countries scored in the category of trade across borders. This ranking, apart from being the same as the 2012 ranking, includes data from a number of indicators, such as ‘documents required to export and import,’ ‘time required to export and import,’ and ‘cost required to export and import,’ and applies a series of normalizing assumptions about both the businesses and goods involved in foreign trade. It is important to note that the Doing Business report excludes tariffs from its analysis of trade costs and focuses on reporting non-tariff barriers (NTB) to trade.

According to the 2013 report, exporting a standard container of goods requires eight documents, takes 38 days and costs USD 3430, an increase of USD 525 from USD 2905 in 2012; while importing the same container of goods requires 10 documents, takes 38 days (4 days less than in 2012) and costs USD 3490, an USD 85 increase from USD 3405 in 2012. These numbers place Azerbaijan far behind the regional average ranking for ‘Eastern European & Central Asian Countries’ of 105th, eight positions behind Russia, ranked at 162th (160th in 2012) and 91 positions behind Turkey, ranked at 78th (80th in 2012). This ranking is, of course, affected heavily by Azerbaijan’s geographical location, i.e. landlocked without direct access to the larger European markets, and its precarious border situations; Azerbaijan shares borders with Armenia, Russian Federation, Georgia, Turkey, and Iran. However, the Armenian border is closed; the Turkish border only allows access to the Nakhchivan exclave; and both Russia and Iran rank poorly on Doing Business’s ‘Trading Across Borders’ indicator at 162th and 143rd (139th in 2012), respectively. However, despite Azerbaijan’s geographical hindrances, self-imposed regulatory factors also impact Azerbaijan’s ranking significantly. Of the total 38 days required to export a standard container from Azerbaijan, “document preparation” and “customs clearance and technical control” combined delay the container by 29 days. For imports, “document preparation” and “customs clearance and technical control” delay the container by 30 days of its overall average travel time of 42 days. These delays represent the cumulative effect of excessive documentation requirements, byzantine customs procedures, and antiquated infrastructure.

Comparatively, Georgia, Azerbaijan’s neighbor, is ranked 38th (down from 47th in 2012) in the category of “Trading Across Borders” in Doing Business’s 2012 report. The average container exported and imported to Georgia travelled for only 9 or 10 days respectively, of which only 5 and 6 days were included for delays related to “documents preparation” and “customs clearance and technical control.” Georgia’s higher ranking is in part due to its better location relative to European markets compared to Azerbaijan’s, i.e. access to the Black Sea and a large land border with Turkey. However, delays related to documentation and customs are self-imposed by the local government, and Georgia’s lower duration counts and costs indicate more liberal trade policies in Georgia.

3.2.5 Foreign Trade Regulation of Azerbaijan

Foreign trade is regulated via the State Customs Committee in Azerbaijan who ensures implementation of the Customs Code, International Convention on Customs, the Simplification and harmonization of the customs procedures, Law on the List of Customs Free Imports, Law on the Tariffs on the Imports and Exports, and other local laws.

The heaviest tariffed top-10 imports in Azerbaijan are automobiles, electrical utensils and tobacco, all at 15 per cent. Some types of optical, photographic devices and cereals are also tariffed at 15 per cent. Boilers and related machinery (19.40 per cent of total imports) are the lowest tariffed goods to import: 0.5 per cent.

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8 Azerbaijan ranks 66th out of 183 for overall Business environment
9 For more information on how the World Bank analyzes Trading Across Borders, consult the full report available at http://www.doingbusiness.org/data/exploreeconomies/azerbaijan/#trading-across-borders
10 For more information regarding Georgia’s Doing Business report, consult the report directly at http://www.doingbusiness.org/data/exploreeconomies/georgia/
Moreover, the customs regulations in the following four categories out of the top 10 imported goods are VAT exempt\(^\text{11}\) (State Customs Committee, 2011):

**Table 1 VAT exempt goods of Top 10 imports**

<table>
<thead>
<tr>
<th>2012 Rank</th>
<th>Category</th>
<th>Share in 2012 imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Electrical machinery and equipment, parts thereof</td>
<td>7.84 per cent</td>
</tr>
<tr>
<td>6</td>
<td>Cereals</td>
<td>3.87 per cent</td>
</tr>
<tr>
<td>7</td>
<td>Air-transport facilities</td>
<td>3.75 per cent</td>
</tr>
<tr>
<td>9</td>
<td>Optical, photographic, cinematographic, measuring</td>
<td>3.49 per cent</td>
</tr>
</tbody>
</table>

Source: Authors, prepared based on data of SSC, SCC and law on VAT exemption

Considering the top-10 imported goods constitute 69.18 per cent of total imports, VAT exempt top-10 goods are only 18.95 per cent. The three most imported goods, “Boilers, machinery and mechanical appliances” (19.40 per cent of total imports), “Vehicle other than railway or tramway rolling-stock” (10.37 per cent of total imports) and “Iron and steel” (9.02 per cent of total imports) fall from the list of VAT exempt imports.

\(^{11}\)Obviously not all goods classified under these categories are VAT exempt. For detailed list please consult State Customs Committee (2011)
4 Economic Trends and Trade of Russia, Kazakhstan and Belarus

To answer the overall question posed in this paper, one also needs to assess how accession impacted current members of the CU. Although the main part of that impact is discussed in quantitative analysis part, researchers felt a need for a general economic overview of existing CU members to allow readers analyze the effects of accession. The section below sets the stage for understanding Section 6 (Analysis) of the paper.

4.1 Russian Federation

The Russian Federation is a developing country and one of the member countries of the Group of 20 (G20). The country ranks in the top 10 by GDP worldwide. It is such economic parameters, together with area, population, and hydrocarbon-rich lands, that make the Russian Federation very influential, especially on CIS countries. Therefore, Russia’s economy can affect numerous economic bilateral and multilateral relations.

The economic situation of the federation is best explained by analyzing Figure 2.

In the last five years, Russia’s economic growth has fluctuated, experiencing strong growth up to 8.5 per cent, annually, but also suffering 7.8 per cent backslides. Such sharply changing trends were mainly due to fluctuations in oil prices before and during the financial crisis of 2008-2009. (CIA, 2013). The decline of oil prices contributed to the increased unemployment rate and budget deficit as well (CIA, 2013). During these years, Russia faced challenges in attracting foreign direct investment and suffered from large capital outflows. This led to “Russia’s adoption of a new oil-price-based fiscal rule in 2012” (CIA, 2013) and a flexible exchange rate policy, which have improved the economy’s ability to deal with unwelcome external threats, including but not limited to, volatile oil prices.

Later, the economy returned to positive growth as oil prices rebounded to pre-crisis levels of USD 100+. This boost reduced unemployment to its pre-crisis levels. In Figure 2 is a declining unemployment rate in light of decelerating GDP growth. Considering the unemployment rate is a lagging indicator, meaning it reflects past economic changes rather than current ones, we can argue the decline is due to the boost in 2010. Thus, one can expect the decelerating growth rate will boost unemployment in next couple of years, and – in conjunction with IMF projections12 of another deceleration of 3.3 percent and then acceleration of 3.6 percent – creates a gloomy outlook for Russia’s economy.

Next, we analyze Russia’s trade turnover.

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12 Please see World Economic Outlook, 2013 April release at official web page of IMF:
As Figure 3 shows, Russia exports more than it imports, which is reflected in a positive total trade balance. The main country group yielding this positive balance is trade with non-CIS countries. Trade with the EU contributed the most to this trade balance. According to the Federal Customs Service of Russia (2013), the main exported product to the European Union is oil and related exports, constituting 73.0 per cent of total exports to these countries, a negligible increase from 72.7 per cent. The same trade balance trend is observed with CIS countries. Among these countries, the top five destination countries are Ukraine, Belarus, Kazakhstan, Azerbaijan and Uzbekistan; the top five import sources among CIS countries are Ukraine, Belarus, Kazakhstan, Uzbekistan and Azerbaijan. However, trade balance figures for only Kazakhstan, Belarus and Azerbaijan are provided here for the purpose of this analysis. Among analyzed countries, Russia had its highest trade turnover with Belarus, constituting 31.6 percent and 30.7 percent of CIS exports and imports, respectively. The same is true for Kazakhstan, which counted for 16.4 and 15.4 percent of CIS exports and imports, respectively. Among analyzed countries, Azerbaijan had the lowest trade balance with RF.

The trade situation with the EU, however, is different: Due to the global crisis in 2008, the trade balance decreased, increased since 2009, but decreased again in 2012. The top five export partners are Netherlands (USD 62567 million), Germany (USD34173 million), Italy (USD32582 million), Poland (USD21369 million), France (USD14857 million); the top five importers are Germany (USD37676 million), Italy (USD13401 million), France (USD13276 million), United Kingdom (USD7180 million) and Poland (USD6651 million) (RosStat, 2013).

In recent years, Russia has had a negative trade balance vis-à-vis China because its imports from China were more than its exports. Russia imports from China machinery and equipment, chemical products, shoes, textile clothing, clothing from knitwear, articles of precious stones, leather goods, cutlery, etc. The trade turnover with China generally increased from 2007 to 2008.

Considering the year of establishment of CU (2010) and the increase in Russia’s export (2010), which is reflected in increase of the trade balance, one might assume the CU had a positive effect on trade. However, it should be noted...
that the increase in trade balance after 2010 is mainly thanks to trade with countries other than Belarus and Kazakhstan. In particular, the trade balance with Kazakhstan deteriorated, despite the increase in the total trade turnover. Considering the free trade regime among CIS (apart from free trade regime of the CU) members, this shift in Russia’s exports was unexpected.

4.2 Republic of Kazakhstan

Kazakhstan, a landlocked developing country, recently improved its economic activity and became a member of the Customs Union. It is geographically the largest of the FSU countries, apart from Russia, with rich hydrocarbon reserves and a large supply of other minerals and metals, such as uranium, copper, and zinc (CIA, 2013). It also has a large agricultural sector featuring livestock and grain. Unable access to the world’s ocean, Kazakhstan benefits from the transit potential of its neighbors, especially to transport oil and grain. (CIA, 2013) Last year’s macroeconomic indicators compared favorably with those of previous years and it became the largest Central Asian country in terms of GDP.

During the global financial crisis, Kazakhstan nearly depleted its grain reserves. The price of inelastic goods, for example, bread, sunflower oil, milk and salt, skyrocketed. To resolve the food crisis, the government banned the export of vegetable oil and simultaneously removed import duties on it. (News.Ru, 2007)

It should also be noted that the Doing Business 2013 Annual Report ranks Kazakhstan 49th, above Russia who occupies the 63th place; the HDI for Kazakhstan is 69 with a value of 0.754. By joining the Customs Union, Kazakhstan attracts more foreign trade.

Parts of Kazakhstan’s macroeconomic developments are depicted in Figure 4. The graph likewise depicts the impact of the financial crisis on Kazakhstan’s GDP, which was much sharper than for Russia in 2007, but milder than in 2008. In contrast to Russia, Kazakhstan suffered only economic deceleration, not a decline in growth. Consequently, recovery came faster than in Russia. Compare Kazakhstan’s 7.25 per cent growth to Russia’s 4.5 per cent growth during 2010. GDP bottomed out in 2009, thanks to recovering oil prices and an improved global economic situation. Kazakhstan’s plans for WTO accession during 2013 in light of such strong GDP growth should boost its economy further (CIA, 2013).

Interestingly, we fail to see Russia’s unemployment trend mirrored in Kazakhstan’s case. This is not unexpected, however, in light of Kazakhstan’s stronger GDP growth. But due to a decrease in the GDP growth rate, the deceleration of the unemployment rate became sluggish during 2009.

Trade figures of Kazakhstan tell an interesting growth story, as displayed in Figure 5 and Figure 6.

Figure 5 Trade balance of Kazakhstan with selected countries/country groups in 2006-2012, USD million
The analysis of Kazakhstan’s trade situation (Figure 5 and Figure 6) reveals more exports than imports in general. An obvious growth trend in trade balance can also be observed from the figures. The noteworthy point to stress is this growth does not come from CU or CIS members. The growth in trade balance is mainly from the EU and other countries, like China. In theory, the establishment of the CU should increase trade turnover mainly due to increased trade diversion to CU members from non-CU members and from trade creation. However, as the data shows, the share of exports to the EU grew from 19.60 per cent to 50.21 per cent between 2006-2012. During the same period, exports to CIS changed negligibly, and the share of CIS exports in total exports dropped to 13.61 per cent from 14.57 per cent, after peaking at 16.68 per cent in 2007. As noted, the establishment of the CU also did not shift the trade structure: export and import shares of CU members in total exports and imports remained almost the same, ignoring some minor fluctuations between 2006-2012. Interestingly, there was an increase in China’s share in total export and imports from Kazakhstan.
4.3 Republic of Belarus

The economy of Belarus is based on a socially-oriented market model. Centralized distribution and planning, except for national measures, is absent. The country benefits largely from a developed power industry, engineering industry, agriculture, construction and manufacture of building materials and mining industry (Ministry of Economy of the Republic of Belarus, 2013). Belarus ranks 58th in the World Bank’s 2012 Doing Business annual report; its HDI is 50th with a 0.793 value. Next to Russia, Belarus suffered most from the financial crisis among the members of the Customs Union (CU). The sharp decline in GDP accompanied by increased unemployment, as implied by Figure 7 during 2008-2009. The economy enjoyed growth as high as 8-10 per cent, which suddenly dropped to 0.16 per cent due to the financial crisis. The recovering economy now experiences a decelerating growth rate. Although this is fuelled by the financial crisis of 2009-2011, increased oil costs from the Russian side also contribute to decelerating growth rates. To keep the economy moving, Belarus received a bail-out of USD6.5 billion from Russia in exchange for shares of Beltransgas, Belarus’ national energy company, and other Russian dominated funds (CIA, 2013).

Analysis of Belarus’ trade situation reveals fluctuating trade balances.

![Figure 7 GDP growth rate and Unemployment of Belarus, per cent](source)

![Figure 8 Trade balance of Belarus with selected countries in 2006-2012, USD billion](source)
The analysis of two figures provided above (Figure 8 and Figure 9) reflects an almost unchanged structure of trade activities. Generally, Belarus experiences a negative trade balance with the world. The biggest contributors to this negative trade balance are CIS countries, especially Russia. Kazakhstan, as a member of CIS and CU, contributes positively to the trade balance. Azerbaijan, in its turn, also positively affects the trade balance. The only negative trade balance with Azerbaijan was experienced in 2011, when Azerbaijan’s oil company SOCAR promised to deliver oil supply to Belarus for Venezuela. In turn, Venezuela would fulfill Azerbaijan’s oil supply commitments to the USA. (Reuters, 2011) During the year of swap transactions between Venezuela and Azerbaijan, Belarus’s import from Azerbaijan totaled to USD 825.8 million. (National Statistics Committee of Belarus, 2013)

An interesting point to be inferred from the two figures is the ineffectiveness of the establishment of the CU on boosting Belarus’ trade turnover. Only imports from the CU increased its share in total imports, after establishment of the CU in 2010. However, the same trend is true for EU countries as well, which increased their shares in total imports at the cost of imports from other than CIS, CU and EU countries. The same is true for exports to CU countries. Thus, it is hard to infer the distinct impact of the establishment of CU on Belarusian trade.

5 Methodology

To analyse the impact of potential accession researchers have used two approaches: quantitative and qualitative. Qualitative methods analyse theoretical impacts of accession using non-numerical information, such as cultural, social and personal attitudes of Azerbaijanis. These points range from the attitude towards imports from CU and non-CU countries (Russia vs. Turkey), economic and energy policies implemented by the GOA, and motivation of different international and local stakeholders, etc. These issues are covered in greater detail in the following sections.

The quantitative approach employs two methods:

1. Hedonic Estimation Model (HEM)
2. Linear Regression Model
Researchers were reluctant to run global simulation models\(^{13}\), as it is done to assess effects on the establishment of free trade zones and customs unions or any other economic integration project, as the researchers’ purpose was to assess the implications of CU accession for macroeconomic parameters.

Hedonic Estimation Modelling, as described by the CFA Institute’s “Alternative Investment Series” (CFA institute, 2012), is a widely respected model for pricing in a low information environment. When one needs a lot of assumptions to develop forecasts, Hedonic Estimation Model is useful because it requires a minimal amount of assumptions. The model incorporates the impact characteristics of the existing accession cases (like Kazakhstan and Belarus) into Azerbaijan’s economy and approximates the expected effect on different ratios. Simply put, if a country with Kazakhstan’s economic parameters experiences, as a result of accession, a certain amount of GDP growth, turnover increase, and inflation stabilisation, a hedonic estimation model allows us to forecast any similar effects on these indicators in an economy with Azerbaijan’s parameters.

Applying this Hedonic Estimation Model requires comparable input variables. For example, if we want to estimate the effect of accession on Azerbaijan’s GDP, HEM should include as many other cases of GDP impacts due to CU accession as possible. By analysing these accession cases and generating regression coefficients, HEM allows researchers to calculate the expected changes to Azerbaijan’s economy. The main economic indicators considered in this research are accession impacts on GDP per capita, trade turnover, budget deficit and inflation.

Linear regression modelling, in turn, calculates the effect of accession on separate economic indicators: It helps us understand if accession helped total trade turnover, trade turnover with CU members, GDP and inflation in the analyzed cases. The model runs different economic indicators (in our case: trade figures, GDP and inflation) as dependent (Y) variable and dummy variable of accession as independent (X) variables. The confidence ratio (or alpha) has been chosen to represent the industry-wide experience of 95 per cent (alpha 5 per cent) (DeFusco, et al., 2007, p. 398).

It should be noted that the quantitative methods answer the questions within limitations, as they are imposed to model specifications, its assumptions and quality of input variables. Thus, researchers considered it vital to run a qualitative analysis along with the quantitative one, to prevent any possible mis-explanations generated by the quantitative methodologies. In case of discrepancies, results of qualitative methodologies (stakeholder and sectorial analysis) shall outweigh those of quantitative methodologies.

### 5.1 Assumptions of the models

According to the “Quantitative Investment Management” of DeFusco et al., (2007) both the Hedonic Estimation Model and Linear Regression models are bounded by the following assumptions:

1. There is linear relationship between dependent and independent variables. This is the most vital assumption of the linear regression models. If there is a type of the relation other than linear regression, the model will perform poorly.
2. The independent variable, X, is not random.
3. The error term, \( e \), is uncorrelated across observations. This assumption is important to avoid the so-called heteroscedasticity problem of the model. When the error terms are correlated, they are biasing regression quality controls upward, and inflate them, which in turn may lead to biased conclusions.

\(^{13}\) Global simulation models are developed by international organisations like the World Bank and United Nations, to allow users all around the world to simulate the effects of tariff changes. However, the models mostly take a micro approach and analyze changes in trade flow, trade revenue and trade wealth creation. They are unable to account for macroeconomic effects vis-à-vis tariff changes related to the Customs Union. Among these models, the researchers can enumerate GSIM, SMART/WITS and TRIST models, which are available on the World Bank’s web site.
4. The variance of the error term is the same for all observations, so that there is no serial correlation and it is normally distributed. This assumption is essential for normally distributed data. As we will discuss later on, the data is normally distributed. Thus, its error terms should be normally distributed.

5.2 Limitations of the models
The Hedonic Estimation model and Linear Regression models have the following limitations:

1. Models are limited by the availability of data. Some economic indicators that were initially to be analyzed have been dropped during the regression analysis due to unavailability of consistent and comparative data for the analyzed countries.
2. Lack of post-accession data. Since the CU was established on 1 January 2010, only 3 years of data are available. Although this makes regression results to some extent unreliable, this was the maximum amount of available information at the date of the research.

Violations of the assumptions: As both models are regression models, violations of the regression assumptions generate misleading results.

5.3 Data Sources
The raw inputs used for the qualitative and quantitative parts of the research are sourced from world-recognized sources:

1. The World Bank Database and International Monetary Fund’s World Economic Outlook Database are widely used to generate cross-sectional and time-series data for the selected countries.
2. Offices of national statistics are employed for deriving trade information and trade policies of the counties. These sources are again largely beneficial while conducting background analysis of countries.
3. Official documents of the Customs Union.

6 Analysis
Now that we have covered the latest economic trends of CU members and analysed the possible ways to calculate impacts of accession, we analyze and discuss the results, which are broken down into qualitative and quantitative parts. In the qualitative part, researchers present theoretical implications of accession to different stakeholders and sectors of the economy. The numerical implications of accession are discussed afterwards in the quantitative section.

6.1 Stakeholder analysis
6.1.1 Businesses
According to EBRD calculations, accession to the Customs Union has increased overall trade turnover for companies (Plekhanov & Isakova, 2012). However, a comprehensive quantitative study is necessary to calculate whether increase in trade turnover is the result of economies of scale (exporting large quantities at low cost) or exporting goods or products at relatively high prices for non-Customs Union countries. Besides, business people would enjoy no customs check points and administrative inefficiencies. This would decrease opportunities for corruption at the borders and contribute to easy transit of goods and cheaper prices. Also, business people would be able to sell their products in a bigger market. This would increase competition in the market, allowing businesses to produce goods more efficiently.
6.1.2 Citizens
Accession to the Customs Union would also benefit citizens. First, citizens of Azerbaijan would enjoy better quality products as a result of competition among businesses. Competition, in turn, would decrease the prices of goods and citizens would be able to purchase better quality products for less. According to the guidelines of the Customs Union, there are no barriers to the movement of labor and services, from which Azerbaijan also stands to benefit. Currently, Azerbaijanis enjoy a visa free regime with Russia, allowing them to come and go as they please across the Russian borders. This visa free regime, however, does not extend to Russian working permits. Applying for a Russian work permit is both complicated and expensive and can definitely act as an insurmountable obstacle for a foreigner seeking work in Russia, especially without a fluent command of Russian. Currently, 603,070 Azerbaijanis officially work in Russia and around 2 million more work there unofficially. For the most part they do not move to Russia to work in factories or on farms, or to work as skilled laborers/specialists. Instead, Azerbaijanis often find work at markets, as construction workers, or as drivers. Reasons for these employment choices are varied, but mostly depend on cultural cues, specifically family ties. Thus, Azerbaijanis who move to Russia for work often end up working in the same industries as their relatives or family friends. In addition to the effect of family ties on the employment options of Azerbaijanis in Russia, jobs in the three professions listed above can all easily be found without working permits, i.e., illegally. This means that by joining the Customs Union, thereby gaining equal working status to Russian citizens, Azerbaijanis would be able to branch out in their employment options in Russia and would even be able to compete for more skilled positions. However, that being said, there is little reason to believe that a mass exchange of unskilled or low-skilled labors will take place between Russia and Azerbaijan despite the comparatively higher wages offered in Russia. This is because of cultural and societal factors in both Azerbaijan and Russia.

6.1.3 International partners of Azerbaijan
According to the guidelines of the CU, common import tariffs will impose extra costs on goods imported from non-CU countries. This article of CU guidelines would negatively affect the relationship of Azerbaijan with its strategic alliances and partners such as Turkey, Italy, the EU, the USA, etc. The CU’s unified external tariff policies would hamper economic ties of Azerbaijan with aforementioned countries. Reconstructing equivalent economic ties with strategic partners would be prohibitive and time consuming.

6.2 Sectorial analysis
Sectorial analysis describes accession’s possible impacts on different economic sectors of Azerbaijan’s economy, such as energy, tourism, production, etc. These impacts are discussed in each section, after providing background information on the sector for the last five years.

6.2.1 Energy industry
The energy industry (namely oil and gas) is the largest industry in the economy of Azerbaijan, generating 47.26 per cent of the nation’s GDP in 2012, as shown in the next figure:

Until 2005, the share of GDP from the non-oil sector was around 60 per cent (not shown here) and began to decline since 2006 because of the growth of the oil sector (not necessarily because the non-oil sector had become weaker). By then, the non-oil sector’s share in the economy dropped to approximately 40 per cent. In comparison, the growth rate in this sector appears to lead general development because of the extraordinarily rapid growth rate of the energy sector from 2006 to 2010.

As the then-existing pipelines (Baku-Supsa and Baku–Novorossiysk) did not contribute sufficiently to the development of the sector, the Baku-Tbilisi-Ceyhan pipeline became operational by allowing oil GDP to overtake non-oil GDP.

There have been different drivers of growth from 2000-2013. Unfortunately, the total growth rate lagged behind the oil boom. Interestingly, regardless of sharp changes in overall GDP growth, the non-oil sector maintained a stable and steady annual growth rate having the lowest value of 3.7 per cent, in 2009 due to restricted government spending.

The future prospects of the sector are not very promising. While the production and export of crude oil are currently declining, the hopes for the future of Azerbaijan’s hydrocarbon sector rest primarily on the country’s natural gas resources. The oil industry already experienced its peak in 2010 (SOCAR, 2012) and now suffers rapid decline. During these period oil GDP had growth rates of 1.8 per cent, -9.8 per cent and -5.0 per cent, respectively (SOCAR, 2012). The declining share of oil GDP directly coincides with decreasing oil extraction. From this the decline of the sector to AZN 19.6 billion (USD 25.0 billion) by 2016 is expected. Oil experts generally project 35 million tons of oil extraction for next years. The gas output now is 28 billion m³, according to the calculations of Heydarov (2013). In 2020, this figure will be peaked at 40 billion m³, as stated by Rovnag Abdullayev, head of SOCAR APA (2012). Despite this gas revenue will not compensate oil revenue because of price discrepancies.

6.2.1.1 Energy industry after accession to Customs Union

Energy policy is the priority of Azerbaijan’s foreign policy that has been pursued during its 22 years of independence. The importance of Azerbaijan for the energy security of the world, especially the European Union, is undeniable. Implementing an independent energy policy would be impossible after joining the Customs Union. Azerbaijan, as an oil and gas exporting country, meets its domestic demand as well. Therefore, there is no share of this sector in imports. With this in mind, the effects of tariff changes are immaterial in this sector. However, delegating the export regulations and customs policy to the Customs Union would prevent Azerbaijan from future implementation of current, independent energy policy.

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14 Oil extraction in 2010 peaked at 50.8 million tons; it was 45.6 million tons in 2011; and 43.7 million tons in 2012.

15 In current exchange rate of 0.7846
Considering the pre-accession energy projects would not be affected by accession, Azerbaijan must consider the future of BTC, TANAP and TAP and, if it were to accede to the CU, its inability to implement its own independent energy policy in the future vis-à-vis new energy projects.

Moreover, gas prices for households would be matched with Russia’s indicator, as required by the current energy policy of Eurasian Economic Commission. Interestingly, as of the exchange rate on 27 June 2013, the gas prices for Russian and Azerbaijani households are at the same level, according to our calculations. Although there will be no need to shift gas prices for Azerbaijani households in the short term, no one can guarantee against future shifts, as necessitated by changes in Russia’s gas prices and other policy measures. On the other hand, match electricity and oil prices are not required to be matched with those of Russia under the rules and regulations of the Eurasian Economic Commission.

In any case, Azerbaijan’s accession to the Customs Union would subordinate its energy policy to that of the CU, which would be economic and political suicide because the country’s international and economic relations are inextricably tied to its oil and gas policies. Also, Azerbaijan's energy resources and policies allow it to be a major actor of the region in the near future (see, e.g., Interview with Richard Morningstar, U.S. Ambassador to Azerbaijan, The Politic, the Yale Undergraduate Journal of Politics, August 21, 2013), but entering the Union would substantially foreclose this opportunity.

### 6.2.2 Trade and services sector

The development the sector was fluctuating which is explained by growth in the economy, government spending, and monopolistic competition. These points, in conjunction with unemployment, inflation hampered the purchasing power of the nation which decelerated the growth in this sector from 2008 to 2010. However, share of the sector in GDP increased from 5 per cent to 7 per cent during last 5 years, according to the GOA (Ministry of Economic Development, 2013; SSC, 2013). Moreover the trade sector accounted for 19.4 per cent of total employment in 2012 (Ministry of Economic Development, 2013).

Not surprisingly, the capital investments to the sector jumped by 73 annually in 2012. These figures tell a growth story of the sector.

#### 6.2.2.1 The sector after the accession to CU

The primary purpose of the CU is to increase the turnover of goods and services between countries. However, a special situation may arise: If trade with CU members were to increase less than non-CU trade decreased, then the total turnover would decrease. As we will observe from the quantitative analysis, this case is very rare and accession positively affected trade turnover almost in all countries. But, as our analysis in Chapter 4 revealed, this positive affect is not reflected in trade turnover and trade balance of the countries. As for the tourist-based part of the services sector, because of the pre-existing visa-free regime for CIS countries, accession would not increase tourism. However, as tourism has great potential and higher profitability than other sectors, it might attract investors’ interest. As a result, rapid development of the tourism sector is more likely than for the energy and agriculture sectors.

### 6.2.3 Construction, Telecommunications and Transport sectors

#### 6.2.3.1 Construction sector

After the petrodollars flow, Azerbaijan’s economy enjoyed a construction boom. As there were no newly built houses for last 10-15 years, the demand for new houses was accumulated. Moreover the extensive economic activities, continuous government spending to reconstruct the obsolete infrastructure drove expansion of this sector. As a result, specialized firms have been established to implement these plans. The flow of investments contributed to the fair competition in the sector. But shortly after the sector was monopolized, which resulted in
building prices rising as much as two times faster than the purchasing power of the population (Bayramov, 2013). In the meantime, the construction sector has stabilized after the boom. Some future growth is expected due to the construction of Khazar Islands, a massive, multi-billion project involving 41 islands with projected occupancy of 1 million (Axundov, 2012). The developers plan to make Azerbaijan Tower the largest building in the world, a racetrack, and other public infrastructure (Babayev, 2012).

6.2.3.2 **Telecommunications and IT sector**

The sector gained public attention availability of internet after establishment of with 50 total and two state owned internet service providers. There were the positive impacts of the state supported projects: Population having access to internet increased from 2 per cent in 1995, to 10 per cent in 2006, and 65 per cent in 2011, along with six-fold decrease in prices. State programs in turn, without doubt, increased cell phone usage and coverage: 2,000 in 1994, 9 million in 2011; 104 phones in the country per 100 people. And as a result the sector’s contribution to GDP has more than doubled to USD 1.45 billion. The GOA has prioritized development of sector to achieve 10 per cent annual growth rate, minimum. Azerbaijan’s satellite alone is will generate revenue of USD 650 million annually. The satellite had cost of USD 230 million (AFN News, 2012). According to the same source in 2017 to foster the growth of this sector, there will be another satellite launch.

6.2.3.3 **Transport**

Transportation infrastructure of Soviet times was intended to meet internal demand; Thus there was an obvious challenges to the country after collapse of Soviet union: the railways of USSR were wider than European railways by approximately 10 cm. This problem has only been abolished in 2003 after the implementation of state supported program. Thus roads infrastructure, over-ground and sea transports have been harmonized with world standard (Ministry of Transport, 2013). More over to these the projects implemented by the international financial institutions cumulatively contributed USD 18 billion to the sector in FDI. The sector’s share was the 5.5 per cent of total GDP in 2012 and employs 8 per cent of total population, according to the State Statistics Committee.

6.2.3.4 **The sectors after accession**

It is expected that, after accession these sectors would have good potential to grow, in both terms of quality and quantity. The increased trade turnover would positively affect the transport sector because of increased product deliveries. Local stakeholders in the construction sector would benefit from the construction experience of Russian-based construction workers at a comparatively lower cost. Moreover, despite its stiff energy policy, the EEC to some extent allows some authority on setting tariffs for internal transportation.

6.2.3.5 **Agriculture**

Due to its low urbanization rate, Azerbaijan historically has been considered an agrarian country. Unfortunately, during the last decade the agricultural sector has had a very weak growth rate, which put Azerbaijan on the list of countries failing to meet its own internal demand. Compare the 25.3 per cent of the agrarian sector’s share of GDP

---

16 Figures are from the State Statistics Committee
17 For clear picture, please consider following rates of rural population: 1897: 83.1 per cent, 1935: 67.9 per cent, 1990: 46.1 per cent, 2000: 48.9 per cent, 2012: 47.1 per cent (SSC, 2013)
in 1995 with 10.8 per cent in 2001 and 5.3 per cent in 2011\textsuperscript{18,19}. Despite receiving large capital investments, the agricultural sector’s share of total GDP declined. The share of investments in agriculture increased by 2.7 percentage points to 3.4 per cent in 2011, according to SSC (2013). Supported by new legislations, these investments may foster the growth of this sector.

### 6.2.3.6 Agriculture sector after accession

Joining the Customs Union may delay the development of agriculture. Although the share of agriculture in GDP is only 5 per cent, it has a special significance for the country’s economy. Approximately 40 per cent of the employed population works in this sector (SSC, 2013). At present, the country’s main policy is to develop of the rural economy and protect this sector’s goods from imported goods. Joining the Customs Union would be counter to this policy because it would open domestic markets to the other member countries, each of whose agricultural productivity is greater than that of Azerbaijan. This would threaten local agricultural production and create serious problems for entrepreneurs for whom economic circumstances are already difficult. The first impression is that accession would allow access to major new markets for farmers and a flow of investment into the country. However, this sector cannot even meet current needs of the domestic market. Azerbaijan’s import of agriculture products is about two times higher than their export. This suggests a very weak export potential. The flow of investment will not happen as well, as mentioned above; agriculture sector in the country is not productive and is not considered profitable. At present, Azerbaijan applies import tariffs on goods imported from CU countries. The absence of tariffs in the event of accession would reduce customs revenues in the state budget and increase the flow of low-cost products into domestic markets, which could lead to a fall in production. Therefore, joining the Customs Union would be detrimental to the development of our agriculture sector and threaten the livelihood of hundreds of thousands of farmers and other agricultural workers.

### 6.2.3.7 Non-oil industry

Of the main drivers of non-oil production, production of machinery, electric appliances, light industry and food grew faster than other non-oil production sectors. As shown in Figure 11, the positive developmental trend in the non-oil industry continued, despite decline in overall production. It is noteworthy that the total decline observed after 2010 is due to decline in oil production.

In researcher’s view the establishment of the Techno Park in Sumgait and an accompanying the parks with tax exemption from 2013 to 2020 are crucial steps to develop the sector. Ganja city, the second largest city of Azerbaijan, also plans to establish a Techo Park in the next few years. (Ministry of Taxes, 2013) The current on-going multilateral discussions on establishing different integrative projects will foster growth, as well. These free trade zones are expected to allow Azerbaijan to transition from a raw material exporter to a final goods exporter. Non-oil production contributed to 21.1 per cent of total industry in 2011, and 19.2 per cent in 2012 (Ministry of Economic Development, 2013).

\[\text{Figure 11 Growth rates of total and non-oil industries, per cent}\]

Source: SSC (2013)

\[\text{Non-oil industry} \quad \text{Total industry}\]

\[
\begin{array}{cccc}
2009 & 2010 & 2011 & 2012 \\
6.2 & 8.6 & 9.2 & 11.1 \\
2.6 & 2.6 & -5 & -2.3
\end{array}
\]

\textsuperscript{18} Even though the rapid growth of the oil sector and its considerable contribution to GDP explains the declining share of agriculture somewhat, the sector grew remarkably slow given it employs almost 37.9 per cent of the Azerbaijani labor force (SSC, 2013)

\textsuperscript{19}These figures are provided by the State Statistics Committee
6.2.3.8 Sector after accession to the Customs Union

Industry constitutes more than half of the country's GDP, which underscores its importance. However, the main emphasis in this area is also on the oil and gas sector. Petroleum products do not have a market problem. But on the other hand, domestic availability of oil in Russia and Kazakhstan reduces the potential for export from Azerbaijan to those markets. Belarus would be a potential market, and the trade turnover with Belarus and the amount of its present composition suggest that accession to the Customs Union could improve exports to this country. Exports from Belarus are currently about six times less than imports. After accession, investor interest in the country's industrial sector may increase. Thus, many foreign investors seeking cheap labour, cheap energy costs and unimpeded access to the markets of CU member countries could produce goods in Azerbaijan.

6.3 Quantitative analysis of the accession to the Customs Union

Researchers ran a series of regression analyses and the hedonic estimation model to assess and predict the possible impact of accession on Azerbaijan’s economy in the following areas:

1. Trade with CU members;
2. Total trade turnover;
3. GDP growth rate; and
4. Inflation rate.

6.3.1 Tests for normality

Before running the regression, the collected data was tested to identify its distribution pattern. For example, treating Weibull distribution as normal distribution and running regression analysis with the parameters of normal distribution would lead to biased results. To avoid this, the Individual Distribution Identification function of the Minitab, a statistical analysis package, has been largely utilised. The package was used to run the Anderson-Darling (AD) test, one of the most widespread normality tests, to identify the suitable pattern of the input data. According to the test results:

1. All raw data distributed normally;
2. Two variables, namely “Trade of Belarus with Customs Union”, and “Belarus Inflation” showed strong lognormality characteristics than normality. Thus, these variables were treated as lognormal. But despite this, these variables’ test results allow us to treat them as normally distributed as well.

The results of the normality tests have been reported in Appendix-1. The AD figure is the result of Anderson-Darling test for particular distribution. The lower the figure, the stronger argument for the support of particular distribution. P-value (P) is a decision-making criterion for AD figures. It is the minimum confidence level below which one shall reject the null hypothesis of “Data follows the distribution”, in favor of “Data do not follow the distribution”. In other words, the higher the p-value is than the alpha (confidence level, during the test it was set as 5 per cent), the better the argument for the support of particular distribution. The lower the p-value is than alpha, argues that the data do not follow the specified distribution patterns.

6.3.2 Regression: Did the accession benefit exiting CU members?

Having ensured the normality of the input data, and thus the suitability of the linear regression model to the regression analysis, we discuss the particular regression equations and answer the research question. The regression tests that assess the effects of accession on Russia’s economic parameters revealed an interesting picture. The equations related to Russia (regression equations 1-6 in Table 4) tell different stories. In general, the establishment of the union positively affected Russia’s trade figures, as intended. However, researchers are unable
Shaping the strategy for Azerbaijan

to draw sharp conclusions about Russia’s GDP and inflation figures. Below, we analyze these points in more detail by going over the equations one by one.

6.3.2.1 Shifts in Russia’s trade, GDP and inflation figures

As per the results of quantitative study, in contrast to qualitative analysis, accession’s effect on Russia’s total trade was positive. As the results of the first regression equation indicate, the significance of the F test (0.018573), a figure indicating minimum probability of not rejecting the null hypothesis of “All regression coefficients are equal to zero”, show strong regression results that coefficients are far from the zero, meaning they are meaningful to draw a conclusion on the effect of accession on total trade. As for individual coefficients, the p values of both intercept (0.001889) and X-Coefficients (in our case, a dummy variable of accession) (0.018573) are far lower than 5 per cent (0.05). These two cases argue the strong t-test of the coefficients. The T-test of the coefficients shows that both of the coefficients are statistically different from 0, as the absolute value of t-tests of coefficients (4.058085 and 2.759490) are higher than the absolute value of t-critical, 2.160 (t critical (df = 13; alpha=0.05; two tailed test) = 2.160). These figures allow us to draw a sharp conclusion: Accession did benefit the Russia’s total trade turnover. Without accession (b1 of X-coefficient= 0) Russia’s total trade turnover would be USD 356,922.6743 million. With accession (b1 of X-coefficient= 1) it was expected to increase by an additional USD 505,234.4152 million:

$$Total\ Trade\ of\ Russia = 356922.6743 + b1 \times 505234.4152 + e$$

The same logic applies to the effect of accession on Russia’s trade with CU members. The F-test, significance of the F-test, t-tests and p-values for t-tests all show strong regression coefficients. As the significance test and p-values are lower than the confidence rate of 0.05 and as the absolute values of t-test are higher than the absolute value of t-critical (2.160), we can argue that the following regression equation of accession effects on trade with CU members is a statistically reliable one:

$$Trade\ of\ Russia\ with\ CU\ members = 27252.0300 + b1 \times 23657.6231 + e$$

However, estimating accession’s effects becomes blurry when it comes to Russia’s GDP growth rate (test no 4). The significance of the F-test (0.729050) is higher than the alpha, 5 per cent, which prevents us from going further into a detailed explanation of the equation. Due to this, researchers have run another regression to assess the impact of accession on real GDP (test no. 6). The F-test (0.030384) of this regression to some extent displayed stronger coefficients than Test No. 4. And this regression suggested that Russia’s GDP would have increased by 76 per cent even in a no-accession scenario (32705.1376/42,890.20). Accession would increase GDP by 20 per cent (8674.8191/32705.1376):

$$GDP\ growth\ rate\ of\ Russia = 32705.1376 + b1 \times 8674.8191 + e$$

The regression also revealed strong positive impacts of accession on inflation in Russia: The expected 2.5971 per cent increase in the inflation rate was on average decreased by 0.7035 per cent after accession.

6.3.2.2 Shifts in Kazakhstan’s trade, GDP and inflation figures

The impacts of accession on Kazakhstan’s economy were almost same as those on the Russian economy. The equations for total trade (Regression equation 7) and trade with CU members (Regression equation 8) are as follows:

$$Total\ Trade\ of\ Kazakhstan = 50350.2865 + b1 \times 80008.1951 + e$$

$$Trade\ of\ Kazakhstan\ with\ CU\ members = 9690.4400 + b1 \times 12594.3257 + e$$

As we have observed in the case of Russia both trade turnovers greatly benefited from accession. If, without accession, the total trade turnover would have increased by USD 50350.2865 million, accession contributed an additional USD 80008.1951 million, or 159 per cent more than a no-accession situation.

The same is true for Kazakhstan’s turnover with CU members, which accession boosted by more than 129 per cent. Surprisingly, according to these two contribution figures, accession increased total turnover more than the

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20 One shall mind the possibilities of obvious collision of qualitative and quantitative studies, as it is a case in here
t turnover with CU members. Further investigation of the two regression equations reveals that the equation for trade with CU members is stronger than the equation for total trade turnover. This point is reflected in the p-values and f-tests of two equations as observed in the summary table below, which compares quality measures of the two regression equations:

**Table 3 Comparison of Eq. 7 and Eq. 8**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Equation 7; Trade Turnover</th>
<th>Equation 8; Turnover with CU</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-test</td>
<td>9.171297</td>
<td>13.141830</td>
<td>Higher is stronger</td>
</tr>
<tr>
<td>Significance of F</td>
<td>0.011482</td>
<td>0.003990</td>
<td>Lower is stronger</td>
</tr>
<tr>
<td>P-value for Intercept</td>
<td>0.002206</td>
<td>0.000118</td>
<td>Lower is stronger</td>
</tr>
<tr>
<td>P-value for X-Coeff.</td>
<td>0.011482</td>
<td>0.003990</td>
<td>Lower is stronger</td>
</tr>
</tbody>
</table>

By all means, equation 8 displays stronger quality measures than equation 7. Based on this table, we can argue that the contribution figure of equation 8 (turnover with CU member), 129 per cent, is more reliable than the contribution figure of equation 7 (total trade turnover), 159 per cent. Thus, one should note possible large deviations of the 159 per cent contribution of accession to total trade turnover.

When we analyze the effects of accession on GDP and inflation, the situation worsens. Although not provided here, but in the Table 4, the regression equations indeed imply negative contribution of accession to GDP and positive implications for inflation with X-coefficients of (-0.1128) and (-0.2583), respectively. If, in the case of no accession, GDP would have grown by 1.9864 per cent, in the case of accession this rate is decreased by 0.1128 per cent. Similar to GDP, the inflation rate would be higher under the no-accession case: an increase by 2.1641 per cent. Once acceded to the Union, the rate decreased by 0.2583 per cent.

However, we are unable to draw such sharp conclusions for Kazakhstan’s GDP and inflation figures. The significance of F-test figures (0.802908 for GDP, Equation 10 and 0.252201 for inflation, Equation 11) are much higher than the alpha of 0.05. Although p-values for intercept coefficients are in line with acceptable criteria, p-values for X-coefficients prevent us from drawing sound conclusions on GDP and inflation.

**6.3.2.3 Shifts in Belarus’s trade, GDP and inflation figures**

As expected, the same impact trends of accession on Russia’s and Kazakhstan’s economies are true for Belarus’s economy. The regression equations for trade turnover are the following:

\[
\text{Total Trade of Belarus} = 32793.4285 + b1 \cdot 52335.9889 + e
\]

\[
\text{Trade of Belarus with CU members} = 18053.4900 + b1 \cdot 19914.5100 + e
\]

Accession to the CU benefited both of the turnovers. An USD18 billion increase in turnover was additionally increased by USD 19bn, on average, owing to accession.

The controversial points we have outlined for Kazakhstan’s GDP are true for Belarus as well: accession decreased GDP growth by 0.2806 per cent. And contrary to the effect on Kazakhstan’s economy, accession increased the inflation rate by 0.2765 per cent. However, if we consider quality measures of these two regression equations, in terms of p-values and F-test (including significance of F), we realize that no definite conclusions can be drawn.

Finally, we should also consider the R-squared figures of the regression equations. These figures are calculated by statistical software packages and are used to assess the degree of explanatory power of the independent variable while explaining the dependent variable. The higher the R-squared value, the better the explanation of the dependent variable by the independent variable. In none of our regression equations did the independent variable (dummy variable of Accession) explain more than 55-60 per cent of the dependent variables. The maximum R-squared figure is observed in the equation of Russia’s inflation rate, equation 5. The minimum R-squared value is observed in the equation of accession’s effect on Kazakhstan’s GDP Growth Rate, equation 10. The average R-squared figure was 0.343094. This figure indicates that in almost all of the models, the independent variable did not explain the dependent variable to its maximum possible extent.
### Table 4 Summary of the results of regression tests

<table>
<thead>
<tr>
<th>Test No</th>
<th>Test Name</th>
<th>R-squared</th>
<th>Adjusted R-squared</th>
<th>Intercept Coefficient</th>
<th>Intercept t-test</th>
<th>Intercept p-value</th>
<th>X Coeff.</th>
<th>X Coeff. t-test</th>
<th>X Coeff. p-value</th>
<th>F test</th>
<th>Significance of F test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Accession effect on Russia Total Trade</td>
<td>0.409072</td>
<td>0.355351</td>
<td>356922.6743</td>
<td>4.058085</td>
<td>0.001889</td>
<td>505234.4152</td>
<td>2.759490</td>
<td>0.018573</td>
<td>7.614785</td>
<td>0.018573</td>
</tr>
<tr>
<td>2</td>
<td>Accession effect on Russia CU Trade</td>
<td>0.410019</td>
<td>0.356384</td>
<td>27252.0300</td>
<td>6.630070</td>
<td>0.000037</td>
<td>23657.6231</td>
<td>2.764899</td>
<td>0.018394</td>
<td>7.644668</td>
<td>0.018394</td>
</tr>
<tr>
<td>3</td>
<td>Accession effect on LN (Russia CU Trade)</td>
<td>0.347224</td>
<td>0.287880</td>
<td>10.1027</td>
<td>70.300677</td>
<td>0.000000</td>
<td>0.7236</td>
<td>2.418905</td>
<td>0.034073</td>
<td>5.851104</td>
<td>0.034073</td>
</tr>
<tr>
<td>4</td>
<td>Accession effect on Russia GDP Growth Rate</td>
<td>0.011349</td>
<td>0.078528</td>
<td>1.6521</td>
<td>4.355246</td>
<td>0.001145</td>
<td>-0.2806</td>
<td>-0.355347</td>
<td>0.729050</td>
<td>0.126272</td>
<td>0.018394</td>
</tr>
<tr>
<td>5</td>
<td>Accession effect on Russia Inflation Rate</td>
<td>0.557770</td>
<td>0.517568</td>
<td>2.5971</td>
<td>28.623357</td>
<td>0.000000</td>
<td>-0.7035</td>
<td>-3.724775</td>
<td>0.003354</td>
<td>13.873952</td>
<td>0.034073</td>
</tr>
<tr>
<td>6</td>
<td>Accession effect on Russia Real GDP</td>
<td>0.359265</td>
<td>0.301017</td>
<td>32705.1376</td>
<td>19.490880</td>
<td>0.000000</td>
<td>8674.8191</td>
<td>2.483504</td>
<td>0.030384</td>
<td>6.167792</td>
<td>0.030384</td>
</tr>
<tr>
<td>7</td>
<td>Accession effect on Kazakhstan Total Trade</td>
<td>0.454671</td>
<td>0.405095</td>
<td>50350.2865</td>
<td>3.967289</td>
<td>0.002206</td>
<td>80008.1951</td>
<td>3.028415</td>
<td>0.011482</td>
<td>9.171297</td>
<td>0.011482</td>
</tr>
<tr>
<td>8</td>
<td>Accession effect on Kazakhstan CU Trade</td>
<td>0.544359</td>
<td>0.502937</td>
<td>9690.4400</td>
<td>5.806408</td>
<td>0.000118</td>
<td>12594.3257</td>
<td>3.625166</td>
<td>0.003990</td>
<td>13.141830</td>
<td>0.003990</td>
</tr>
<tr>
<td>9</td>
<td>Accession effect on LN (Kazakhstan CU Trade)</td>
<td>0.415955</td>
<td>0.362860</td>
<td>9.0267</td>
<td>53.754388</td>
<td>0.000000</td>
<td>0.9784</td>
<td>2.798960</td>
<td>0.017307</td>
<td>7.834178</td>
<td>0.017307</td>
</tr>
<tr>
<td>10</td>
<td>Accession effect on Kazakhstan GDP Growth Rate</td>
<td>0.005908</td>
<td>0.084464</td>
<td>1.9864</td>
<td>9.373301</td>
<td>0.000001</td>
<td>-0.1128</td>
<td>-0.255690</td>
<td>0.802908</td>
<td>0.065377</td>
<td>0.802908</td>
</tr>
<tr>
<td>11</td>
<td>Accession effect on Kazakhstan Inflation Rate</td>
<td>0.117205</td>
<td>0.036951</td>
<td>2.1641</td>
<td>21.078724</td>
<td>0.000000</td>
<td>-0.2583</td>
<td>-1.208478</td>
<td>0.252201</td>
<td>1.460419</td>
<td>0.252201</td>
</tr>
<tr>
<td>12</td>
<td>Accession effect on Kazakhstan Real GDP</td>
<td>0.504931</td>
<td>0.459925</td>
<td>691.9497</td>
<td>13.989457</td>
<td>0.000000</td>
<td>344.8770</td>
<td>3.349496</td>
<td>0.006483</td>
<td>11.219124</td>
<td>0.006483</td>
</tr>
<tr>
<td>13</td>
<td>Accession effect on Belarus Total Trade</td>
<td>0.507891</td>
<td>0.463154</td>
<td>32793.4285</td>
<td>4.394897</td>
<td>0.001072</td>
<td>52335.9889</td>
<td>3.369390</td>
<td>0.006259</td>
<td>11.352788</td>
<td>0.006259</td>
</tr>
<tr>
<td>14</td>
<td>Accession effect on Belarus CU Trade</td>
<td>0.543845</td>
<td>0.502376</td>
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<td>6.834084</td>
<td>0.000028</td>
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<td>0.433530</td>
<td>0.384018</td>
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<td>0.014132</td>
<td>8.481104</td>
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<td>16</td>
<td>Accession effect on Belarus GDP Growth Rate</td>
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<td>0.078528</td>
<td>1.6521</td>
<td>4.355246</td>
<td>0.001145</td>
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<td>-0.355347</td>
<td>0.729050</td>
<td>0.126272</td>
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<td>17</td>
<td>Accession effect on Belarus Inflation Rate</td>
<td>0.015003</td>
<td>0.074543</td>
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<td>0.167542</td>
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<td>18</td>
<td>Accession effect on Belarus Real GDP</td>
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6.3.3 Hedonic Estimation Model: Will Azerbaijan’s economy gain from the accession?

To answer the last research question, authors ran the Hedonic Estimation Model with the following variables:

- **Dependent variable**: GDP in current prices, million USD,
- **Independent Variable**: Trade Turnover with Customs Union Members, million USD
- **Independent Variable**: Trade Turnover with Non-Customs Union Members, million USD
- **Independent Variable**: Budget Deficit, million USD
- **Independent Variable**: Exponential (Inflation)

The aforementioned model generated the following equation for the dependent variable:

$$ GDP = -3,829.16 + 3.548641 \times \text{CU Trade} + 2.142136 \times \text{Non-CU trade} + 1.288472 \times \text{BgdDef} + 2.95932 \times 10^{-22} \times \text{Inflation} $$

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Intercept</th>
<th>CU Trade, million USD</th>
<th>Non-CU trade, million USD</th>
<th>Budget Deficit/Surplus, USD million</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3,829.16</td>
<td>3.548641</td>
<td>2.142136</td>
<td>1.288472</td>
<td>2.95932E-22</td>
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</tbody>
</table>

The R-squared and Adjusted R-squared figures for the regression equation are 0.979691 and 0.945843, respectively. The quality of the regression equation is best expressed by the F-value and P-value for F-test, which are 28.943628 and 0.009648, respectively.

Once applied to the 2012 statistics of Azerbaijan, these figures imply an almost 5 per cent increase in the country’s GDP in current terms:

$$ GDP = -3,829.16 + 3.548641 \times \text{CU Trade} + 2.142136 \times \text{Non-CU Trade} + 1.288472 $$

Once plugged in and calculated for the GDP with Azerbaijan’s appropriate statistics for 2012, the GDP for 2012 becomes USD 72,243.77 million. Considering the regression run for statistical figures since 2010 (2010-2012, the CU’s functioning period) and its results, we conclude there would be approximately a 4.99 per cent potential increase in Azerbaijan’s GDP. Considering the GDP growth rates for 2010, 2011 and 2012 were 4.96 per cent, 0.94 per cent, and 2.16 per cent respectively, their average is 2.69 per cent. The important point is to realize that Azerbaijan has achieved – without CU membership – an average GDP growth rate of 2.69 per cent for the last three years. With CU membership, it could enjoy an additional 2.3 per cent increase in its GDP growth rate thanks to the increased trade turnover with CU members and decreased budget deficit. Meanwhile, as expected, non-CU trade contributed less than trade with CU members, as their coefficients imply.
7 Summary of paper and Recommendations

This paper assessed the economic impacts on Azerbaijan in the event that it accedes to the CU and analysed the issues in qualitative and quantitative terms. The Customs Union of Belarus, Kazakhstan and Russia is an economic integrative project proposed by the Russian Federation and effectively established on 1 January 2010. It is largely regarded as an extension of current economic integrative projects of Russia, namely the Commonwealth of Independent States and a quasi-re-establishment of Soviet Union. This re-establishment will not be limited with establishment of a 3rd degree economic integration (Customs Union) of Former Soviet Union countries, but will continue further with 4th and 5th degree integrative models (like Eurasian Economic Union and possibly Eurasian Monetary Union, after establishment of common currency). The Customs Union is, by its nature, a third degree economic integration (preferential free trade agreement- free trade agreement- customs union). The Customs Union was initially coined in world media in June 2006 by then-president of the Russian Federation Vladimir Putin and signed in October 2007. The Union has a supervising body composed of the representatives of all member states. This body, in conjunction with others belong to the Eurasian Economic Union, which is a supra-government institution in its turn. Two years following the official agreement, the abovementioned countries adopted a code for common customs to control the external and internal customs tariffs. After this, member states considered the possible expansion of the Union to other FSU countries, namely Tajikistan and Kyrgyzstan. Tajikistan it its turn, considering its trade realities (Russia and Kazakhstan are the largest trade partners), has actively sought membership in the ECU. The accession has stalled only because of lack of common border; without accession of Kyrgyzstan to the Union, Tajikistan will have no common border with the Union.

Considering Azerbaijan’s case, it is not easy to attain Pareto efficiency (one person is better off, no one is worse off) by acceding into the CU. Some stakeholders will be better off; some will be worse off (Potential Pareto Efficiency). However, taking into account the aforementioned analysis and overall net effects, Azerbaijan’s accession to the CU would not be beneficial in the long run. As mentioned, the economy of Azerbaijan is overwhelmingly dependent on the oil and gas sector, accounting for over 94.49% per cent of total export, as of the 1st half of 2013. Only a small portion of total export goes to CU countries, predominantly to Russia. Having a harmonized export policy would negatively affect Azerbaijan’s trade relations with EU countries. Most importantly, accession to the CU would take away Azerbaijan’s long-term ability to independently manage its natural resources. Moreover, common import tariffs would increase the total cost of comparatively higher quality imports from EU countries and Turkey. At the same time, it would increase the competitiveness of lower-quality Russian goods. Machinery, electronic equipment from the EU, textiles and food products from Turkey would be much more expensive and not beneficial to exporting partners. As a result, this would hamper Azerbaijan’s relations with crucial trading partners.

On the other hand, in the short run, accession to the CU would positively affect certain stakeholders in Azerbaijan. First, businesses would benefit from the elimination of customs checks, which would enable them to export more easily their non-oil products, predominantly agricultural products, to other CU countries. Also, administrative barriers would be abolished at the customs centers at these
Accession to the Customs Union: Shaping the strategy for Azerbaijan

by Ziya Alili, MSc; Tural Abbasov, MPA; David N. Chang, JD; Max Hoyt

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Borders. This would decrease corruption to the benefit of businesses. Businessmen would have a bigger market for their products. Also, there would be favourable conditions for businesses to invest in different countries of the CU with no limitation. This would increase competition, and, in turn, decrease the price of goods and services. Businesses in the agriculture sector, however, would not be able to compete with better quality products imported from Russia, Kazakhstan and Belarus. Nevertheless, they might consequently develop their production by using new technologies. Moreover, in the short run, accession would allow GDP to grow at 2+ per cent faster, despite its long-term consequences.

Accession would also impact various economic sectors differently. The energy sector is the top economic sector affecting Azerbaijan's foreign policy. Accession would prevent Azerbaijan from further implementation of current energy policy, which would effectively ensure a Russian monopoly of the energy supply to the EU. Moreover, Azerbaijan imports no energy, so any theoretically positive effects from tariff changes are irrelevant in this context. Although accession would affect only future energy projects and not current ones, delegating export regulations and customs policy to the Customs Union would deprive Azerbaijan of independence in its energy policy. The only promising point is accession will prevent Azerbaijan from its energy policy on future projects, and not effective for the current energy projects. Considering this point, Azerbaijan can ensure the future prospects of BTC, TANAP and TAP. The important point to consider is the inability to implement its own independent energy policy in the future when Azerbaijan becomes interested in new energy projects.

In the event of accession, gas prices for households would be matched with the relative indicator of Russia, as per policies of the Eurasian Economic Commission, the supervisory body of the CU. Because CESD calculations reveal almost the same prices for household gas in Russia and Azerbaijan, there it would be unnecessary to shift Azerbaijani gas prices in the short term; however, no one can guarantee against future shifts. On the other hand, there is no need to match electricity and oil prices with those of Russia, as these are not required by EEC rules and regulations.

Although accession would develop the trade and services sector, especially vis-à-vis Russia, it could strain relationships with the EU and Turkey, who are critical economic partners and political allies. As discussed above, accession affected trade turnover differently in different countries. An increase in tourism would not be expected after accession, which would grant no benefits to visitors in addition to those already enjoyed under current CIS agreements. However there is another point to consider: The EU is by far the largest trading partner of Azerbaijan, accounting for half of exports and one-third of imports. Among EU countries Italy, France, Germany, Greece and Bulgaria are Azerbaijan’s most important partners, due to energy exports. Having this in mind, and considering the strategic importance of Turkey, in addition to having strong cultural bonds with Azerbaijan, is the largest importer to Azerbaijan and final destination of Azerbaijan’s BTC pipeline, the unified external tariff policy of the CU would raise barriers to the EU and Turkey and could run counter to westward integrative projects, such as TRACECA and INOGATE. However, trade with CU members also has strategic importance: Azerbaijan’s agriculture products are mostly exported to CU members, especially Russia. Thus, the effect on trade of joining the CU does not clearly weigh in favour or against accession.

21 Assuming adoption of strong antimonopoly rules and regulations
Interestingly, the construction, transportation and IT sectors are expected to have good potential to grow, in both quality and quantity. The possible increase in trade turnover would positively affect transport sector because of increased good deliveries. Construction sector will have a change to benefit from huge construction experience of Russian based construction workers, which will allow local stakeholders to benefit from this experience in a very cheap way. Although without calculation it is hard to state any possible effects of accession to construction sector, it can act as a double-edged sword. Despite this, considering the current IT potential of Russia and Russians, one can ensure the strong development potential in IT sector of Azerbaijan.

Unfortunately, joining the Customs Union would hinder the development of agriculture. Although the share of agriculture in GDP is very low, it is of critical strategic importance because it employs almost 40 per cent of the population. Accordingly, the government is taking strong policy positions to support this sector. Joining the Customs Union would be contrary to these policies because it would allow other CU countries, whose agricultural productivity is greater than that of Azerbaijan, to export their goods to Azerbaijan and win in price competition. This would threaten local agricultural production and create serious problems for entrepreneurs for whom economic circumstances are already difficult. Since the agriculture sector cannot even meet current domestic needs, the comparative advantage for this sector disappears. Moreover, because Azerbaijan imposes tariffs on goods imported from CIS, including but not limited to CU countries, the removal of tariffs in the event of accession would reduce customs revenues and increase the flow of low-cost products into domestic markets, which could lead to a fall in production. Therefore, the effect of accession to the CU on agriculture would be overwhelmingly negative.

On the other hand, investors might become interested in Azerbaijan’s industrial sector. Current government support, for example, abolishing taxes for the next seven years, and other incentives will lead to the development of the sector, even after accession. Foreign investors seeking cheap labor, cheap energy costs and free access to the markets of other CU members, may consider Azerbaijan a good spot to develop their businesses.

Taking into account the pros and cons of accession to the Customs Union and Azerbaijan’s strategic political and economic priorities, we conclude that although Azerbaijan might receive short-term benefits from accession, in the long run, it is not beneficial. Thus, the Centre for Economic and Social Development offers the following conclusions and recommendations:

- Because joining the Customs Union of Belarus, Kazakhstan and Russia would not be beneficial in the long run, CESD strongly recommends against accession;
- Although there are short term benefits, as per the results of the Hedonic Estimation Model, one cannot ensure the future continuation of short-term benefits, which are, in any event, outweighed by long-term disadvantages. The Hedonic Estimation Model estimates only the implications of accession if Azerbaijan had acceded in 2010. There is no guarantee for the same trend in 2010-2013 to be continued in following years.
- Per the results of the sectorial and stakeholder analysis, the Customs Union promises nothing more than the existing advantages of the Free Trade Zone of the Commonwealth of Independent Countries. Because Azerbaijan already has all of the potential benefits of
accession to Customs Union within framework of Free Trade Zone of the CIS, CESD discerns no marginal material benefit to the accession scenario.

- As per the discussion in Section 4, there is no obvious impact from establishing the Customs Union on the trade turnover of Russia, Belarus and Kazakhstan. Russia experienced increased trade balance, fostered by the exports, after establishment. However, it should be noted that the increase in trade balance after 2010 is mainly thanks to trade with countries other than Belarus and Kazakhstan. As for Belarus’s trade flow after establishment of CU, the imports from the CU increased its share in total imports. However, the same trend is true for trade with EU countries as well. This increase in the EU’s share came at the cost of imports from other CIS countries. The same is true for exports to CU countries. The lack of a monosemous positive impact from acceding to the CU is true for Kazakhstan, as well. After 2010, Kazakhstan experienced growth in external trade, but not due to increase in trade with CU members. The growth in trade balance sourced mainly from the EU and other countries, like China. Thus, there is no guarantee of a positive impact from accession on Azerbaijan’s foreign trade.

- Considering the current social and political realities, in the event that Azerbaijan were to accede to the Customs Union anyway, CESD recommends the “United Kingdom model of accession”. The UK was granted exemptions in its accession to the European Union. Having in mind the Azerbaijaniis living in Russia, Russia’s important share in non-oil exports, especially agriculture exports of Azerbaijan and some political points, which are beyond the scope of this research, existing Customs Union members, especially Russia, may exert tremendous pressure on Azerbaijan to accede. Considering Azerbaijan’s current geo-political location and its accumulated reserves (monetary and non-monetary\(^{22}\)), if Azerbaijan found itself acceding to the CU, it should follow the “UK model” of accession and request exemptions.

- In the event of accession, CESD strongly recommends obtaining the following exemptions:
  - Decision-making independence on all energy projects, current and future;
  - Full control over the cash flow of current and future energy projects;
  - Independent monetary and fiscal policies;
  - Exclusion from possible integration of the Customs Union into the Monetary Union in the future;
  - Non-applicability of the Common Customs Tariffs to all external countries (non-CU members), which will allow Azerbaijan to implement its own tariff policy, especially with the EU and Turkey.

\(^{22}\) Please refer to the CESD’s earlier research on accession to the Eurasian Economic Union at following link, for more information on this: [http://cesd.az/new/2013/05/considering-accession-to-the-eurasian-economic-union-for-azerbaijan-disadvantages-outweigh-advantages-independent-economic-assessment/](http://cesd.az/new/2013/05/considering-accession-to-the-eurasian-economic-union-for-azerbaijan-disadvantages-outweigh-advantages-independent-economic-assessment/)
### 8 Appendices: Tests for Normality

Welcome to Minitab, press F1 for help.

#### 8.1 Distribution Identification for Total Trade Turnover of KZ

**Descriptive Statistics**

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<tr>
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<th>N</th>
<th>N*</th>
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<th>StDev</th>
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Box-Cox transformation: Lambda = 0.5

**Goodness of Fit Test**

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<th>LRT P</th>
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#### 8.2 Distribution Identification for Total Trade Turnover of RF

**Descriptive Statistics**

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Box-Cox transformation: Lambda = 0.5

**Goodness of Fit Test**

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#### 8.3 Distribution Identification for Total Trade Turnover of BLR

**Descriptive Statistics**

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Box-Cox transformation: Lambda = 0.5

**Goodness of Fit Test**

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### 8.4 Distribution Identification for CU Trade of KZ

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### 8.5 Distribution Identification for CU Trade of RF

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</table>
8.6 Distribution Identification for CU Trade of BLR

* NOTE * P Value for original data > 0.1. No Johnson transformation function is selected.

Descriptive Statistics

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<th>Distribution</th>
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8.7 Distribution Identification for GDP Growth rate, KZ

Descriptive Statistics

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8.8 Distribution Identification for GDP Growth rate, RF

Descriptive Statistics

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</table>
ACCESSION TO THE CUSTOMS UNION: Shaping the strategy for Azerbaijan

by Ziya Alili, MSc; Tural Abbasov, MPA; David N. Chang, JD; Max Hoyt

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Johnson transformation function:
0.797127 + 0.963736 * Asinh( ( X - 7.90348 ) / 1.92436 )

Goodness of Fit Test
Distribution AD P
Normal 0.155 0.505
3-Parameter Lognormal 1.142 *
2-Parameter Exponential 3.452 <0.010
3-Parameter Weibull 0.416 0.221
Smallest Extreme Value 0.413 >0.250
Largest Extreme Value 1.939 <0.010
3-Parameter Gamma 20.853 *
Logistic 0.575 0.088
3-Parameter Loglogistic 0.582 *
Johnson Transformation 0.291 0.553

8.9 Distribution Identification for GDP Growth Rt BLR

Descriptive Statistics
N  N*  Mean  StDev  Median  Minimum  Maximum  Skewness  Kurtosis
13  0  6.69769  3.38705  7.04  0.16  11.45 -0.552836 -0.319392
Box-Cox transformation: Lambda = 1

Goodness of Fit Test
Distribution AD P LRT P
Normal 0.256 0.664
Box-Cox Transformation 0.256 0.664
Lognormal 1.625 <0.005
3-Parameter Lognormal 0.276 * 0.000
Exponential 1.523 0.025
2-Parameter Exponential 1.986 <0.010 1.000
Weibull 0.801 0.032
3-Parameter Weibull 0.198 >0.500 0.037
Smallest Extreme Value 0.198 >0.250
Largest Extreme Value 0.520 0.181
Gamma 1.071 0.010
3-Parameter Gamma 2.427 * 0.164
Logistic 0.251 >0.250
Loglogistic 1.080 <0.005
3-Parameter Loglogistic 0.252 * 0.003

8.10 Distribution Identification for Inflation KZ

Descriptive Statistics
N  N*  Mean  StDev  Median  Minimum  Maximum  Skewness  Kurtosis
13  0  8.66769  3.30530  7.58  5.12  17.15 1.69059 2.86360
Box-Cox transformation: Lambda = -1
Johnson transformation function:
-0.603958 + 0.657037 * Asinh( ( X - 6.79424 ) / 0.854348 )

Goodness of Fit Test
Distribution AD P LRT P
Normal 0.198 0.140
Box-Cox Transformation 0.187 0.883
Lognormal 0.433 0.255
3-Parameter Lognormal 0.207 * 0.132
Exponential 2.957 <0.003
2-Parameter Exponential 0.500 >0.250 0.000
Weibull 0.842 0.024
3-Parameter Weibull 0.387 0.414 0.020
Smallest Extreme Value 1.392 <0.010
Largest Extreme Value 0.392 >0.250
Gamma 0.585 0.145
3-Parameter Gamma 0.480 * 0.290
Logistic 0.673 0.044
8.11 Distribution Identification for Inflation RF

* NOTE * P Value for original data > 0.1. No Johnson transformation function is selected.

### Descriptive Statistics

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Box-Cox transformation: Lambda = -0.5

### Goodness of Fit Test

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