Economic effects estimation for the Eurasian Economic
Union: Application of regional linear regression

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ABSTRACT

This paper aims to provide a coherent analysis of the economic impact accession to the
Eurasian Economic Union has had on the economies of current member states and what
affect membership would have on the economy of Azerbaijan. By applying a Linear
Regression Model we find that membership to this regional bloc has yielded minimal
financial benefits for the existing members. However, for most states, accession has
increased the trade deficit with Russia and that a membership would likely produce a
similar negative outcome for Azerbaijan in addition to undermining national economic
and energy policy making.

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1. Introduction

Since its official inauguration in 2015, the Eurasian Economic Union (EAEU), consisting of the Russian Federation, Republic
of Belarus, Kazakhstan, Armenia and the Kyrgyz Republic, has often been regarded as the regional competitor of the European
Union and inspired by its model; an integrated block of post-Soviet republics with a single market and common policies on
trade, energy investment etc. that allow the free movements of goods, services, and people. While on paper this seems
justified, this article provides a coherent analysis of the economic impact integration has had on the economies of the
member states. In this context, we aim to address the following questions: what have been the benefits and shortcomings for
the countries following their accession to the EAEU? What would be the potential economic implications for Azerbaijan
should it wish to join this regional block?

The process of accession to the EAEU for new members has necessitated the adoption of a Customs Code and in turn
implementing a common external tariff (CET), which was mainly based on Russia’s tariff structure. In terms of internal trade
among member states, customs barriers such as import tax and customs duties have been removed and the number of
customs documents has been reduced. Additionally EEU nationals can work in any of the member countries without a work
permit.

The aim of this paper is to provide an in-depth analysis of the potential impact the accession of Azerbaijan to the EAEU
would have on the country’s economy. By using both quantitative data and qualitative analysis the article will examine
whether Azerbaijan stands to gain economically from a membership or whether an accession will bring minimal benefits at
the expense of relinquishing a greater degree of the state’s independent policy-making in its economy and trade relations.
In the first section after the literature review, we will analyze the economic trends and trade dynamics of the current member states of the EAEU. The section thereafter will focus specifically on Azerbaijan. Following our brief description on the methodology, we will conduct a sectorial analysis for the country. Finally, we will interpret the results of the econometric models, hypothesizing on the potential impact of an EAEU membership for Azerbaijan and develop our conclusion.

2. Literature review

Publications on the Eurasian Economic Union by other authors can be narrowed down to two particularly descriptive ways of analyzing the regional block, namely: focusing on its geopolitical aspect and the overall performance of the union. Not only is the EAEU a counter-balance to the EU for Russia but it also a way to protect its traditional sphere of interests from an ever-increasing Chinese presence in the region (Kim, Y. & Indeo, F. 2013, 279-280). For the sake of this article, the latter manner of analysis will be touched upon. Moreover, Kazakhstan will be used as the main example in this section. The choice of Kazakhstan is based on the fact that, like Azerbaijan, it too is a fossil-fuel exporting country and has a much less developed industrial sector compared to Russia (Bayramov and Abbas, 2017). As mentioned above, the elimination of internal trade barriers and the imposition of a common external tariff would, as one can expect, increase mutual trade in the union. In the case of Kazakhstan (along with Armenia and Kyrgyzstan) this entailed an increase in its external tariff, rather than a decrease, as was the case for Russia and Belarus (Russell, M. April 2017).

This resulted in Russia increasing its share of imports to Kazakhstan but exports to Russia and Belarus from Kazakhstan, on the other hand, have been insignificant, as is evident by its constant trade deficit with the EAEU countries (Kassenova, N. Nov 2012, 19-20). Kassenova, N. attributes this to the fact that Kazakhstan is mainly a mineral exporter and importer of manufactured goods (Nov 2012, p. 20). However, Ziguo, L. highlights that the actual share of intra-trade between the member states is considerably lower than trade with EU countries, 11.7% and 60% respectively in 2014 (Aug 2016). He attributes this to the similar composition of the economic structures of the countries, particularly in the case of Russia and Kazakhstan, which limits production transfers (Ziguo, L. Aug 2016). This supports the argument put forward by Jarosiewicz, A. & Fischer, E. that due to Russia having the most developed manufacturing base among all other EAEU members the result will be a one-sided stream of intra-trade, that is, more imports from Russia to the other states rather than vice-versa (Jarosiewicz and Fischer, 2015). Russell, M. notes however that since 2014 trade within the EAEU has increased sharply relative to trade with non-EAEU countries (April 2017, 5). However, Russell, M. argues that this shift only began in 2014, thus oil price rather than tariff changes have had a bigger impact (April 2017, 5). Lower oil prices and the resulting devaluation of national currencies in Russia and Kazakhstan made imports from third countries much more expensive (Russell, M. April 2017, 5). Moreover, an essential component of integration within the union is the ideology of “defensive regionalism”, in other words, seeing China and the EU not only as strategic partners but also as competitors (Roberts, S. & Moshes, A. 2016, 552). For Russia this entails protecting domestic producers within its manufacturing sector from foreign competitors while for Kazakhstan protecting its domestic market from re-exported Chinese goods from Kyrgyzstan is a key priority (Roberts, S. & Moshes, A, 2016, 552). In the case of Russia, this strategy is evidentially crucial as the CIS countries represent the biggest market for Russian manufactured goods (Krickovic, A. 2014, 514).

The dominance of the energy sector in Kazakhstan has so far limited any real benefits of integration. Due to a lack of diversification away from this sector Hartwell, C. argues that there is a risk that both countries will become more synchronized in their boom/bust cycles as a result of deeper integration (2013, 414). Only by expanding the non-energy sectors of the countries and utilizing trade from each other’s respective non-energy sectors can integration prove more beneficial (Hartwell C. 2013, 414). Cooper, J. also points out the disparity in the sizes of the economies of the member states, which leaves the economies of the smaller countries vulnerable to fluctuations in the Russian economy as they become more integrated (Cooper, J. 2013, 22 in Dragneva & Wolczuk, 2013). Moreover, Dreyer, I. & Popescu, N. highlight that customs union work best when their members are either rich or complimentary, and to avoid trade diversion liberalisation must cover all areas of trade, including “trade barriers towards non-members which should not be raised and so called “behind-the-border” barriers to commerce should be reduced” (Mar 2014, 2). In their analysis they note that market access for exporters in Kazakhstan and Belarus has been limited, while Kazakhstan has seen signs of trade diversion (Dreyer, I. & Popescu, N, Mar 2014, 3). It should also be noted briefly that bandwagoning for economic concessions from Russia by the smaller members has been an important precondition for deeper integration (see Viera, A.V.G. 2016). There have also been incidents of behind the border barriers. As mentioned above, both Belarus and Kazakhstan saw an influx of Russian goods. This forced Belarus and Kazakhstan to implement a series of non-tariffs barriers to protect their markets (Strzelecki, J. Feb 2016). In addition, due to the size of the economies of the new members, Armenia and Kyrgyzstan, “the initial economic effect of their integration will not be sizeable” (Kirkham, K. 2016, 119).

Oscar B. Sierra has analyzed the influence of Russia and EU over the South Caucasus and concludes that approach of Russia is less institutionalized and legalistic than EU’s as it is more based on informal ties ranging from political to business spheres. According to him, despite being a crucial partner in the region, countries of Southern Caucasus view Russian initiatives as a potential way to influence them (Pardo Sierra, 2011).

The dominance of the energy sector in Azerbaijan, as with Kazakhstan, will arguably lead to similar outcomes. However, if we disregard diversification for one moment, the main drawback for Azerbaijan in joining the union would be a harmonization of its energy policy into the planned common internal and external energy policy of the EAEU towards third countries, particularly considering the importance of the trade relations between Azerbaijan and the EU (Bayramov, V. 17 Jun 2013, 15).
In addition, Bayramov argues that the common internal energy policy of the EAEU, requiring member states to share the profits of their natural resources with other members, makes accession to the union unappealing (17 Jun 2013, 15).

3. Economic trends and trade of the custom union members

To be able to assess the impact that a potential membership accession to the EAEU might have on the economy of Azerbaijan it is important to look at how membership has affected the current members. The following section will outline several economic indicators in the economies of the member states to evaluate the impact that membership has had on overall economic development in these countries. The benchmark year for all economic indicators will be set at 2013, but in the case of Armenia and Kyrgyzstan the year is 2015.

3.1. Russian Federation

The Russian Federation is not only one of the biggest economies in the world, with an estimated total GDP of 1.283 trillion USD, but also a major energy player, currently first in the world as natural gas exporter and second, only after Saudi Arabia, as oil exporter. This coupled with its historical role as the region’s super power makes it the most influential player among the EAEU member states. As most major hydrocarbon exporting countries, Russia’s economic growth is very much dependent on the price of oil and fluctuations in the global market. Looking at the uneven trend of the country’s real GDP growth affirms this claim, reaching an average annual high of 1.79% in 2013, a low of −2.83% in 2015 and with a spike in 2017 up to 1.5%. As can be seen in Fig. 1 the downward trend of Brent since 2013 and the recent modest rebound conforms to the similar trend of economic growth experienced in the Russian economy; this has been particularly obvious in the case of 2015 which saw a sharp drop in the price of Brent and the slight increase that has been estimated for 2017.

Despite the decreasing level of economic growth, the level of unemployment has remained relatively stable, hovering between 5.2% and 5.6% between 2013 and 2017 (International Labor Organization). Inflation on the other hand saw an almost 100% increase for the year 2015, reaching 15.5% (World Bank Data). This is directly linked to the devaluation of the ruble of that same year that in turn was caused by the fall of the price of Brent oil in 2014. It is important to point out that this spike was temporary, as inflation dropped the following year down to pre-price shock levels to around 7% (World Bank Data). The main factors behind the stabilization of the inflation rate were the gradual recovery of the ruble, low effective demand by the population, but most importantly due to the relatively tight monetary policy of the Bank of Russia (Dokuchaev, D. 14 Jul 2016). In terms of Foreign Direct Investment (FDI), the collapse of the price of oil inherently lead to a massive outflow of investors in 2014 reducing the level of FDI from an all-time post-financial crisis high of 62.22 billion USD in 2013 to 22.03 billion USD (World Bank Data). The additional compliment of sanctions by the West on the Russian economy further decreased the amount of FDI to a mere 6.85 billion USD in 2015 (Szakonyi, D. 12 July 2017). However, this figure jumped to 32.54 billion USD in 2016. In addition, the EU member states are the main investors in Russia representing three quarters of FDI stocks (European Commission Trade Policy).

![Fig. 1. Relationship between Russia’s GDP growth and oil price.](image-url)
The current total trade turnover of Russia in 2016 was 471.2 billion USD. Imports and exports in 2016 amounted to around 183 billion USD and 285.5 billion USD respectively, creating a trade surplus of 102 billion USD. Russia's biggest trade partners are non-CIS countries, in particular, countries of the European Union, who in 2016 imported 118 billion Euros (130 billion USD) worth of goods and services (European Commission Trade with Russia, 16 Nov 2017). Oil and gas constitute the majority of Russian exports to the European Union. Imports from the EU, on the other hand, amounted to around 72 billion Euros (79.2 billion USD) (European Commission Trade with Russia, 16 Nov 2017). It should be noted that from 2012 to 2016 the volume of trade between Russia and the EU decreased by approximately 44% (European Commission Trade Policy). Arguably two factors can be contributed to this, namely, the sanctions (and counter-sanctions) and the drop in the price of oil in 2013 and 2014 respectively. However, trade has recovered slightly since 2016 (European Commission Trade Policy).

Russia's total trade turnover with the countries of the EAEU was recorded at 8.3% in 2016. Exports and imports to EAEU members were estimated at 25.55 billion USD and 13.56 billion USD respectively, amounting to a total trade turnover of 39.1 billion USD (Federal Customs Service). Here it is also important to point out that these figures point to a trade surplus of almost 12 billion USD or 30.6% of total trade turnover with the EAEU states. Out of the member states the highest trade turnover was with Belarus which surmounted to 23.45 billion USD, or; 60% of total turnover with the EAEU (Federal Customs Service). Trade with Kazakhstan constituted around 33% of total trade turnover, with Armenia 3.4% and Kyrgyzstan just over 3% (Federal Customs Service). Azerbaijan's trade turnover in 2016 represents 3.45% of total CIS trade with Russia, a decrease from 4.18% in 2013 (Federal Customs Service).

A final point to be examined further is the change in Russia's volume of trade with countries from the EU and the EAEU. In 2016, the EU represented 42.8% of Russia's total trade turnover, a slight decrease from 49.6% in 2013 (Federal Customs Service). For the same year the overall trade turnover with the EAEU countries stood at 8.3%, as mentioned above, thus recording a slight increase (Federal Customs Service). On the other hand, if one looks at its predecessor, the Customs Union of Belarus, Kazakhstan and Russia, in 2013 Russia's trade turnover with these countries was a mere 7.2%. Moreover, trade with countries from the Asia-Pacific Economic Cooperation was 30.0% 2016 (Federal Customs Service). In other words, trade with the EAEU has increased but still constitutes a small percentage compared to Russia's trade with other regional trade blocks (Federal Customs Service).

3.2. Republic of Kazakhstan

Kazakhstan is the second largest member of the EAEU and, like Russia, is a major exporter of natural gas and oil. This is evident when considering that 68.7% of the country's exports are hydrocarbon fuels and that over ⅓ of demand comes from Europe (EIA: Kazakhstan, 10 May 2017). In addition, being a landlocked country, it has to rely on Soviet-era infrastructure, through Russia, for its exports. Thus, we can expect a similar developmental pattern to that of its bigger neighbor when analyzing the economic indicators.

Indeed, we find that overall GDP growth in the period 2013-2016 has decreased from a high of 6% in 2013 to a low of 1.1% in 2016, reaching 4.0% in 2017 (Committee on Statistics). However, this decline is expected to be reversed for 2017, with estimations pointing to a 4.3% growth (Committee on Statistics). As is the case with Russia's GDP growth, Kazakhstan's GDP growth is also correlated with fluctuations of the price of Brent crude oil. Kazakhstan's GDP growth recorded an equal downtrend following the drop in price of Brent and, following the increase in 2017, is also expected to register a growth.

Unemployment in Kazakhstan has remained fairly stable since 2013, hovering at around the 5% mark, and coincidentally similar to Russia's case (Committee on Statistics). Inflation, on the other hand, has had a different trajectory. Between 2013 and 2015 the rate of inflation saw only a mild increase of less than 1% from 5.8% in 2013 to 6.7% in 2015 (IMF Data Mapper). However, the rate of inflation jumped to 14.6% in 2016 (IMF Data Mapper). Like its bigger neighbor, the sharp drop in the price of Brent oil sent shocks throughout the Kazakhstani economy forcing the National Bank of Kazakhstan in 2015 to devalue the tenge (Dorsati, M. & Sarsenov, I. 1 Sep 2016). This, in turn, resulted in a spike in the inflation rate.

Kazakhstan's trade turnover in 2016 amounted to 62.11 billion USD, a substantial decrease from 2013 when trade turnover was 133.5 billion USD (Committee on Statistics). Exports stood at 36.73 billion USD, of which 23.89 billion USD were hydrocarbon fuels, while imports were 25.37 billion USD (Committee on Statistics). This translates to a trade surplus of 11.36 billion USD for 2016.

Trade with the EAEU countries in 2016 was 13.79 billion USD, representing 22.2% of Kazakhstan's total trade turnover for that year (Committee on Statistics). If we compare this figure to 2013 (24.6 billion USD), we can see a substantial decline in the total turnover with the EAEU (Eurasian Economic Commission Statistics). It is important to note that the figures for 2013 do not include Armenia or Kyrgyzstan, as they had not joined yet. Looking at imports and exports to the EAEU countries we find that while imports have been almost halved since 2013 (18.67 billion USD to 9.86 billion USD in 2016), exports actually peaked in 2014 (6.49 billion USD) only to drop the following years, down to 3.93 billion USD in 2016 (Eurasian Economic Commission Statistics). Here again, the devaluation of the national currency was the main contributor in relation to exports. In addition, we find that while Kazakhstan has a total trade surplus, trade with the EAEU countries, on the other hand, has constantly recorded a deficit (Eurasian Economic Commission Statistics). Currently, the deficit constitutes 43% of total trade turnover with the EAEU states.

If we first look at imports and then exports by individual country we see that imports from Russia and Belarus have been steadily decreasing even prior to the accession of the two newest members (Eurasian Economic Commission Statistics). On the other hand, imports from Armenia and Kyrgyzstan did increase slightly between 2015 and 2016 (Eurasian Economic...
Compared to Russia and Kazakhstan, the inflation rate has actually steadily decreased from a high of 18.3% in 2013 to a current low of 11.84% in 2016 (World Bank Data). This is a significant drop from 2013 when trade turnover with Russia and Kazakhstan amounted to 40.68 billion USD (Eurasian Economic Commission Statistics). If one removes Russia's total share of trade turnover (25.25 billion USD) between Belarus and the EAEU countries, the total figure for the remaining member states amounts to less than 1 billion USD. This is supported by data from the National Statistics Committee of Belarus which shows that trade turnover between Belarus and Kazakhstan constituted 0.45 billion USD, for Armenia 32 million USD and Kyrgyzstan 53 million USD. In other words, with the exception of Russia, the other three EAEU countries represent less than 1% of Belarus's total trade turnover. In terms of imports from EAEU countries we see a steady decline from 22.98 billion USD in 2013 to 15.38 billion USD in 2016 (Eurasian Economic Commission Statistics). Exports dropped from a high of 17.7 billion in 2013 to 11 billion in 2015, with a slight increase to 11.38 billion in 2016 (Eurasian Economic Commission Statistics). As of 2016 Belarus's trade deficit stood at 4 billion USD, equaling to 15% of total trade turnover with the EAEU states. Both exports and imports to Russia experienced a decline in the period of 2013–2014 to eventually drop sharply in 2015, with only exports slightly recovering by 2016 (Eurasian Economic Commission Statistics). The trajectory of imports and exports to Kazakhstan have been declining since 2013, the biggest drop occurring in 2015 (Eurasian Economic Commission Statistics). In the case of Armenia and Kyrgyzstan, imports have increased since their accession but exports have actually been in decline (Eurasian Economic Commission Statistics). Finally, Belarus’s share of the EAEU’s mutual trade turnover has grown to 26.5% (Eurasian Economic Commission Statistics).

3.3. Republic of Belarus

Landlocked Belarus renowned as a traditional hub of heavy industry is the third biggest member in the union. However, Belarus is also known for its socially-oriented market model and was one of the few countries of the former USSR that did not embrace the path of liberalisation. Even though Belarus is not a resource-abundant economy like its eastern counterparts, thus avoiding oil price shocks, the pattern of Belarus's GDP since 2013 has been recording a negative trend. GDP growth in 2013 was 1.02% which declined to –3.83% in 2015 and rose slightly in 2016 to –2.65% (World Bank Data). However, in 2017 this figure became positive again (1.19%) (National Statistics Committee). The main factor here is trade with Russia. Russia is by far Belarus's biggest trading partner representing 51.1% of the country's total trade turnover (National Statistics Committee). The recession in Russia caused by the sharp drop in oil prices has inherently also impacted the Belarusian economy. However, according to World Bank predictions Russia’s economy is set to recover from the recession, as growth again becomes positive (World Bank Economic Report).

Unemployment in Belarus has remained unchanged in the period of 2013–2016, at 0.5% (ILO Statistics & Databases). Compared to Russia and Kazakhstan, the inflation rate has actually steadily decreased from a high of 18.3% in 2013 to a current low of 11.84% in 2016 (World Bank Data).

Trade turnover for 2016 was 51.15 billion USD, down from 80.23 billion USD in 2013 (National Statistics Committee). Exports were recorded at 23.54 billion USD and imports at 27.61 billion USD, translating to a trade deficit of 4.07 billion USD (National Statistics Committee).

Total Trade turnover with the EAEU countries amounted to 26.5 billion USD or 52.1% of Belarusian total trade turnover for 2016 (Customs Authorities of Belarus). This is a significant drop from 2013 when trade turnover with Russia and Kazakhstan amounted to 40.68 billion USD (Eurasian Economic Commission Statistics). If one removes Russia's total share of trade turnover (25.25 billion USD) between Belarus and the EAEU countries, the total figure for the remaining member states amounts to less than 1 billion USD. This is supported by data from the National Statistics Committee of Belarus which shows that trade turnover between Belarus and Kazakhstan constituted 0.45 billion USD, for Armenia 32 million USD and Kyrgyzstan 53 million USD. In other words, with the exception of Russia, the other three EAEU countries represent less than 1% of Belarus's total trade turnover. In terms of imports from EAEU countries we see a steady decline from 22.98 billion USD in 2013 to 15.38 billion USD in 2016 (Eurasian Economic Commission Statistics). Exports dropped from a high of 17.7 billion in 2013 to 11 billion in 2015, with a slight increase to 11.38 billion in 2016 (Eurasian Economic Commission Statistics). As of 2016 Belarus’s trade deficit stood at 4 billion USD, equaling to 15% of total trade turnover with the EAEU states. Both exports and imports to Russia experienced a decline in the period of 2013–2014 to eventually drop sharply in 2015, with only exports slightly recovering by 2016 (Eurasian Economic Commission Statistics). The trajectory of imports and exports to Kazakhstan have been declining since 2013, the biggest drop occurring in 2015 (Eurasian Economic Commission Statistics). In the case of Armenia and Kyrgyzstan, imports have increased since their accession but exports have actually been in decline (Eurasian Economic Commission Statistics). Finally, Belarus’s share of the EAEU’s mutual trade turnover has grown to 26.5% (Eurasian Economic Commission Statistics).

3.4. Republic of Armenia

The smallest country both in size and population, Armenia is one of the newest additions to the Customs Union. It is also the only member state that does not share a border with any other union member, thus trade with the EAEU has to pass through Georgia. Armenia’s GDP growth rate up until 2016 remained pretty stable, between 3.3% and 3.6%, but saw a sharp fall that same year, down to 0.2% (World Bank Data). Unemployment levels have been considerably higher than that of the other EAEU countries, hovering between 18.5% and 16.2% (World Bank Data). In 2016 inflation turned negative (–1.27%), in other words the country experienced a deflation (World Bank Data). While the downsides of economic dependence on oil can be removed from the equation (since Armenia lacks any hydrocarbon resources), the explanation is intrinsically linked to the characteristics of Armenia’s economic relations with Russia.

According to statistics from the Customs Service, total trade turnover in 2016 was around 5.086 billion USD, out of this, trade turnover with Russia represented about 27% (Customs Service). However, since 2013 the level of trade turnover with Russia has had an interesting trajectory. As the figures shows, a steady decline in the level of trade can be observed until 2014 with sharp drop in 2015 and a rebound for 2016. Indeed, we see a pattern with that of Russia’s GDP growth rate, which in turn followed the trajectory of the price fluctuations on the global oil market.

In terms of trade with the EAEU, total trade turnover for 2016 was 1.45 billion USD or 28.5% of Armenia’s total trade turnover (Eurasian Economic Commission Statistics). Compared to the previous year this is an increase of around 200 million
USD (Eurasian Economic Commission Statistics). In the case of Armenia we find that both exports and imports have increased as a result of joining the union. In fact, imports increased only slightly compared to exports, from 988 million USD to 1.06 billion USD and 256 million USD to 393 million USD respectively. Thus, it would seem Armenia has to a certain degree benefitted from accession. However, it is equally important to note that Armenia has one of the largest trade deficits among the member states. Currently, the deficit is 668 million USD or 63% of total trade turnover with the EAEU countries (Eurasian Economic Commission Statistics). Again, by looking at trade with individual members we see that exports have increased with all the countries fairly equally, with the exception of Kazakhstan (Eurasian Economic Commission Statistics). Imports on the other hand have only increased from Russia and Kazakhstan while exports from Belarus and Kyrgyzstan have declined (Eurasian Economic Commission Statistics).

As mentioned above, Russia dominates in this category, constituting almost 95% of Armenia’s trade with the bloc; Belarus second with 3.6%, Kazakhstan third with 1.5% and Kyrgyzstan only 0.3% (Manukyan, A. 3 Mar 2017). Armenia’s share in the mutual trade turnover of the union has actually increased from 0.6% to 0.9% since its accession in 2015 (Eurasian Economic Commission Statistics).

Arguably, the impact on the economy of Armenia has not been as severe as for the oil-exporting countries; nevertheless it underlines the unilateral dependence on the Russian economy, further deepened as a result of Armenia’s accession to the EAEU.

3.5. Kyrgyz Republic

The most recent addition to the union has been the small mountainous country of Kyrgyzstan. Being a landlocked mountainous country, its economy is mainly dependent on the export of gold, but also precious metals and ores, which accounts for 54.6% of its exports (National Statistical Committee). Kyrgyzstan’s GDP growth saw a sharp drop in 2014, from 10.9% (in 2013) to 4% (World Bank Data). Since then it has remained relatively stable at about 3.8—3.9% (3.82% in 2016) (World Bank Data). Two factors can be contributed to this. Firstly, the state’s heavy reliance on the mining industry, particularly gold, meant that the drop in the international price of gold in 2014 greatly impacted the economy. The second factor was the crisis that same year in the Russian economy.

Unemployment levels have been on a path of minimal decrease, from 8.3% in 2013 to 7.7% in 2016 (World Data Bank). Inflation has been quite steady throughout the period (6-8%) with the exception of 2016 when it dropped to 0.4% (World Data Bank).

In terms of trade, Kyrgyzstan’s total trade turnover for 2016 stood at 5.46 billion USD while exports and imports were 1.544 billion USD and 3.919 billion USD respectively, resulting in a trade deficit of 2.374 billion USD (National Statistical Committee).

Trade turnover with the countries of the EAEU in 2016 was 2.06 billion USD; this is a relatively significant drop from 2015 when turnover was 2.4 billion USD (Eurasian Economic Commission Statistics). Interestingly the main reason for this was a 20% decline in imports compared to 2016. Between 2015 and 2016 imports dropped from 2.01 billion USD to 1.62 billion USD, while exports increased from 399 million USD to 447 million USD (Eurasian Economic Commission Statistics). These indicators highlight the economy’s dependence on imports and the comparably low levels of exports, which as a consequence has led to a trade deficit of 1.17 billion USD or 56.9% of total trade turnover with the EAEU states. However, it should be noted that due to the sharp drop in imports the trade balance, in turn, also shrunk from 76.6% in 2015. According to figures from the Eurasian Economic Commission we see that overall imports to all member states have decreased, with the exception of Armenia which nearly tripled (Eurasian Economic Commission Statistics). On the other hand, we find that exports to Russia and Kazakhstan did indeed increase but exports to Armenia and Belarus decreased in the above mentioned time period (Eurasian Economic Commission Statistics).

As of 2016 Russia represents the biggest trading partner in the block, at 64% of total trade turnover with the EAEU, Kazakhstan coming second with 34%, while Belarus and Armenia constitute the remaining 2% (Eurasian Economic Commission Statistics). Kyrgyzstan’s total share of the EAEU’s mutual trade turnover amounts to just 1% (Eurasian Economic Commission Statistics).

4. Economic trends and trade of the republic of Azerbaijan

Azerbaijan is one of the bigger oil-exporting countries in the post-Soviet space and, apart from Russia, a major oil supplier to the EU. However, like many resource-rich countries its economy is greatly dependent on oil and suffers from many symptoms of the resource curse. Among those include: weak non-oil sectors and an economy prone to oil fluctuations and shocks. As was the case of the Russian Federation and Kazakhstan, the correlation of GDP growth to the price of Brent oil is equally evident in the case of Azerbaijan. At its highest in 2013 GDP growth rate stood at 5.8% and, following the trajectory of the oil price, has registered a steady drop to –3.1% in 2016. However, as the price of Brent increased for the year 2017 so too did Azerbaijan’s GDP, up to 0.1% (State Statistical Committee).

Azerbaijan’s total foreign trade turnover has increased from 1.3 billion USD in 1995 to 21.8 billion USD in 2017 (State Statistical Committee). Mineral fuels, particularly since 2004, have dominated the composition of Azerbaijan’s exports. This, in turn, makes the country’s foreign trade turnover highly susceptible to fluctuations in the global oil market. Two recent events highlight this. In 2008 total trade turnover jumped from 11.77 billion USD to 54.92 billion USD, due to the sharp increase of exports (representing 86.9% of total trade turnover for that year) (State Statistical Committee). Oil’s share of total exports on the other hand constituted 97.1%, also up from 81.4% in 2007 (State Statistical Committee). The main reason behind
the increase of oil exports was the coming online of the Baku-Tbilisi-Ceyhan oil pipeline. This coupled with high oil prices explains the sharp spike in Azerbaijan’s trade turnover for that year. However, once oil prices collapsed total trade turnover for the following year, in 2009, dropped down to 20.82 billion USD, with exports making up the sum of the drop (down to 14.7 billion USD from 47.75 billion USD in 2008) (State Statistical Committee). The second oil price collapse in 2014 caused a similar shock to the economy which saw trade turnover fall with almost 10 billion USD (State Statistical Committee). The remaining exports constitute: vegetables, prepared food & beverages, plastic material, and represent only around 13% of Azerbaijan’s exports (State Statistical Committee).

In terms of imports, Azerbaijan imports a variety of products but the five main categories are:

- Machinery and mechanical appliances, electrical equipment, etc. (23.6%)
- Base metals and articles of base metal (15.4%)
- Vehicles, aircrafts, vessels and associated transport equipment (9.4%)
- Chemical Products (8.3%)
- Prepared food (7.8%)

Constituting 64.5% of total imports for 2016, a slight decrease of 1.3% since 2013 (State Statistical Committee). Looking at the composition of imports, one can conclude that Azerbaijan lacks a well-developed manufacturing industry.

Azerbaijan’s main trading partner is the EU, which made up 35% of the country’s total trade turnover for 2016 (State Statistical Committee). This is a drop of almost 10% since 2013 (State Statistical Committee). EU countries contribute up to 26% of Azerbaijan’s total imports and 43.2% of total exports (State Statistical Committee). Both imports and exports have also decreased since 2013, from 35.1% to 48%, respectively (State Statistical Committee). However, the EU, as a whole, still remains the biggest trading partner of Azerbaijan. After the EU, Turkey has the biggest share of Azerbaijan’s total trade turnover, constituting around 13.1% (State Statistical Committee). Yet, Turkey is only Azerbaijan’s second biggest export and import partner, if one looks at individual country (thus excluding the EU). In fact, Russia is Azerbaijan’s main import partner, making up almost 20% of total imports (State Statistical Committee). Nevertheless, Russia is only Azerbaijan’s 8th biggest export partner, at 4.5% of total exports (State Statistical Committee). Moreover, Russia makes up the lion’s share in Azerbaijan’s trade turnover with the EAEU, estimated at around 88.8% of total trade turnover (State Statistical Committee).

In spite of the fact that Russia is the main non-oil export partner of Azerbaijan, accounting for 1/3 of total non-oil exports (Azerbaijan State Statistics Committee, 2017), the share of non-EAEU countries in Azerbaijan non-oil exports has increased since 2016. Excluding Russia, 4 out of the top 5 non-oil export destinations are not members of the EAEU — they are Turkey (2nd), Switzerland (3rd), Georgia (4th) and Italy (5th) (Azerbaijan State Statistics Committee, 2017). Moreover, Azerbaijan is continuously searching for new markets to reduce its dependency on traditional markets, particularly the Russian market. As such, a potential membership in the EAEU would not have any positive impact on Azerbaijan’s export diversification and would, in fact, reduce Azerbaijani export to new markets, including the EU market.

As of 2016 the EAEU’s share of Azerbaijan’s total trade turnover stood at 13.1%, this shows a growth of just over 4% compared to 2013 (8.85%) (State Statistical Committee). Trade with the EU on the other hand, as shown above, has decreased. This is due to the drop in the price of Brent oil which meant lower revenue from oil exports and a weaker consumer power in Azerbaijan. Arguably this has resulted in increased trade with both Turkey and Russia. Russia’s share in imports increased with more than 5% since 2013 (State Statistical Committee). The explanation here lies in weak consumer power in Azerbaijan; as the manat devaluated, Russian goods became a cheaper import alternative. In the case of Turkey, the explanation in the increased trade turnover lies in Azerbaijan’s exports, in particular, natural gas’s share in exports. Total exports to Turkey jumped to 1.47 billion USD in 2015 from 502 million USD in 2014, of which natural gas was about 800 million USD (State Statistical Committee). The following year, in 2016, exports dropped to 1.13 billion USD, portraying the price crunch of natural gas that occurred, as natural gas constituted about 400 million USD of the drop (State Statistical Committee).

5. methodology & analysis

The analysis section will assess the possible impact of accession applying a qualitative and a quantitative approach. The qualitative approach will outline the non-numerical implications for the main sectors of the economy. The quantitative approach will highlight the numerical implications by employing a Linear Regression Model. By using a qualitative approach for the sectoral analysis, we can estimate the main benefits or consequences for each sector. A numerical approach will give us an idea of how economic indicators might alternate following an accession. For the sake of this paper, all non-energy sectors have been grouped into a non-energy group, compared to a solely energy sector.

6. Sectorial analysis

6.1. Energy sector

The energy sector is the biggest and most revenue-generating sector, contributing to 37.2% of total GDP as of 2017. Although if one takes into account all other sectors into one whole group (that is, non-oil GDP) then we see that combined
these contribute more to total GDP than the energy sector by itself. As we can see on the figure, the share of non-oil GDP up until 2015 has increased while the share of oil-GDP has decreased. However, from 2016 on we see a reversing trend as non-oil GDP started to decrease and oil GDP started to increase. This again relates to the rebound of the price of Brent oil. It is also important to mention that prior to 2012, the share of oil GDP was above the 50% threshold (State Statistical Committee).

Total production has steadily declined since 2013 from around 43.5 million tons to 41 million in 2016 (SOCAR Statistics). Even though official explanation points to the commitment Azerbaijan has undertaken in accordance with the OPEC/NOPEC deal, which entails cutting production to raise the price of oil, the main reason for a declining output is due to the decreasing capacity of its major oil platforms (CESD, 18 May 2017). In fact, Azerbaijan experienced a decline in oil output prior to the OPEC agreement. This is evident if one compares oil output in 2010 (50.7 million tons) to 2016 (41 million tons), an almost 10 million decline in the span of 6 years (CESD, 18 May 2017; SOCAR Statistics). In other words, Azerbaijan has entered a post-oil period with low oil output.

Gas production on the other hand has had a less volatile trajectory compared to oil. Total gas production in 2010 was 26.3 million m3, reaching a historical high of 29.6 million m3 in 2013, then slightly dropping to 28.9 million m3 in 2015 to rebound to 29.3 million m3 for 2016 (SOCAR Statistics). According to SOCAR officials, the second phase of the Shah Deniz 2 gas field (the biggest gas field in Azerbaijan) is expected to come online by the end of 2018 with predictions that 2 billion cubic meters will come online as of 2019 (Azernews, 13 Jan 2018). Shah Deniz 2 is expected to increase Azerbaijan’s total gas production from 9 billion cubic meters a year to 25 billion (Azernews, 13 Jan 2018).

6.2. Energy sector after accession

As mentioned above, the legislative body of the EAEU is drafting a program for the establishment of a unified oil and natural gas market, with an estimated date of 2025. The program for the creation of a common oil market and common natural gas market have both been approved by the Board of the Eurasian Economic Commission but still need to be ratified by the presidents of each member country. The oil market program would harmonize common tariffs and mechanisms for transit and export to third countries and allow non-discriminatory access to transport services of pipelines (Pastukhova, M. & Westphal, K. 2018, 2-3). The latter also applies to the program for an integrated gas market, but harmonization would exclusively be for extraction, trading, transport, storage and processing within the union (Pastukhova, M. & Westphal, K. 2018, 2-3). The biggest draw-back here for Azerbaijan would be sharing its pipelines with other oil and gas exporting members, such as Russia and Kazakhstan. This is particularly the case for natural gas. As shown above, oil production is in decline while natural gas production is steadily rising. Accession, in particular considering the coming online of TANAP and TAP pipelines in the near future, would not be in the national interest of Azerbaijan. Finally, additional oil and gas revenue from new markets following accession would be minimal, as the only other importing countries are Belarus and Kyrgyzstan.

6.3. Non-energy sector

The geography of goods production is highly centralized in Azerbaijan. Out of the country’s total production of goods, Baku and its administrative region constitutes 67.9%. This, however, is mostly due to the fact that the concentration of petroleum and natural gas fields are located offshore near the capital. On the other hand, if one excludes petroleum and natural gas from the mining industry, the share of non-fossil fuel products (in terms of value added) is merely 4.7% of the sector, in 2016 (State Statistical Committee). This figure is three times higher than what it was in 2013 (1.6%), yet this increase is insignificant compared to the total contribution that oil and natural gas provides to the sector and, as a result, to GDP (State Statistical Committee). Thus we find that with the exception of oil and gas, the mining sector’s overall contribution to GDP is tiny. In fact, the three biggest non-energy sectors are construction at 10.6%, trade (repair of transport means) at 10.2%, and transportation and storage at 6.8% (State Statistical Committee). Looking at each individual share trajectory of these three sectors we find that the latter two have seen a constant increase since 2013, while the former grew until 2014 and then slowly dropped (State Statistical Committee).

The next biggest sector is agriculture, whose share was 5.57% as of 2016 (State Statistical Committee). Again, looking at its share trajectory we also see that compared to 2013 (5.36%) its share has just slightly grown but still remains insignificant (State Statistical Committee). Manufacturing has likewise experienced a similar trajectory, from 4.2% in 2013 to 5.16%, slightly more than agriculture (State Statistical Committee). Interestingly, the information and communication sector in Azerbaijan is lagging behind many other sectors. Constituting just 1.75%, it is almost half less than the education sector, and still below other sectors such as real estate activities and financial insurance activities (State Statistical Committee).

6.4. Non-energy sector after accession

What we can see here is that oil and natural gas still remains by far the most important sector for Azerbaijan’s economy. Since its main exports are oil and gas, and as we explained above, it would be illogical and pointless for Azerbaijan to divert its natural gas and oil to countries such as Belarus or Kyrgyzstan, due to the size of their economies, nor would Russia or Kazakhstan need any additional fossil fuels. Thus we can expect that any increase in exports to the EAEU following accession will most likely be minimal. In terms of imports we can imagine an increase in imports from the EAEU while a decline in share with other trade partners such as Turkey or the EU countries. The main reason here would be due to the implementation of
the common external tariffs with third-countries. However it should be noted, that such a trade diversion would predominantly be with Russia, and only an insignificant increase from the other EAEU member states. As mentioned above, Russia is Azerbaijan’s main import partner while exporting to Azerbaijan mostly food products & beverages but also home retail products such as refrigerators and detergents etc. Thus, reduction in tariffs for Russian products could create stiff competition for the agricultural sector in Azerbaijan while potentially undermining any attempt at expanding the manufacturing sector, particularly for the development of light industry. Finally, we can expect that FDI investment will likewise be unidirectional, since Russian companies are the biggest investors by far within the EAEU. Reliance solely on Russian companies have proved to be risky however. As Vinokurov, E. points out; in 2015 the EAEU’s mutual FDI stock decreased quite substantially due to a decrease in direct investment in Belarus and Kazakhstan by Russian companies (2017, 62). This was in turn due to the devaluation of the ruble, and also the tenge, which forced Russian companies to reevaluate their assets abroad (Vinokurov, E. 2017, 62).

6.5. Test for normality

We have ran a number of multiple regression models in order to see the true effect of the customs union accession to Gross Domestic Product, Exports, Imports and Inflation of the current member states. Using multiple linear regressions allowed us to control for different independent variables that have strong influence over those economic indicators. By including them in our model, the coefficients of the accession have become more accurate and trustworthy.

Prior to proceeding to the regressions, we have run a test for normality in each model, as it is one of the required assumptions of the multiple regressions. The main aim of the tests is to check if the residuals of the model are distributed normally, because failing to have normally distributed residuals may lead to doubtful results, especially with the prediction intervals.

For checking the normality, we have used the Jarque-Bera (JB) test of Eviews 9 statistical package, which decides if the residuals are normally distributed or not by matching its skewness and kurtosis with a normal distribution. The null hypothesis of the JB test is “normally distributed.” After running the test, we have observed that:

1. Out of the 22 regression models, 6 of them have had Jarque-Bera probability below 0.10, meaning that the null hypothesis is rejected.
2. The regression models: Exports of Kazakhstan to Russia and Exports of Kyrgyzstan to Russia have smaller Jarque-Bera values compared to other not-normally distributed models, indicating a higher p value which means that the null hypothesis of “normally distributed” has a higher probability of not being rejected.

Considering the size of the sample, as well as the fact that we will not be predicting the variables of Kazakhstan or Kyrgyzstan, we believe that the above-mentioned non-normality cases will not hinder our research. All results of the Normality tests are given in Appendix A.

When constructing the models we have included country specific variables, for example, in the case of Russia and Kazakhstan the price of Brent crude oil has been added to the equation because of their significant dependence on the oil sector. In the case of Kyrgyzstan and Armenia variables for controlling their mining exports have been added. It must be noted that the dummy variable of “customs” shows when the country experienced the actual effect of the accession. In other words, for Russia, Kazakhstan and Belarus, the variable “customs” is equal to “1” after 2011, as the trade agreements came into full effect in July of 2011. For Armenia and Kyrgyzstan, who joined this union just 3 years ago in 2015, the dummy variable is set to “1” for only 2015 and 2016. All of the data for the 5 member states has been collected on an annual basis from 1995 to 2016.

While running the regression for export/import, we have used trade between the member state and the Russian Federation, because almost all of the trade inside of the union either starts or ends in Russia.

7. Regression results

7.1. Accession effect on Russian Federation

The regression model for Gross Domestic Product showed that the accession to the customs union had a positive effect on the economy of the Russian Federation, however the p value of the variable “customs” (0.2255) gives a strong argument that the effect is statistically insignificant, once all the other variables are held constant.

The t values of variables oilprice and oilproduction are much larger than that of customs. Keeping in mind that our null hypothesis is $H_0$: $B_1 = 0$, a higher t value means that we can reject the null hypothesis with more confidence. This means that, as expected, price of oil and oil production has a strong effect on the economy of the Russian Federation unlike accession to the customs union. Because the other member states of the union have much smaller economies compared to Russia, the other 4 countries combined (Kazakhstan, Belarus, Armenia and Kyrgyzstan) make up less than 20% of the Russian GDP, the union’s effect is negligible.

To see the effect of the union on the exports and imports of Russia, we have run a number of regressions. Exports/Imports to Kazakhstan and Belarus have been evaluated separately from Exports/Imports to Armenia and Kyrgyzstan due to the fact...
that the latter two joined the union 5 years later following its establishment. First let us have a look at how the accession affected the trade relationship between Russia and Kazakhstan/Belarus:

Even though Russia does not export oil directly to Kazakhstan, the price of oil without a doubt affects the trade between the two countries. For that reason, we have also included the price of oil into our equation. The p value of customs in the equation for Russian exports to Kazakhstan and Belarus is a little over 0.10, indicating that the effect is not significant. In the case of imports from Kazakhstan and Belarus, however, the p value stands at 0.001, which means that the accession has boosted Kazakh and Belarussian exports to the Russian Federation. The models for Armenia and Kyrgyzstan, on the other hand tells us a different story;

All of the variables in these two equations are statistically significant. The results tell us that accession boosted the exports of Armenia and Kyrgyzstan to the Russian Federation by 133.2 million USD. On the other hand, imports of these countries from Russia have increased by 1297.2 million USD, resulting in a trade deficit in the sum of 1163.9 million USD. In the following pages we will look at these countries’ trade balance with Russia again but with more variables in the equation to get more accurate results. However, considering the fact that both of these countries have a significant trade deficit with the Russian Federation, it is safe to assume that accession into the customs union worsened their deficits.

Our last regression model for Russia is the effect of accession to inflation. In this equation, we have added the dummy variable of “instability” in order to control for the years of high inflation after the collapse of the Soviet Union and the political instability of the late 1990s. The results show that the customs union accession has had no significant effect over the inflation rate (p value of customs is 0.7473). The low R-squared of equation (32.53%) also indicates that the independent variables could not explain most of the variation in the dependent variable.

7.2. Accession effect on Kazakhstan

For the estimation of the accession effect on Kazakhstan’s GDP, we have included a new dummy variable called “nurlyzhol” which controls for the expansionary fiscal policies under president Nazarbaev during 2014–2016 following the drop in oil prices.

Despite the fact that the coefficient of accession is positive, it has a t statistic of 1.4673 and p value of 0.1596, which means that we do not have enough data to reject the null hypothesis. Thus, as was the case with the Russian Federation, we can say that accession has had a marginal effect on the economy of Kazakhstan. Perhaps the fact that only less than 10% of Kazakh exports goes to Russia explains why the accession has not had a significant effect.

We then run two regressions for analyzing the effect of the accession to imports and exports of Kazakhstan with Russian Federation. Considering the fact that the largest export partner among the other three member states (Armenia, Kyrgyzstan and Belarus) is Kyrgyzstan, which only accounts for 1% of total Kazakh exports, as well as the unavailability of data, we have not included trade with those countries and Kazakhstan into the equations. As we can see from above, the results indicate that imports from Russia increased by 2827.1 million USD while export to Russia saw a 1101.7 million USD increase, which leads to an additional trade deficit of 1725.4 million USD for Kazakhstan.

Kazakhstan, just like the other member states of the union has a significant trade deficit with the Russian Federation. On 2012 (the year when the Union came into full effect) the deficit was equal to 5646 million USD. According to our results, the accession has further increased the deficit by 19.5%.

The regression model for the inflation finds a negative relationship between the accession and inflation, but the p value of the variable customs is too high since it is equal to 0.8962, meaning that the relationship is statistically insignificant. Unlike its Russian counterpart, the R-squared of this model is fairly higher as it stands at 64.8%. Regardless of that, it is safe to say that the accession does not have an effect on the inflation rate of Kazakhstan.

7.3. Accession effect on Belarus

While constructing the model for Belarus, we have added the variable “exchange” for taking into account the extreme fluctuations the country has faced over the past two decades. The local currency unit of the country, the Belarusian Ruble, has seen a sharper devaluation during this period than the all other member states as the exchange rate (Belarusian Ruble per USD) moved from 0.001 (1995) to 1.99 (2016). We have initially included the oil price as an independent variable as well, but due to the fact that Belarussian exports are final oil products rather than crude oil, this variable ended up being both statistically and economically insignificant. For those reasons, we have decided to exclude it from the model.

The regression results show a positive effect on the economy of Belarus after the accession, however with a small t statistic (0.6221) and a high p value (0.5413) the union’s effect is statistically insignificant. The R squared of the equation is equal to 40%, meaning that the customs accession and exchange rate fluctuations do not provide a full explanation for the variation in the Gross Domestic Product of Belarus.

Looking at the regressions for exports and imports separately, we see that exports have been boosted by 5737.8 million USD while imports have seen an increase of 4384.2 million USD. What this implies is that unlike Kazakhstan, Armenia and Kyrgyzstan, the accession actually contributed positively to the trade balance of Belarus with the Russian Federation. The fact that the relationship between Belarus and the Russian Federation has been extremely close in every field since their independence may be the reason for this contrast between Belarus and rest of the member states. Regardless, even for Belarus these numbers look too high. R squared of the regressions are 43.7% and 25.36%, respectively. In both models the probability
of customs is above 0.10, as they are 0.1155 and 0.5641. The results yield that the variables are statistically insignificant, especially for imports of Belarus from the Russian Federation.

The model for inflation of Belarus also has the same results and problems as the other member states. The direction of the relationship between accession and inflation rate is negative here as well, but the variable of customs is again statistically insignificant. The model also has a very low level of R squared.

7.4. Accession effect on Armenia

Analyzing the effect of accession to the customs union for Armenia has been perhaps the most challenging. Not only has the country joined the Customs Union as recently as 2015, but the lack of data has also hindered our research. In order to better explain the model and get more accurate estimators, we have added two new independent variables. The first of these is called “index”, which is the average price of the top exports of Armenia (Copper, Aluminum, Gold and Tobacco). Logically, the volatility of this index should have a significant effect on Armenian exports, imports, inflation and GDP. The second new variable is “miningboom” which reflects the sharp increases in Armenian mining production starting from 2011.

Out of the three independent variables that are included in the equation of Armenian GDP, only index is statistically significant. The model tells us that a 1% increase in overall prices of copper, aluminum, gold and tobacco leads to a 2.62% increase in Armenian GDP. The other two independent variables, miningboom and customs are statistically insignificant. It must be noted that the p value of the customs is equal to 0.5381. R squared of the equation stands at 89.9%, which leads us to believe that the model does a good job at explaining the variation in GDP of Armenia.

We then run the regressions with exports to Russia (exportsrussia) and imports from Russia (importsrussia) to see how the accession affected the trade balance of Armenia with its largest trade partner. The models show that after joining the customs union, the exports of Armenia to the Russian Federation increased by 10.80 million USD while the imports from Russia saw a 116.35 million USD increase, leading to an additional trade deficit equal to 105.55 million USD. This number might look small; however when we take into account that the Armenian GDP was equal to 10.572 billion USD as of 2016, the additional trade deficit with the Russian Federation due to customs union accession is approximately equal to 1% of the GDP of Armenia.

The last regression for Armenia has in customs as the dependent variable. Regression shows us as was the case with Russia, Kazakhstan and Belarus; the accession has also decreased the inflation rate of Armenia. On the other hand, like the prior models, the independent variable of “customs” is statistically insignificant. The extremely small R-squared value of the model shows us that these variables are not useful for explaining the variation in inflation.

7.5. Accession effect on Kyrgyzstan

The last country that we analyzed is Kyrgyzstan. Estimating the relationship between different economic factors and the accession into the union has also been challenging here because just like Armenia, Kyrgyzstan joined the union in 2015. Like the Russian Federation and Kazakhstan, this country is also very dependent on a single commodity, which is gold in this case. For that reason, in order to have more accurate estimators, we have included the price of gold to the equations as well. Our equation for GDP tells us that the accession’s economic effect would be positive; however it is statistically insignificant with a p value of 0.1558. As expected, the customs union does not seem to have any impact on the economy of Kyrgyzstan. R squared value of 90.7% further backs up our model.

Something rather interesting happens when we run the regressions for both exports to and imports from Russia. Unlike any of the previous member states that we analyzed, both imports and exports in the case of Kyrgyzstan have actually seen a decrease after accession. According to our models, the accession decreased exports to Russia by 118.24 million USD and imports from Russia by 99.05 million USD. The accession not only decreased the overall trade between these two countries, it also added another 19.191 million USD of trade deficit for Kyrgyzstan.

Similar to all the regressions with inflation above, accession has a negative relationship with inflation in the case of Kyrgyzstan as well. And just like the rest of the models, the independent variable of customs is statistically insignificant and the model has a very small R squared which is equal to 14.1%.

8. Potential effects of accession on Azerbaijan

The effect of the customs union to the Gross Domestic Product (GDP) of current member states is all statistically significant according to our models. This comes as no surprise, bearing in mind that these countries already have traditional ties regardless of the union. It is expected that in case Azerbaijan joins the Eurasian Economic Union (EEU), it will have no direct effect on the GDP of the country as well.

In three out of four countries that have joined the customs union we find have accumulated a larger trade deficit with the Russian Federation. Among those countries, Kazakhstan resembles Azerbaijan the most due to the fact that both economies severely depend on their respective oil sectors. Our regression results showed us that after accession, Kazakh exports to the Russian Federation have increased by 10.96%, while the imports from Russia have increased by 18.01%, leading to an additional trade deficit.

Similar to the other countries of the CIS, Azerbaijan also has a large trade deficit with Russia. Trade with rest of the CIS countries is marginal compared to that of the Russian Federation. In 2017, Azerbaijani exports to Russia were 587 million USD
while imports were 1554.3 million USD, resulting in a trade deficit of 967.2 million USD. This is by far the largest trade deficit Azerbaijan has with any single country. In fact, the deficit is so immense that it is only 26% smaller than the total trade turnover of Azerbaijan with the rest of the CIS member and associated states for 2017; Belarus, Kazakhstan, Kyrgyzstan, Moldova, Uzbekistan, Tajikistan, Turkmenistan and Ukraine.

In addition, the national energy policy is the main priority of Azerbaijan’s foreign policy—which it has been pursuing during its 27 years of independence. Adhering to the national energy policy is an integral part of Azerbaijan’s strategic development, yet, implementing an independent energy policy would be impossible after joining the Customs Union (Bayramov, V. 17 Jun 2013). Considering that 80% of total Azerbaijani export is oil and 9.0% is gas, maintaining the current, independent national energy policy is of the utmost importance in terms of Azerbaijani export revenues. Therefore, a potential membership in the EAEU would decrease the country’s revenues and would negatively impact economic development, including economic diversification.

Using the latest available statistics from the customs committee of Azerbaijan Republic, and the results of accession on the economies of the other member states, we calculated that joining the union would add an additional 215.58 million USD of trade deficit with the Russian Federation to Azerbaijan.

9. Conclusion

In this article we have evaluated the potential impact Azerbaijan’s accession to the EAEU would have on its economy. According to our qualitative and quantitative analysis we have assessed that accession for Azerbaijan would offer limited benefits. Looking at the current members of the EAEU as an example we find that, with the exception of Russia and Belarus, accession has not yielded any overly positive results, and in the case of Russia benefits have at best been minimal. Excluding Russia, we found that all other member states have recorded a trade deficit with the remaining EAEU members. We also see that Russia constitutes the main trade partner for each individual country, with the exception of Kyrgyzstan (where it comes second), and that trade between the other nations has not changed significantly. In terms of trade, Armenia and Belarus have actually seen their exports rise. However, the increase in exports of both countries has been vastly different: Belarus has seen a significant increased but Armenia’s increase in exports has been meager. Kyrgyzstan, on the other hand, experienced a decline in trade with Russia.

As we explained above, since oil and natural gas constitute the majority of Azerbaijan’s exports, the likelihood of fossil fuel exports, following accession, to re-orientate towards the markets of the other EAEU members is highly unlikely. In addition, the creation of a common natural gas and oil market would be the biggest risk for Azerbaijan, as it would prevent Azerbaijan from carrying out its energy policy independently.

An increase in non-fossil fuel exports is possible but would be minimal due to the relative dominance of the agriculture sector in the non-oil sector. In addition the current export potential of agriculture is anemic. In fact, should Azerbaijan wish to accede it would have to remove its current trade tariffs and, since Russia is Azerbaijan’s main importer, local products would find it hard to compete with Russian products. Thus, arguably, trade with Russia would increase but it would be unilateral and not in Azerbaijan’s favor. As we mentioned earlier, currently all other EAEU members, excluding Russia, are running a trade deficit in terms of trade with the EAEU for each respective country. Moreover, the implementation of common external trade
Fig. 3. Relationship between GDP growth of Russia and Armenia’s trade with Russia. Source: World Bank, Customs Service of Republic of Armenia.

Fig. 4. Relationship between Azerbaijan’s GDP growth and oil price.
tariffs would lead to a decrease in imports from Turkey and the EU. We can conclude that accession to the EAEU would not be in the overall national interest of Azerbaijan (see Figs. 2–5, and Tables 1–5).

Fig. 5. Azerbaijan’s GDP divided into Oil and Non-oil Sectors (excluding taxes).

Table 1
Consequences of the union to Russian economic indicators.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>(1) $\ln(\text{gdp})$</th>
<th>(2) $\text{exports}_{\text{kzbl}}$</th>
<th>(3) $\text{imports}_{\text{kzbl}}$</th>
<th>(4) $\text{exports}_{\text{kramp}}$</th>
<th>(5) $\text{imports}_{\text{kramp}}$</th>
<th>(6) inflation</th>
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<td>customs</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
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<td>customs</td>
<td>0.1739 (0.139)</td>
<td>6466.927 (2202.463)</td>
<td>3570.586*** (914.6016)</td>
<td>1297.221*** (228.2879)</td>
<td>133.2336* (914.6016)</td>
<td>0.1379 (0.139)</td>
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<td>oilprice</td>
<td>0.0112*** (0.002)</td>
<td>467.1618*** (30.63525)</td>
<td>135.1969*** (12.7217)</td>
<td>26.4593*** (1.9599)</td>
<td>1297.221*** (914.6016)</td>
<td>4.2499*** (0.6210)</td>
</tr>
<tr>
<td>oilprice</td>
<td>0.0002*** (0.139)</td>
<td>-467.1618*** (30.63525)</td>
<td>-135.1969*** (12.7217)</td>
<td>-26.4593*** (1.9599)</td>
<td>133.2336* (914.6016)</td>
<td>-0.0601 (0.1838)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intercept</td>
<td>4.1851 (0.3330)</td>
<td>0.1739 (0.139)</td>
<td>6466.927 (2202.463)</td>
<td>-397.9442 (127.2637)</td>
<td>78.3325 (40.3225)</td>
<td>0.4991** (0.1922)</td>
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<td>0.9549</td>
<td>0.9451</td>
<td>0.9157</td>
<td>0.7204</td>
<td>0.3253</td>
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</tbody>
</table>

Notes: *Statistically significant at $p < 0.10$, **statistically significant at $p < 0.05$ and ***statistically significant at $p < 0.01$.

Table 2
Consequences of the union to Kazakh economic indicators.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>(1) $\ln(\text{gdp})$</th>
<th>(2) $\text{exports}_{\text{russia}}$</th>
<th>(3) $\text{imports}_{\text{russia}}$</th>
<th>(4) inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>customs</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
</tr>
<tr>
<td>customs</td>
<td>0.0117 (0.2639)</td>
<td>1101.723*** (467.1122)</td>
<td>2827.102*** (641.7194)</td>
<td>-0.0154 (0.1163)</td>
</tr>
<tr>
<td>oilprice</td>
<td>0.0247*** (0.0023)</td>
<td>51.1457*** (5.8459)</td>
<td>129.3449*** (8.0306)</td>
<td>0.9831*** (0.1695)</td>
</tr>
<tr>
<td>nurlyzhol</td>
<td>0.8944*** (0.1254)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>instability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intercept</td>
<td>2.6664 (0.1254)</td>
<td>997.7589 (330.8818)</td>
<td>-34.8305 (454.5659)</td>
<td>0.0936 (0.0581)</td>
</tr>
<tr>
<td>R squared</td>
<td>0.923</td>
<td>0.873</td>
<td>0.959</td>
<td>0.648</td>
</tr>
</tbody>
</table>

Notes: *Statistically significant at $p < 0.10$, **statistically significant at $p < 0.05$ and ***statistically significant at $p < 0.01$.
Table 3  
Consequences of the union to Belarussian economic indicators.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>(1) ln(gdp) Coefficient (SE)</th>
<th>(2) exportsrussia Coefficient (SE)</th>
<th>(3) importsrussia Coefficient (SE)</th>
<th>(4) inflation Coefficient (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>customs</td>
<td>0.3847 (0.6185)</td>
<td>5737.841 (3478.744)</td>
<td>4384.181 (7469.13)</td>
<td>−0.7144 (0.7933)</td>
</tr>
<tr>
<td>exchange</td>
<td>0.5402 (0.4967)</td>
<td>453.3665 (2793.644)</td>
<td>3812.495 (5998.169)</td>
<td></td>
</tr>
<tr>
<td>intercept</td>
<td>3.0854 (0.1601)</td>
<td>5949.145 (900.4878)</td>
<td>9855.288 (1933.417)</td>
<td>0.9564 (0.3782)</td>
</tr>
<tr>
<td>R squared</td>
<td>0.40</td>
<td>0.437</td>
<td>0.2536</td>
<td>0.039</td>
</tr>
</tbody>
</table>

Notes: *Statistically significant at p < 0.10, **statistically significant at p < 0.05 and ***statistically significant at p < 0.01.


Table 4  
Consequences of the accession to Armenian economic indicators.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>(1) ln(gdp) Coefficient (SE)</th>
<th>(2) exportsrussia Coefficient (SE)</th>
<th>(3) importsrussia Coefficient (SE)</th>
<th>(4) inflation Coefficient (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>customs</td>
<td>0.1527 (0.2433)</td>
<td>10.7972 (40.0041)</td>
<td>116.3512 (96.0818)</td>
<td>−0.1281 (0.27766)</td>
</tr>
<tr>
<td>ln(index)</td>
<td>2.6186*** (0.2820)</td>
<td>156.7048*** (46.3645)</td>
<td>894.0485*** (111.3583)</td>
<td></td>
</tr>
<tr>
<td>miningboom</td>
<td>0.1574 (0.1899)</td>
<td>145.1353*** (31.2234)</td>
<td>343.7024*** (74.9924)</td>
<td></td>
</tr>
<tr>
<td>intercept</td>
<td>−19.2199 (2.2033)</td>
<td>−1134.605 (362.2519)</td>
<td>−6717.038 (870.0566)</td>
<td>0.1402 (0.0837)</td>
</tr>
<tr>
<td>R squared</td>
<td>0.899</td>
<td>0.845</td>
<td>0.93</td>
<td>0.011</td>
</tr>
</tbody>
</table>

Notes: *Statistically significant at p < 0.10, **statistically significant at p < 0.05 and ***statistically significant at p < 0.01.


Table 5  
Consequences of the accession to Kyrgyz economic indicators.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>(1) ln(gdp) Coefficient (SE)</th>
<th>(2) exportsrussia Coefficient (SE)</th>
<th>(3) importsrussia Coefficient (SE)</th>
<th>(4) inflation Coefficient (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>customs</td>
<td>0.2368 (0.1602)</td>
<td>−118.2441 (85.3877)</td>
<td>−99.0531 (201.1081)</td>
<td>−0.0649 (0.0096)</td>
</tr>
<tr>
<td>goldprice</td>
<td>0.0012*** (0.0001)</td>
<td>0.1175** (0.0524)</td>
<td>1.2260*** (0.1234)</td>
<td>−0.0001 (0.0001)</td>
</tr>
<tr>
<td>intercept</td>
<td>−0.1850 (0.0829)</td>
<td>98.0185 (44.1980)</td>
<td>−214.1304 (104.0965)</td>
<td>0.1877 (0.0469)</td>
</tr>
<tr>
<td>R squared</td>
<td>0.907</td>
<td>0.226</td>
<td>0.848</td>
<td>0.141</td>
</tr>
</tbody>
</table>

Notes: *Statistically significant at p < 0.10, **statistically significant at p < 0.05 and ***statistically significant at p < 0.01.


Appendix A. Results of the Jarque–Bera tests

<table>
<thead>
<tr>
<th>Country</th>
<th>Equation (Dependent Variable)</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Jarque–Bera</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russian Federation</td>
<td>ln(gdp)</td>
<td>0.021948</td>
<td>2.502003</td>
<td>0.229101</td>
<td>0.891767</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>exportsrusskzbl</td>
<td>0.71438</td>
<td>2.073848</td>
<td>2.657521</td>
<td>0.264805</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>importsrusskzbl</td>
<td>0.57179</td>
<td>2.472723</td>
<td>1.453649</td>
<td>0.483442</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>exportskram</td>
<td>0.160376</td>
<td>3.094052</td>
<td>0.102417</td>
<td>0.95008</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>importsrusskram</td>
<td>0.665108</td>
<td>2.690912</td>
<td>1.762149</td>
<td>0.414337</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>inflation</td>
<td>2.409473</td>
<td>11.42642</td>
<td>86.37453</td>
<td>0</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>ln(gdp)</td>
<td>−0.19343</td>
<td>3.131463</td>
<td>0.153031</td>
<td>0.926339</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>exportsrussia</td>
<td>0.642212</td>
<td>5.172805</td>
<td>5.839927</td>
<td>0.053936</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>importsrussia</td>
<td>0.349688</td>
<td>2.801794</td>
<td>0.484379</td>
<td>0.784907</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>inflation</td>
<td>0.006136</td>
<td>10.43305</td>
<td>50.64624</td>
<td>0</td>
</tr>
<tr>
<td>Belarus</td>
<td>ln(gdp)</td>
<td>0.288204</td>
<td>1.571887</td>
<td>2.174106</td>
<td>0.337209</td>
</tr>
<tr>
<td>Belarus</td>
<td>exportsrussia</td>
<td>0.700124</td>
<td>2.806188</td>
<td>1.831736</td>
<td>0.400169</td>
</tr>
<tr>
<td>Belarus</td>
<td>importsrussia</td>
<td>0.633068</td>
<td>2.195955</td>
<td>2.062132</td>
<td>0.356627</td>
</tr>
</tbody>
</table>

(continued on next page)
Partial Table:

<table>
<thead>
<tr>
<th>Country</th>
<th>Equation (Dependent Variable)</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Jarque-Bera Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belarus</td>
<td>inflation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Armenia</td>
<td>ln(gdp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Armenia</td>
<td>exportsrussia</td>
<td>0.028038</td>
<td>3.532543</td>
<td>0.551635</td>
</tr>
<tr>
<td>Armenia</td>
<td>importsrussia</td>
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<td>0.981429</td>
</tr>
<tr>
<td>Armenia</td>
<td>inflation</td>
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<td>19.25204</td>
<td>307.4926</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>ln(gdp)</td>
<td>0.164291</td>
<td>2.353245</td>
<td>0.482403</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>exportsrussia</td>
<td>1.251531</td>
<td>3.601926</td>
<td>6.075331</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>importsrussia</td>
<td>0.330596</td>
<td>2.389056</td>
<td>0.539494</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>inflation</td>
<td>0.829479</td>
<td>2.870177</td>
<td>2.336248</td>
</tr>
</tbody>
</table>