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Regional Trade and Economic Growth in the CIS Region

Nurbek Jenish

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abstract

This paper examines recent economic and trade developments in 11 countries of the Commonwealth of Independent States (CIS) and includes an empirical analysis of growth determinants in the region. In contrast to the standard growth literature, the paper brings different trade flows into the analysis and attempts to examine their effect on economic growth. Trade is divided into extra-regional and intra-regional trade without the Russian Federation (RF) and trade with the RF. A generalised method of moments panel data estimation methodology is employed to examine the determinants of growth. Key findings of the paper include: 1) Trade with the RF has a positive effect, although only moderate, on economic growth in the countries; intensification of trade with the RF by 1% adds, on average, 0.07% to the rate of growth; 2) Neither intra-regional trade without the RF nor extra-regional trade has a statistically significant impact on growth; 3) Investment, oil exports and economic freedom have a positive effect on economic growth. Higher government consumption is found to affect growth negatively.

keywords

trade, economic growth, Commonwealth of Independent States

JEL Codes: F10, O10

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about the author

Nurbek Jenish, is a research fellow at the IPPA and associate professor at the Department of Economics, American University of Central Asia. He holds PhD in economics from Central European University, and has an extensive experience in modeling and researching monetary and fiscal policy interactions in developing countries.

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University of Central Asia
138 Toktogul Street, Bishkek 720001, Kyrgyz Republic
Tel.: +996 (312) 910 822, E-mail: ippa@ucentralasia.org
www.ucentralasia.org

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1. Introduction[1]

Following the recovery from the Russian financial crisis of 1998 and prior to the global financial crisis of 2008, the countries of the Commonwealth of Independent States (CIS) enjoyed robust economic growth. From 2000 to 2008, the economies of CIS countries[2] grew at an average rate of over 6%.[3] What are the factors behind the relatively strong economic performance in these countries? A recent paper[4] on growth in CIS countries identified the following factors: (i) Macroeconomic stability; (ii) Drastic cuts in public expenditures combined with improved fiscal discipline and tax reforms that resulted in fewer, lower and flatter taxes; (iii) Energy exports (in the cases of Russia, Kazakhstan and Azerbaijan); (iv) Improved economic freedom; (iv) Relatively free labour markets, and (v) Implementation of structural reforms. They further argue that other determinants, which are standard in the growth literature, such as investment and human capital, were of little importance. Although they stress that the economies of these countries benefited from increased trade, trade (or openness to trade measure) was not included in their regression analysis.

Does trade cause economic growth? It is traditionally thought that more open economies grow more quickly.[5] Some of the literature asserts that countries that are more open have a greater ability to access growth-enhancing modern technologies.[6] Openness is also thought to promote more efficient allocation of resources through comparative advantage, help disseminate knowledge and technologies and foster competition in domestic and international markets.[7] However, other studies that suggest the opposite view.[8] Results of recent empirical (econometric) studies are diverse. Some suggest that there is positive relationship between trade and growth, while others find that trade does not affect growth. The direction of causality between growth and trade also remains unclear.[9]

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1 The author would like to thank Dr. Charles Becker and Dr. Roman Mogilevskii for providing valuable comments and suggestions, and Anvar Muratkhanov for providing excellent research assistance.

2 The countries under consideration are Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Ukraine and Uzbekistan.

3 With the exception of Kyrgyzstan, all countries recorded positive growth rates during that period.

4 Anders Åslund and Nazgul Jenish, "The Eurasian Growth Paradox," *Institute for International Economics Working Paper* No. 06-5 (Washington, DC: Institute for International Economics, 2006). This paper compares the economic performance of CIS and Central and Eastern European (CEE) countries covering the period 1997-2004 and explans why CIS countries grew faster than CEE countries.

5 The literature also suggests that trade may be more important for economic growth for small economies than for large countries. See, for example, Alberto Alesina, Enrico Spolaore and Romaine Wacziarg, "Trade, Growth and the Size of Countries," in *Handbook of Economic Growth, Volume* 1B, ed. Philippe Aghion and Steven N. Durlauf, 1499-1542 (Elsevier B.V, 2005). DOI: 10.1016/S1574-0684(05)01023-3.

6 Robert J. Barro and Xavier Sala-i-Martin, *Economic Growth* (Boston, MA: McGraw-Hill,1995); G.M. Grossman and E. Helpman, *Innovation and Growth in the Global Economy* (Cambridge, MA: MIT Press, 1991); and D. Romer, "Two Strategies for Economic Development: Using Ideas and Producing Ideas," *Proceedings of the World Bank Annual Conference on Development Economics*, 1992, ed. L.H. Summers and S. Shah, 63-91 (Washington, D.C.: World Bank, 1993).

7 Roberto Chang, Linda Kaltani and Norman V. Loayza, "Openness is Good for Growth: The Role of Policy Complementarities," *Journal of Development Economics* 90 (2009): 33-49.

8 Francisco Rodriguez and Dani Rodrik, "Trade Policy and Economic Growth: A Skeptics Guide to the Cross-National Evidence" in *NBER Macroeconomics Annual 2000, Vol. 15*, ed. Ben S. Bernanke and Kenneth Rogoff, 261-325. (Cambridge, MA: MIT Press, 2001).

9 A more detailed discussion of the empirical literature on the trade-growth relationship is provided in Section 2.

This paper is an empirical investigation of the effect of trade on economic growth in eleven CIS countries of the CIS region (as listed in footnote 2, and hereinafter referred to as CIS countries[10]). The main focus of this paper is to empirically examine the role of intra-regional and extra-regional trade in promoting economic growth in the countries.[11] For this purpose, the paper builds and estimates a panel data growth model for the CIS countries covering period 2000-2010. It employs a generalized method of moments (GMM) methodology to assess the effect of regional trade on growth and to account for possible bi-directional causality (endogeneity) between the macroeconomic variables.

Section 2 reviews the empirical growth literature. Section 3 provides an overview of economic and trade performance in the countries under discussion and Section 4 presents the description of data and discusses methodology and results. Section 5 includes conclusions and policy implications. The Annex provides detailed trade profiles for each country.

2. Literature review

The standard determinants of economic growth in the empirical literature are catch up effect (convergence hypothesis), human capital, size of government consumption, investment, quality of political institutions, rule of law, trade openness, spillover effects from neighbouring countries, and some other factors, such as abundance in natural resources.

It is argued that in general, poorer countries typically grow faster than developed ones and tend to catch up to richer countries (absolute convergence hypothesis). This hypothesis was put forward by Solow[12] and Swan[13] and implies that the growth rate of real gross domestic product (GDP) per capita would tend to be inversely related to the initial level of real per capita GDP.[14] Empirical growth literature also stresses the importance of human capital for growth. A large number of studies on human capital entering growth regressions find a positive effect of human capital[15] on growth. Barro, using data for 98 countries covering period from 1960 to 1985, found that a one percentage p oint increase in primary school enrolment resulted in a 2.5 % increase in GDP per capita growth. A similar increase in secondary school enrolment was associated with a 3 % increase in per capita GDP growth.[16] More recent papers, using

10 Georgia officially withdrew from the CIS on 18 August 2009.

11 In this analysis, the countries included in the CIS region are included on the basis of geographical proximity, common history, economic ties established during the Soviet era, and ability to speak a common language. Trade (both exports and imports) between the countries in the region is referred to as intra-regional. Trade with third countries is referred to as extra-regional. Turkmenistan is not included because of its poor and unreliable statistics. The three Baltic States, Estonia, Lithuania and Latvia, which are European Union members, are also excluded from the analysis.

12 Robert Solow, "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics* 70 (1956): 65-94.

13 Trevor Swan, "Economic Growth and Capital Accumulation," *Economic Record* 32.63 (1956): 334-361.

14 In terms of cross-country data analysis this hypothesis fares badly. Therefore, the concept of conditional convergence is frequently used to reconcile the convergence hypothesis with the data. Under conditional convergence the variables that distinguish the countries are held constant and the relationship between growth and the starting position is then examined.

15 Human capital is usually proxied by primary and secondary school enrollment rates for both men and women.

16 Robert J. Barro, "Economic Growth in a Cross-section of Countries," *Quarterly Journal of Economics* 106, no. 2 (1991): 407-443.

more sophisticated estimating techniques for both developed and developing economies, also established the positive relationship between growth and human capital.[17]

Large government consumption[18] is argued to have a negative impact on economic growth. Ausland and Jenish, based on results of their estimations, argue that smaller government consumption in CIS countries relative to that in CEE counterparts helps explain why the CIS countries had more than 4 %points higher annual growth that the CEE countries during the period 1997-2004.[19] A negative association between government consumption and growth has also been stressed by empirical growth studies conducted for different groups of countries.[20]

Although theoretical models (and common sense) predict that investment is an important determinant of growth, empirical studies do not always find a statistically significant positive relationship between growth and investment.[21] Ausland and Jenish find that investment is not statistically significant in their growth regression, though it is positive. They argue that the majority of post-communist countries started with high levels of physical capital and the marginal effect of additional investment was small, and the time series that they use is too short to detect a stable relationship between growth and investment.[22] With regard to the latter point, Barro and Sala-i-Martin, using longer time series for a larger sample of countries, also failed to find a statistically significant effect of investment on growth.[23]

Government policy and quality related variables are also found to be important factors in the empirical growth studies. For instance, Barro and Sala-i-Martin find that the International Country Risk Guide index that includes rule of law, corruption in government, and quality of the bureaucracy have a statistically significant positive effect on growth.[24] Ausland and Jenish find that higher economic growth is associated with lower levels of corruption.[25] The corruption measure they use comes from Transparency International.

Other important factors that affect growth and are usually accounted for in the quantitative analysis include, but are not limited to, political instability and armed conflicts, qualitative country specific variables such as abundance in natural resources (e.g. oil, gas) and the effects of spillovers from neighbouring countries.

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17 See, for example, Robert J. Barro, "Education and Economic Growth," *Paper presented at the International Symposium on the Contribution of Human and Social Capital to Sustained Economic Growth and Well-being,* organised by the Organisation for Economic Development and Cooperation (OECD) and HRDC, (Quebec City, Canada, 19-21 March 2000); Robert J. Barro, Determinants of Economic Growth: *A Cross-country Empirical Study* (Cambridge, MA: MIT Press,1997); and Jess Benhabib and Mark M. Spiegel, "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-country Data," *Journal of Monetary Economics* 34, no. 2 (1994): 143-173.

18 Government consumption excludes capital expenditures and usually enters empirical models as a ratio to GDP and proxies for political corruption, nonproductive public expenditures and taxation as well as other aspects of bad governance.

19 Anders Åslund and Nazgul Jenish (2006).

20 See, for example, Robert J. Barro and Xavier Sala-i-Martin (1995).

21 In the case of large government consumption, for example, causality might be easily reversed biasing the coefficient in the growth regression upwards.

22 Anders Åslund and Nazgul Jenish (2006).

23 Robert J. Barro and Xavier Sala-i-Martin (1995).

24 Ibid.

25 Anders Åslund and Nazgul Jenish (2006).

Finally, the results of empirical studies that examine the effect of trade on growth are diverse (see Table 1). Studies tend to find a statistically significant positive association between some measures of trade openness and economic growth. However, results of some studies are not robust to the inclusion of additional variables. Some results also depend on the estimation methodology. For example, Dollar and Kraay found that if both trade and institutions are instrumented, then the effect of trade on growth becomes ambiguous.[26]

Table 1. Empirical evidence on the impact of trade on growth, Selected studies

Study	Data	Main Result
Dollar (1992)[27]	95 developing countries	Positive
Edwards (1992)[28]	30 developing countries	Positive
Sachs and Warner (1995)[29]	122 countries	Positive
Harrison (1996)[30]	17–51 countries	Positive
Edwards (1998)[31]	93 countries	Positive (TFP)
Frankel and Romer (1999)[32]	98 countries	Positive – trade instrumented
Irwin and Terviö (2002)[33]	23–146 countries	Positive – trade instrumented no – if geography measure is also included.
Dollar and Kraay (2003)[34]	63–154 countries	Positive – trade instrumented no – if both trade and institutions are instrumented.
Alcalá and Ciccone (2004)[35]	138 countries	Positive (TFP) – both trade and institutions instrumented.
Noguer and Siscart (2005)[36]	98 countries	Positive – trade instrumented Robust to inclusion of geography and institutions

Source: Lopez (2005).[37]

Notes: Positive means there is a positive and significant correlation between openness and growth.

TFP, total factor productivity.

26 David Dollar and Aart Kraay, "Institutions, Trade, and Growth," *Journal of Monetary Economics* 50 (2003): 133–162.

27 David Dollar, "Outward-oriented Developing Economies Really do Grow More Rapidly: Evidence from 95 LDCs, 1976–85," Economic Development and Cultural Change 40 (1992): 523–544.

28 Sebastian Edwards, "Trade Orientation, Distortions and Growth in Developing Countries," Journal of Development Economics 39 (1992): 31–57.

29 Jeffrey D. Sachs and Andrew Warner, "Economic Reform and the Process of Global Integration," Brookings Papers on Economic Activity 1 (1995): 1–118.

30 Ann E. Harrison, "Productivity, Imperfect Competition and Trade Reform. Theory and Evidence," Journal of International Economics 36 (1994): 53–73.

31 Sebastian Edwards, "Openness, Productivity and Growth: What do we Really Know?" Economic Journal 108 (1998): 383–398.

32 Jeffrey A. Frankel and David H. Romer, "Does Trade Cause Growth?" American Economic Review 89 (1999): 379–399.

33 Douglas A. Irwin and Marko Terviö, "Does Trade Raise Income? Evidence from the Twentieth Century," Journal of International Economics 58 (2002): 1–18.

34 David Dollar and Aart Kraay (2003).

35 Francisco Alcalá and Antonio Ciccone, "Trade and productivity," Quarterly Journal of Economics 119 (2004): 613–646.

36 Marta Noguer and Marc Siscart, "Trade Raises Income: A Precise and Robust Result," Journal of International Economics 65 (2005): 447–460.

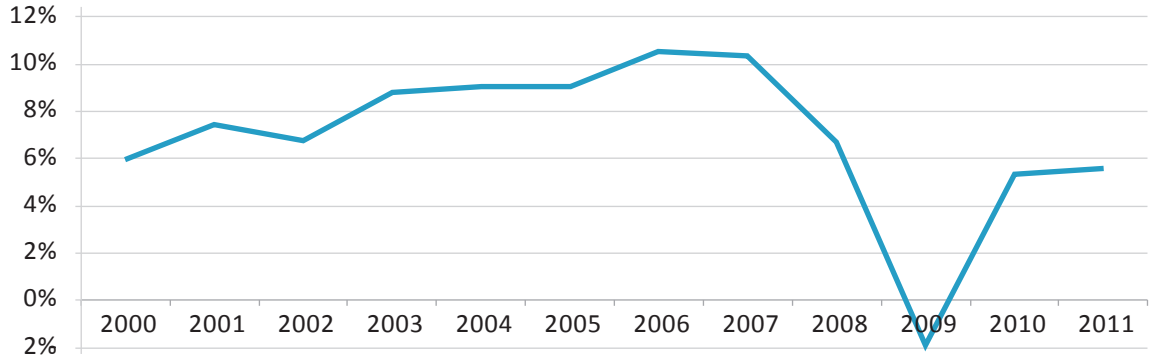
37 Ricardo A. López, "Trade and Growth: Reconciling the Macroeconomic and Microeconomic Evidence," Journal of Economic Surveys 19 (2005): 623-648.

Despite a relatively large body of empirical studies, an examination of growth determinants in the CIS region may be interesting in view of differing from non-CIS countries initial conditions, differing roles of the state, and the absence of observations in most existing studies.

3. Overview of economic and trade performance in sample countries

From 2000 through 2008, all the CIS countries under study, except Kyrgyzstan, demonstrated strong economic growth. Kyrgyzstan went through periods of recession in 2002, 2005 and 2010. In 2005 and 2010, the country suffered from socio-political disturbances leading to disruptions in economic activity and changes in leadership. Despite the relatively weaker economic performance of Kyrgyzstan, the average growth rate of all the 11CIS countries in 2000-2008 was above 6 % per annum (Figure 1).

Figure 1. Average growth in CIS countries, 2000-2011



Source: World Economic Outlook[38]

Commodity-poor Armenia registered two-digit growth rates during 2002-2007. To a large extent, this growth was attributable to large volumes of remittances, which were mostly funneled to construction.[39] In the first decade of 2000, remittances were also an important source of growth in Kyrgyzstan, Tajikistan and Moldova. In 2010, remittances to GDP ratio in these countries stood at around 27 %, 40 % and 24 %, respectively.[40] In these countries, remittances were mostly used for consumption (and to a smaller extent for construction), stimulating aggregate demand. To a lesser degree, remittances were also important for Uzbekistan. In view of the relatively large size of its economy, remittance to GDP ratio in Uzbekistan was smaller, though in nominal terms remittances were higher than in the above listed countries.

Despite its negative consequences, the Russian financial crisis of 1998 also had some positive effects on the economies of CIS countries. Fiscal systems were brought to reasonable order, which helped keep inflation at moderate levels and allowed them pursue (more or less) sound macroeconomic policies. Following the devaluation of the Russian ruble by three-quarters, the majority of CIS countries followed suit, devaluing their currencies by about 50 %. This helped them boost their exports.

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38 International Monetary Fund, World Economic Outlook database, www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx

39 King Banaian, David Kemme and Grigor Sargsyan, "Inflation Targeting in Armenia: Monetary Policy in Transition," *Comparative Economic Studies* 50, no. 3 (September 2008).

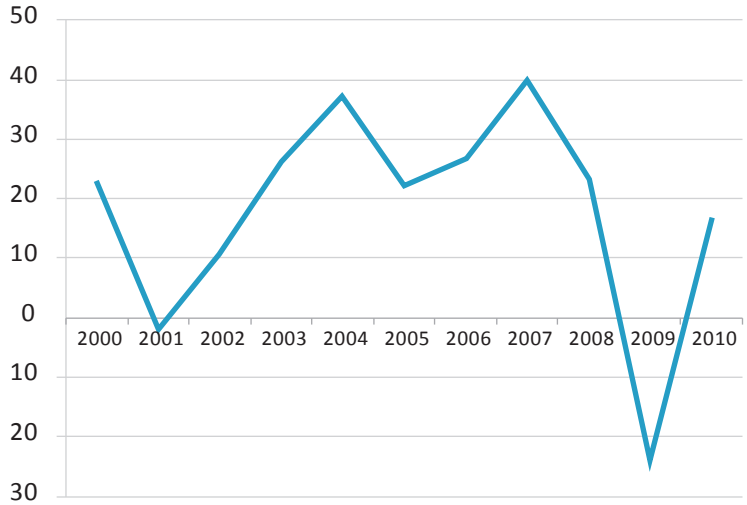
40 Measurement error for GDP may be greater for countries with lots of workers abroad.

In the 2000s, CIS countries continued to carry out economic and structural reforms in an attempt to create a favourable environment for economic development. According to the Index of Economic Freedom[41], from 2000 to 2010, all CIS countries, except for Moldova, the Russian Federation and Ukraine, substantially increased their economic freedom positions. This improvement may have helped promote economic growth in the countries.[42]

The economies of Russia, Kazakhstan and Azerbaijan significantly benefited from increased energy exports (see corresponding country trade tables in Annex). The enormous growth of their exports was mainly due to both increased volumes of exports and rising prices for oil and oil products. Following the export boom, the three countries received substantial amounts of foreign direct investment (FDI), which further reinforced growth, especially in Azerbaijan and Kazakhstan.

Economic growth in the region was accompanied by increasing trade, both intra- and extra-regional.[43] Most notably, the annual growth rate of trade of 10 CIS countries with the Russian Federation was between 10 % and 40 % during the period 2001-2008 (Figure 2).

Figure 2. Average growth rate of regional trade with Russia, 2000-2010



Source: UN Comtrade and author's calculations

At the same time, both the trade within the region excluding Russia and extra-regional trade also intensified (Figures 3 and 4). In the latter case, a huge intensification of trade with third countries was mostly due to soaring energy prices combined with an enormous increase in

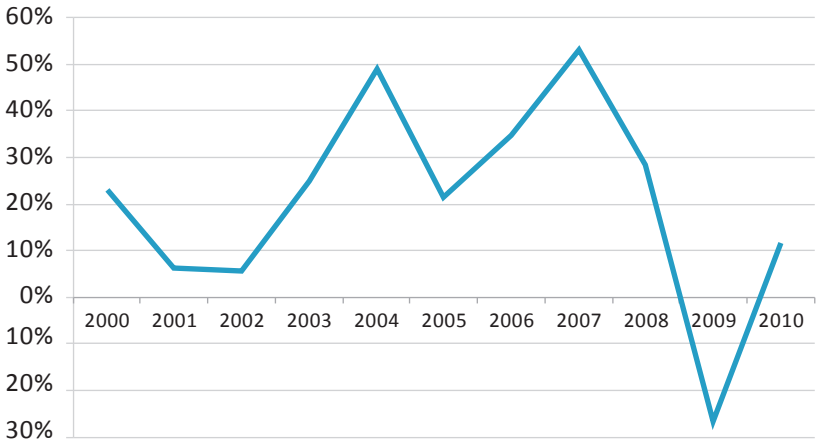
41 Heritage Foundation. Index of Economic Freedom. www.heritage.org/index/. The index is constructed through an analysis of 10 components of economic freedom, which are grouped for ease of reference into four key categories: Rule of law (property rights, freedom from corruption); Limited government (fiscal freedom, government spending); Regulatory efficiency (business freedom, labour freedom, monetary freedom); and Open markets (trade freedom, investment freedom and financial freedom). Some of the 10 components are themselves composites of additional quantifiable measures. Each of the 10 economic freedoms is graded on a scale from 0 to 100. The 10 component scores are equally weighted and averaged to get an overall economic freedom score for each economy.

42 An alternative indicator is the European Bank for Reconstruction and Development's transition index. However, it has changed little since 1998 despite major structural changes undertaken since that time. Therefore, it may not be a relevant measurement of actual structural reforms.

43 There may be a bi-directional causality between trade and growth: Trade may stimulate growth and vice versa. See footnote 10 for the definitions of intra- and extra-regional trade used in this paper.

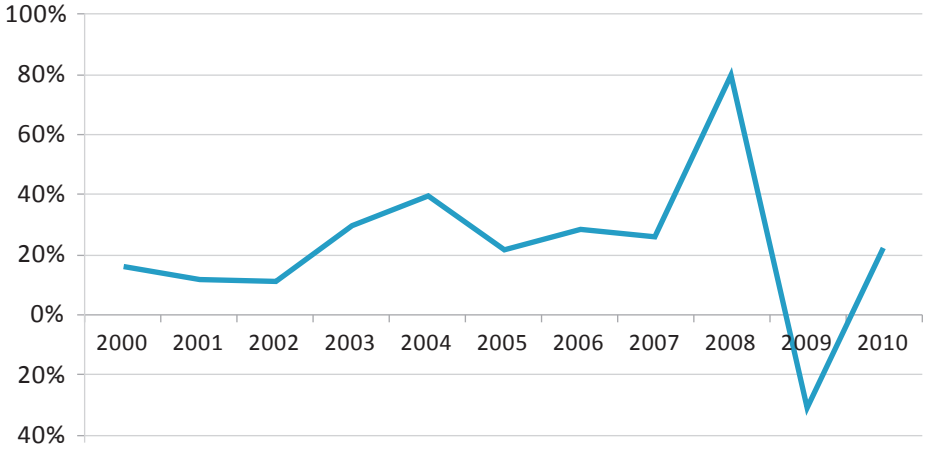
energy exports of Russia, Kazakhstan and Azerbaijan to countries outside the region. Figures A1-A21 and Tables A1-A37 in Annex provide more detailed information about export and import activities of all countries under consideration. In particular, they present information on main export and import partners of each country, along with information about key export and import products in the years 2000 and 2010. From an examination of trade developments in the countries, one may conclude that the Russian Federation has been an important trade partner of almost all countries in the region,[44] and both intra-regional trade without Russia and extra-regional trade have intensified.

Figure 3. Average growth rate of intra-regional trade without Russia, 2000-2010



Source: UN Comtrade and author's calculations

Figure 4. Average growth rate of extra-regional trade, 2000-2010



Source: UN Comtrade and author's calculations

[44] Georgia stopped trading with the Russian Federation following the conflict of 2008.

4. Empirical investigation

This section of the paper constructs a formal growth model to empirically examine the role of the major factors and developments promoting growth in the CIS region.

4.1. Model specification and estimation methodology

To accurately examine the relative contribution of the major factors, which were discussed in the previous section, the following panel data model is estimated:

$$\begin{cases} yti = \beta_0 + \beta_1 y_{t-1,i} + \beta_2 \log(\mathrm{GDP}p/c)_{t-1,i} + \beta_3 \left(\frac{GFCF}{GDP}\right)_{ti} + \beta_4 \left(\frac{Gov}{GDP}\right)_{ti} + \\ + \beta_5 tradeR_{ti} + \beta_6 regtrade_{ti} + \beta_7 extrade_{ti} + \beta_8 econfreedom_{ti} + \beta_9 remit_{ti} + \\ + \beta_{10} Oil_i + \beta_{11} conflict_{ti} + \lambda_t + u_{ti}; \\ u_{ti} = \mu_i + v_{ti}, t = 1,.., T; i = 1,..., N, \end{cases}$$

where y_{ti} is annual GDP growth rate for a country i in year t.
The explanatory variables include: lagged annual GDP growth rate, $y_{t-1,i}$.
This variable is included to account for possible persistence of the growth rate;
log of lagged per capita GDP, $\log(\mathrm{GDP}p/c)_{t-1,i}$, is included to control for the "catch-up" effect.
Investment (proxied by gross fixed capital formation) to GDP ratio, $(GFCF / GDR)_{ti}$;
Ratio of government consumption to GDP, $(Gov / GDP)_{ti}$;
Growth rate of trade with the Russian Federation, $tradeR_{ti}$;
Growth rate of intra-regional trade without Russian Federation, $regtrade_{ti}$;
Growth rate of extra-regional trade, $extrade_{ti}$;
Economic freedom index, $econfreedom_{ti}$, that proxies for the quality of government institutions, labour market and other country's characteristics (see footnote 17);
Growth rate of remittances, $remit_{ti}$;
Oil-producing country dummy, Oil_i, to account for the effect of surging energy exports;
Conflict dummy, $conflict_{ti}$, to account for the negative consequences of instability on growth;
Fixed period effects, λ_t, are included to control for common shocks, e.g. global and regional economic conditions.
The error term, u_{ti}, is composed of two parts: μ_i and v_{ti}.
The former is unobserved individual effect that can account for unobserved country specific characteristics (such as cultural characteristics) that may affect growth. The latter is the idiosyncratic error.

In contrast to the standard growth literature, the model does not contain any measures of human capital and inflation. Human capital is not included since all the countries under consideration possess relatively high levels of education, which did not change much during the period of consideration. Inflation (used in the growth literature as a proxy to macroeconomic stability) does not enter the regression in view of the reasons discussed above: all of the countries managed to achieve macroeconomic stability by 2000 and since then have had moderate levels of inflation. Hence inflation may not be viewed as a major factor accounting for growth differences. Additionally,

possible effects from inflation may be partly captured by year effects. As for possible spillover effects, effects emanating from the countries in the region are partially captured by included trade variables.

Most of the explanatory variables are likely to be correlated with the error term due to either endogeneity or omitted variables problems or both:

1. $(log\ GDP\ p/c)_{t\text{-}1,i}$ is potentially correlated with the unobserved individual effect, , through omitted variables.
2. $\left(\frac{GFCF}{GDP}\right)_{ti}$ is endogenous since higher levels of investment can be caused by higher growth rates (reversed causation), so it is correlated with v_{ti}. It may also be correlated with μ_i, for example, due to some unobserved country-specific characteristics such as saving culture, structure of the economy, or capital flight.
3. $\left(\frac{Gov}{GDP}\right)_{ti}$ may also be endogenous, contemporaneously correlated with GDP growth, though it may be argued that government budgets are approved earlier, and hence, predetermined with respect to GDP growth.

4. $econfreedom_{ti}$ may be correlated with μ_i as well as with v_{ti}.

5. Oil_i can be assumed to be strictly exogenous, with respect to both idiosyncratic time-variant and individual error components since any common shocks associated with energy markets are captured by year dummies.

6. All trade explanatory variables may be correlated with v_{ti} in view of the possible bi-directional causality between growth and trade.

7. $remit_{ti}$ may be correlated with both μ_i and v_{ti}. The volume of remittance may depend on economic developments in the home country of migrant workers and unobserved cultural characteristics.

8. λ_t is strictly exogenous.

In view of possible endogeneity of explanatory variables (correlation with v_{ti}), the commonly used fixed effects (FE) estimation procedure will not deliver consistent estimates. Additionally, the FE procedure cannot estimate coefficients on time-invariant regressors, such as *Oil*.

To tackle the endogeneity problem and obtain consistent estimates for both time-variant and time-invariant explanatory variables, the paper uses the two-step efficient generalised method of moments (GMM) procedure proposed by Arellano and Bover[45]. In the GMM estimation, all endogenous variables (investment, trade variables, government consumption, economic freedom, lagged per capita GDP and lagged GDP growth rate) are instrumented with their second lags.

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45 Manuel Arellano and Olympia Bover, "Another Look at the Instrumental Variable Estimation of Error-Components Models," *Journal of Econometrics* , vol. 68, issue 1 (1995): 29-51.

4.2. Data

The sample consists of 11 CIS countries listed in footnote 2 covering the period 2000-2010. The data sources are summarized in Table 2. The annual GDP growth rate and GDP per capita (in purchasing power parity) are from the World Economic Outlook Database. Data on gross fixed capital formation and government consumption are drawn from the World Bank's World Development Indicators (WDI) database. All trade variables are taken from the United Nations' Comtrade database, with the exception of Uzbekistan whose trade data for 2000-2004 and 2006 are drawn from National Statistical Committee of Uzbekistan[46]. Remittances statistics come from the World Bank's WDI database and the Central Bank of the Russian Federation[47]. The index of economic freedom is from the Heritage Foundation. The higher scores correspond to a better economic environment. Among all the countries, only Kyrgyzstan has experienced two episodes of political instability that led to internal conflict, in 2005 and in 2010.[48]

Table 2. Data sources

	GDP Growth	Intra-regional trade without Russia	Extra-regional trade	Trade with Russia	Investment	Government Consumption	GDP per capita, at purchasing-power-parity	Index of Economic Freedom	Remittances
11 CIS countries	WEO	UN Comtrade	UN Comtrade	UN Comtrade	WB	WB	WEO	The Heritage Foundation	World Bank/ CB of Russia

Notes: CB – Central/National Bank; WB – World Bank's World Development Indicators database; WEO- World Economic Outlook Database; UN Comtrade- UN Comtrade database. The Uzbek trade data for 2000-2004 and 2006 from National Statistical Committee of Uzbekistan.

4.3. Results

The results of estimation are presented in Table 3. The first column reports regression results under FE estimation procedure. The FE estimator does not yield consistent estimates in the presence of a correlation between explanatory variables and the error term, ; so the FE results are not discussed here. The results of GMM estimation are reported in the second column.

The coefficient on lagged per capita GDP is negative and statistically significant, implying that laggard effect is one of the factors explaining the observed growth differences across countries. Investment appears to contribute substantially to growth in the CIS region during 2000-2010; a 1 percent-to-GDP increase in investment gives rise to about a 0.18 percent increase in GDP growth rate, *ceteris paribus*. The coefficient on government consumption is negative and

46 National Statistical Committee of Uzbekistan. www.stat.uz/en/.
47 Central Bank of the Russian Federation. http://www.cbr.ru/eng/.
48 Georgia also had conflict with the Russian Federation in 2008 which may have affected growth through a reduction of trade with the Russian Federation. But it did not result in a disruption in overall economic activity, as was the case in Kyrgyzstan.

marginally significant, implying that a 1 percent-to-GDP reduction in government consumption, other things being equal, leads to about a 0.3 percent increase in the GDP growth rate.[49]
Trade with the Russian Federation turns out to be an important determinant of growth in CIScountries. It is strongly statistically significant and is positive, meaning that a 1 percent increase in the growth rate of trade with the Russian Federation adds 0.07 percent to the economic growth rate, *ceteris paribus*.[50] Other trade variables are not statistically significant.[51]

Although remittances are important for economic growth in Kyrgyzstan, Tajikistan and Moldova, they are less important for other countries and so are found to be statistically insignificant. The coefficient on oil is strongly statistically significant; oil exporters tend to grow faster than non-oil exporters, on average, by 0.6 percentage points.

The degree of economic freedom has a positive association with economic growth; countries with better quality government institutions, less corruption, stronger execution of laws and more financial and fiscal freedom tend to grow faster.

Finally, growth in the CIS region appears to be positively affected by favourable developments in the global market, which is reflected by positive and statistically significant coefficients for the years 2002-2007 and 2010. In these periods, positive developments in the global market added, on average, an additional 0.5 percentage points to the rate of economic growth in CIS countries.

Table 3. GDP growth rates in CIS countries: Regression results

Explanatory Variable	Fixed Effects (FE)	Generalised Method of Moments (GMM)
Constant	1.349*** (0.391)	4.036 (0.582)***
Lagged GDP growth	0.554*** (0.103)	-0.050 (0.129)
Lagged GDP per capita	-0.169*** (0.047)	-0.542*** (0.069)
Inv/GDP	-0.098 (0.073)	0.180** (0.090)
Gov/GDP	-0.070* (0.124)	-0.301* (0.160)
Trade with Russia	0.034* (0.020)	0.073*** (0.014)

[49] Government consumption is related both to the size of the non-working age population and to unemployment (or other social protection) expenditures. Therefore, in general, it is difficult to interpret the negative association between growth and government expenditure.

[50] Different models specifications were estimated (without lagged GDP growth rate, with trade variables entering the regression as a ratio to GDP).

[51] Extra-regional trade definitely affects growth in the oil-exporting countries, Russia, Kazakhstan and Azerbaijan. But when all CIS countries are taken together and regression analysis is conducted, the effect of external trade may become insignificant in view of the relatively lower volume of external trade of non-oil exporters. Trade with China (PRC) has recently become very important for economic growth in Kyrgyzstan. However, other countries have not traded intensively with PRC so trade with PRC is not included as a separate regressor in the model and is part of extra-regional trade.

Intra-regional trade without Russia	0.009 (0.020)	-0.021 (0.013)
Extra-regional trade	-0.077 (0.009)	-0.009 (0.007)
Economic Freedom	0.001 (.002)	0.006*** (0.001)
Remittances	0.009 (.007)	-0.002 (0.006)
Oil	—	0.570*** (0.167)
Conflict	-0.087*** (.033)	-0.023 (0.019)
Year 2002	-0.003 (.017)	0.031* (0.019)
Year 2003	0.032 (0.020)	0.048** (0.022)
Year 2004	0.034 (0.025)	0.047*** (0.013)
Year 2005	0.065** (0.028)	0.057* (0.035)
Year 2006	0.089*** (0.033)	0.060* (0.035)
Year 2007	0.092** (.039)	0.058** (0.026)
Year 2008	0.093** (.044)	0.043 (0.031)
Year2009	0.057 (0.047)	-0.023 (0.025)
Year 2010	0.165*** (0.048)	0.050** (0.025)
R2	0.61	0.53
Number of observations	121	

Notes:

Robust standard errors are reported in parentheses for GMM estimation.

**** denotes significance at 1%, ** at 5%, and * at 10% levels.*

5. Conclusions and policy implications

The results of regression analysis and examination of economic and trade developments in the 11 CIS countries during 2000-2010 give rise to the following conclusions and policy implications:

- The analysis reveals a strong positive relationship between economic growth in CIS countries and trade with the Russian Federation. Intra-regional trade without Russia is found to be insignificant for growth in the CIS region, implying that the Russian Federation remains the main economic partner for the majority of CIS countries. This implies that both CIS countries and the Russian Federation would benefit from further strengthening economic cooperation, especially through trade intensification.
- The analysis finds a negative association between growth and government expenditure. The countries should reduce nonproductive public expenditures and undertake more productive public investments.
- Increasing investment partially explain high growth rates in the region.
- Greater economic freedom promotes economic growth. Governments should continue their efforts toimprove the quality of government institutions, reduce corruption and create a favourable economic environment.
- The boom in the global energy markets boosted economic growth in oil-rich CIS countries.
- Positive external developments in global markets also positively affected growth in the region.

References

Alberto Alesina, Enrico Spolaore and Romaine Wacziarg. "Trade, Growth and the Size of Countries." in Handbook of Economic Growth, Volume 1B, ed. Philippe Aghion and Steven N. Durlauf, 1499-1542. Elsevier B.V, 2005. DOI: 10.1016/S1574-0684(05)01023-3.

Anders Åslund and Nazgul Jenish. "The Eurasian Growth Paradox." Institute for International Economics Working Paper No. 06-5 (Washington, DC: Institute for International Economics, 2006).

Ann E. Harrison. "Productivity, Imperfect Competition and Trade Reform. Theory and Evidence." *Journal of International Economics 36* (1994): 53–73.

Central Bank of the Russian Federation. http://www.cbr.ru/eng/ (accessed 15 February 2013).

David Dollar. "Outward-oriented Developing Economies Really do Grow More Rapidly: Evidence from 95 LDCs, 1976–85." *Economic Development and Cultural Change 40* (1992): 523–544.

David Dollar and Aart Kraay. "Institutions, Trade, and Growth." *Journal of Monetary Economics 50* (2003): 133–162.

David Romer. "Two Strategies for Economic Development: Using Ideas and Producing Ideas." Proceedings of the World Bank Annual Conference on Development Economics, 1992, ed. L.H. Summers and S. Shah, 63-91 Washington, D.C.: World Bank, 1993.

Douglas A. Irwin and Marko Terviö. "Does Trade Raise Income? Evidence from the Twentieth Century." *Journal of International Economics 58* (2002): 1–18.

Francisco Alcalá and Antonio Ciccone. "Trade and productivity." *Quarterly Journal of Economics 119* (2004): 613–646.

Francisco Rodriguez and Dani Rodrik. "Trade Policy and Economic Growth: A Skeptics Guide to the Cross-National Evidence" in NBER Macroeconomics Annual 2000, Vol. 15, ed. Ben S. Bernanke and Kenneth Rogoff , 261-325. Cambridge, MA: MIT Press, 2001.

GeneM. Grossman and Elhanan Helpman. Innovation and Growth in the Global Economy (Cambridge, MA: MIT Press, 1991).

Heritage Foundation. Index of Economic Freedom. http://www.heritage.org/index/ (accessed 2 March 2013).

International Monetary Fund. World Economic Outlook database, http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx

Jeffrey A. Frankel and David H. Romer. "Does Trade Cause Growth?" *American Economic Review 89* (1999): 379–399.

Jeffrey D. Sachs and Andrew Warner. "Economic Reform and the Process of Global Integration." *Brookings Papers on Economic Activity 1* (1995): 1–118.

Jess Benhabib and Mark M. Spiegel. "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-country Data." *Journal of Monetary Economics 34*, no. 2 (1994): 143-173.

King Banaian, David Kemme and Grigor Sargsyan. "Inflation Targeting in Armenia: Monetary Policy in Transition." *Comparative Economic Studies 50*, no. 3 (September 2008).

Manuel Arellano and Olympia Bover. "Another look at the instrumental variable estimation of error-components models." *Journal of Econometrics* , vol. 68, issue 1 (1995): 29-51

Marta Noguer and Marc Siscart. "Trade Raises Income: A Precise and Robust Result." *Journal of International Economics 65* (2005): 447–460.

National Statistical Committee of Uzbekistan. www.stat.uz/en/ (accessed 13 February 2013).

Ricardo A. López. "Trade and Growth: Reconciling the Macroeconomic and Microeconomic Evidence." *Journal of Economic Surveys 19* (2005): 623-648.

Robert J. Barro. "Education and Economic Growth." Paper presented at the International Symposium on the Contribution of Human and Social Capital to Sustained Economic Growth and Well-being, organised by the Organisation for Economic Development and Cooperation (OECD) and HRDC, (Quebec City, Canada, 19-21 March 2000).

Determinants of Economic Growth: A Cross-country Empirical Study. (Cambridge, MA: MIT Press,1997).

"Economic Growth in a Cross-section of Countries." *Quarterly Journal of Economics 106*, no. 2 (1991): 407-443.

Robert J. Barro and Xavier Sala-i-Martin. Economic Growth (Boston, MA: McGraw-Hill,1995).

Roberto Chang, Linda Kaltani and Norman V. Loayza. "Openness is Good for Growth: The Role of Policy Complementarities." Journal of Development Economics 90 (2009): 33-49.

Robert Solow. "A Contribution to the Theory of Economic Growth.» Quarterly Journal of Economics 70 (1956): 65-94.

Sebastian Edwards. "Openness, Productivity and Growth: What do we Really Know?" *Economic Journal 108* (1998): 383–398.

"Trade Orientation, Distortions and Growth in Developing Countries." *Journal of Development Economics 39* (1992): 31–57.

Trevor Swan. "Economic Growth and Capital Accumulation." Economic Record 32.63 (1956): 334-361.

United Nations Statistics Division, Commodity Trade Statistics Database (COMTRADE) http://comtrade.un.org/db/dqBasicQuery.aspx (accessed 3 March 2013).

World Bank. World Development Indicators. http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=world-development-indicators (accessed 1 March 2013).

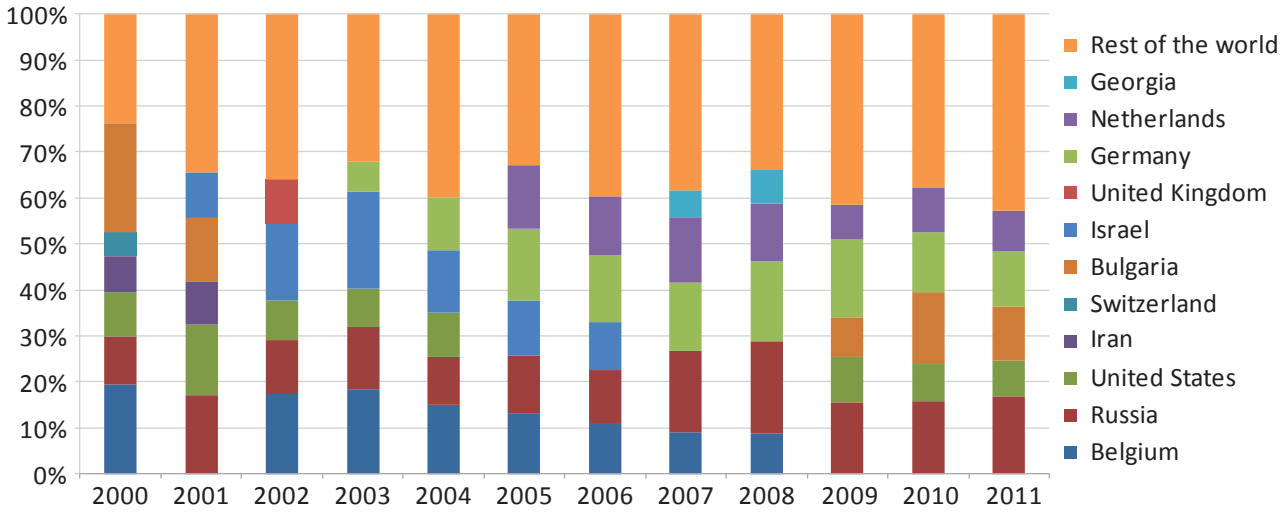
annex

Country Profiles

armenia

In 2000, the main export commodity of Armenia was diamonds, whether or not worked, but not mounted or set, which composed 33.6 % of total export. The main buyers of Armenian exports were Belgium, the Russian Federation, the United States, Iran and Switzerland (Figure A1 and Table A1). In 2011, copper ores and concentrates became the main export product, constituting 19.9 % of total exports. In 2011, the main destinations of Armenian exports were Russia, Germany, Bulgaria, the Netherlands and the United States (Table A2).

Figure A1. Armenian main export partners, 2000-2011



Source: UN Comtrade

Table A1. Main destinations of Armenian key exports, 2000

Country	Main Product	Thousand USD	% of total exports
Belgium	Diamonds, whether or not worked, but not mounted or set	73,623.7	25.1
Russia	Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 % vol; spirits, liqueurs and other alcohol beverages	16,209.4	5.5
United States	Articles of jewelry, of precious metal or of metal plated with precious metal	9,173.5	3.1
Iran	Aluminum waste and scrap	10,448.7	3.6
Switzerland	Unrefined copper; copper anodes for electrolytic refining	11,396.3	3.9

Source: UN Comtrade

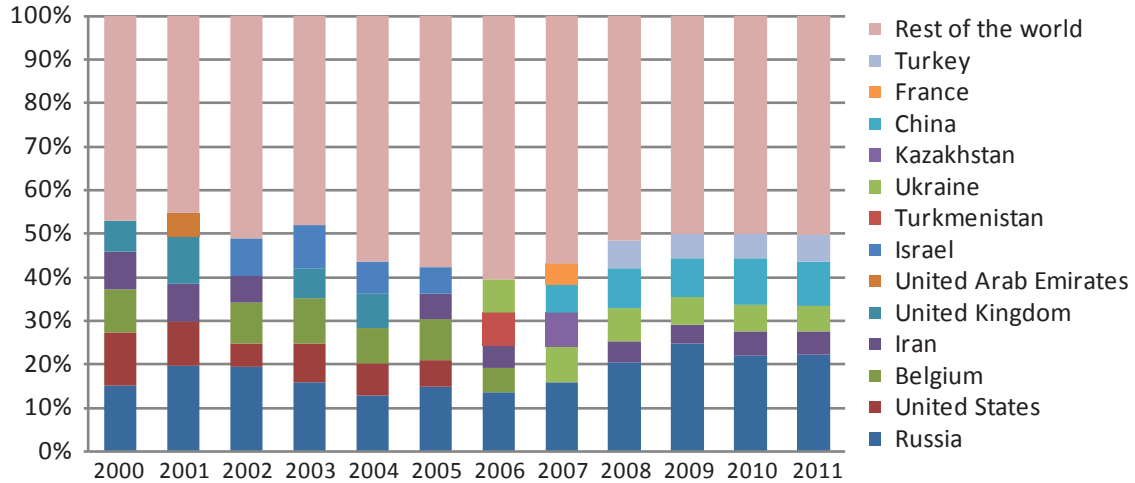
Table A2. Main destinations of Armenian key exports, 2011

Country	Main Product	Thousand USD	% of total exports
Russia	Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 % vol; spirits, liqueurs and other alcoholic beverages	96,171.9	7.4
Germany	Unrefined copper; copper anodes for electrolytic refining	82,506.7	6.3
Bulgaria	Copper ores and concentrates	151,742.5	11.6
Netherlands	Ferro-alloys	70,620.7	5.4
United States	Aluminium foil	79,963.2	6.1

Source: UN Comtrade

In 2000, the key Armenian imports were diamonds, whether or not worked, but not mounted or set (12 % of total imports), petroleum gases and other gaseous hydrocarbons (10.3 % of total imports) and petroleum oils and oils obtained from bituminous minerals, other than crude (8.82% of total imports). In 2011, the product structure of Armenian imports was similar to that of 2000; mostly consisting of petroleum gases and other gaseous hydrocarbons(10.3% of total imports), petroleum oils and oils obtained from bituminous minerals, other than crude(9.32 % of total imports) and diamonds, whether or not worked, but not mounted or set (3.19 % of total imports). In 2000, the main import partners of Armenia were Russia, the United States, Belgium, Iran and the United Kingdom. In 2011, the main sources of import were Russia, China, Turkey, Ukraine and Iran. The main imports from key partners are presented in Tables A3 and A4.

Figure A2. Armenian main import partners, 2000-2011



Source: UN Comtrade

Table A3. Armenian main imports from key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum gases and other gaseous hydrocarbons	82,058.1	9.8
United States	Medicaments	30,363.5	3.6

Belgium	Diamonds, whether or not worked, but not mounted or set	72,251.9	8.6
Iran	Electrical energy	10,183.01	1.2
United Kingdom	Petroleum oils and oils obtained from bituminous minerals, other than crude	35,279.8	4.2

Source: UN Comtrade

Table A4. Armenian main imports from key partners, 2011

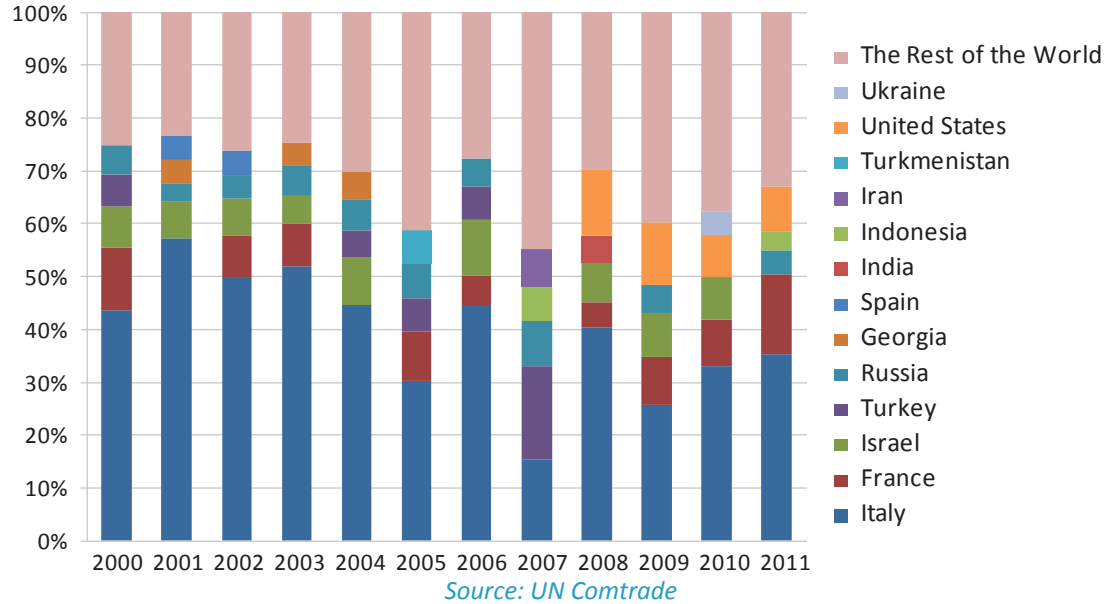
Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum gases and other gaseous hydrocarbons	326,728.6	8.2
China	Flat-rolled products of iron or non-alloy steel	13,245.1	0.3
Turkey	Particle board and similar board of wood or other ligneous materials, whether or not agglomerated with resins or other organic binding substances	14,147.2	0.3
Ukraine	Other bars and rods of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but including those twisted after rolling	27,152.3	0.7
Iran	Petroleum gases and other gaseous hydrocarbons	83,908.1	2.1

Source: UN Comtrade

azerbaijan

In 2000, the exports of Azerbaijan were dominated by petroleum oils and oils obtained from bituminous minerals, crude, comprising 56.5 % of total exports. The main buyers of Azerbaijan commodities were Italy, France, Israel, Turkey and Russia (Table A5). In 2011, the main export product was the same as in 2000, petroleum oils and oils obtained from bituminous minerals, crude, but its share increased to 86.6%. The main export markets of Azerbaijan were Italy, France, the United States, Russia and Indonesia (Table A6).

Figure A3. Main export partners of Azerbaijan, 2000-2011



Source: UN Comtrade

Table A5. Main destinations of key exports of Azerbaijan, 2000

Country	Main Product	Thousand USD	% of total exports
Italy	Petroleum oils and oils obtained from bituminous minerals, crude	622,889.2	35.7
France	Petroleum oils and oils obtained from bituminous minerals, crude	146,993.9	8.4
Israel	Petroleum oils and oils obtained from bituminous minerals, crude	107,608.1	6.2
Turkey	Petroleum oils and oils obtained from bituminous minerals, other than crude	63,380.5	3.6
Russia	Electrical energy	18,945.3	1.1

Source: UN Comtrade

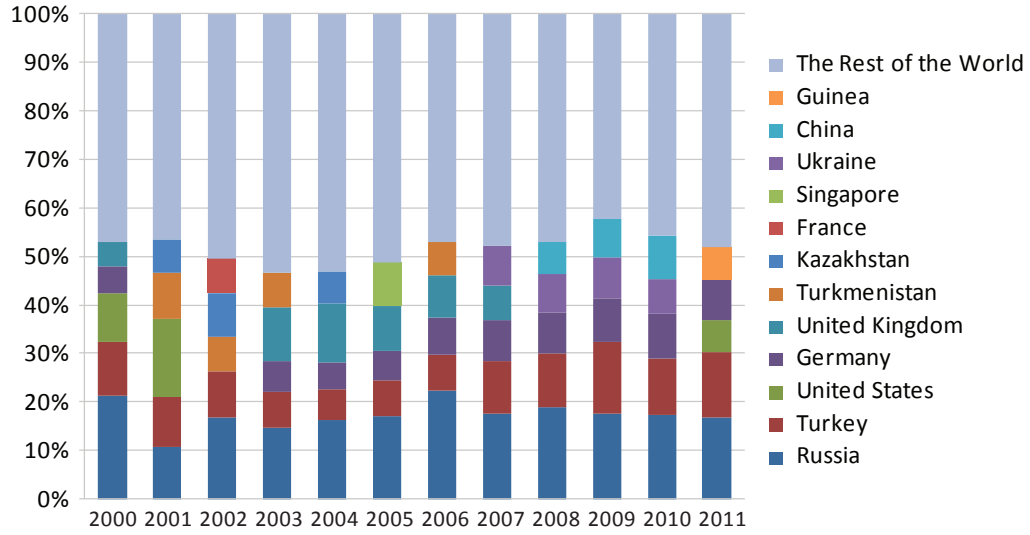
Table A6. Main destinations of key exports of Azerbaijan, 2011

Country	Main Product	Thousand USD	% of total exports
Italy	Petroleum oils and oils obtained from bituminous minerals, crude	9,255,699.7	34.9
France	Petroleum oils and oils obtained from bituminous minerals, crude	4,032,586.2	15.2
United States	Petroleum oils and oils obtained from bituminous minerals, crude	2,268,149.7	8.6
Russia	Petroleum gases and other gaseous hydrocarbons	412,649.7	1.6%
Indonesia	Petroleum oils and oils obtained from bituminous minerals, crude	913,126.4	3.4

Source: UN Comtrade

In 2000, the main imported goods to Azerbaijan were wheat and meslin (7.5% of total imports), transmission apparatus (3.8%) and electrical energy (3.0%). Main import partners were Russia, Turkey, the United States, Germany and the United Kingdom. In 2011, the main partners for import were Russia, Turkey, Germany, the United States and Guinea (Figure A4). Main imports are presented in Tables A7 and A8.

Figure A4. Main import partners of Azerbaijan, 2000-2011



Source: UN Comtrade

Table A7. Azerbaijan's main imports from key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Russia	Wheat and meslin	31,619.1	2.7
Turkey	Cane or beet sugar and chemically pure sucrose, in solid form	11,162.1	0.9
United States	Parts suitable for use solely or principally with the machinery of headings	16,743.6	1.4
Germany	Reservoirs, tanks, vats and similar containers	7,544.8	0.6
United Kingdom	Petroleum oils and oils obtained from bituminous minerals, other than crude	6,466.9	0.5

Source: UN Comtrade

Table A8. Azerbaijan's main imports from key partners, 2011

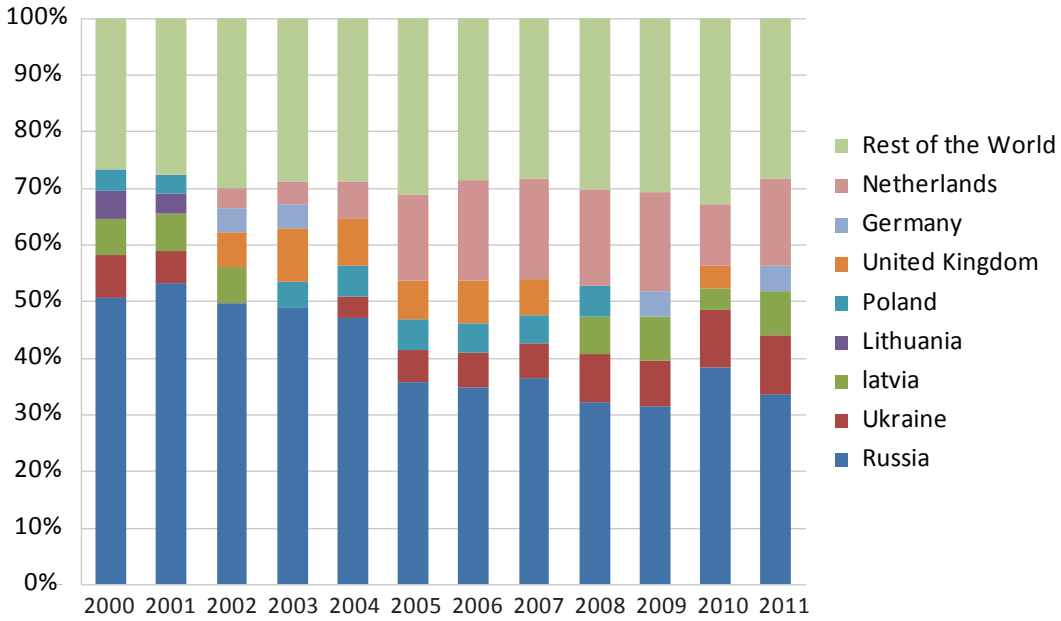
Country	Main Product	Thousand USD	% of total imports
Russia	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes	150,261.5	1.5
Turkey	Structures (excluding prefabricated buildings of heading No.94.06) and parts of structures (for example, bridges and bridge-sections, lock-gates, towers, lattice masts, roof roofing frame-works, doors and windows) and their frames	98,061.1	1.0
Germany	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes	69,643.2	0.7
United States	Parts suitable for use solely or principally with the machinery of headings	33,268.5	0.3
Guinea	Metal-rolling mills and rolls	40,983.2	0.4

Source: UN Comtrade

Belarus

The main Belarusian export commodity in 2000 was petroleum oils and oils obtained from bituminous minerals, crude which composed 39.8 % of total exports (mostly representing re-exports from Russia). In 2011, the key export remained the same, but its share increased to 45.8 %. The main buyers of Belarusian exports in 2000 were Russia, Ukraine, Latvia, Lithuania and Poland (Figure A5). During 2000-201,1 the geographical structure of Belarusian exports changed slightly, with Russia remaining the main partner for export. In 2011, the main markets for Belarusian exports were Russia, the Netherlands, Ukraine, Latvia and Germany. Main exports are presented in Tables A10 and A11.

Figure A5. Belarusian main export partners, 2000-2011



Source: UN Comtrade

Table A10. Main destinations of key Belarusian exports, 2000

Country	Main Product	Thousand USD	% of total exports
Russia	Motor vehicles for the transport of goods	304,019.8	50.7
Ukraine	Petroleum oils and oils obtained from bituminous minerals, other than crude	364,073.1	7.6
Latvia	Petroleum oils and oils obtained from bituminous minerals, other than crude	375,299	6.4
Lithuania	Petroleum oils and oils obtained from bituminous minerals, other than crude	209,054.5	4.8
Poland	Petroleum oils and oils obtained from bituminous minerals, crude	61,597.6	3.8

Source: UN Comtrade

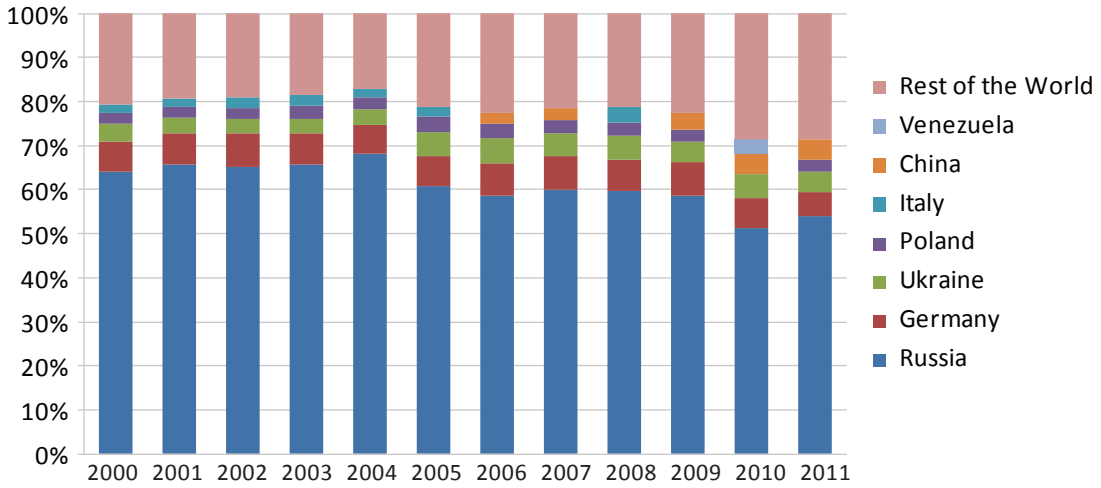
Table A11. Main destinations of key Belarusian exports, 2011

Country	Main Product	Thousand USD	% of total exports
Russia	Motor vehicles for the transportation of goods Tractors	1,014,782.1 871,581.4	2.5 2.3
Netherlands	Petroleum oils and oils obtained from bituminous minerals, other than crude	5,476,999.4	13.6
Ukraine	Petroleum oils and oils obtained from bituminous minerals, other than crude	2,812,293.8	7.0
Latvia	Petroleum oils and oils obtained from bituminous minerals, other than crude	1,640,515.9	4.1
Germany	Petroleum oils and oils obtained from bituminous minerals, crude	1,286,307.8	3.2

Source: UN Comtrade

Belarus' main import in 2000 was petroleum oils and oils obtained from bituminous minerals, crude, which comprised 31.2% of total imports. In 2011, oil products remained the key import, and its share increased slightly to 33.0%. Main import partners in 2000 were Russia, Germany, Ukraine, Poland and Italy. In 2011, the main exporters to Belarus were Russia, Germany, China, Ukraine and Poland. The main products exported by key partners are presented in Tables A12 and A13.

Figure A6. Belarusian main import partners, 2000-2011



Source: UN Comtrade

Table A12. Belarusian main imports from key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum oils and oils obtained from bituminous minerals, crude	1,627,825.2	18.8
Germany	Rye	44,676.6	0.5
Ukraine	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes	21,414.7	0.2

Poland	Harvesting or threshing machinery	21,657.4	0.2
Italy	Woven fabrics of carded wool or of carded fine animal hair	11,423.3	0.1

Source: UN Comtrade

Table A13. Belarusian main imports from key partners, 2011

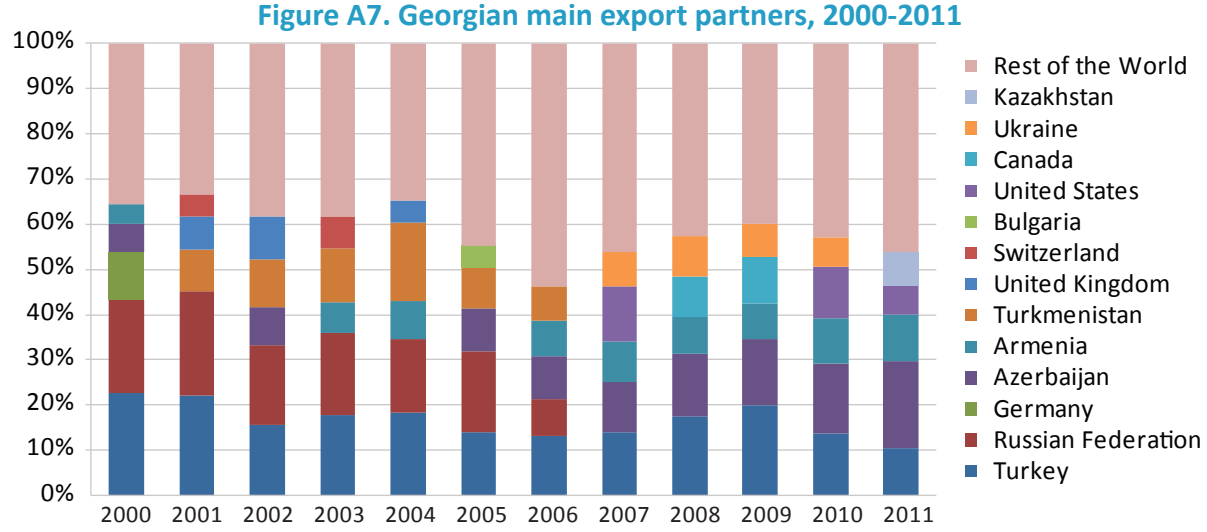
Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum oils and oils obtained from bituminous minerals, crude	7,444,273.5	16.2
Germany	Motor cars and other motor vehicles principally designed for the transport of persons, including station wagons and racing cars	180,005	0.4
China	Automatic data processing machines and units thereof	107,037.1	0.2
Ukraine	Electrical energy (optional heading)	160,811.3	0.3
Poland	Meat of swine, fresh, chilled or frozen	126,067.4	0.3

Source: UN Comtrade

Georgia

In 2000, main Georgian export commodities were ferrous waste and scrap (12.2% of total exports), wine (9.0%) and nuts (6.0%). The main buyers of Georgian exports were Turkey, Russia, Germany, Azerbaijan and Armenia. In 2010, Georgian main exports were ferro-alloys (16.7% of total exports), motor cars and other motor vehicles (representing mostly re-exports) principally designed for the transport of persons (14.4%), ferrous waste and scrap (6.9%). In 2010, the main destinations of Georgian exports were Azerbaijan, Turkey, the United States, Armenia and Ukraine (Table A14 and A15).

Figure A7. Georgian main export partners, 2000-2011



Source: UN Comtrade

Table A14. Main destinations of Georgian key exports, 2000

Country	Main Product	Thousand USD	% of total exports
Turkey	Ferrous waste and scrap; remelting scrap ingots of iron or steel	32,246.8	10.0
Russian Federation	Wine	23,079.8	7.1
Germany	Precious metal ores and concentrates	16,145.2	5
Azerbaijan	Other manufactured tobacco and manufactured tobacco substitutes	4,081.0	1.3
Armenia	Petroleum oils and oils obtained from bituminous minerals, other than crude	4,726.062	1.5

Source: UN Comtrade

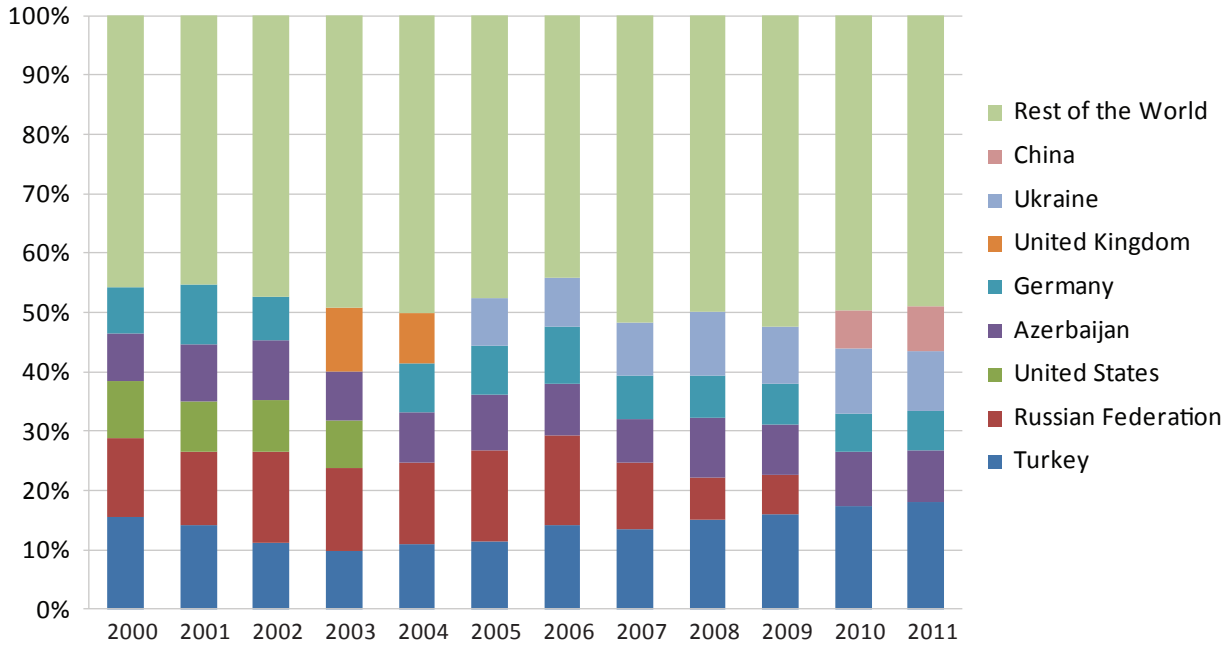
Table A15. Main destinations of Georgian key exports, 2010

Country	Main Product	Thousand USD	% of total exports
Azerbaijan	Motor cars and other motor vehicles	104,265.2	6.6
Turkey	Ferrous waste and scrap; remelting scrap ingots of iron or steel	88,952.1	5.6
United States	Ferro-alloys	164,078.5	10.4
Armenia	Motor cars and other motor vehicles	54,362.5	3.4
Ukraine	Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 % vol	25,381.9	1.6

Source: UN Comtrade

The main imported items to Georgia in 2000 were petroleum oils and oils obtained from bituminous minerals (other than crude), which comprised 10.2% of total imports, petroleum gases and other gaseous hydrocarbons (7.2% of total imports), medicaments (6.5%). The main import partners of Georgia were Turkey, Russia, the United States, Azerbaijan and Germany. In 2010, the main import commodities were petroleum oils and oils obtained from bituminous minerals, other than crude, which constituted 13.7% of total imports and motor cars and other motor vehicles (6.1%). The main sources of imports were Turkey, Ukraine, Azerbaijan, China and Germany. The main imports from key partners are presented in Tables A16 and A17.

Figure A8. Georgian main import partners, 2000-2011



Source: UN Comtrade

Table A16. Georgian main imports from key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Turkey	Wheat or meslin flour	21,618.1	3.0
Russia	Petroleum gases and other gaseous hydrocarbons	48,151.5	6.8
United States	Medicaments	11,271.0	1.6
Azerbaijan	Petroleum oils and oils obtained from bituminous minerals, other than crude	45,025.5	6.3
Germany	Motor cars and other motor vehicles	6,311.8	0.9

Source: UN Comtrade

Table A17. Georgian main imports from key partners, 2010

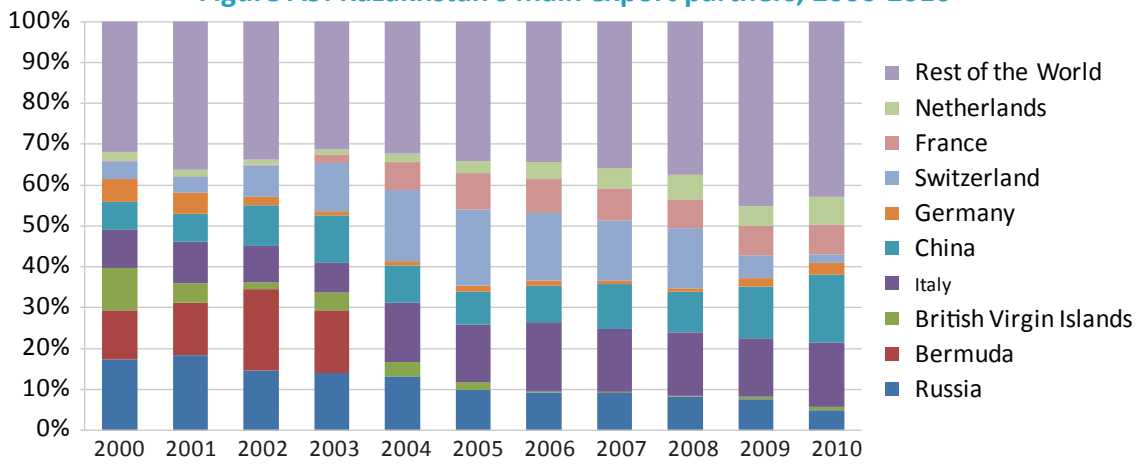
Country	Main Product	Thousand USD	% of total imports
Turkey	Medicaments	37,996.9	0.7
Ukraine	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes	66,621.5	1.3
Azerbaijan	Petroleum oils and oils obtained from bituminous minerals, other than crude	297,746.93	5.8
China	Transmission apparatus for radio-telephony, radio-telegraphy, radio-broadcasting or television	18,554.3	0.3
Germany	Motor cars and other motor vehicles	71,624.22	1.4

Source: UN Comtrade

kazakhstan

In 2000, the main export commodity of Kazakhstan was petroleum oils and oils obtained from bituminous minerals, crude, which accounted for 49.1% of total exports. The main buyers of Kazakh export were Russia, Bermuda, the British Virgin Islands, Italy and China. In 2010, petroleum oil products remained the main export commodity of Kazakhstan, and its share in total export increased to 64.6%. The main export partners were China, Italy, France, the Netherlands and Russia. The main exports to key partners are presented in Tables A18 and A19.

Figure A9. Kazakhstan's main export partners, 2000-2010



Source: UN Comtrade

Table A18. Main destinations of Kazakhstan's key exports, 2000

Country	Main Product	Thousand USD	% of total exports
Russia	Petroleum oils and oils obtained from bituminous minerals, crude	629,867.2	7.3
Bermuda	Petroleum oils and oils obtained from bituminous minerals, crude	1,185,798.8	13.7
British Virgin Islands	Petroleum oils and oils obtained from bituminous minerals, crude	1,029,109.1	11.9
Italy	Petroleum oils and oils obtained from bituminous minerals, crude	459,642.8	5.3
China	Petroleum oils and oils obtained from bituminous minerals, crude	212,789.6	2.5

Source: UN Comtrade

Table A19. Main destinations of Kazakhstan's key exports, 2010

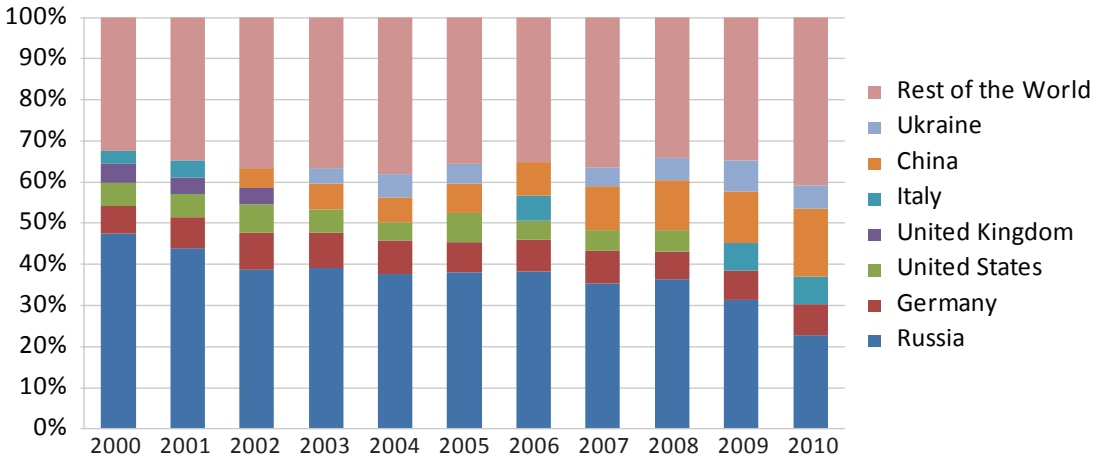
Country	Main Product	Thousand USD	% of total exports
China	Petroleum oils and oils obtained from bituminous minerals, crude	5,374,404.8	9.4
Italy	Petroleum oils and oils obtained from bituminous minerals, crude	9,152,128.3	16.0

France	Petroleum oils and oils obtained from bituminous minerals, crude	4,133,804.8	7.2
Netherlands	Petroleum oils and oils obtained from bituminous minerals, crude	3,804,539.7	6.6
Russia	Iron ores and concentrates, including roasted iron pyrites	506,682.4	0.9

Source: UN Comtrade

The main products imported to Kazakhstan in 2000 were petroleum oils and oils obtained from bituminous minerals, other than crude (5.1% of total imports), motor cars and other motor vehicles (4.4%), petroleum gases and other gaseous hydrocarbons (2.6%), tubes, pipes and hollow profiles, seamless, of iron or steel (2.2%). The main providers of imports were Russia, Germany, the United States, the United Kingdom and Italy (Table A20 and Figure A10). In 2010, the main import commodities were petroleum oils and oils obtained from bituminous minerals, crude (5.6% of total imports), medicaments (3.1%), aircraft (2.6% of total import) and petroleum oils and oils obtained from bituminous minerals, other than crude (1.67%). The main sources of imports were Russia, China, Germany, Italy and Ukraine (Table A21).

Figure A10. Kazakhstan's main import partners, 2000-2010



Source: UN Comtrade

Table A20. Kazakhstan's main imports from key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum oils and oils obtained from bitumi-nous minerals, other than crude	221,114.7	4.5
Germany	Motor cars and other motor vehicles	23,300.6	0.5
United States	Other moving, grading, leveling, scraping, excavating, tamping, compacting, extracting or boring machinery, for earth, minerals or ores; pile-drivers and pile-extractors; snow-ploughs and snow-blowers	28,527.0	0.6
United Kingdom	Parts suitable for use solely or principally with the machinery of headings	17,117.8	0.3

Italy	Machinery, plant or laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting, distilling, rectifying, sterilising	37,581.4	0.8

Source: UN Comtrade

Table A21. Kazakhstan's main imports from key partners, 2010

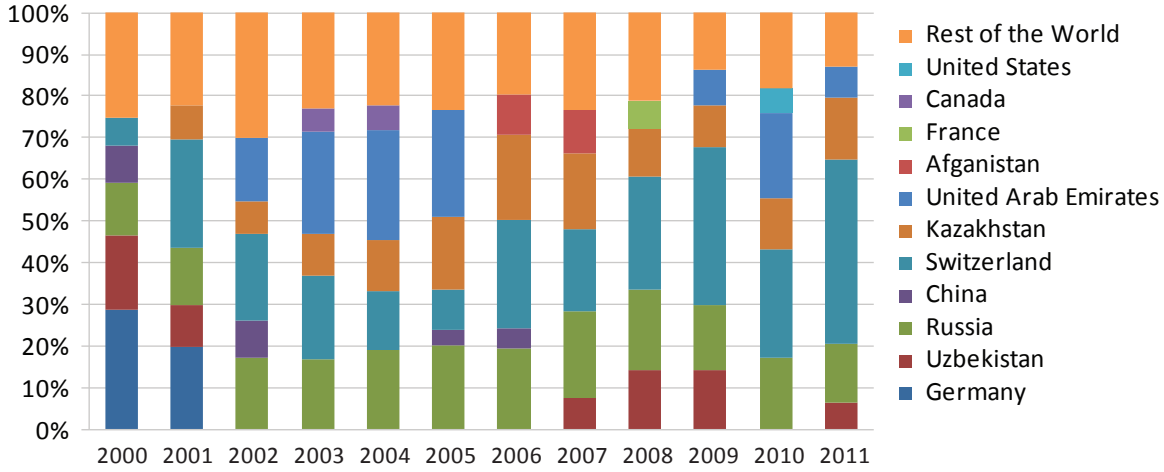
Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum oils and oils obtained from bituminous minerals, crude	1,340,913.0	5.6
China	Electrical apparatus for line telephony or line telegraphy	184,250.6	0.8
Germany	Other aircraft	201,972.2	0.8
Italy	Prefabricated buildings	257,991.2	1.1
Ukraine	Railway or tramway goods vans and wagons, not self-propelled	216,102.7	0.9

Source: UN Comtrade

kyrgyzstan

The main Kyrgyz export commodity in 2000 was gold, accounting for 38.7% of total exports. The main export partners were Germany, Uzbekistan, Russia, China and Switzerland (Table A21). In 2011, gold remained the key export and its share increased to 52.4% of total exports. During the same period the main consumers of Kyrgyz exports were Switzerland, Kazakhstan, Russia, United Arab Emirates and Uzbekistan (Table A22).

Figure A11. Kyrgyzstan's main export partners, 2000-2011



Source: UN Comtrade

Table A21. Main destinations of Kyrgyzstan's key exports, 2000

Country	Main Product	Thousand USD	% of total exports
Germany	Gold	140,466.1	27.8
Uzbekistan	Electrical Energy	64,315.1	12.7
Russia	Unmanufactured tobacco	25,241.3	5.0
China	Aluminum waste and scrap	18,471.3	3.7
Switzerland	Gold	33,308.4	6.6

Source: UN Comtrade

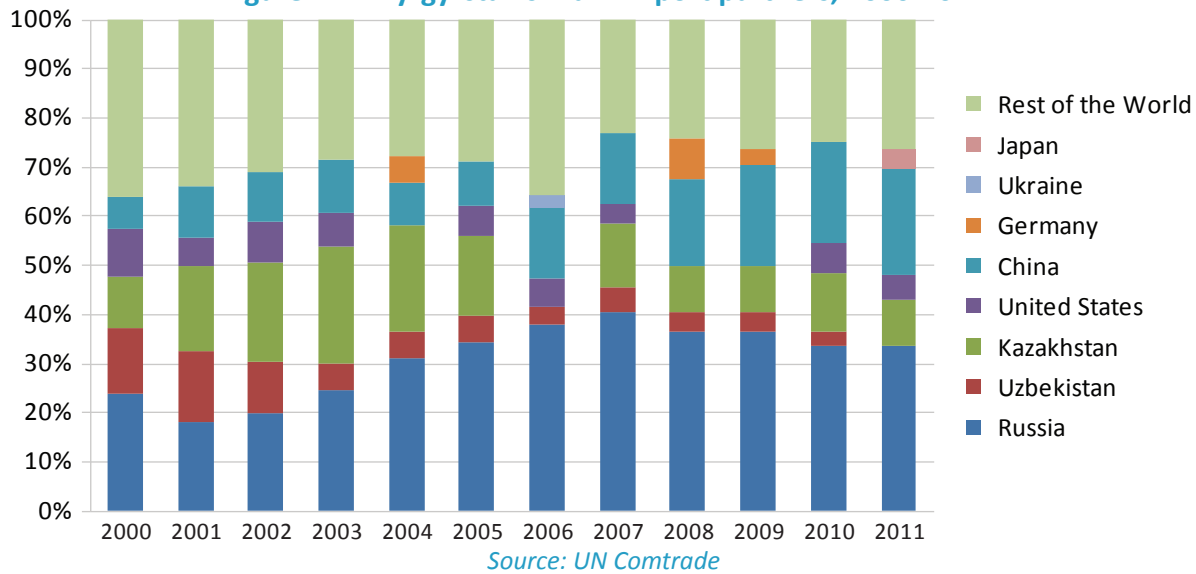
Table A22. Main destinations of Kyrgyzstan's key exports, 2011

Country	Main Product	Thousand USD	% of total exports
Switzerland	Gold	867,505.3	43.8
Kazakhstan	Electrical energy	68,852.8	3.5
Russia	Women's or girls' suits	47,817.2	2.4
United Arab Emirates	Gold	137,255.1	6.9
Uzbekistan	Motor vehicles for the transport of goods	20,808.9	1.1

Source: UN Comtrade

In 2000, the main import commodities of Kyrgyzstan were petroleum oils and oils obtained from bituminous minerals, other than crude (12.6% of total imports), petroleum gases and other gaseous hydrocarbons (6.2%) and wheat and meslen (6%). The main import partners were Russia, Uzbekistan, Kazakhstan, the United States and China (Table A23). In 2011, the main import commodities were petroleum oils and oils obtained from bituminous minerals, other than crude (19.7% of total imports), motor cars and other motor vehicles (5.6%), medicaments (3.5%) and motor vehicles for the transportation of goods (2.7%). The main import providers were Russia, China, Kazakhstan and Japan (Table A24).

Figure A12. Kyrgyzstan's main import partners, 2000-2011



Source: UN Comtrade

Table A23. Kyrgyzstan's main imports from key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum oils and oils obtained from bituminous minerals, other than crude	15,955.9	2.9
Uzbekistan	Petroleum gases and other gaseous hydrocarbons	33,486.3	6.0
Kazakhstan	Petroleum oils and oils obtained from bituminous minerals, other than crude	15,735.8	2.8
United States	Wheat and meslin	21,839.3	3.9
China	Cyanides, cyanide oxides and complex cyanides	5,464.1	1.0

Source: UN Comtrade

Table A24. Kyrgyzstan's main imports from key partners, 2011

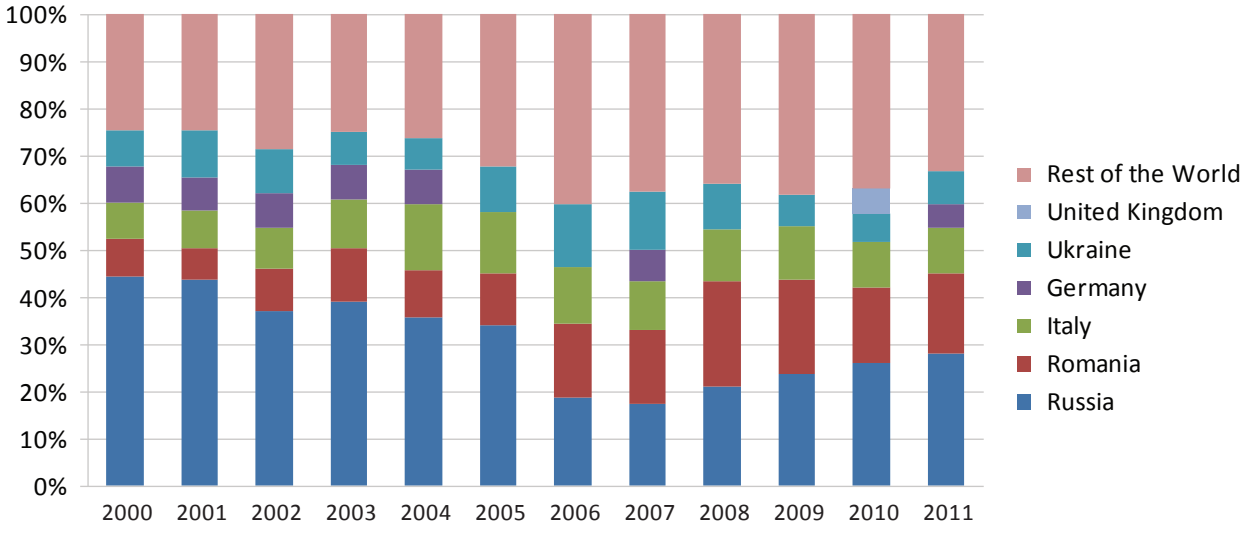
Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum oils and oils obtained from bituminous minerals, other than crude	781,369.7	18.3
China	Electrical apparatus for line telephony or line telegraphy	59,822.8	1.4
Kazakhstan	Wheat and meslin	66,945.2	1.6
United States	Meat and edible offal	45,041.1	1.1
Japan	Motor cars and other motor vehicles principally designed for the transport of persons	140,535.1	3.3

Source: UN Comtrade

Moldova

Moldavia's key export in 2000 was wine of fresh grapes (24.0% of total exports). The second largest export was unmanufactured tobacco (6.2%) (Table A25). In both 2000 and 2011, the main consumers of Moldavian exports were Russia, Romania, Italy, Germany and Ukraine. In 2011, the main exports were insulated wire (6.4% of total exports), wine of fresh grapes (6.0%) and sunflower seeds (3.5%) (Table A26).

Figure A13. Moldavian main export partners, 2000-2011



Source: UN Comtrade

Table A25. Main destinations of Moldavian key exports, 2000

Country	Main Product	Thousand USD	% of total exports
Russia	Wine of fresh grapes	209,470.7	19.4
Romania	Sunflower seeds	37,552.2	1.5
Italy	Men's or boys' suits	36,374.7	1.2
Germany	Women's or girls' suits	36,266.7	2.2
Ukraine	Carboys, bottles, flasks, jars, pots, phials, ampoules and other containers, of glass	35,460.6	1.7

Source: UN Comtrade

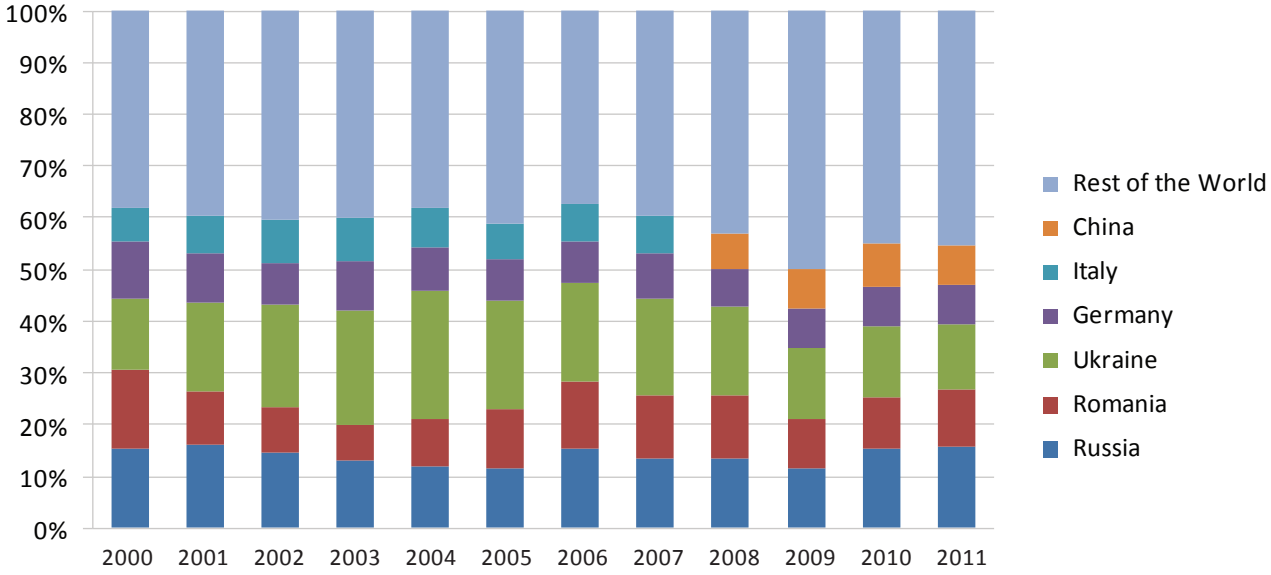
Table A26. Main destinations of Moldavian key exports, 2011

Country	Main Product	Thousand USD	% of total exports
Russia	Medicaments	625,509.5	2.7
Romania	Insulated wire; optical fibre cables	376,397.2	6.1
Italy	Women's or girls' suits	215,096.6	0.9
Ukraine	Sunflower seeds, whether or not broken.	152,997.9	1.9
Germany	Copper waste and scrap	106,484.5	1.4

Source: UN Comtrade

The main imported commodities in Moldova in 2000 were petroleum oils and oils obtained from bituminous minerals, other than crude (13.7% of total imports). Key import partners in 2000 were Russia, Romania, Ukraine, Germany and Italy (Table A27). The main imports of Moldova in 2011 were petroleum oils and oils obtained from bituminous minerals, other than crude (13.1% of total imports). The main importers in 2011 were Russia, Ukraine, Romania, China and Germany (Table A28).

Figure A14. Moldavian main import partners, 2000-2011



Source: UN Comtrade

Table A27. Moldavian main imports from key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum gases and other gaseous hydrocarbons	83,615.3	10.8
Romania	Petroleum oils and oils obtained from bituminous minerals, other than crude	67,431.9	8.7
Ukraine	Electrical energy	38,005.4	4.9
Germany	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes	27,141.8	3.5
Italy	Other knitted or crocheted fabrics	4,636.7	0.6

Source: UN Comtrade

Table A28. Moldavian main imports from key partners, 2011

Country	Main Product	Thousand USD	% of total imports
Russia	Petroleum oils and oils obtained from bituminous minerals, other than crude	822,960.9	15.9
Ukraine	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes	641,161.7	12.3

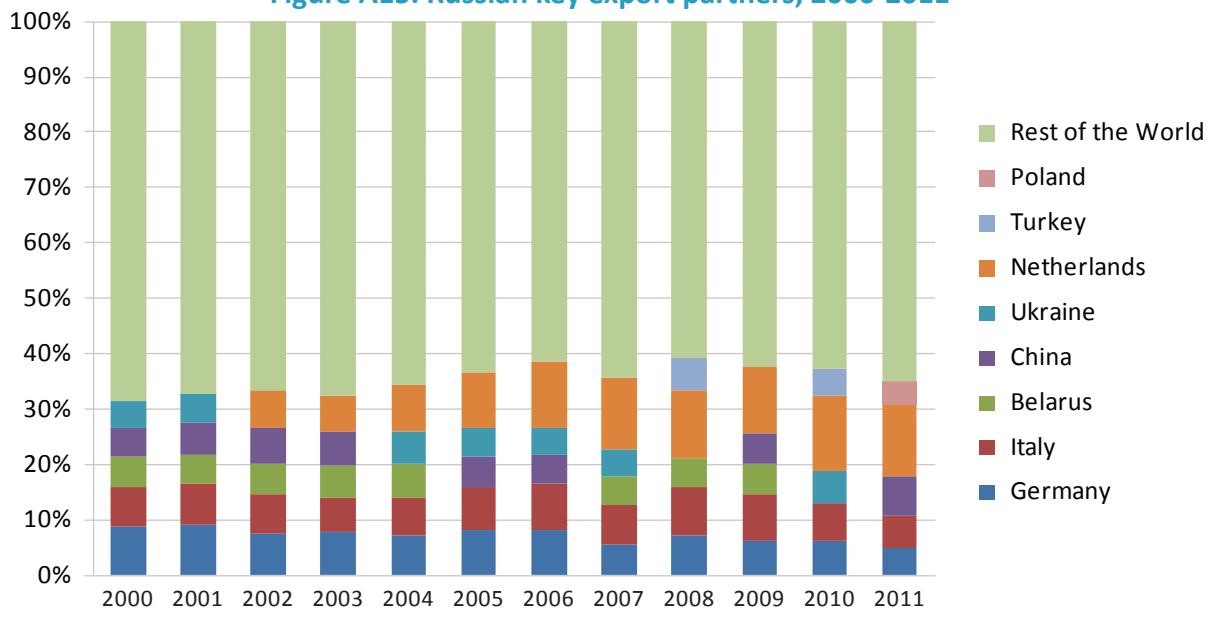
Romania	Petroleum oils and oils obtained from bituminous minerals, other than crude	574,273.2	11.1
China	Electrical apparatus for line telephony or line telegraphy	399,757.8	7.7
Germany	Motor cars and other motor vehicles	395,762.9	7.6

Source: UN Comtrade

Russia

In 2000, the main export commodity of Russia was petroleum oils and oils obtained from bituminous minerals, crude (26% of total exports). The second and the third main products in 2000 were petroleum gases and other gaseous hydrocarbons (17.9% of total exports) and petroleum oils and oils obtained from bituminous minerals, other than crude (11.8 %). The main buyers of Russian exports in 2000 were Germany, Italy, Belarus, China and Ukraine (Table A20). In 2011, the main commodities were petroleum oils and oils obtained from bituminous minerals, crude (43.3% of total exports) and petroleum oils and oils obtained from bituminous minerals, other than crude (23.0%). In 2011, the main Russian export partners were the Netherlands, China, Italy, Germany and Poland (Table A30).

Figure A15. Russian key export partners, 2000-2011



Source: UN Comtrade

Table A29. Main destinations of Russian key exports, 2000

Country	Main Product	Thousand USD	% of total exports
Germany	Petroleum oils and oils obtained from bituminous minerals, crude	3,459,749.2	3.4
Italy	Petroleum oils and oils obtained from bituminous minerals, crude	3,085,385.9	3.0
Belarus	No available data	-	-

China	Unwrought aluminum	482,809.9	0.5
Ukraine	Petroleum oils and oils obtained from bituminous minerals, crude	644,360.3	0.7

Source: UN Comtrade

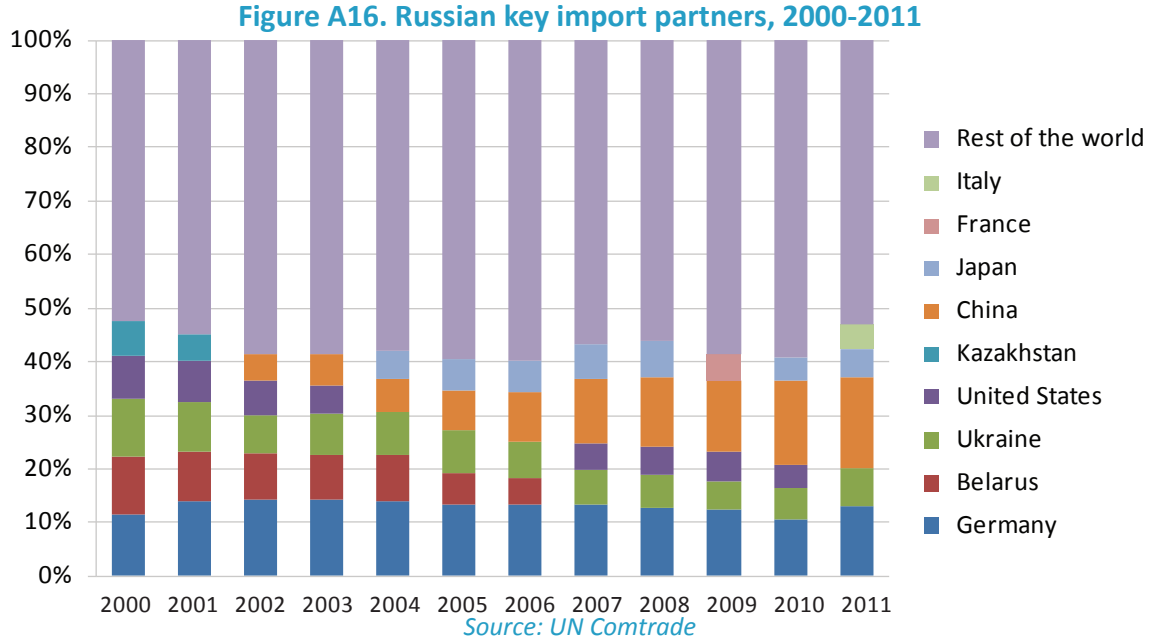
Table A30. Main destinations of Russian key exports, 2011

Country	Main Product	Thousand USD	% of total exports
Netherlands	Petroleum oils and oils obtained from bituminous minerals, crude	32,274,016.2	6.8
China	Petroleum oils and oils obtained from bituminous minerals, crude	17,103,338.2	3.6
Italy	Petroleum oils and oils obtained from bituminous minerals, crude	17,142,167.3	3.6
Germany	Petroleum oils and oils obtained from bituminous minerals, crude	16,517,900.4	3.5
Poland	Petroleum oils and oils obtained from bituminous minerals, crude	17,540,000.1	3.7

Source: UN Comtrade

In 2000, the main imports in Russia were medicaments (3.7% of total imports), artificial corundum (3.4%) and cane/beet sugar and chemically pure sucrose, in solid form (2.5%) (Table A31). The main partners were Germany, Belarus, Ukraine, United States and Kazakhstan. In 2011, the main import commodities were motor cars and other motor vehicles (6.7% of total import), medicaments (3.9%), and motor parts and accessories (3.2%). China, Germany, Ukraine, Japan and Italy were the main importers to Russia in 2011 (Table A32).

Figure A16. Russian key import partners, 2000-2011



Source: UN Comtrade

Table A31. Russian main imports key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Germany	Medicaments	150,648.2	0.4
Belarus	No available data	-	-
Ukraine	Artificial corundum	250,806.4	0.7
United States	Meat and edible offal of the poultry of heading	257,078.7	0.8
Kazakhstan	Petroleum oils and oils obtained from bituminous minerals, crude	615,931.2	1.8

Source: UN Comtrade

Table A32. Russian main imports from key partners, 2011

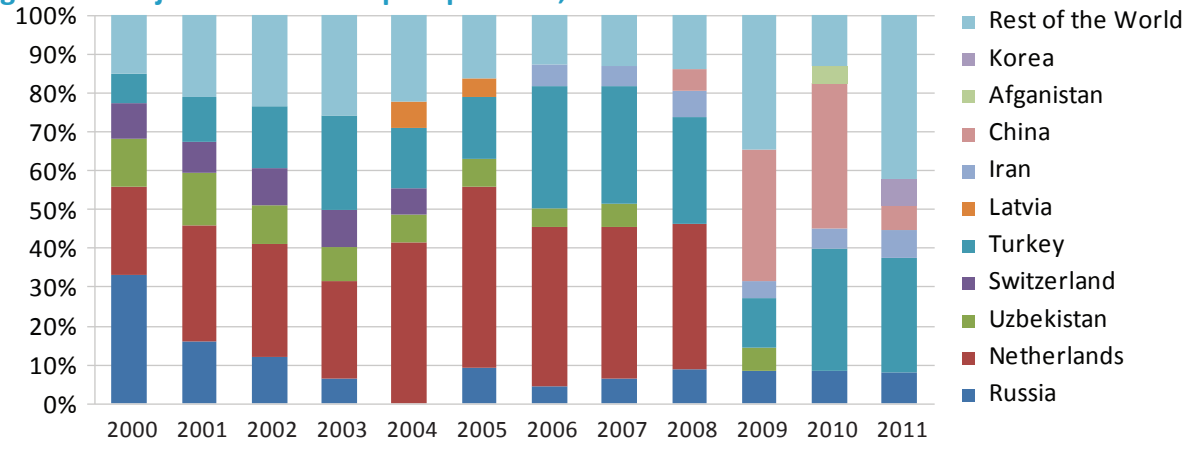
Country	Main Product	Thousand USD	% of total imports
China	Footwear with outer soles of rubber	1,168,883.3	0.4
Germany	Medicaments	2,143,346.7	0.7
Ukraine	Petroleum oils and oils obtained from bituminous minerals, other than crude	2,514,209.7	0.9
Japan	New pneumatic tires of rubber	509,058.0	0.2
Italy	Medicaments	700,820.1	0.2

Source: UN Comtrade

Tajikistan

In 2000, the key Tajik export commodity was unwrought aluminum, which comprised 53.6% of total exports. The main buyers of Tajik exports in 2000 were Russia (33.0% of total exports), the Netherlands (22.7%), Uzbekistan (12.5%), Switzerland (9.2%) and Turkey (7.5%). In 2010, main export partners included China (37.4% of total exports), Turkey (31.6%), Russia (8.5%), Iran (5.0%) and Afghanistan (4.4%). The main exports are presented in Table A34.

Figure A17 Tajikistan's main export partners, 2000-2011



Source: UN Comtrade

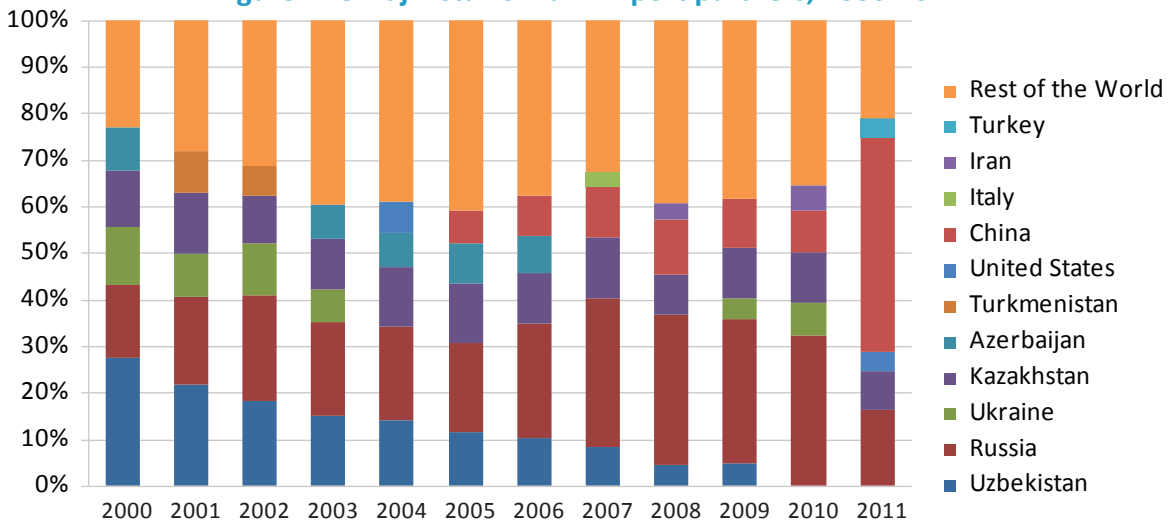
Table A34. Main destinations of Tajik key exports, 2000

Country	Main Product	Thousand USD	% of total exports
Russia	Unwrought aluminum	172,106	21.9
Netherlands	Unwrought aluminum	178,202	22.7
Uzbekistan	Electrical energy	89,929	11.5
Switzerland	Cotton, not carded or combed	35,051	4.5
Turkey	No available data	-	-

Source: UN Comtrade

The main Tajik import commodity in 2000 was artificial corundum, which comprised 30.9% of total imports. Tajikistan's main import partners in 2000 were Uzbekistan, Russia, Ukraine, Kazakhstan and Azerbaijan (Table A35). In 2010, the main exporters to Tajikistan were Russia, Kazakhstan, China, Ukraine and Iran.

Figure A18. Tajikistan's main import partners, 2000-2011



Source: UN Comtrade

Table A35. Tajikistan's main imports from key partners, 2000

Country	Main Product	Thousand USD	% of total imports
Uzbekistan	Electrical energy	101,899	15.1
Russia	Petroleum coke	14,732	2.2
Ukraine	Artificial corundum	71,940	20.7
Kazakhstan	Wheat and meslin	36,272	10.7
Azerbaijan	Artificial corundum	61,663	5.4

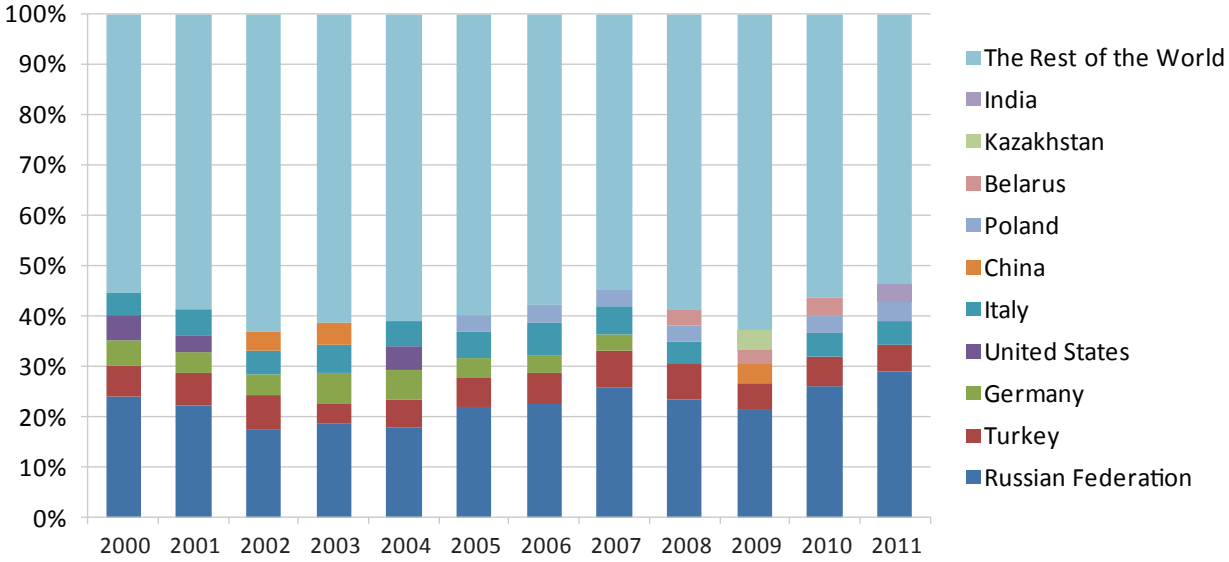
Source: UN Comtrade

Ukraine

Ukraine's main export partners in 2000 were Russia, Turkey, Germany, United States and Italy, with shares of exports of 24.1%, 5.9%, 5.1%, 5.0% and 4.4% respectively. In 2011, the main export products of Ukraine were semi-finished products of iron or non-alloy steel (9.5% of total exports), flat-rolled products of iron or non-alloy steel (6.1%),

iron ores and concentrates (5.6%) and petroleum oils and oils obtained from bituminous minerals, other than crude (4.9%). In 2011, the main buyers of Ukraine exports were Russia, Turkey, Italy, Poland and India (Table A36).

Figure A19. Ukrainian main export partners, 2000-2011



Source: UN Comtrade

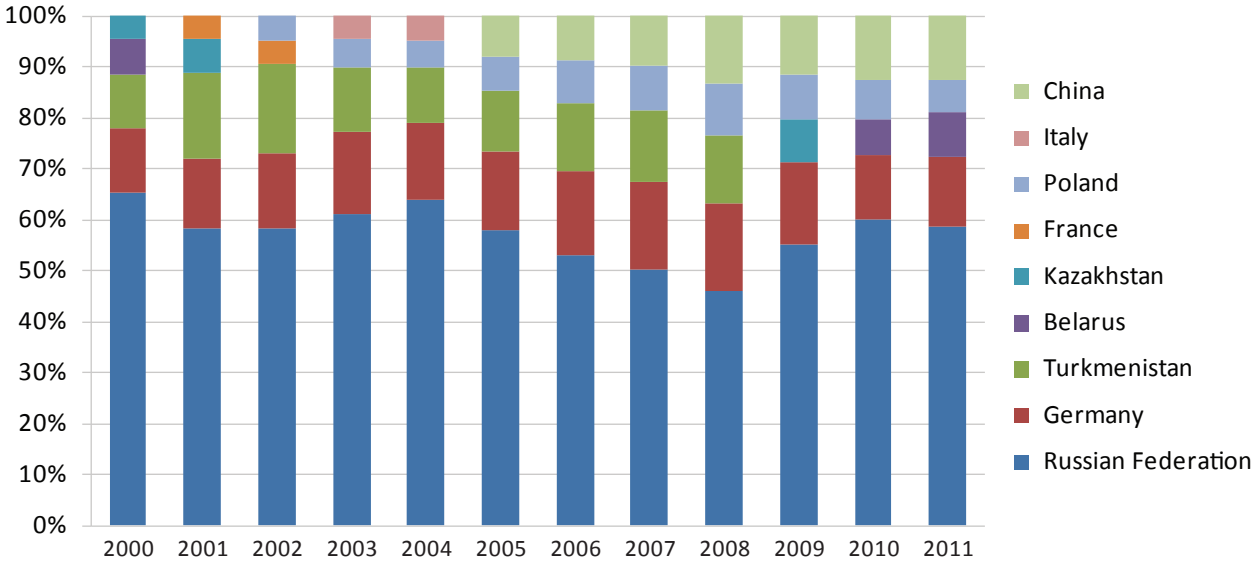
Table A36. Main destinations of Ukrainian key exports, 2011

Country	Main Product	Thousand USD	% of total exports
Russia	No available data	-	-
Turkey	Semi-finished products of iron or non-alloy steel	549,306.1	0.8
Italy	Semi-finished products of iron or non-alloy steel	1,304,915.2	1.9
Poland	Iron ores and concentrates	501,856.3	0.7
India	Sunflower-seed, safflower or cotton-seed oil and fractions thereof, whether or not refined, but not chemically modified	919,119.5	1.3

Source: UN Comtrade

In 2000, the major exporters to Ukraine were Russia, Germany, Turkmenistan, Belarus and Kazakhstan. Their export shares made up 41.7%, 8.1%, 6.78%, 4.3% and 2.96% of total exports respectively. The main import commodities of Ukraine in 2011 were petroleum gases and other gaseous hydrocarbons (17.4% of total imports), petroleum oils and oils obtained from bituminous minerals, other than crude (8.5%), petroleum oils and oils obtained from bituminous minerals, crude (5.2%). In 2011, main importers to the country were Russia, Germany, China, Belarus and Poland (Table A37).

Figure A20. Ukrainian main import partners, 2000-2011



Source: UN Comtrade

Table A37. Ukrainian main imports from key partners, 2011

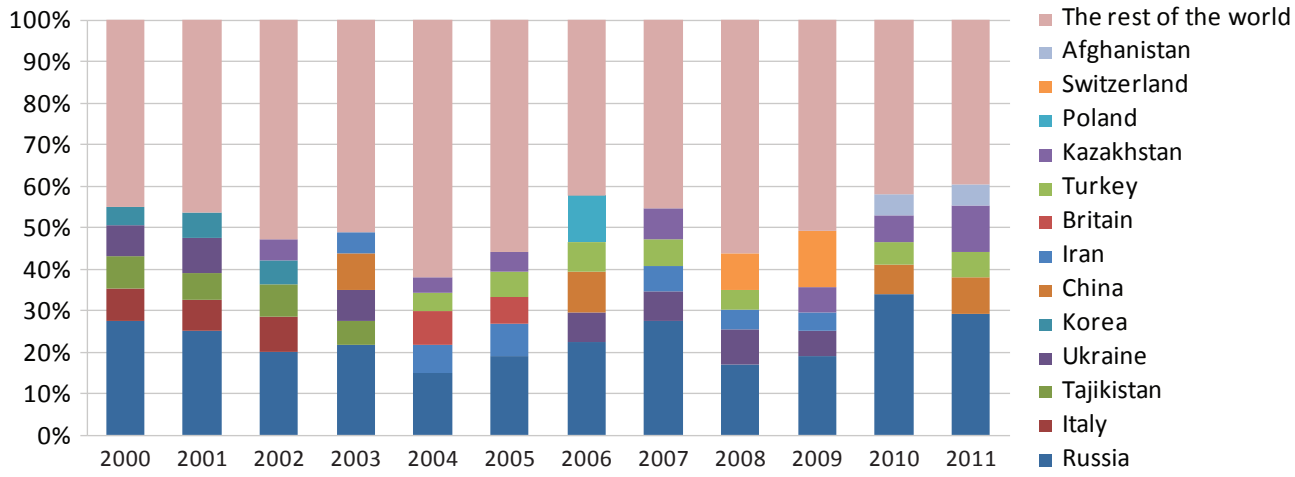
Country	Main Product	Thousand USD	% of total imports
Russia	No available data	-	-
Germany	Motor cars and other motor vehicles	545,590.8	0.7
China	Electric motors and generators	568,001.0	0.7
Belarus	Petroleum oils and oils obtained from bituminous minerals, other than crude	2,852,121.6	3.4
Poland	Petroleum oils and oils obtained from bituminous minerals, other than crude	161,708.5	0.2

Source: UN Comtrade

Uzbekistan

The main buyers of Uzbek exports in 2000 were Russia, Italy, Tajikistan, Ukraine and Korea, with shares in total exports of 27.6%, 7.9%, 7.7%, 7.4% and 4.3% respectively. In 2011, main export partners were Russia, Kazakhstan, China, Turkey and Afghanistan, with corresponding shares in total exports of 29.3%, 11.1%, 8.7%, 6.06%, and 5.3% respectively.

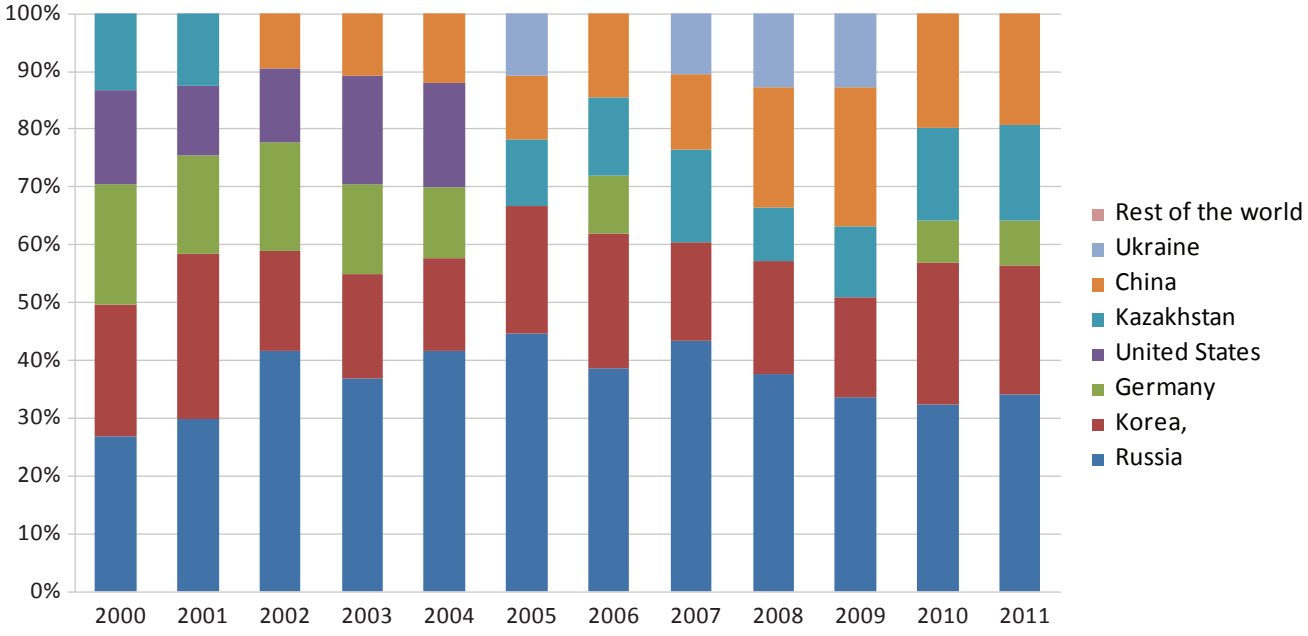
Figure A21. Uzbekistan's main export partners, 2000-2011



Source: UN Comtrade

The main exporters to Uzbekistan in 2000 were Russia, Korea, Germany, the United States and Kazakhstan. Their shares in total imports constituted 14.6%, 12.2%, 11.3%, 8.8%, 7.1% respectively. In 2011, the main partners for imports were Russia, Korea, China, Kazakhstan and Germany, with corresponding shares in total Uzbek imports of 21.7%, 14.1%, 12.3%, 10.44% and 4.9% respectively.

Figure A22. Uzbekistan's main import partners, 2000-2011



Source: UN Comtrade

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