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UNRAVELING COMPLEXITY: ASSESSING THE IMPACT OF REAL EFFECTIVE EXCHANGE RATE ON UZBEKISTAN'S TRADE DYNAMICS

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ANNOTATION

This article investigates the complex interplay between economic theory and real-world trade dynamics in Uzbekistan, with a particular focus on the Real Effective Exchange Rate (RER). Contrary to conventional expectations, our findings reveal a negative correlation between export volume to Kazakhstan and RER changes, challenging the assumption that so'm depreciation consistently drives export growth. Additionally, a counterintuitive trend emerges in import dynamics, where the volume of imported goods consistently rises during periods of so'm depreciation, contradicting traditional theoretical predictions. Beyond RER, the study underscores the presence of unexplored factors shaping trade patterns.

Introduction. It is crucial for a country to establish a stable currency regime to reduce uncertainty for businesses, encourage entrepreneurship, and boost economic growth. The exchange rate policy, a pivotal determinant in a country's foreign trade dynamics, can be effectively managed to stimulate exports and mitigate inflation. Policymakers may employ discretionary measures, such as devaluation and revaluation, within the framework of a fixed exchange rate regime. However, navigating this intricate task requires a careful consideration of the monetary implications associated with currency policy**.**

Since gaining independence, Central Asian countries, notably Uzbekistan, have grappled with the intricacies of maintaining a sustainable exchange rate policy. Uzbek authorities navigated policy shifts several times between 1991 and 2017. These adjustments were prompted by a myriad of factors, including internal considerations such as the adoption of import substitution strategy and external conditions like the financial crises of 1998 and 2008.

Throughout this period, the exchange rate policy served as a supplemental instrument for the government's broader policy objectives. When facing challenges in currency affairs, authorities consistently turned to restrictive actions. For instance, in the mid-1990s, as a response to low export earnings and a shortage of foreign currency, the government opted for the import substitution strategy. Policymakers concurrently implemented measures to reduce the quantity of so’m that could be converted. (Olimov & Sirajiddinov, 2008).

In general, for most of the period the officials heavily managed the currency exchange for several reasons. At the same time, they failed to achieve desired outcome by manipulating currency policy. In one instance the very idea of the import substitution was the cause of failure. By implementing import substitution strategy, the government intended to reduce consumption of foreign currency but paradoxically to produce import substitutes country increased import of intermediate goods. This in turn led to increased demand for foreign currency. In the second instance, by rationing foreign currency trade to enhance current account balance authorities become the main cause of forming multiple exchange rate regime in aftermath of 2008 financial crises.

Thus, it is intriguing to investigate the currency policy of independent Uzbekistan with relationship to foreign trade. The theory suggests that depreciation of currency value would lead to the export volume to rise and import volume to decrease and vice versa. The scope of the research not broad though it will try to explore to what extent Uzbekistan case is consistent with the dominant theory.

Literature review. The literature on the relationship between exchange rate changes and foreign trade in the specific context of Uzbekistan is not extensive, yet characterized by varying findings, underscoring the complexity of this relationship. While the dominant theory posits that the overall depreciation of a domestic currency would lead to an increase in export volumes and a decrease in imports, studies on Asian countries, including Uzbekistan, reveal that additional factors need consideration.

Also, it should be noted all reviewed papers have investigated period before 2013 the year when authorities imposed draconian restrictions on convertibility of the *so’m.* As pointed out by previous papers, Uzbekistan’s currency policy could be divided into certain periods. Period from 1993 to 1996 marked as initial years when the country introduced new currency *so’m* and its flexible convertibility to the US dollar. The period from 1996 to 2000 marked as the period of restrictions. Beginning from 1996 government implemented restrictive currency policy to protect domestic firms from foreign competition and applied import substitution strategy. The situation had remained unchanged until the beginning of 2000’s when authorities announced gradual liberalization of currency regime (Olimov & Sirajiddinov, 2008). However, the consequences of financial crisis again pushed Uzbekistan toward highly regulated foreign exchange policies. As mentioned early, in 2013 government by the presidential decree commercial banks were banned to sell cash currency to the individuals. Restrictions continued until 2017 when new administration initiated second attempt to liberalize foreign exchange market.

In the case of Asian nations, particularly Uzbekistan, factors beyond exchange rate fluctuations seem to play pivotal roles. Notably, limited evidence suggests that the income growth of trading partners may be a more influential determinant of export volumes in these countries. Importantly, import prices do not always react to currency depreciation, and the volume of imports may not decline due to the low elasticity of trading goods, a phenomenon consistent with the Marshall-Lerner condition. Moreover, the distinction between short-term and long-term effects of exchange rate adjustments on exports and imports is crucial, as short-term effects may not align with theoretical expectations, as argued by Fan (2002).

Various studies specific to Uzbekistan contribute divergent findings, adding layers to the understanding of the relationship between exchange rates and foreign trade in the country. For instance, Olimov and Sirajiddinov's (2008) quantitative research covering the period of 1994-2005 indicates that large devaluations during the currency rationing period did not yield the anticipated improvements in overall export performance. This observation points towards a relatively lower elasticity during that period.

Contrastingly, Bakhromov's (2011) examination of real exchange rate volatility on Uzbekistan's exports and imports, utilizing quarterly data from 1999-2009, aligns more closely with economic models and theory. Bakhromov's findings suggest that while short-term effects may involve adverse impacts on exports and imports, in the long run, the depreciation of the domestic currency led to an increase in exports and a decrease in imports.

Halmurzayev (2015) took a comprehensive approach by identifying and evaluating internal and external factors affecting Uzbekistan's export trends. Employing econometric techniques, the study found that exchange rate variations did not exert a significant impact on export volumes. Instead, income levels of trading partners and

world prices for major export commodities emerged as crucial determinants, indicating that external factors played a more substantial role in explaining export trends during the specified period.

Another perspective is provided by Anderson & Klimov (2012), who focused on the trade regime in Uzbekistan. While their emphasis was on the country's trade policies, their findings were consistent with Halmurzaev (2015). They concluded that the primary driver of increased exports was the rise in prices of exported goods. Additionally, they suggested that the surge in import volumes was a consequence of the significant importation of intermediate and capital goods, aligning with Uzbekistan's strategy of import substitution.

The divergence in findings across these studies underscores the intricate nature of the relationship between exchange rates and foreign trade in Uzbekistan. It implies that adopting a universal approach may be inadequate for comprehending the impact of exchange rate changes on trade dynamics, necessitating a nuanced understanding that considers the specific economic context and policy measures of the country. Internal and external factors, such as trade regimes, income levels of trading partners, and global commodity prices, collectively contribute to shaping the export trends of Uzbekistan.

The primary objective of the article is not to explore the broader factors influencing a country's exports and imports, but rather to address a gap in existing literature by investigating the correlation between exchange rate variability and trends in export and import activities. The specific focus is on filling this gap and contributing new insights into the relationship between fluctuations in exchange rates and the patterns of international trade within the country.

Research methodologies. This article employs a simple quantitative technique to assess the correlation between real exchange rates (RER) and foreign trade. The independent variable comprises fluctuations in the real exchange rate of the Uzbekistani *so'm* against the US dollar and currencies of neighboring trading partners. Dependent variables include exports from and imports to Uzbekistan from these partner countries. The inclusion of the US dollar in the analysis is justified by its dominant status as a reserve currency and its widespread use in global trade. Dividing variables simply technical because the correlation merely indicates whether there is a relationship between two variables or not.

Data utilized in this study were sourced from official channels of the respective countries and reputable international organizations' websites. For transparency, information on the volume and value of Uzbekistan's foreign trade from 2003 to 2022 was obtained from the Statistics Agency under the President of the Republic of Uzbekistan. Quarterly nominal exchange rates during the specified period were collected from the Central Banks of each country and adjusted to the annual GDP deflator, sourced from the World Bank Open Data for each respective nation. Additionally, correlation between nominal exchange rates of currencies USD, SDR, RUB, KZT and KGS were measured.

The overarching goal of this analysis is to explore potential connections between currency fluctuations and trade patterns. This exploration could hold implications for understanding the broader economic dynamics and influences on foreign trade in Uzbekistan.

To assess the correlation between RER fluctuations and foreign trade, the article employed Pearson Correlation analysis. This method quantifies the strength and direction of the linear relationship between two variables. The Pearson correlation coefficient is computed using the formula:

$$r = \frac{SP}{\sqrt{ss_x ss_y}}$$

Or more simply,

$$r = \frac{\sum((x-\bar{x})(y-\bar{y}))}{\sqrt{\sum(x-\bar{x})^2 \sum(y-\bar{y})^2}}$$

In Pearson's Correlation Analysis, the correlation scale ranges from 0 to 1.00 (ibid.). A higher correlation coefficient (r) indicates a stronger correlation. A coefficient of zero signifies no correlation, and a negative or positive sign indicates a negative or positive correlation, respectively. There are no clear definitions of which correlation coefficient means weak, moderate, or significant relationship. However, Gravetter and Wallnau (2014) estimated $r = 0.5$ as a moderate and $r = 0.8$ as a strong correlation. Based on this estimate, I treated the correlation results as follows: if $r < 0.5$ the correlation is insignificant; if $r \leq 0.5$ the correlation is significant, if $r \geq 0.8$ the correlation is strong.

Analysis and results. Overall results of the correlation were presented in following table:

Table 1 Pearson Correlation analysis

		KAZUZEXP	KAZUZIMP	KZTRER
KAZUZEXP	Pearson Correlation	1	0,384	-,490*
	Sig. (2-tailed)		0,094	0,028
	N	20	20	20
KAZUZIMP	Pearson Correlation	0,384	1	-0,232
	Sig. (2-tailed)	0,094		0,325
	N	20	20	20
KZTRER	Pearson Correlation	-,490*	-0,232	1
	Sig. (2-tailed)	0,028	0,325	
	N	20	20	20

*. Correlation is significant at the 0.05 level (2-tailed).

Table 1 Pearson Correlation analysis (continuation)

		KGUZEXPORT	KGUZIMPORT	KGSRER
KGUZEXPORT	Pearson Correlation	1	,929**	,879**
	Sig. (2-tailed)		0,000	0,000
	N	20	20	20
KGUZIMPORT	Pearson Correlation	,929**	1	,857**
	Sig. (2-tailed)	0,000		0,000
	N	20	20	20
KGSRER	Pearson Correlation	,879**	,857**	1
	Sig. (2-tailed)	0,000	0,000	
	N	20	20	20

**. Correlation is significant at the 0.01 level (2-tailed).

		RUSUZBEXP	RUSUZBIMP	RUBRER
RUSUZBEXP	Pearson Correlation	1	0,294	,929**

	Sig. (2-tailed)		0,209	0,000
	N	20	20	20
RUSUZBIMP	Pearson Correlation	0,294	1	0,118
	Sig. (2-tailed)	0,209		0,620
	N	20	20	20
RUBRER	Pearson Correlation	,929**	0,118	1
	Sig. (2-tailed)	0,000	0,620	
	N	20	20	20

**. Correlation is significant at the 0.01 level (2-tailed).

		UZBTOTEXP	UZBTOTIMP	USDUZSRER
UZBTOTEXP	Pearson Correlation	1	,897**	,705**
	Sig. (2-tailed)		0,000	0,001
	N	20	20	20
UZBTOTIMP	Pearson Correlation	,897**	1	,931**
	Sig. (2-tailed)	0,000		0,000
	N	20	20	20
USDUZSRER	Pearson Correlation	,705**	,931**	1
	Sig. (2-tailed)	0,001	0,000	
	N	20	20	20

**. Correlation is significant at the 0.01 level (2-tailed).

Discussion. In ideal, to be consistent with dominant theory, correlation between country's RER and exports must be positive while with imports it must be negative.

However, our Pearson Correlation analysis reveals quite a different and ambiguous results.

To begin with, *so'm's* RER against Kazakh tenge has insignificant relation with imports from Kazakhstan and insignificant connection with exports to Kazakhstan which is both disappointing and counterintuitive. It seems, bilateral trade between countries has no meaningful connection with exchange rate fluctuations.

Meanwhile, other pairs in analysis have shown more interesting and meaningful results. In almost all other cases exports have shown positive and strong correlation with RER. In Kyrgyzstan it is 0,879 and in Russian case it is 0.929 which is impressive. In the case of *so'm's* RER against USD correlation is strong (0.705) but not strong.

Completely different results could be seen in the case of imports' volume and RER. In no single case there is a matching result consistent with predictions of the theory. In the cases of Kazakh tenge and Russian rubble correlation between RER and imports is insignificant, while in other two cases correlation is positive which contradicts to the assumptions of the general theory.

The article aims to investigate the relevance of a particular economic theory to the case of Uzbekistan, focusing on foreign trade dynamics. According to the paradigm under consideration, when the value of a domestic currency appreciates, the prices of the country's exported goods decrease, while the prices of imported goods rise. This is expected to lead to an increase in the volume of exports and a decline in imports, and vice versa.

The central idea here is that a stronger domestic currency makes a country's export goods more competitively priced in international markets, potentially boosting export volumes. Simultaneously, higher import prices could contribute to a decrease in the volume of imports. Conversely, when the domestic currency depreciates, the prices of export goods rise, potentially leading to increased export revenues, while import prices decrease, potentially resulting in higher import volumes.

The complexity of applying economic theory to real-world scenarios is evident in our results, particularly concerning Uzbekistan's trade dynamics. For instance, in the context of exports from Uzbekistan, we observe a negative correlation between export volume to Kazakhstan and changes in the Real Effective Exchange Rate (RER). This challenges the conventional notion that so'm depreciation should consistently lead to export growth, introducing a nuanced perspective that questions the straightforward relationship between currency devaluation and increased export activity. Conversely, our findings on the correlation of import volume with RER present a counterintuitive trend. Contrary to theoretical expectations, the volume of imported goods consistently rises during periods of so'm depreciation, revealing a noteworthy deviation from the anticipated outcomes based on economic theory.

These results prompt a deeper consideration of factors influencing trade patterns beyond RER variability. While export outcomes display a degree of consistency, the article refrains from definitively asserting that differences in RER directly influenced export trends, emphasizing the importance of recognizing that correlation does not imply causation. Furthermore, the impact of RER on import trends during the specified period remains somewhat ambiguous. Despite this uncertainty, the robustness of findings and explanations from prior works reinforces the notion that the relationship between exchange rates and trade dynamics is intricate, involving multifaceted elements that extend beyond a simplistic correlation framework.

Conclusion and suggestions. The Central Asian countries, having gained independence relatively recently, are still in the process of developing their economies. Despite a 32-year period since gaining independence, none of the countries in the region have achieved results comparable to other nations. The economies, heavily reliant on the export of raw materials, are susceptible to periodic instabilities. Particularly noteworthy is the case of Uzbekistan, where currency affairs exhibit pronounced instability with periodic drastic changes in exchange rate regimes.

This article aims to investigate the relationship between Uzbekistan's exchange rate fluctuations and foreign trade. Despite the simplicity of its goal—to measure the correlation between Real Effective Exchange Rate (RER) variability and export-import trends over a 20-year period—the findings are significant. The Pearson Correlation analysis performed in the article reveals a notable connection between RER fluctuations and export trends, aligning with existing theory predicting that currency depreciation leads to export growth. However, the analysis contradicts this theory by showing no significant connection between RER and import trends, which theoretically should be negative.

In conclusion, it is emphasized that primary factors influencing export and import trends in Uzbekistan go beyond RER fluctuations. While the research provides valuable insights, a more comprehensive and in-depth investigation is warranted before making conclusive statements about the causes of disparities between real-world scenarios and economic theory.

References

1. Anderson Brion, & Klimov Yuriy. (2012). Uzbekistan: Trade Regime and Recent Trade Developments. Institute of public policy and administration , *4*. https://doi.org/10.13140/RG.2.2.30984.01281
2. Bakhromov, N. (2011). The Exchange Rate Volatility and the Trade Balance: Case of Uzbekistan. In Journal of Applied Economics and Business Research JAEBR (Vol. 1, Issue 3).
3. Gravetter, F., & Wallnau, L. (2014). Essentials of Statistics for the Behavioral Sciences (8th ed.). Wadsworth, Cengage Learning.
4. Fan, E. X. (2002). Implications of a US Dollar Depreciation for Asian Developing Countries Asian Development Bank. http://www.adb.org
5. Halmurzaev, A. (2015). Factors effecting export trends in Uzbekistan.
6. Olimov, U., & Sirajiddinov, N. (2008). The Effects of the Real Exchange Rate Volatility and Misalignments on Foreign Trade Flows in Uzbekistan.
7. Ugli, B. K. F. (2024). THE IMPACTING FACTORS ON SMALL BUSINESS GROWTH. *Frontline Marketing, Management and Economics Journal*, *4*(01), 24-36.
8. Umarov Toxirjon Mamurjonovich. (2024). ERKIN IQTISODIY ZONALARDA TADBIRKORLIK FAOLIYATIGA INNOVATSIYALAR VA INVESTITSIYALARNI RAG'BATLANTIRISHDA KLASTER YONDASHUVINING O'RNI. *INTERNATIONAL CONFERENCE OF NATURAL AND SOCIAL-HUMANITARIAN SCIENCES*, *1*(1), 156–167. Retrieved from https://universalconference.us/universalconference/index.php/ICNSHS/article/view/277