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Beyond Borders: Assessing the Impact of Political Shifts on Informal Trade.

A Case Study of the Kyrgyz Republic

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Abstract:
The Kyrgyz Republic forms a dynamic political context characterized by various shifts in its domestic and foreign political sphere. Thereby, informal cross-border trade has developed as a crucial pillar of the Kyrgyz economy and has become an essential source of income and stability for its citizens. Despite its relevance for society and the state, only limited research has set out to draw a connection between political shifts and informal cross-border trade, and the hidden nature of this trade has made it somewhat difficult to quantify its actual dimensions. Acknowledging the importance of informal cross-border trade, this paper analyses how shifts in the political sphere impact the informal cross-border trade of the Kyrgyz Republic between 2010 and 2022, focusing on its trade relationships with China, Russia, Kazakhstan, and Uzbekistan. This process-tracing case study presents a theorized causal mechanism of how political shifts have increased informal cross-border trade founded in institutionalist theory and the everyday governance framework. The empirical analysis then tests the presence of the causal mechanism. The findings suggest that the causal mechanism is partially validated. Shifts in the political sphere of the Kyrgyz Republic did not consistently lead to an increase in informal cross-border trade during all the years under examination.

Keywords:
Informal Cross-Border Trade; Political Shifts; Kyrgyz Republic; Institutionalist Theory; Everyday Governance Framework

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List of Abbreviations

EAEU (EEU[1])	Eurasian Economic Union
ICBT	Informal Cross-Border Trade
ROW	Rest of the World
USD	US-Dollar
USSR	Union of Soviet Socialist Republics
WB	World Bank
WGI	Worldwide Governance Indicators
WTO	World Trade Organization

[1] This research employs the abbreviation EAEU, as does the official website of the Eurasian Economic Union http://www.eaeunion.org/?lang=en# . However, existing scholarly literature often employs the abbreviation EEU.

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1. Introduction

Since their independence from the Union of the Soviet Socialist Republic (USSR) in 1991, Central Asian states have garnered increased attention. This is particularly due to the region's geopolitically significant location, situated between the major powers China and Russia[2]. However, apart from its geopolitical importance, the region has yet to receive substantial attention from the public and within academia.

Scholars highlight that the post-Soviet countries in Central Asia form a particularly compelling region to study the presence of informality (see for instance Fehlings & Karrar, 2020; Giordano & Hayoz, 2013; Morris & Polese, 2013; Polese, 2023; Polese & Rodgers, 2011; Rasanayagam, 2011; Rodgers & Williams, 2009; Rudaz, 2020; Steenberg, 2016b; Wheatley, 2013), and informal cross-border trade specifically (see for instance Alff, 2016; Cieślewska, 2013; Fehlings, 2018; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Karrar, 2019; Libman & Vinokurov, 2011; Maga et al., 2023; Steenberg, 2016a). The geographic location of the Kyrgyz Republic[3], in parallel with other reasons such as its customs regime, fuelled the country's exceptional position in informal cross-border trade activities (Alff, 2016; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Karrar, 2019; Rudaz, 2020). Additionally, the Kyrgyz Republic represents a dynamic political context, characterized by several changes in its domestic and foreign political landscape since its independence from the Union of the Soviet Socialist Republic (USSR) in 1991 (IMF, 2024; Ivanov, 2022). In particular, scholars emphasize the change brought by the accession of the Kyrgyz Republic to the Eurasian Economic Union (EAEU) in 2015, influencing informal cross-border trade (Alff, 2016; Dragneva & Hartwell, 2021; Eggart, 2023; IMF, 2024; Karrar, 2023; Peyrouse, 2015; Tarr, 2016).

Nonetheless, the impact of changes in the political arena on informal cross-border trade is insufficiently researched in existing scholarly work. It represents a gap which this research aims to fill. Assessing the impact of these domestic and foreign political changes on informal cross-border trade grants a better understanding of the economic resilience of informal cross-border trade. Exploring political instabilities and/ or reforms is fundamental due to the pronounced importance of informal trade for the Kyrgyz economy. Understanding how economic activities,

[2] This research employs the names Russia and Russian Federation interchangeably.
[3] This research employs the names Kyrgyzstan and Kyrgyz Republic interchangeably.

governance structures and political dynamics interact in transitional and developing contexts is pivotal since these interactions shape the mechanism underlying democratic consolidation and state-building processes. Additionally, an evaluation of the impact of shifts in the political environment on informal cross-border trade of the Kyrgyz Republic is also practically relevant for Kyrgyz society and politics, as a vast part of Kyrgyz society is dependent on informal trade and their participation in informal economic activities. Lastly, this research is practically relevant for policymakers and government agencies, specifically in the sphere of trade, since the results of this study could allow them to elaborate on strategies for future economic development and trade facilitation.

This research project aims to answer the following research question: ***How do shifts in the political landscape influence informal cross-border trade of the Kyrgyz Republic?*** More concretely, this research adopts a process-tracing case study approach to evaluate the impact of changes in domestic and foreign politics on the volume of informal cross-border trade of the Kyrgyz Republic between 2010 and 2022 collectively, and with China, Russia, Kazakhstan and Uzbekistan, specifically. Based on institutionalist theory and the everyday governance framework by Polese (2023), this research aims to test whether the causal mechanism can be confirmed. This mechanism predicts that shifts in Kyrgyzstan's political landscape lead to increased political instability, which then prompts a reduction of formal enforcement capacity. As a result, it expects the creation of regulatory gaps, enabling an increase in the volume of informal cross-border trade.

To answer its research question and test whether the theorized causal mechanism functions as expected, a process-tracing case study approach is employed, which analyses qualitative and quantitative data. As presented in Chapter 4, the presence of shifts in the political sphere is evaluated based on a content analysis of BTI country reports, which is compared with existing data on political stability as aggregated by the Worldwide Governance Indicators (WGI) of the World Bank (WB) in the Kyrgyz Republic. Similarly, the intervening variables of formal enforcement capacity and regulatory quality are measured based on existing data aggregated by the WGI. To assess the development of the volume of informal cross-border trade of the Kyrgyz Republic with the trade partners under investigation, the trade data of Kyrgyz imports and exports extracted from UN Comtrade is analysed with the help of the mirror statistics approach.

This paper starts by reviewing the current state of the scholarly debate on the concept of informality and the most dominant approaches assessing the relationship between the informal and the formal economy. Following this, the existing literature on informal trade in the Kyrgyz Republic is reviewed and an overview of the dominant shifts in the domestic and foreign political landscape is presented. Chapter 3 introduces the underlying theoretical framework of this research, focusing on the explanations of institutional theory and the everyday governance approach by Polese (2023). The causal mechanism and underlying hypotheses are carved out based on the theoretical framework. In Chapter 4, the methodology of this research project is introduced, and its variables are operationalized. Then, Chapter 5 presents the main findings of the empirical analysis. Lastly, this paper concludes with a summary of its findings and its limitations and provides an outlook for future research.

2. Literature Review

This chapter provides an overview of the existing scholarly debate on the concept of informality and informal trade in the Kyrgyz Republic, more specifically. After introducing the concept of informality, the most dominant theoretical approaches to explain the emergence of informality and its relationship with formality are presented. Subsequently, existing research on informal trade in the Kyrgyz Republic is introduced. In a third step, this chapter elaborates on the dynamic (political) context of the Kyrgyz Republic, introducing its major shifts in the domestic and foreign political landscape. Lastly, the research gap is identified, and this study's central research question is outlined.

2.1. Informality

Since its beginnings, the concept of informality has appeared in research across several disciplines, such as political science, economics, social sciences, (economic) sociology, and anthropology (Giordano & Hayoz, 2013; Polese, 2023; Rodgers & Williams, 2009; Steenberg, 2016b). Scholars stress the potential of the informality approach, as its theoretical framework, rooted in various scientific disciplines, considers the "social, cultural and environmental needs of segments of the population" and does not focus solely on economic perspectives (Polese, 2023, p. 324; Steenberg, 2016b). Polese (2023) emphasizes the growing importance of research on various pillars of informality globally, specifically in the context of post-Soviet Eurasia.

Defining informality proves to be challenging due to the various standpoints of academia on the concept and its evolution over time (Polese, 2023; Williams, 2019). Nonetheless, in their attempt to conceptualize informality and to develop a theoretical framework, most scholars have traced back the emergence of the concept of *informal economy* in academic discourse to the research by anthropologist Keith Hart in Ghana published in 1973 (Cantens et al., 2015; Fehlings, 2018; Fehlings & Karrar, 2020; Guha-Khasnobis et al., 2006; Hart, 1973; Morris & Polese, 2013; Polese, 2023; Pratt, 2019; Rasanayagam, 2011; Steenberg, 2016b; Williams, 2019).

Williams (2019) categorizes the existing scholarly definitions into three groups, focusing on the perspective of the enterprise, jobs, or activities. Thereby, the author underlines the shortcomings of the enterprise- and jobs-based definition of the informal economy, as these do

not take into account that informal employment can also take place in formal enterprises, not solely in informal ones (Williams, 2019). Against such a backdrop, the author argues for an activity-based definition of informality, as in developed and transitional contexts, enterprises and jobs can be formal and informal simultaneously (Williams, 2019). This research agrees with these considerations and, therefore, employs the definition as brought forward by Williams, who defines *informal activity* as a "socially legitimate paid activity that is legal in all respects other than that it is not declared to, hidden from or unregistered with, the authorities for tax, social security and/ or labour law purposes when it should be declared" (Williams, 2019, p. 6).

Various scholars further emphasize the need to distinguish between different informal economic practices and propose to follow the approach by Van Schendel & Abraham (2005), which differentiates between legal and illegal, as well as licit and illicit activities (Abraham & van Schendel, 2005; Cantens et al., 2015; Polese & Morris, 2015; Ribeiro, 2012). Scholars argue that such differentiation is crucial since an economic activity can be illegal yet licit and can be "legally banned but socially sanctioned and protected" (Abraham & van Schendel, 2005, p. 22). Already, Hart (1973, p. 68) elaborated on the importance of differentiating "between legitimate and illegitimate activities in the informal sector". Hart (1973) distinguished between informal income opportunities, which are legitimate, such as petty trade or farming, and illegitimate informal income opportunities, which contain, for instance, bribery or petty theft (Hart, 1973). Similarly, Ribeiro (2012) distinguishes between the global illegal economy, thus global organized crime, and the global (il)licit economy, named *globalization from below.* Various additional scholars also highlight the need to distinguish the informal economy from the criminal economy, as the informal economy, contrary to the criminal economy, produces and exchanges legal goods, while the informality stems from the production and exchange processes (Chen, 2006; Williams, 2019).

Depending on their standpoint and the scientific discipline from which the authors come, researchers emphasize different key features of informal (economic) activities. Social scientists, for instance, contribute to the conceptualization of informality by emphasizing the embeddedness of informality, arguing that **(**informal) economic actions should be analysed as being embedded in the social and economic relations, as well as within the cultural context of the concerning societies (Fehlings, 2018; Morris & Polese, 2013; Polese, 2023; Polese &

Morris, 2015; Polese & Rodgers, 2011; Rodgers & Williams, 2009; Steenberg, 2016a). Additionally, various scholars highlight the importance of social networks for informality (Morris & Polese, 2013; Polese, 2023; Steenberg, 2016b). For instance, Steenberg (2016b) recognizes social networks as integral components of society due to their essential function in the everyday life of the majority of the population rather than a complementary one. The author further claims that social networks often predominate state bureaucratic institutions and recognizes that throughout Central Asia, state institutions are often profoundly interconnected with social networks (Steenberg, 2016b).

2.1.1. Dualist and Non-Dualist Approaches to Informality

Within scholarly debates, various theoretical perspectives explain the emergence and persistence of the informal economy. The most dominant approaches are the modernization theory, the neoliberal theory, the political economy theory and the institutional theory, which stress different motives for actors to engage in the informal sector (Williams, 2019). Additionally, the theories have different understandings of the relationship between the formal and the informal economy (Chen, 2006; Polese, 2023; Williams, 2019).

The *modernization theory* has been dominant throughout the 20th century and predicts that "economic underdevelopment and unmodern systems of governance cause large informal economies" (Williams, 2019, p. 17). Representatives of the modernization theory expect that informality will gradually disappear with the increasing development of the country since the subordinate informal economy weakens and is overtaken and finally replaced by the superior and growing formal economy (La Porta & Shleifer, 2014; Polese, 2023; Williams, 2019). Moreover, modernization theory adopts a dualistic view, which recognizes that the informal and formal economies are disconnected from one another (La Porta & Shleifer, 2014; Williams, 2019). Chen (2006) labels this dualist perspective as "the old view", which considers the two spheres as persisting independently. In their research, La Porta & Shleifer (2014, p. 110) follow such a dualist perspective and consider the informal economy to be "largely disconnected from the formal economy".

However, as informal economies around the globe persisted and/ or even grew and spread, modernization theory was considered to insufficiently explain informality and its predictions were contradicted, rendering additional explanations necessary (Castells & Portes, 1989;

Steenberg, 2016b; Williams, 2019). The subsequently emerging theoretical frameworks view the connection between the informal and formal economy differently. This "new view", as proposed by Chen (2006), recognizes the informal economy as a permanent and enlarging phenomenon alongside industrial development, which plays a substantial role in a state's GDP (Chen, 2006). Thus, contrary to the old dualist view, representatives of the new stance consider the informal economy to be closely connected to the formal economy (Chen, 2006).

Consequently, the *political economy theory* was employed to explain the developments of the informal economy, which pre-existing theoretical frameworks such as modernization theory were unable to (Castells & Portes, 1989; Williams, 2019). Therefore, from a political economy theoretical background, the informal economy is considered to be connected with the formal economy, which contradicts the assumption of *modernization theory* (Castells & Portes, 1989; Williams, 2019). Even though the political economy perspective assumes the informal economy to be linked with the formal economy, the former is nevertheless considered inferior and structurally reliant (Williams, 2019). More concretely, Williams (2019, p. 23) underlines that "low levels of state intervention in the economy and welfare, and a lack of protection of workers" strengthen the informal economy. According to the arguments of political economy theorists, workers are not protected sufficiently and are, thus, excluded from the formal labour market due to the lack of state regulation and intervention (Castells & Portes, 1989; Williams, 2019). Hence, as alternative sources of income are absent, actors engage in the informal sector in order to survive (McMann, 2014; Williams, 2019).

The *neoliberal theoretical perspective* also refers to state involvement (Williams, 2019). In contrast to political economy theory, however, neoliberal theorists argue that too much state interference in the market, particularly in the form of high taxes and social security contributions, fuels the informal economy (Williams, 2019). From a neoliberal point of view, engagement in the informal economy is based on choice and forms a "rational economic decision", often founded on potential benefits (Williams, 2019, p. 23). Therefore, supporters of the neoliberal perspective maintain that actors voluntarily engage in the informal sector to escape over-regulation from the state (Williams, 2019).

Advocates of *institutional theory* similarly recognize the connection between the formal and informal economy (Williams, 2019). However, institutional theory introduces the distinction between formal and informal institutions (Helmke & Levitsky, 2004; Williams,

2019). As institutional theory forms the theoretical backbone of this study, it is introduced in Chapter 3 in more detail.

2.1.2. Informality as a Global Phenomenon

Scholars highlight the significant challenges involved in assessing and quantifying informal economic activities, in particular through official statistics, due to reasons such as the existence of numerous forms of informality and its hidden nature (Fehlings, 2018; La Porta & Shleifer, 2014; Maga et al., 2023; Morris & Polese, 2013; Williams, 2019). Therefore, estimations are often based on indirect methods, like MIMIC[4] approaches as well as alternative estimation techniques such as mirror statistics, mixed methods approaches, job surveys or assessments of electricity consumption (Chen, 2006; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; La Porta & Shleifer, 2014; Libman & Vinokurov, 2011; Maga et al., 2023; Nelson, 2023; Polese, 2023; Williams, 2019).

Despite the challenges of measuring informality, scholars emphasize the importance of grasping its global and universal dimensions (Castells & Portes, 1989; Polese, 2023; Polese et al., 2016). More concretely, scholars agree that the concept of informality is vital due to the substantial size of the informal economy globally, in the developed and developing world alike (see for instance Castells & Portes, 1989; Chen, 2006; La Porta & Shleifer, 2014; Mathews & Vega, 2012; Morris & Polese, 2013; Polese et al., 2016; Polese, 2023). Polese (2023, p. 324) stresses that the "nature and dynamics of informal practices do not change too significantly across world regions". Furthermore, scholars underline that informality is not a temporary phenomenon and thus anticipate that the concept will persist (Morris & Polese, 2013; Polese, 2023; Rodgers & Williams, 2009). The durability and endurance of the concept of informality and its ability to adapt further fuels the importance of the concept's theorization and analysis (Morris & Polese, 2013; Polese, 2023; Polese et al., 2016; Polese & Morris, 2015; Rodgers & Williams, 2009). According to Steenberg (2016b), informal practices in Central Asia, specifically, are characterized by their resilience as well as pervasiveness.

Through the expansion of informal economic activities and their appearance in new and unexpected sectors, the concept of informality has further gained importance (Castells & Portes,

[4] Multiple indicators, multiple causes

1989; Chen, 2006). Therefore, Chen (2006, p. 80) concludes that the informal economy will stay and even expand, and thus continue to serve as a primary source of "employment, goods and services for lower-income groups". Chen (2006) explains this expansion by the decrease in formal employment, coupled with the ongoing shift of previously formal jobs into the informal sector, enlarging the variety of informal occupations. By contrast, Mathews and Vega (2012) advance that this expansion is due to critical transformations in politics, technologies, societies and global economies.

Scholars study the existence and the development of informality in the post-socialist context of Eurasia specifically (see for instance Fehlings, 2018; Fehlings & Karrar, 2020; Giordano & Hayoz, 2013; Karrar, 2019; Libman & Vinokurov, 2011; Polese, 2023; Polese et al., 2016; Polese & Rodgers, 2011; Rasanayagam, 2011; Rodgers & Williams, 2009; Steenberg, 2016b; Wheatley, 2013). According to Polese (2023, p. 334), informality in Eurasia is particularly pronounced "due to at least three reasons: a homogeneous starting point, congruent findings and opportunities". Thereby, Polese (2023) acknowledges informal governance, corruption, and the informal economy as the key pillars of examining informality in Eurasia.

2.2. Informal Trade in the Kyrgyz Republic

The African continent (see for instance Benjamin et al., 2015; Golub, 2015; Hart, 1973) and Eurasia (see for instance Cieślewska, 2013; Eggart, 2023; Kaminski & Mitra, 2012; Karrar, 2019; Polese, 2023; Rodgers & Williams, 2009; Rudaz, 2020; Steenberg, 2016a; Wheatley, 2013) have been the predominant contexts object to scholarly research on informal cross-border trade. Scholars emphasize the Kyrgyz Republic's unique position in informal cross-border trade due to its two main pillars of informal (cross-border) trade. Firstly, Kaminski and Mitra (2012, p. 3) put forward that "the Kyrgyz Republic has the largest network of bazaars that export foreign and domestically produced goods to former Soviet republics in Central Asia". Thereby, Central Asia's largest bazaar, Dordoi, is located in the Kyrgyz Republic (see for instance Alff, 2016; Eggart, 2023; Kaminski & Mitra, 2012; Rudaz, 2020). Secondly, scholars elaborate on the role of the Kyrgyz Republic and its bazaar networks in the re-export of bazaar goods, primarily imported from China, then flowing undocumented into neighbouring Central Asian states (Alff, 2016; Fehlings & Karrar, 2020; IMF, 2024; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Karrar, 2023).

In their research, Kaminski and Mitra (2012) distinguish between two types of trade flows in Central Asia: the standard and the non-standard channels, which are characterized by the absence of formal statistics.[5] Kaminski and Mitra (2012) highlight that a significant part of Kyrgyz trade flows through non-standard channels, which are not reported formally, and therefore complicates research considerably. As such, a great part of Kyrgyzstan's imports is not reported in the country's import statistics as a result of the authorities' leniency towards smuggling and its favourable attitude towards shuttle trading (Kaminski & Mitra, 2012). To overcome the constraints posed by official statistics, which do not account for trade conducted through informal channels, prior research has applied different methods to examine informal trade in the Kyrgyz Republic. While certain researchers examine the role of bazaars and informal cross-border trade in post-Soviet Central Asia from a qualitative perspective (see for instance Alff, 2016; Cieślewska, 2013; Eggart, 2023; Karrar, 2019), other studies employ the mirror statistics approach or statistical methods to assess informal cross-border trade of the Kyrgyz Republic (see for instance Grafe et al., 2008; IMF, 2024; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011; Maga et al., 2023; Rudaz, 2020).

As academic literature suggests, the current informal economies of Central Asian states are continuously reflected in multiple pillars, such as the development of bazaars, the institutionalization of border trade, shuttle trade[6], and the re-exports of previously imported goods through bazaars (Alff, 2016; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Karrar, 2019). A variety of academic literature analyses the importance of informal trade for the Kyrgyz economy and society (Alff, 2016; Cieślewska, 2013; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Karrar, 2019, 2023). Karrar (2019) postulates that informal trade constitutes a crucial component of the economic strategy of the Kyrgyz Republic. In this regard, scholars highlight the dependence of the Kyrgyz economy on informal trade, based on the assumption that a vast number of people is employed in bazaars and border trade, for instance, in the functions of shuttle traders and sellers (Alff, 2016; Kaminski & Mitra, 2012; Karrar, 2019, 2023). Consequently, changes in informal trade impact not only the Kyrgyz economy but

[5] Following Kaminski and Mitra (2012, p. 3), the non-standard channel consists of transshipments as well as border/ bazaar trade, which contains re-exports as well as domestic trade and sales of imported products.

[6] Shuttle trade describes small-scale trading across borders, in which shuttle traders personally transport low-cost consumer or bazaar goods, usually declared as personal items and thus, not or only partially reported (Cieślewska, 2013; Kaminski & Mitra, 2012; Karrar, 2019, 2023).

also the fate of various individuals and families (Alff, 2016; Kaminski & Mitra, 2012; Karrar, 2019).

Scholars agree that the emergence of informal economic activities resulted from the economic decline of the newly independent post-Soviet successor states, leading to decreased living standards (Alff, 2016; Karrar, 2019; Radnitz, 2005; Rudaz, 2020). As a result, the informal economy enabled the creation of extensive employment options for a substantial part of society and was crucial to providing political and economic stability (Fehlings, 2018; Karrar, 2019). Furthermore, scholars emphasize that the Kyrgyz Republic was the first of the Central Asian states to liberalize and implement market reforms after its independence, which resulted in rising unemployment (Cieślewska, 2013; Dergousoff, 2017). Scholars hereby point out the rapid spread of informal trading, the emergence of trans-border (shuttle) trade and a fast rise in the number of bazaars in the Kyrgyz Republic emerging consequently (Alff, 2016; Cieślewska, 2013; Karrar, 2019).

Another reason for the emergency and persistence of informal trade in the Kyrgyz Republic is argued to be its geographic location bordering China, benefitting by serving as an intermediary in trade exchanges (Kaminski & Raballand, 2009; Rudaz, 2020). As researchers argue, China plays a crucial role in Central Asian economies, due to the growing importance of Chinese exports to Central Asia and the Kyrgyz Republic specifically (Alff, 2016; Athukorala & Hill, 2023; IMF, 2024; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011; Steenberg, 2016a). Scholars underline trade relations between China and the Kyrgyz Republic, characterized by the harmonisation of their custom regimes, thanks to the early WTO accession of the two states in 1998 and 2001, respectively (Alff, 2016; Steenberg, 2016a). In his study, Steenberg (2016a) focuses on the development of trade across the Sino-Kyrgyz border, noting the impact of changes in the political sphere on it.

Not only the advantageous geographic location of Kyrgyzstan is argued to foster the country's unique role in informal trade and re-exports, but also the state's political-economic foundation, such as the customs regime and regulations (Alff, 2016; Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Karrar, 2019; Rudaz, 2020). Kaminski and Raballand (2009) posit that government policies influence cross-border trade. Similarly, scholars suggest that state support in informal trade "has given Kyrgyz traders a comparative advantage over bazaars and traders elsewhere in the region" (Alff, 2016; Kaminski & Raballand, 2009; Karrar, 2019;

Rudaz, 2020, p. 16). Researchers, therefore, claim that shifts in the political sphere, such as the entrance of Kyrgyzstan into the Eurasian Economic Union in 2015, influenced the country's trade patterns (Alff, 2016; Dragneva & Hartwell, 2021; Eggart, 2023; Karrar, 2019, 2023).

Existing research studies regionalisation processes in post-Soviet Eurasia (see for instance Dragneva & Hartwell, 2021; Grafe et al., 2008; Libman & Vinokurov, 2011). Libman and Vinokurov (2011, p. 469) elaborate on the current level of economic interdependence and future regional economic integration in Central Asia following a quantitative approach. Due to the unreported imports of Central Asian states, the scholars build on the mirror statistics method to assess the actual trade volume, including informal trade, between multiple Central Asian states, as well as Russia and China (Libman & Vinokurov, 2011). Similarly, in their research aimed to determine obstacles to trade in Central Asia, Grafe et al. (2008) conclude that the effect of borders on price disparities across different areas in Central Asia is considerably less than hitherto supposed (Grafe et al., 2008). Furthermore, Grafe et al. (2008, p. 462) state that "Central Asian countries are still reasonably closely integrated", besides existing trade barriers such as "delays at border crossings, outright border closures, unofficial payments to customs officials, border guards and other inspecting bodies" (Grafe et al., 2008, p. 455).

In such light, various scholars observe widespread corruption in numerous spheres in the Kyrgyz Republic and emphasize its impact on (informal) trade (Alff, 2016; Cieślewska, 2013; Eggart, 2023; Grafe et al., 2008; Rudaz, 2020). Alff (2016, p. 441) highlights that the regime regulating border controls between China and the Kyrgyz Republic is "driven by corruption and bribery rather than properly enforced regulative measures". Field research, as by Cieślewska (2013), hereby observes that most people participating in informal trade activities do not consider themselves as doing something morally incorrect. Cieślewska (2013, p. 129) explains this by the view of the governing apparatus as an entity acting "against the interests of ordinary people, mainly due to corruption, but also because of the uncertain regulatory framework". The people's frustration is only further boosted by the inability and/ or lacking will of the Kyrgyz government to deliver basic social security and combat corruption, encouraging individuals involved in informal trade activities to refuse to pay the total tax amount (Cieślewska, 2013; Eggart, 2023). Such refusal of tax payments is generally not perceived as harmful or problematic in society (Cieślewska, 2013; Eggart, 2023).

2.3. Shifts in the Political Sphere of the Kyrgyz Republic

Since its independence in 1991, the Kyrgyz Republic has formed an exceptionally dynamic and unstable (political) context, even among the post-Soviet republics (Ivanov, 2022). Cieślewska (2013) argues that Kyrgyzstan's political instability impacts its economy and, consequently, also its informal trade activities. The subsequent chapter explores this intricate interplay between recent political shifts and informal cross-border trade.

2.3.1. Kyrgyzstan's Dynamic Domestic Political Landscape

Shifts in the domestic political sphere of the Kyrgyz Republic have been numerous since the country's independence in 1991. Following Radnitz (2005), the scale and level of organization of the series of protest actions by people from the Aksy district in 2002 has been unprecedent and significantly impacted Kyrgyzstan's national politics, comparable to later revolutions. In 2005, large scale protests, the so-called Tulip Revolution, which Ivanov (2022) classifies as part of the various colour revolutions occurring within the post-Soviet context, arose in the Kyrgyz Republic, through which people expressed their dissatisfaction with low living standards and lack of future prospects (Ivanov, 2022). The Tulip Revolution triggered a change in government, since the prior president Askar Akayev was ousted from office, and Kurmanbek Bakiyev took over. (Ivanov, 2022)

While Steenberg (2016a) notes that the period under President Akayev (1990-2005) was relatively profitable for (informal) trade activities across the Sino-Kyrgyz border, he states that this changed under President Bakiyev (2005-2010), as besides a substantial advance in security, the trade settings deteriorated due to stricter controls, increased taxes and widespread corruption (Steenberg, 2016a). By contrast, Dragneva & Hartwell (2021) observe that trade liberalisation in the Kyrgyz Republic was relatively high after the Tulip Revolution in 2005 and significantly deteriorated following the global economic crisis around 2008 and the April Revolution in 2010.

In 2010, the Kyrgyz authorities faced mass protests, the so-called April Revolution, which they attempted to repress with force (Ivanov, 2022). As a result of the April Revolution in 2010, Roza Otunbayeva became the new interim president of the Kyrgyz Republic, and a new constitution was introduced (Ivanov, 2022). Kudaibergenova (2016) outlines that the two

revolutions of 2005 and 2010 in the Kyrgyz Republic negatively impacted state capacity and stability, impeded economic development, and thereby fuelled the importance of Eurasian integration. Additionally, scholars note that ethnic tensions and at times ethnic clashes in its geographical South adversely affected border regions and thus, also informal cross-border trade (Cieślewska, 2013; Steenberg, 2016a).

Almazbek Atambayev, the following president of the Kyrgyz Republic, was the first to leave the office as planned (Ivanov, 2022). In 2017, Sooronbay Jeenbekov was elected president of the Kyrgyz Republic, who needed to resign from office due to the 2020 protests (Ivanov, 2022). According to Ivanov (2022), the Third Kyrgyz Revolution in 2020 was fuelled by the Covid-19 pandemic, which undermined the domestic economy even stronger and further revealed the weakness of formal state institutions. Since 2021, Sadyr Japarov has been president of the Kyrgyz Republic (Ivanov, 2022).

2.3.2. Shifts in Kyrgyzstan's Foreign Political Sphere

Since its independence, multiple shifts have also occurred in Kyrgyzstan's foreign political sphere. An assessment of these shifts is necessary, as scholars observe an impact of (geo)political shifts on (informal) cross-border trade of the Kyrgyz Republic and on Sino-Kyrgyz Trade, more specifically, representing a crucial component of Kyrgyzstan's informal trade (Alff, 2016; Cieślewska, 2013; Steenberg, 2016a).

As noted previously, regionalisation processes are present in Central Asia and also involve the Kyrgyz Republic (see for instance Dergousoff, 2017; Dragneva & Hartwell, 2021; Kudaibergenova, 2016; Libman & Vinokurov, 2011; Madiyarova & Terletskiy, 2022; Tarr, 2016). Scholarly work highlights the importance of the relatively early accession of the Kyrgyz Republic to the World Trade Organisation (WTO) in 1998 (Alff, 2016; Athukorala & Hill, 2023; Dragneva & Hartwell, 2021; Eggart, 2023; Karrar, 2019). The WTO constitutes a "supranational organisation regulating world trade norms and rules" (Dragneva & Hartwell, 2021, p. 207). Therefore, to become a member of the WTO, the Kyrgyz Republic needed to undertake "extensive harmonisation and movement towards the adoption of a complex body of developed rules and the compliance with international procedures" (Dragneva & Hartwell, 2021, p. 207). The Kyrgyz Republic was the first country of the Central Asian Republics to become a member of the WTO, and China accessed the WTO shortly after in 2001 (Alff, 2016;

Karrar, 2019; Steenberg, 2016a). WTO membership was the starting point of the enhanced trade relationship between China and the Kyrgyz Republic (Alff, 2016; Steenberg, 2016a).

The global financial crisis in the late 2000s is argued not to have had a severe direct impact on Kyrgyzstan's national economy due to its limited integration into the global financial system (Ivanov, 2022). However, Ivanov (2022) argues that the indirect effects of the global financial crisis were substantial as they indirectly contributed to the April Revolution in 2010 (Ivanov, 2022). Dragneva and Hartwell (2021) mention that the global financial crisis, in combination with the April Revolution in 2010, led to a substantial decline in Kyrgyzstan's trade liberalisation. Fehlings (2018), on the contrary, raises the question of the extent to which the financial crisis fuelled shuttle trading activities.

In 2015, the Kyrgyz Republic became a member of the Eurasian Economic Union (EAEU) (see for instance Alff, 2016; Athukorala & Hill, 2023; Dergousoff, 2017; Dragneva & Hartwell, 2021; Eggart, 2023; IMF, 2024; Karrar, 2019; Peyrouse, 2015; Tarr, 2016). Existing scholarly literature raises the question of how the accession of the Kyrgyz Republic to the EAEU in 2015 affected the Kyrgyz economy, (informal) trade and various involved actors (Alff, 2016; Dragneva & Hartwell, 2021; Eggart, 2023; IMF, 2024; Karrar, 2023; Madiyarova & Terletskiy, 2022; Peyrouse, 2015; Tarr, 2016). As stated on its website, the Eurasian Economic Union "provides free movement of goods, services, capital and labor, pursues coordinated harmonized and single policy in the sectors determined by the Treaty and international agreements within the Union" (Eurasian Economic Union, n.d.). Hitherto, participating members of the EAEU are the Russian Federation, Kazakhstan, Belarus, Armenia and the Kyrgyz Republic (Athukorala & Hill, 2023; Dergousoff, 2017; Dragneva & Hartwell, 2021; Eggart, 2023; Eurasian Economic Union, n.d.; Karrar, 2019; Tarr, 2016). Thus, the EAEU pursues to form a unified and integrated market among its members while encouraging increased trade through further liberalization efforts (Dergousoff, 2017; Dragneva & Hartwell, 2021).

Articulating the main advantages of the Kyrgyz Republic to adhere to the EAEU, scholars highlight the integrated energy market as well as the free movement of people, as EAEU accession renders the work of the numerous Kyrgyz migrants on the Russian market legal and more accessible (Kudaibergenova, 2016; Peyrouse, 2015; Tarr, 2016). This is crucial, as a crucial percentage of the Kyrgyz GDP originates from the remittances of its migrants working in Russia (Athukorala & Hill, 2023; Ivanov, 2022; Peyrouse, 2015; Tarr, 2016). On the other

hand, scholars recognize the attractiveness of EAEU accession, as they expect an increase in financial support as well as foreign direct investment (Kudaibergenova, 2016; Peyrouse, 2015; Tarr, 2016). Consequently, Kudaibergenova (2016) presumes that EAEU membership has a stabilizing effect on Kyrgyz politics and economy. Hence, Peyrouse (2015) states that the pronounced need for development within the Kyrgyz Republic was the primary motor behind the country's accession to the EAEU in 2015.

Nonetheless, scholars draw attention to the various threats to EAEU membership of the Kyrgyz Republic (Dragneva & Hartwell, 2021; Kudaibergenova, 2016; Peyrouse, 2015; Tarr, 2016). Firstly, Peyrouse (2015) expects prices of essential food products and consumer goods to rise. Secondly, the author anticipates the growing influence of Russia on Kyrgyz issues (Peyrouse, 2015). Lastly, scholars expect Kyrgyzstan's EAEU adherence to threaten Sino-Kyrgyz trade and, thus, to jeopardize an increasing and substantial amount of employment (Eggart, 2023; Peyrouse, 2015; Tarr, 2016). This threat arises from EAEU adherence due to increasing tariffs on Chinese imports (Tarr, 2016) and an expected strengthening of border security (Peyrouse, 2015). Peyrouse (2015, p. 10) concludes that this would lead to a "possible loss of Kyrgyzstan's status as a key re-exporter of Chinese products". Dragneva and Hartwell (2021) conclude that the EAEU does not contribute to trade liberalisation and continues to prioritize geopolitical goals over economic objectives.

Additional fundamental shifts in the foreign political sphere of the Kyrgyz Republic have been discussed in scholarly research. For instance, Eggart (2023) examined how the Covid-19 pandemic influenced the informal apparel industry in Kyrgyzstan. The scholar argues that the pandemic led to growth and inventions within the Kyrgyz informal apparel industry, particularly reflected in a shift to e-commerce platforms (Eggart, 2023). However, scholarly research on the impact of the pandemic and its consequences on Kyrgyzstan's informal cross-border trade remains limited. Additionally, researchers elaborate on the impact of the Russian full-scale invasion of Ukraine in 2022 on official Kyrgyz trade patterns (Athukorala & Hill, 2023; IMF, 2024). More concretely, the IMF 2024 Country Report of the Kyrgyz Republic detects an increasing concentration on Kyrgyz trade partners - China, as the primary importer, and Russia, as the principal export partner. Thus, an impact of Russia's full-scale invasion on Kyrgyzstan's informal trade is also anticipated (IMF, 2024).

2.4. Research Gap and Research Question

As presented in the literature review, scholarly work on informal trade in Central Asia, and more specifically in the Kyrgyz Republic, exists. However, empirical research on recent developments in informal cross-border trade of the Kyrgyz Republic is either limited to a quantitative assessment of its volume (see for instance Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011; Maga et al., 2023) or a qualitative evaluation of the situation of sellers at bazaars or shuttle traders (see for instance Alff, 2016; Cieślewska, 2013; Eggart, 2023; Karrar, 2019).

The Kyrgyz Republic represents an exceptional dynamic political context. However, scholarly attempts to study the development of informal trade in the Kyrgyz Republic from a broader perspective, connecting the political and economic sphere, remain few and focus primarily on the developments in the first two decades of the country's independence (see for instance Kaminski & Mitra, 2012). While scholars note that political events, such as the accession to the Eurasian Economic Union in 2015, did lead to changes in trade relations, they do not elaborate on their impact on informal cross-border trade in more detail (Alff, 2016; Dergousoff, 2017; Dragneva & Hartwell, 2021; Karrar, 2019, 2023; Libman & Vinokurov, 2011; Madiyarova & Terletskiy, 2022; Peyrouse, 2015).

Examining the interplay between shifts in the political landscape of the Kyrgyz Republic and the volume of its informal cross-border trade is crucial to understanding the economic resilience of informal cross-border trade in times of political instability. This is central due to the dependence of the Kyrgyz economy and society on informal trade. To add to the existing literature, the subsequent analysis is based on the following research question: ***How do shifts in the political landscape influence informal cross-border trade of the Kyrgyz Republic?*** The findings of this analysis contribute to scholarly research by offering insights into the causal link between recent political shifts and the evolution of the volume of informal cross-border trade.

3. Theoretical Framework

This chapter introduces the theoretical background of this research. First, the institutional theory and the everyday governance framework by Polese (2023), which form the foundation of this study's theoretical background, are presented. Second, informal cross-border trade is conceptualized. Lastly, this chapter sets out the expected causal mechanism based on the theoretical framework and reveals the underlying hypotheses of this research.

3.1. Theories

This sub-chapter introduces the underlying theories of this research, namely institutional theory and the everyday governance framework by Polese (2023). In short, while institutional theory focuses on how the weaknesses of formal institutions drive informal economic activities (Williams, 2019), the everyday governance approach complements it by focusing on how the bottom actors navigate and adapt in such a context, managing to bypass state structures through the repetition of informal practices, particularly in spheres in which state regulations are absent or lacking (Polese, 2023).

3.1.1. Institutional Theory: The Interplay between Informal and Formal Institutions

The *institutional theory* perspective emphasizes the importance of distinguishing between formal and informal institutions when studying the informal economy (Helmke & Levitsky, 2004; Wheatley, 2013; Williams, 2019). More concretely, scholars underline that from an *institutional theory* perspective, both types of institutions are present in every society (Helmke & Levitsky, 2004; Williams, 2019). While according to Williams (2019, p. 26), formal institutions represent "codified laws and regulations" he defines *informal institutions* as the "unwritten socially shared rules existing outside of official codes and laws" (Williams, 2019, p. 26). Therefore, from an institutional theoretical perspective, every informal economic activity "occurs outside of these formal institutional prescriptions but within the norms, values, beliefs of informal institutions" (Williams, 2019, p. 26).

In his work, Williams (2019) presents three steps to explain the emergence and persistence of the informal economy through an institutional lens. Firstly, the scholar puts forward that

informal economies arise due to shortcomings of formal institutions, which stem from the following four main categories, namely: “resource misallocations and inefficiencies; voids and weaknesses; powerlessness; and instability and uncertainty” (Williams, 2019, p. 27). More concretely, Williams (2019) presents that inefficient use of resources and mismanagement emerge due to corrupt practices by the government or the government’s insufficient modernization efforts. Secondly, the *institutional theory* postulates that gaps and deficiencies in formal institutions promote informal economic growth (Williams, 2019). Thirdly, following institutional theory, the inability of authorities to offer incentives to promote compliance with the formal rules and/ or to enforce policies contributes to an expansion of the informal economy (Williams, 2019). Lastly, from an institutional standpoint, an actual and/or perceived unstable and uncertain formal institutional framework promotes activities within the informal economy (Williams, 2019). In such contexts of frequent changes in the formal institutional framework, actors express their lack of trust in the authorities through strategies such as escaping payments, which further constrain the authorities’ power to realize formalization (Williams, 2019). Moreover, in “developing and transition economies”, the prevailing perspective recognizes the present formal rules as foreign and “imposed by external supranational institutions” (Williams, 2019, pp. 30–31).

The second step, as put forward by Williams (2019), describes how the informal economy emerges due to **institutional asymmetry.** The less the formal rules align with the prevailing informal institutions, such as “socially shared norms, values and belief”, the greater the institutional asymmetry (Williams, 2019, p. 31). Thus, the informal economy arises due to institutional asymmetry, in which an activity “although formally illegal, is deemed socially legitimate” (Williams, 2019, p. 33). Williams (2019) underlines the interconnection between the two previous steps in his last step. The latter, institutional asymmetry, is then caused by formal institutional failings, and the former eventually results in an increase in informal economic activities (Williams, 2019).

3.1.2. Everyday Governance Framework by Polese (2023)

Polese (2023, p. 323-324) introduces in his paper the everyday governance framework, which “takes into account everyday governance and the role of informal practices and actors in the construction of the political”. The author postulates that informality is a permanent

phenomenon which is globally and universally present, as presented in the literature review. (Polese, 2023)

Supplementing the definition provided by Williams (2019), as introduced in the literature review, Polese (2023) describes informality as:

> "an activity, performed by an individual or a group of individuals (organization, family, clan), that eventually bypasses the state or the overarching entity regulating the life of that group or society. This may happen because informal practice emerges in areas that a state has not managed to regulate (beyond the state) or because that practice replaces allegedly ineffective state mechanisms (in spite of the state)." (p. 324)

This definition of informality is based on the following three assumptions. First, informality involves activities that are intentionally hidden from the state. Second, informality permits actions in areas of state governance that had not been formally regulated before and can thus be considered as the gap between two codified rules (Polese, 2023). Third, minor and uncoordinated acts of citizens can alter the implementation of a particular political decision if repeated numerous times and informality can, thus, in this case, serve as an instrument for citizens to participate in state governance (Polese, 2023). Thus, formal and informal governance are simultaneously present (Polese, 2023).

Polese (2023) argues that it is crucial to include the political actors at the top but also to incorporate the individual and bottom actors in the theoretical considerations about informality. Therefore, Polese's (2023) everyday governance framework posits that through the multiple repetition of actions, even if they are seemingly insignificant, these actions can collectively contribute to "policymaking and the construction of the political" (Polese, 2023, p. 341). Hence, "everyday informality becomes a means through which new governance mechanisms are created and reproduced for a better interaction between the state and its society" (Polese, 2023, p. 341). According to Polese (2023), the everyday governance framework expands the theoretical background of informality as it recognizes that informal economic activities are not solely attractive due to monetary gains yet can also serve as an instrument for actors to express their frustration with how a sector is run (Polese, 2023). Additionally, it recognizes the impact of "everyday actions and common people to the construction of the political" (Polese, 2023, p. 342).

Thus, the everyday informality approach by Polese (2023) emphasizes that ordinary individuals, through daily actions, can significantly shape the political sphere. Thereby, scholars expect four possible reactions of the state towards the multiple repetitions of daily informal practices: (1) its adoption, (2) its failed attempt to suppress it, (3) total elimination of the practice, or (4) by inciting citizens to mobilize politically to defend the valued practice (Polese, 2023; Polese & Morris, 2015). Interestingly, scholars carve out the role of the state in tolerating and/ or facilitating informal economic practices, particularly in cases in which the state either engages in them intentionally or simply fails to respond to them (Karrar, 2019; Polese, 2023).

As introduced earlier, informal networks are often embedded within social relations. Thus, on a small scale, informal networks may foster an alternative system seeking to substitute "the state in areas of governance where its welfare distribution, or social protection mechanisms are weak" (Polese, 2023, p. 342). On a comprehensive scale, however, the everyday governance framework demonstrates how the repetition of informal activities threatens the existing state order and may even alter the political structure of a system (Polese, 2023). Furthermore, Polese (2023) puts forward that informal practices can serve as an indicator of trust in state institutions and potentially even reflect the quality of governance. This is due to the observation that individuals focus on strengthening interpersonal relationships, thus circumventing the state in areas where trust in state institutions is diminished (Polese, 2023). In sum, Polese (2023) hence examines informality as "the art of bypassing the state, as a mode of governance and as a proxy of the quality of a country's institutions" (Polese, 2023, p. 345).

3.2. The Concept of Informal Cross-Border Trade

As presented, this paper conceptualizes informal cross-border trade rooted in the academic literature on informality discussed in Chapter 2.1. Scholars state that, resulting from increased globalization, countries and their formal regulations have weakened, and informal trade has started to occur across national borders (Fehlings, 2018; Maga et al., 2023). Thus, this research follows Golub (2015), Maga et al. (2023) and Rudaz (2020) and understands *informal cross-border trade* as the trade of legal goods between different countries, which is not or only partially documented, reported or registered.

In the case of the Kyrgyz Republic, scholars stress that in addition to bazaars, the undocumented exchange takes place, particularly along its borders with China and Central

Asian states, as well as Russia (Karrar, 2019; Rudaz, 2020; Steenberg, 2016a). Informal cross-border trade of the Kyrgyz Republic consists of the exchange of consumer goods and is typically characterized by small quantities (Fehlings, 2018; Kaminski & Mitra, 2012; Morris & Polese, 2013; Steenberg, 2016a). Thereby, the great majority of transactions are based on cash (Karrar, 2019). Cross-border trade is expected to arise due to various reasons, often related to inconsistencies in regulations between the countries, such as differences in the prices across borders or customs regulations (Benjamin et al., 2015; Kaminski & Mitra, 2012; Maga et al., 2023). Thereby, scholars elaborate on the role of the state authorities, which allow informal exchange of goods across borders, even if it breaks with the regulatory frameworks, which they explain by the states' "inability to uphold its own regulations" and widespread corruption (Karrar, 2019, p. 273; Rudaz, 2020).

In the case of the Kyrgyz Republic, a significant number of informal cross-border trade is done by so-called shuttle traders, whose "unregulated, transnational trade was informal as commercial merchandise was frequently declared as personal items, with the volume and value of goods undervalued and state duties not paid or underpaid" (Karrar, 2019, p. 282). Thereby, scholars emphasize the great number of people, specifically women, participating in the shuttle trade (Benjamin et al., 2015; Cieślewska, 2013; Fehlings, 2018; Golub, 2015; Kaminski & Mitra, 2012; Karrar, 2019). Additionally, this research grasps informal cross-border trade as being embedded in the economic and social structures of the countries involved (Morris & Polese, 2013; Polese, 2023; Polese & Rodgers, 2011; Rodgers & Williams, 2009; Steenberg, 2016a). Therefore, local (social) networks play a predominant role and are often based on trust and kinship, which facilitate informal trade (Benjamin et al., 2015; Fehlings, 2018; Fehlings & Karrar, 2020; Golub, 2015; Karrar, 2019; Polese, 2023; Rudaz, 2020; Steenberg, 2016a, 2016b). Also, scholars outline that with the increasing globalization of informal cross-border trade, networks started to spread transnationally and even across continents (Golub, 2015).

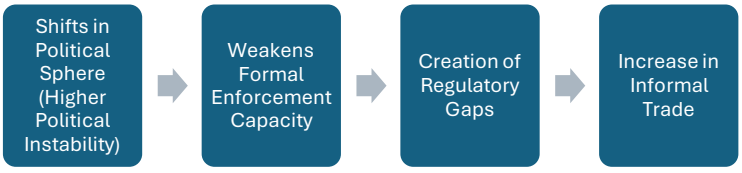
3.3. Expected Causal Mechanism and Hypothesis

This research aims to examine how shifts in the political landscape impact informal cross-border trade in the Kyrgyz Republic. Thereby, the independent variable of this research is the *shifts in the political sphere* of the Kyrgyz Republic. The dependent variable, expected to be influenced by said shifts, is the *volume of informal cross-border trade* of the Kyrgyz Republic.

This chapter carves out the causal mechanism derived from the theoretical framework of institutional theory and the everyday governance framework and outlines the accompanying hypotheses. As presented, *institutional theory* presumes that political instability weakens formal institutions and negatively impacts the state's capacity to enforce regulations (Williams, 2019). Moreover, shortcomings in the formal institutional framework, and its instability stimulate an increase in the informal economy (Williams, 2019). Additionally, the *everyday governance framework* expects actors to adapt to changes in formal and informal institutions (Polese, 2023). Hence, in case of state failure or gaps in the formal institutional framework in meeting people's needs, the construction of informal governance becomes viable (Polese, 2023).

Derived therefrom, this study expects that the dynamic domestic and foreign political landscape of the Kyrgyz Republic, characterized by various shifts, generates political instability. Combined with the pressure of EAEU accession and, thus, closer regional integration and new trade regulations, instability is further reinforced. Based on the assumption of institutional theory, this political instability weakens the regulatory enforcement of formal institutions, reflected in higher corruption, decreased government effectiveness and deficient regulatory enforcement, thereby creating regulatory gaps and increasing uncertainty. Following the presumptions of the everyday governance approach by Polese (2023), actors are incited to search for non-formal income opportunities to avoid uncertainty and potential government interventions and secure their survival. Hence, actors are expected to rely increasingly on informal governance mechanisms to bypass the formal EAEU regulations and adapt to the uncertainty and instability characterizing the formal institutional context. Consequently, as actors exploit regulatory gaps, a rise in the volume of informal cross-border trade is anticipated. The causal graph in Figure 1 illustrates the expected causal mechanism, while Table 1 summarizes it.

Figure 1: Causal Graph



Note. Compiled by author

Table 1: Expected Causal Mechanism

Expected causal mechanism	
Independent Variable (X)	**Shifts in the political sphere** Various shifts in the political sphere of the Kyrgyz Republic lead to increased political instability and (perceived) uncertainty. This creates a perception of unreliability in formal governance and institutions.
Part 1	**Weakened formal enforcement capacity** The increased political instability in the Kyrgyz Republic reduces the formal enforcement capacity, which is indicated by a higher level of corruption, reduced government effectiveness and a lack of regulatory enforcement. Thus, in this context, formal institutions fail to provide the expected stability and support.
Part 2	**Creation of regulatory gaps** Weakened formal enforcement capacity incites the creation of regulatory gaps. In absence of effective regulatory structures, informal governance mechanisms emerge to fill these gaps.
Dependent Variable (Y)	**Increase in volume of informal cross-border trade** As a consequence of regulatory gaps, more actors engage in informal cross-border trade activities of the Kyrgyz Republic, as they seek alternative governance mechanisms to bypass unreliable or obstructive formal institutions.

Note. Compiled by author

To test the expected causal mechanism, this research tests each of the following hypotheses:

H1: Shifts in the political landscape of the Kyrgyz Republic, reflected in an increase in political instability, have led to a rise in the volume of informal cross-border trade.

H1.1.: *Increased political instability reduces the formal enforcement capacity, as indicated by a higher level of corruption, reduced government effectiveness, and a lack of regulatory enforcement.*

H1.2.: *Weakened formal enforcement capacity caused by political instability prompts the creation of regulatory gaps.*

H1.3.: *Regulatory gaps caused by weakened formal enforcement capacity induce a rise in the informal cross-border trade volume.*

Nevertheless, potential alternative mechanisms do exist. For instance, EAEU accession and, hence, deeper regional integration could lead to a decrease in informal trade. However, such an outcome appears unlikely due to formal institutional weaknesses.

4. Methodology

This chapter outlines the methodological approach of the analysis, which seeks to analyse how ***shifts in the political landscape influence informal cross-border trade in the Kyrgyz Republic.*** Therefore, this research employs a **process-tracing case study** approach to test whether the theorized causal mechanism between shifts in the political landscape and the volume of informal cross-border trade is present and can be validated**.** After introducing the process-tracing case study method, this chapter operationalizes every part of the theorized causal mechanism and its variables, explains their data sources and data collection process, and describes the analytical techniques used to analyse the data. Lastly, the limitations of this research's methodology are demonstrated.

4.1. Research Design

This **process-tracing case study** analysis uses qualitative and quantitative data to gain knowledge on the different parts of the causal mechanism under investigation, employing a qualitative content analysis and the mirror statistics approach, respectively. This type of research allows one to gain insight into the effect of political shifts on informal cross-border trade and to test whether this effect occurs as hypothesized by the causal mechanism.

According to scholars, case studies centre on "a particular event, decision, institution, location, issue, or piece of legislation" and thus, case study research is characterized by an in-depth understanding by the researcher of a specific case (Gerring, 2016; King et al., 1994, p. 4). Thereby, a case refers to a phenomenon defined within specific spatial and temporal boundaries and holding theoretical significance. (Gerring, 2016) Importantly, Gerring (2016) emphasizes that case study research not only seeks to assess the specific case being studied but also aims to provide insights into a broader context. Blatter & Blume (2008) distinguish between three types of case studies, namely co-variational, causal process tracing and congruence analysis. This **case study** follows a **causal process tracing approach**, which is case-centred and aims to trace how the theorized causal mechanism unfolds (Blatter & Blume, 2008). More concretely, the scholars outline that "within-case implications of causal mechanisms include the values of independent and dependent variables, but go beyond these types of observations and try to identify traces for every step between the cause and the outcome" (Blatter & Blume, 2008, p. 320).

4.2. Operationalization and Analytical Methods

As presented, this research follows a causal process-tracing approach with sequential mechanism validation. Thus, this study aims to confirm whether each element of the causal chain exists as predicted. This chapter describes each variable, its operationalization, its data source and how the data is analysed.

4.2.1. Independent Variable: Shifts in Political Landscape

The independent variable of this research is *Shifts in the Political Landscape* of the Kyrgyz Republic. More concretely, the first part of the theorized causal mechanism predicts that various shifts in the political sphere of the Kyrgyz Republic engender increased political instability and (perceived) uncertainty. To assess the validity of this hypothesis, this research employs secondary data to measure political shifts in the political landscape and examine how they evolved from 2010 to 2022. More concretely, this research measures its independent variable with the following four dimensions: (1) *political instability*, (2) *domestic political shifts*, (3) *foreign political shifts* and (4) *shifts in the sphere of cross-border trade*. Table 2 summarizes the operationalization of the independent variable *Shifts in the Political Landscape*.

Table 2: Operationalization of the Independent Variable

IV: Shifts in the Political Landscape		
Dimensions	*Indicators*	*Sources*
(1) Political instability	• Public Perception of Political Stability and Absence of Violence/Terrorism	Worldwide Governance Indicators (WGI) by World Bank (existing dataset)
(2) Domestic political shifts	• Changes in leadership • Protests / civil unrest • Introduction of new constitutions / amendments • Ethnic clashes • Parliamentary elections	BTI reports 2012, 2014, 2016, 2018, 2020, 2022, 2024 (content analysis)
(3) Foreign political shifts	• Russia's annexation of Crimea 2014 • Russia's full-scale invasion of Ukraine • Covid-19 pandemic • Shifts in bilateral relations of Kyrgyz Republic with Russia, Uzbekistan, Kazakhstan, Tajikistan, China and International Organizations	BTI reports 2012, 2014, 2016, 2018, 2020, 2022, 2024 (content analysis)
(4) Shifts in (informal) cross-border trade	• EAEU accession • Policies to curb informal trade	BTI reports 2012, 2014, 2016, 2018, 2020, 2022, 2024 (content analysis)

Note. Compiled by author.

The first dimension, *political instability*, is measured with one of the indicators of the Worldwide Governance Indicators (WGI), namely Political Stability and Absence of Violence/ Terrorism, which documents the perceptions on the probability "that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism" (Kaufmann & Kraay, 2024, p. 4; World Bank, n.d., 2024). The World Bank (WB) aggregates the WGI, whose estimated values range between -2.5, weak, and 2.5, strong, governance (Kaufmann & Kraay, 2024; World Bank, n.d., 2024). The WGI's data, its sources and an overview of the indicators are publicly accessible online[7] (World Bank, n.d.). After downloading the full WGI dataset in Excel, the sheet containing the data on *Political Stability No Violence* is used to assess the estimated level of Political Stability and Absence of Violence/ Terrorism for the Kyrgyz Republic from 2010 to 2022. These public perception estimates range between -2.5, weak, and 2.5, strong (World Bank, 2024). Additionally, the

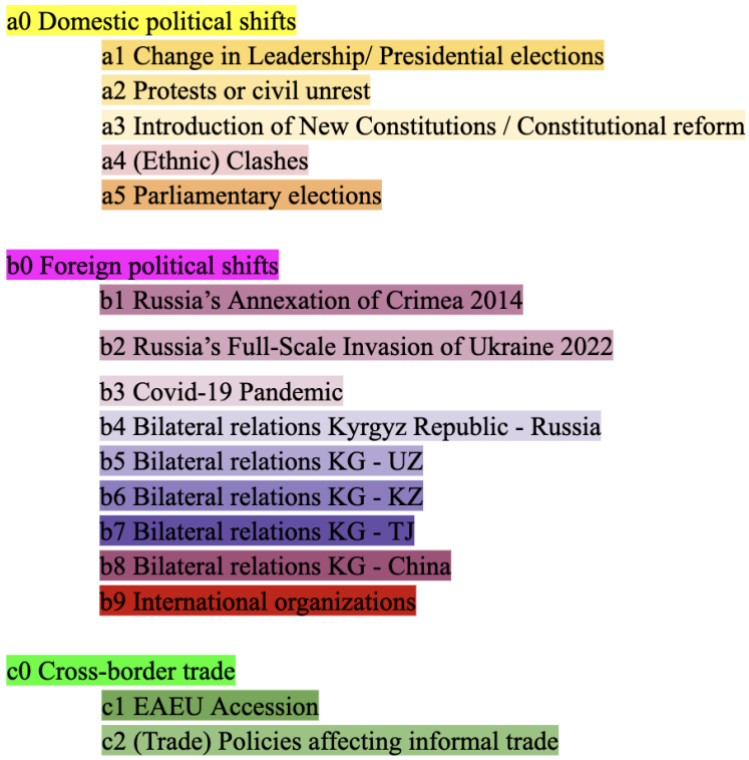
[7] Available under: https://www.worldbank.org/en/publication/worldwide-governance-indicators/documentation

author calculates the mean, which provides further insight into how political stability in the Kyrgyz Republic was perceived on average from 2010 to 2022.

To test the first variable of the causal mechanism and thus facilitate the temporal comparison of the perception of political stability in the Kyrgyz Republic, the estimated values based on the WGI are summarized in a graph. This allows for a better comparison between the development of Kyrgyzstan's political stability and the remaining variables of the causal mechanism in question.

To assess the three remaining dimensions of the independent variable, namely (2) *domestic political shifts*, (3) *foreign political shifts* and (4) *shifts in cross-border trade*, the second part of the analysis undergoes a content analysis based on the considerations by Mayring (2022), of the country reports on Kyrgyzstan by the Bertelsmann Stiftung's Transformation Index (BTI) from 2012 to 2024. The BTI country reports are chosen as a source for the content analysis due to their comprehensive textual analysis of political and economic developments in the Kyrgyz Republic during the temporal period of analysis (Bertelsmann Stiftung, 2012, 2014, 2016, 2018, 2020, 2022, 2024). The BTI country reports for the Kyrgyz Republic are published in a two-year interval, reporting on a two-year period. For instance, the BTI country report 2024 covers the period from February 1st, 2021, to January 31st, 2023. The analysis includes the entire written content of the BTI country reports of 2012, 2014, 2016, 2018, 2020, 2022 and 2024 (Bertelsmann Stiftung, 2012, 2014, 2016, 2018, 2020, 2022, 2024). Derived from the considerations of Mayring (2022), the content is analysed following a codebook created based on a deductive-inductive approach. Thus, based on the literature review, most codes are previously defined and selectively supplemented by additional codes. The three main categories, *a0 domestic political shifts*, *b0 foreign political shifts* and *c0 cross-border trade,* are drawn from the dimensions of the operationalized variable and consist of various subcategories. Figure 2 demonstrates the employed codebook.

Figure 2: Codebook for Content Analysis of BTI Country Reports



Note. Compiled by author

The following procedure is guided by Mayring's (2022) considerations but has been adapted. The content under analysis is coloured and coded following the codebook outlined in Figure 2. Then, an Excel table is created, where each row corresponds to a specific code, and each column represents one of the examined BTI country reports. Once all reports have been analysed and the passages incorporated, the content within each row is summarized to provide an overview of the coded material across all country reports for that specific code. This summary is then further condensed to emphasize the temporal aspects of the coded passages. This process is repeated for every code to ensure a concise and structured synthesis of the data. Table 3 presents an example of a summary and generalization of a directly quoted passage, coded in the BTI country report 2014 with the code *a4 (ethnic) clashes* (Bertelsmann Stiftung, 2014).

Table 3: Example of Summarizing and Generalizing a Coded Passage

Direct quote **Coded in BTI country report 2014**	**Summary**	**Generalization**
"The situation spiraled out of control between June 11 and 13, when a scuffle among some youth in Osh escalated into the bloodiest ethnic violence since Kyrgyzstan's independence. The violence ended with over 450 deaths and forced more than 400,000 ethnic Uzbeks to flee their homes, (…)." (a4) (Bertelsmann Stiftung, 2014, p. 4)	2010: • June 2010: Osh inter-ethnic clashes for 4 days (bloody: 450 died, 400'000 ethnic Uzbeks needed to flee) (a4)	2010 • June 2010: Osh inter-ethnic clashes (4 days) (a4)

Note. Compiled by author

In the last step, the generalized findings of the qualitative content analysis of the BTI country reports are then chronologically organized in a table, which provides an overview of the primary shifts in the three dimensions of (2) *domestic politics*, (3) *foreign politics* and (4) *cross-border trade* for every year between 2010 and 2022. The table is consequently complemented by the estimated value of (1) public perception of *Political Stability and Absence of Violence/ Terrorism* of the dataset by the WGI. In brackets, the change of the estimated value compared to the prior year, as calculated by the author, is added. In doing so, the table presents a chronological overview of all four dimensions, along which the independent variable is measured. The table facilitates a comparative analysis of the annual trends and their evolution during the years under investigation. This table can then be used to assess the changes in public perception of political stability from one year to another and give insight into whether shifts in domestic or foreign politics or cross-border trade can explain these. This provides an overview of Kyrgyzstan's principal shifts between 2010 and 2022 and their impact on the public perception of political stability, facilitating an evaluation of the theorized causal mechanism for the independent variable.

4.2.2. Part 1: Weakened Formal Enforcement Capacity

Based on institutionalist theory and the everyday governance approach, the presented causal mechanism assumes that shifts in the political landscape resulting in increased political instability induce weakened formal enforcement capacity, indicated by a lower level of government effectiveness, increased corruption and reduced regulatory enforcement. To

examine whether the first part of the causal mechanism applies to this case study, the first intervening variable of formal enforcement capacity is operationalized as described in Table 4.

Table 4: Operationalization of Formal Enforcement Capacity

Part 1: Weakened formal enforcement capacity		
Dimensions	*Indicators*	*Source*
Government effectiveness	See WGI	Worldwide Governance Indicators (WGI) by World Bank (existing dataset)
Rule of law	See WGI	Worldwide Governance Indicators (WGI) by World Bank (existing dataset)
Control of corruption	See WGI	Worldwide Governance Indicators (WGI) by World Bank (existing dataset)

Note. Compiled by author.

The formal enforcement capacity is measured along the following three dimensions: *1) government effectiveness, 2) rule of law* and *3) control of corruption*. All three dimensions are measured with existing data from the WGI dataset for the Kyrgyz Republic, and the values for each range between -2.5 weak and 2.5 strong (World Bank, 2024). The author then determines the formal enforcement capacity for the Kyrgyz Republic for the period 2010 to 2022 by calculating the mean of the three dimensions.

Firstly, (1) *government effectiveness,* as measured by the WGI, assesses how "the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies" are commonly viewed (Kaufmann & Kraay, 2024, p. 5; World Bank, n.d., 2024). Similarly, following the WGI, (2) *rule of law* analyses perceptions "of the extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence" (Kaufmann & Kraay, 2024, p. 5; World Bank, n.d., 2024). Lastly, (3) *Control of Corruption* as assessed by the WGI "captures perceptions and views of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests" (Kaufmann & Kraay, 2024, p. 5; World Bank, n.d., 2024). The criteria used by the WGI to measure each of

its components are detailed and publicly accessible[8] in the respective online descriptions (World Bank, n.d.).

Comparable to the proceeding in the case of the *Political Stability and Absence of Violence / Terrorism* dimension of the independent variable, the dataset of the WGI was downloaded in Excel format, and the estimated values of the perception of each of the three dimensions, namely *government effectiveness, rule of law* and *control of corruption*, were chosen and summarized in a table for the period under examination, thus from 2010 to 2022, for the Kyrgyz Republic. Additionally, the author calculated the overall mean of each of the three dimensions to gain insight into their average public perception level. The author calculated the annual mean of the three operationalized dimensions to determine the values for the intervening variable of formal enforcement capacity. This average value represents the formal enforcement capacity of the Kyrgyz Republic.

Finally, to analyse the data of the three dimensions, a graph is produced for each of the dimensions and the intervening variable with the help of Excel. This visual overview of the development of the data from 2010 to 2022 facilitates a temporal comparison between the independent variable and the intervening variable of formal enforcement capacity. A table is created to test this part of the causal mechanism, presenting chronologically how political stability and formal enforcement capacity develop annually. Therefore, the formal enforcement capacity values are compared with the annual values of political stability. Every year is complemented by the change in the value compared to the previous year, as calculated by the author, in brackets. This approach permits to compare whether the same trends (increase or decrease) are present in the year under examination. The first part of the causal mechanism is validated if a reduction is observable in both analysed variables.

4.2.3. Part 2: Creation of Regulatory Gaps

The second part of the causal mechanism suggests that weakened formal enforcement capacity boosts the creation of regulatory gaps. Therefore, its operationalization is outlined in Table 5.

[8] Available under https://www.worldbank.org/en/publication/worldwide-governance-indicators/documentation

Table 5: Operationalization of Regulatory Gaps

Part 2: Creation of regulatory gaps		
Dimension	*Indicator*	*Source*
Regulatory quality	See WGI	Worldwide Governance Indicators (WGI) by World Bank (existing dataset)

Note. Compiled by author.

To determine whether the second part of the causal mechanism can be observed in the case of the Kyrgyz Republic, the development of *Regulatory Quality* is measured with secondary data aggregated by the WGI (World Bank, 2024). More concretely, the WGI data on regulatory quality reflects how "the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development" is publicly regarded (Kaufmann & Kraay, 2024, p. 5; World Bank, n.d., 2024). After downloading the data, the estimated values are organized in a table chronologically for each year of the period between 2010 and 2022. They are complemented by their mean as calculated by the author. Again, the estimated values are expected to range between -2.5, weak, and 2.5, strong regulatory quality (World Bank, 2024).

The estimated values are depicted in a graph produced in Excel to analyse the trend of regulatory quality. The graph facilitates the analysis of how the variable changes over time and compares it with the simultaneous evolution of political instability and formal enforcement capacity. Additionally, to simplify a comparative analysis of this part of the causal mechanism with the remaining causal chain, the data on regulatory quality is added to the table containing the values previously gathered. Thus, the supplemented table chronologically presents the estimated values of political stability, formal enforcement capacity and regulatory quality with the change in the estimated value compared to the previous year in brackets for every year between 2010 and 2022.

To assess whether the part of the causal mechanism is present, the values of the regulatory quality are compared for every year under examination with the values of political stability and formal enforcement capacity. Therefore, the focus is on comparing whether the same trends (increase or decrease) can be observed for the three variables in the year under examination. The second part of the causal mechanism is validated if a reduction is observable in the three analysed variables.

4.2.4. Dependent Variable: Informal Trade Volume

The dependent variable of this research is the volume of informal cross-border trade of the Kyrgyz Republic from 2010 to 2022. According to the causal mechanism, the informal trade volume is expected to increase, resulting from shifts in the political landscape. To test the theorized causal mechanism, this study employs the mirror statistics approach to measure the imbalance in reported trade data and then assess how the informal cross-border trade volume evolved. The data to evaluate this research's dependent variable, thus the volume of Kyrgyzstan's informal trade, is deducted from UN Comtrade[9]. The United Nations International Trade Statistics Database, in short, UN Comtrade, is a database that aggregates the available data reported by the state authorities on international trade (Nelson, 2023; United Nations, 2024). The data which the United Nations Statistics Division provides is publicly available and can be downloaded from the database's official website (Nelson, 2023; United Nations, 2024).

Using the UN Comtrade data, this research focuses on Kyrgyzstan's main (regional) trade partners, namely China, Russia, Kazakhstan, and Uzbekistan (United Nations, 2024).[10] Unfortunately, trade data on UN Comtrade is not readily available for all partners for the entire period under review. More concretely, this research analyses trade imbalances between the Kyrgyz Republic and Russia until 2021 and with Uzbekistan only from 2017 onwards.

To assess informal cross-border trade, this research analyses trade discrepancies[11] between Kyrgyz official imports and its partners' reported exports to the Kyrgyz Republic and Kyrgyz official exports to its partners and their reported imports from the Kyrgyz Republic, respectively. These trade gaps are first calculated for *all commodities*. Subsequently, the trade gaps between the four country pairs are analyzed specifically for *bazaar-traded goods*, as defined by Kaminski & Mitra (2012), and for *re-exportable bazaar goods*, as described in existing research (Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011).

[9] https://comtradeplus.un.org/

[10] According to UN Comtrade, the three main export partners of the Kyrgyz Republic in 2022 were the Russian Federation, Kazakhstan, and Uzbekistan, and its main import partners were China, the Russian Federation, and Kazakhstan (United Nations, 2024).

[11] Followingly also named trade gaps

Table 6 presents the goods Kaminski and Mitra (2012, p. 86) consider bazaar-traded goods. In contrast, Kaminski and Mitra (2012, p. 180) categorize the re-exportable bazaar goods as follows:

SITC 65 Textile yarn, fabrics, made-up articles, related products

SITC 83 Travel goods, handbags, and similar containers

SITC 84 Articles of apparel and clothing accessories

SITC 85 Footwear

SITC 89 Miscellaneous manufactured articles, n.e.s.

Table 6: HS Classification of Bazaar-Traded Goods in Central Asia following Kaminski & Mitra (2012, p. 86)

Table 5.2 HS Classification of Bazaar-Traded Goods in Central Asia

HS no.	*Bazaar goods*
50–60	Fabrics (11 double-digit HS items)
4203	Articles of leather apparel
61	Articles of apparel, accessories, knit or crochet
62	Articles of apparel, accessories, not knit or crochet
63	Other made textile articles, sets, worn clothing, etc.
64	Footwear, gaiters and the like, parts thereof
65	Headgear and parts thereof
66	Umbrellas, walking-sticks, seat-sticks, whips, etc.
67	Bird skin, feathers, artificial flowers, human hair
69	Ceramic products
70	Glass and glassware
91	Clocks and watches and parts thereof
95	Toys, games, sports requisites
Memorandum: Share of bazaar goods mirror imports in total Central Asia's mirror imports of consumer goods:	
2005, 32%	
2006, 33%	
2007, 37%	
2008, 50%	
2009, 45%	
2010, 49%	

Source: Share derived from export data submitted to the UN COMTRADE database.
Note: HS = Harmonized System.

Note. From Kaminski and Mitra (2012, p. 86)

Hence, the dependent variable of this research, namely the *informal trade volume*, is operationalized with the help of the dimension of trade volume discrepancy, using the following three indicators: *trade volume discrepancies of (1) all commodities*, (2) *bazaar-traded goods* as well as (3) *re-exportable bazaar goods*, as summarized in Table 7.

Table 7: Operationalization of the Dependent Variable

Dependent Variable: Informal Trade Volume		
Dimension	*Indicators*	*Source*
Trade Volume Discrepancy (Imbalance in Reported Trade Data)	Overall Trade Volume Discrepancies	Data from UN Comtrade Database (mirror statistics)
	Trade Volume Discrepancies of bazaar-traded goods (as defined by Kaminski & Mitra, 2012)	Data from UN Comtrade Database (mirror statistics)
	Trade Volume Discrepancies of re-exportable bazaar goods (as defined by Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011)	Data from UN Comtrade Database (mirror statistics)

Note. Compiled by author.

As previously outlined, this research employs the mirror statistics analysis to evaluate the informal trade volume of the Kyrgyz Republic with its key trading partners – ROW, China, Russia, Kazakhstan and Uzbekistan - building on the framework established by prior research (Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011). The mirror statistics method is a popular tool in international trade research to assess informal trade volume (Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011; Maga et al., 2023; Nelson, 2023). It has been applied in a wide range of academic studies despite its inability to guarantee complete accuracy (see for instance Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011; Maga et al., 2023; Nelson, 2023). The mirror statistics method serves as an instrument in cases where official trade statistics exhibit significant gaps, as in the case of the Kyrgyz Republic (Kaminski & Mitra, 2012).

Utilizing the method of mirror statistics allows to bypass the gaps in official trade statistics and, thus, get insight into informal trade volumes by measuring the discrepancy between the export statistics of country A to country B and the import statistics of imports of country B importing from A (Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Libman & Vinokurov, 2011). More concretely, Libman and Vinokurov (2011, p. 482) explain the mirror statistics approach as follows: “If the import of country A from country B reported by A is smaller than export from B to A reported by B, it may serve as an indication of informal trade, and the difference between export and import flows reported is referred to as the ‘import gap’.” Kaminski & Mitra (2012, pp. 83-84) further underline that “the larger the positive mirror trade gap, the larger the gap between imports reported by a country and its actual imports”.

This research retrieved data from UN Comtrade for each of the five country pairs (Rest of the World (ROW) – Kyrgyz Republic; China – Kyrgyz Republic; Russia - Kyrgyz Republic; Kazakhstan - Kyrgyz Republic and Uzbekistan - Kyrgyz Republic) across all three indicators: *all commodities*, *bazaar-traded goods* and *re-exportable bazaar goods*. For each country pair, the yearly data is retrieved from 2009 to 2022. However, due to data gaps, trade discrepancies in Kyrgyz-Russian trade are analysed only from 2009 to 2021, while imbalances in Kyrgyz-Uzbek trade are examined from 2017 to 2022. For instance, to assess the mirror import gap of *all commodities* imported to the Kyrgyz Republic from China, the filtration on UN Comtrade was refined as follows: China (Reporter) Exports (Trade Flows) to the Kyrgyz Republic (Partners) for the years 2009 to 2022 (Periods) for *all commodities* (Total) (HS (as reported) Commodity Codes). According to the refined search, the data is then downloaded in Excel format. In the second step, the search is refined as follows: the imports (Trade Flows) of the Kyrgyz Republic (Reporter) from China (Partners) for *all commodities*. This dataset is also downloaded in Excel format. Following that, the two datasets are merged into one Excel file. This is repeated for every country pair for each of the three types of commodities and Kyrgyz imports and exports.

After that, a table is created for every indicator for Kyrgyz imports as well as exports, which includes the following parameters for every country pair (Kyrgyz-ROW, Kyrgyz-Chinese, Kyrgyz-Russian, Kyrgyz-Kazakh and Kyrgyz-Uzbek trade) for every year from 2009 to 2022. The year 2009 is included to facilitate calculations such as the annual change in trade gaps for the year 2010, which is part of the analysis. The six tables[12], for imports and exports of the Kyrgyz Republic for each of the three types of commodities and each of the five country pairs include the values and calculations summarized in Table 8.

[12] Tables A.1. to A.6. are available in the appendix and online under https://www.dropbox.com/scl/fi/fnke1pg7yrzkku5o2xahc/Knobel_MAmirrorstat.xlsx?rlkey=643i5dasqxwhxb7qieg320l0e&st=l87w484k&dl=0

Table 8: Calculations with Mirror Statistics for Kyrgyz Imports and Exports

Imports of the Kyrgyz Republic		**Exports of the Kyrgyz Republic**	
Year	2009-2022	**Year**	2009-2022
Partner	ROW, Sum of four partners, China, Russia, Kazakhstan, Uzbekistan	**Partner**	ROW, Sum of four partners, China, Russia, Kazakhstan, Uzbekistan
Mirror imports (in USD)	Reported exports by partner, FOB value	**Official exports** (in USD)	Reported exports by Kyrgyz Republic, FOB value
Official imports (in USD)	Reported imports by Kyrgyz Republic, CIF value	**Mirror exports** (in USD)	Reported imports by partner, CIF value
CIF adjustment	0.05	**CIF adjustment**	0.05
Adjusted mirror imports (in USD)	reported exports by partner, adjusted CIF value) = mirror imports * 0.05	**Adjusted official exports** (in USD)	Reported exports by Kyrgyz Republic, adjusted CIF value = official exports * 0.05
Mirror Import Gap (in USD)	= adjusted mirror imports – official imports	**Mirror Export Gap** (in USD)	= mirror exports – adjusted official exports
GDP* of the Kyrgyz Republic (in USD)	Yearly GDP*	**GDP* of the Kyrgyz Republic** (in USD)	Yearly GDP*
Mirror gap as % of GDP	= mirror gap / GDP	**Mirror gap as % of GDP**	= mirror gap / GDP
Mirror imports to official imports ratio	= adjusted mirror imports / official imports	**Mirror exports to official exports ratio**	= adjusted mirror exports / official exports
Annual change in mirror imports & trade gaps (in USD)	= mirror import/ trade gap of year x – mirror import/trade gap of previous year	**Annual change in official exports & trade gaps** (in USD)	= mirror export/ trade gap of year x – Mirror export/trade gap of previous year
Share in total mirror import gap of all commodities with ROW (in %)	= mirror gap / total mirror gap of Kyrgyz imports from ROW of all commodities	**Share in total Kyrgyz exports of all commodities/ bazaar traded goods/ re-exportable bazaar goods with ROW / four trade partners** (in %)	= Kyrgyz exports / total Kyrgyz exports to ROW/ four trade partners
Share in total mirror import gap of bazaar-traded goods / re-exportable bazaar goods with ROW (in %)	= mirror gap / total mirror gap of Kyrgyz imports from ROW of bazaar-traded goods/ re-exportable bazaar goods	**Share in total mirror export gap of all commodities/ bazaar traded goods/ re-exportable bazaar goods with ROW / four trade partners** (in %)	= mirror gap / total mirror gap of Kyrgyz exports to ROW/ four trade partners of all commodities
Share in total mirror gap of bazaar-traded goods / re-exportable bazaar goods of four trade partners (in %)	= mirror gap / mirror gap of the four trade partners		

* The data for GDP (current USD) of the Kyrgyz Republic is downloaded from the World Development Indicator database, which is publicly accessible under https://databank.worldbank.org/source/world-development-indicators

Note. Compiled by author.

The six tables for each group of commodities, for both imports (Tables A.1., A.2. and A.3.) as well as exports (Tables A.4., A.5. and A.6.) of the Kyrgyz Republic are displayed in the appendix and are also available online[13]. Followingly, the results are partially displayed with the help of graphs and tables to facilitate analysis. To test whether the causal mechanism is

[13] Available under https://www.dropbox.com/scl/fi/fnke1pg7yrzkku5o2xahc/Knobel_MAmirrorstat.xlsx?rlkey=643i5dasqxwhxb7qieg320l0e&st=l87w484k&dl=0

present as theorized, the mirror import gap and mirror export gap are compared with the findings of the previous parts of the causal mechanism.

4.3. Scope and Limitations

This case study explores the informal cross-border trade of the Kyrgyz Republic between 2010 and 2022 and examines whether shifts in the political landscape have augmented it. Embedded in the institutional theory and the everyday governance framework, this case study analysis employs a process-tracing method. While the methodology chosen provides a deep understanding of the impact of political shifts on the volume of informal cross-border trade of the Kyrgyz Republic, some significant limitations to the scope of this analysis need to be addressed.

The scope of this research is limited as this case study focuses on the Kyrgyz Republic. Thus, this research lacks external validity, as its results are not generalizable or applicable to other contexts. The findings are further constrained as this analysis consolidates fully on secondary data. Additionally, due to the predominantly qualitative nature of this analysis, this research must acknowledge the potential for an interpretative bias. The independent variable is measured with a qualitative content analysis of the BTI country reports, for which an interpretative bias cannot be excluded, and completeness cannot be guaranteed.

Additionally, the author of this paper influenced the codebook of the qualitative content analysis, which was carved out based on scholarly literature, the operationalized dimensions and indicators. Thereby, certain factors were excluded and not coded for the content analysis, such as the introduction of laws or the level of inflation, which might also impact political stability. Additionally, the decision to generalize the results by two levels could also influence the results of the content analysis of the BTI country reports, as the process is characterized by the author's interpretation of how the importance of events was weighted in the reports.

Also, as presented, some of the dimensions applied to measure some of the variables of the causal mechanism are based on one or several of the WGI by the World Bank, which measure the perceptions of the topic under examination. Even though the WGI are based on various data sources, they measure only public perception (World Bank, n.d., 2024). Thus, such an assessment of public perception cannot be equated with an objective evaluation of how the

analysed factors occur in reality. More specifically, perceptions are always subjective and influenced by the cultural and societal context.

The subject of informal trade constrains research due to its hidden nature. As already carved out, the mirror statistics approach permits an estimation of the volume of informal trade. However, such estimations are affected by various limitations, mainly due to the hiddenness of informal trade activities and, hence, do not provide a final assessment of informal cross-border trade (Kaminski & Mitra, 2012; Kaminski & Raballand, 2009; Nelson, 2023). Additionally, the mirror statistics method helps to grasp trade gaps, which can be driven by informal trade (Nelson, 2023). However, as Nelson (2023) presents, additional factors, such as distinctive reporting practices or time lags, also enlarge trade gaps.

5. Empirical Analysis

This chapter presents the results of the empirical analysis related to how political shifts affect informal cross-border trade of the Kyrgyz Republic and discusses its findings. As a causal process-tracing case study, this research aims to validate each sequence of its causal mechanism. In the first step, this chapter presents the results of the empirical analysis for every component of the hypothesized causal chain with the help of tables and figures. In the second step, the results are analysed against the backdrop of the underlying hypotheses. In the last step, the limitations of the findings are carved out.

5.1. Independent Variable: Shifts in Political Landscape

The independent variable of this research, namely shifts in the political landscape, was measured along the following four dimensions: *1) political instability*, 2) *domestic political shifts, 3) foreign political shifts* and *4) shifts in the sphere of cross-border trade*. Thereby, the causal mechanism hypothesizes that different shifts in the political sphere of the Kyrgyz Republic culminate in increased political instability and (perceived) uncertainty.

5.1.1. Results

Based on the evaluation of the WGI dataset and the calculated mean, Table 9 presents the values of *Public Perception of Political Stability and Absence of Violence/ Terrorism* in the Kyrgyz Republic (World Bank, 2024).

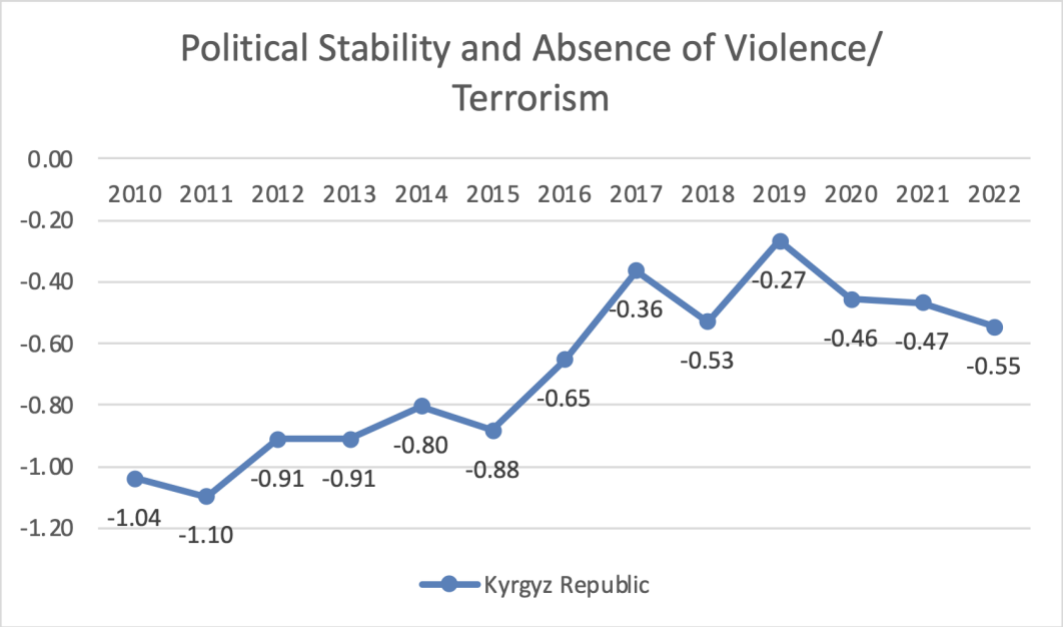
Table 9: Public Perception of Political Stability and Absence of Violence/ Terrorism in the Kyrgyz Republic

Political Stability and Absence of Violence/ Terrorism	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	mean
Kyrgyz Republic	-1.04	-1.10	-0.91	-0.91	-0.80	-0.88	-0.65	-0.36	-0.53	-0.27	-0.46	-0.47	-0.55	-0.69

Note. Compiled by author based on WGI dataset.

As for all dimensions of the WGI, the estimated values for *Political Stability and Absence of Violence and Terrorism* range between -2.5 (weak) and 2.5 (strong) (World Bank, n.d., 2024). Figure 3 illustrates how the perception of political stability according to the WGI has evolved in the Kyrgyz Republic from 2010 to 2022.

Figure 3: Political Stability and Absence of Violence/ Terrorism in the Kyrgyz Republic, 2010-2022



Note. Compiled by author based on WGI dataset.

The data shows that the WGI estimate of the perception of political stability in the Kyrgyz Republic has ranged between its lowest value of -1.10 in 2011 and reached its peak in 2019 with a value of -0.27. Therefore, the perception of political stability was continuously weak between 2010 and 2022, also reflected in the calculated mean value of -0.69. More concretely, the data indicates a decline in political stability compared to the previous year in 2010[14] and 2011, 2015, 2018 and from 2020 onwards. Overall, the political stability from 2010 to 2015 was weaker (between -1.10 and -0.88) than from 2016 to 2022, with a slightly stronger level ranging between -0.65 and -0.27.

Table 10 summarizes the results of the content analysis of the BTI country reports of the years 2012 to 2024, which refer to the years before their publication (Bertelsmann Stiftung, 2012, 2014, 2016, 2018, 2020, 2022, 2024). Hence, Table 10 outlines the primary shifts in domestic and foreign politics and cross-border trade resulting from the content analysis. The table is further complemented by the yearly estimated value of political stability calculated by

[14] In 2009, the WGI estimated the Political Stability and Absence of Violence/ Terrorism in the Kyrgyz Republic at a value of -0.62. Thus, in 2010, compared to 2009, public perception of political stability decreased by -0.42.

the WGI, with the change in the estimated value compared to the previous year[15] listed in brackets. The table presents the key domestic political shifts that occurred in 2010, 2011, 2015 to 2017, and from 2020 onwards based on the content analysis. According to the content analysis, foreign political shifts were pronounced in 2010, 2017, and from 2020 onwards. In contrast, shifts in the sphere of cross-border trade were identified for the years 2012, 2015, 2021 and 2022. These shifts are elaborated on in more detail in the next chapter, which assesses whether the first component of the causal mechanism - hypothesizing that various shifts in the political sphere of the Kyrgyz Republic provoke increased political instability and, thus, (perceived) uncertainty - is present.

[15] Based on author's calculations

Table 10: Political Shifts and Political Stability in the Kyrgyz Republic, 2010-2022

Year	Political Stability*	Domestic Political Shifts	Foreign Political Shifts	Shifts in Sphere of Cross-Border Trade
2010	-1.04 (-0.42)	• April Revolution: popular uprising • Overthrow of Bakiyev • Introduction of provisional government headed by interim president Otunbayeva • Constitutional referendum: introduction of new constitution June 2010 • Various inter-ethnic clashes among Uzbeks & KG • Parliamentary elections	• Unilateral border closure by Kazakhstan	
2011	-1.10 (-0.06)	• Nov 2011 presidential elections: Atambayev new president		
2012	-0.91 (+0.19)			• Economic work plan *100 Days*
2013	-0.91 (0.00)			
2014	-0.80 (+0.11)			
2015	-0.88 (-0.08)	• Parliamentary elections		• EAEU accession
2016	-0.65 (+0.23)	• Changes to constitution, Dec 2016		
2017	-0.36 (+0.29)	• Oct 2017 presidential elections: Jeenbekov new president • Series of public protests before presidential elections	• Improvements with Relations to Uzbekistan • 2-month border closure by Kazakhstan, resolved when Jeenbekov assumed office	
2018	-0.53 (-0.17)			
2019	-0.27 (+0.26)			
2020	-0.46 (-0.19)	• Post-election protests • Oct 2020 forced political turnover → fall of Jeenbekov • Parliamentary elections	• Covid-19 pandemic (border closure, etc.) • Chinese border closure due to Covid-19	
2021	-0.47 (-0.01)	• Jan 2021 early presidential elections: Japarov new president • Constitutional referendum → new constitution • Parliamentary elections	• Militarized clashes between Kyrgyz Republic and Tajikistan • Kyrgyzstan closes borders with Tajikistan • Chinese border closure due to Covid-19	• Economic policy of government to curb immense informal sector
2022	-0.55 (-0.08)	• Series of protests against Russian invasion of Ukraine in front of the Russian embassy	• Feb 2022: Russian invasion of Ukraine • Border conflict between Kyrgyz Republic and Tajikistan • Chinese border closure due to Covid-19	• Introduction of unified electronic fiscal accountability

* Compiled by author based on WGI Dataset (World Bank, 2024). Estimated values range from -2.5 (weak) to 2.5 (strong). In brackets, the change in estimate value compared to prior year as calculated by the author.

Note. Compiled by author based on findings of the content analysis of BTI country reports (Bertelsmann Stiftung, 2012, 2014, 2016, 2018, 2020, 2022, 2024).

5.1.2. Discussion

According to the WGI dataset, public perception of political stability decreased significantly in 2010, with a minus of -0.42. This aligns with the results of the content analysis of the BTI country reports from 2012 to 2024, which found that various shifts in the domestic and foreign political spheres of the Kyrgyz Republic characterized the year 2010. More concretely, mass protests, the so-called April Revolution, took place, leading to the overthrow of President Bakiyev. Furthermore, parliamentary elections were held during this year. Other remarkable events include the introduction of the new constitution and the provisional government headed by interim president Otunbayeva. Additionally, several inter-ethnic clashes occurred in the South of Kyrgyzstan. In the foreign political sphere, the Kyrgyz Republic faced a unilateral border closure by its neighbour, Kazakhstan. The WGI dataset indicates that the perception of political stability in 2011 decreased slightly (by -0.06) compared to 2010. Following the content analysis, this decrease can be explained by the presidential elections taking place in 2011, in which Atambayev was elected as the new president to replace prior interim-president Otunbayeva.

According to the WGI data, political stability was perceived to either improve or remain steady during the period from 2012 to 2014. Again, the results of the content analysis of the BTI country reports confirm these findings, as no large-scale shifts in the indicators under review were observed, apart from the introduction of an economic work plan aiming to reduce the informal economy (Bertelsmann Stiftung, 2014). Moreover, the content analysis has shown that the year 2015 was characterized by important shifts in the domestic political landscape and the sphere of cross-border trade. First, parliamentary elections took place, and second, the Kyrgyz Republic accessed the EAEU. This again corresponds with the perception of political stability, which has slightly weakened (-0.08), according to the WGI dataset.

The WGI dataset suggests that political stability in the Kyrgyz Republic was perceived to strengthen in 2016, with the estimated value increasing by +0.23 and +0.29 in 2017 in relation to the previous year. However, the results of the content analysis of the BTI country reports insinuate that the domestic political sphere shifted in 2016 upon constitutional changes. Similarly, the content analysis concludes that 2017 was a dynamic year with domestic and foreign political shifts. First, the domestic political sphere was characterized by protests before the presidential elections in October 2017, in which Jeenbekov was elected as the new president.

Moreover, following the content analysis, shifts also occurred in the foreign political sphere, as the BTI reports mention that the relations with Uzbekistan have improved significantly since 2017 under Uzbekistan's new president, Mirziyoyev (Bertelsmann Stiftung, 2018, 2020). Additionally, the BTI report 2020 states that a two-month unilateral border closure by Kazakhstan, sparked by tensions, was successfully settled when Jeenbekov took on the role of president and strived to restore diplomatic ties with Kazakhstan (Bertelsmann Stiftung, 2020). Thus, the findings do not support the hypothesized component of the causal mechanism, which posits that shifts would lead to instability for the years 2016 and 2017. During this period, political stability was perceived to strengthen despite significant changes in both the foreign and domestic political spheres.

According to the data of the WGI, political stability decreased in 2018 (by -0.17) in contrast to the year before. Contrarily, the content analysis of the BTI country reports did not confirm this development, as no major shifts explaining such an increase in political instability could be identified. Solely minor shifts, such as "pro-nationalist protests took place in which anti-Chinese slogans were raised" (Bertelsmann Stiftung, 2020, p. 29), may partially explain the increase in political instability measured by the WGI. In 2019, political stability was publicly regarded as increasing (+0.26) according to the WGI dataset. This finding is in line with the findings of the content analysis, which observe no large-scale shifts in the three dimensions under examination.

Interestingly, according to the WGI dataset, political stability was perceived to weaken from 2020 to 2022 (World Bank, 2024). Following the results of the content analysis of the BTI reports, such a decrease can be justified by various factors. Thus, the perception of political stability decreased by -0.19 in 2020 compared to 2019. Foreign political developments that are expected to negatively impact the perception of political stability are the global Covid-19 pandemic, which started in the Kyrgyz Republic in March and reached its peak in June and July 2020. The Covid-19 pandemic impacted various spheres, as for instance, the bilateral relations between the Kyrgyz Republic and China, as China closed its borders until 2022. Moreover, shifts occurred in Kyrgyzstan's domestic political sphere following the parliamentary elections, leading to large-scale protests, also named the October Revolution. As a result of the protests, President Jeenbekov needed to resign. These shifts support the first component of the causal mechanism, as they explain a decrease in the perception of political stability.

According to the results of the content analysis, the years 2021 and 2022 were similarly characterized by various shifts in the three dimensions under investigation. However, the WGI dataset shows a surprisingly limited decrease in the perception of political stability compared to the previous years, of -0.01 and -0.08, respectively. On the contrary, the findings of the content analysis of the BTI reports point out various shifts. Following the results of the content analysis, the domestic political sphere experienced early presidential elections, with Japarov elected as the new president, the introduction of a new constitution, and parliamentary elections. Militarized clashes between the Kyrgyz Republic and Tajikistan particularly characterized the foreign political sphere. This led the Kyrgyz Republic to close its borders with Tajikistan for goods and people. Additionally, Chinese borders remained closed due to the pandemic. Also, the government introduced an economic policy aimed at reducing the size of the vast informal sector, which presents a shift in the sphere of cross-border trade. When considering the above findings of the content analysis, the estimated decrease in public perception of political stability of -0.01 is surprisingly weak.

Similarly, the results of the content analysis of the BTI reports imply various shifts in the year 2022. The continuation of the border conflict between the Kyrgyz Republic and Tajikistan thus characterized the foreign political sphere. Also, the Chinese border closure due to the Covid-19 pandemic continued, which was then announced to be lifted in late 2022. Following the content analysis of the BTI country reports, the Russian invasion of Ukraine in February 2022 impacted various spheres. For instance, the domestic political sphere was affected by a "series of protests against Russia's invasion of Ukraine in front of the Russian embassy" in Bishkek (Bertelsmann Stiftung, 2024, p. 10). Lastly, the BTI Country Report 2024 states that the introduction of unified electronic fiscal accountability marks a significant shift in cross-border trade, leading to a notable decline in informal economic activity (Bertelsmann Stiftung, 2024). These results are equally reflected in the WGI data, which indicates a decrease in public perception of political stability by -0.08 compared to the previous year.

5.2. Part 1: Weakened Formal Enforcement Capacity

The first part of the hypothesized causal mechanism expects increased political instability to reduce formal enforcement capacity, as indicated by a higher level of corruption, reduced government effectiveness and a lack of regulatory enforcement. To test whether this part of the causal chain is present in the underlying case study of the Kyrgyz Republic, this research measures formal enforcement capacity along the following three dimensions: *1) government effectiveness, 2) rule of law* and *3) control of corruption*. Thereby, all three dimensions are measured along the estimated values of the WGI by the World Bank for the period from 2010 to 2022 for the Kyrgyz Republic (World Bank, 2024). The mean value[16] of these three dimensions serves as an estimate of formal enforcement capacity. Thereby, the estimated values for all dimensions range between -2.5 (weak) and 2.5 (strong) (World Bank, n.d.).

5.2.1. Results

Table 11 summarizes the estimated values for every year for each of the three dimensions: government effectiveness, rule of law and control of corruption and the mean[17] of each variable between 2010 and 2022. Furthermore, the table is complemented by the estimated values of formal enforcement capacity, determined by the mean of the three dimensions calculated by the author.

Table 11: Results of the Second Part of the Causal Mechanism

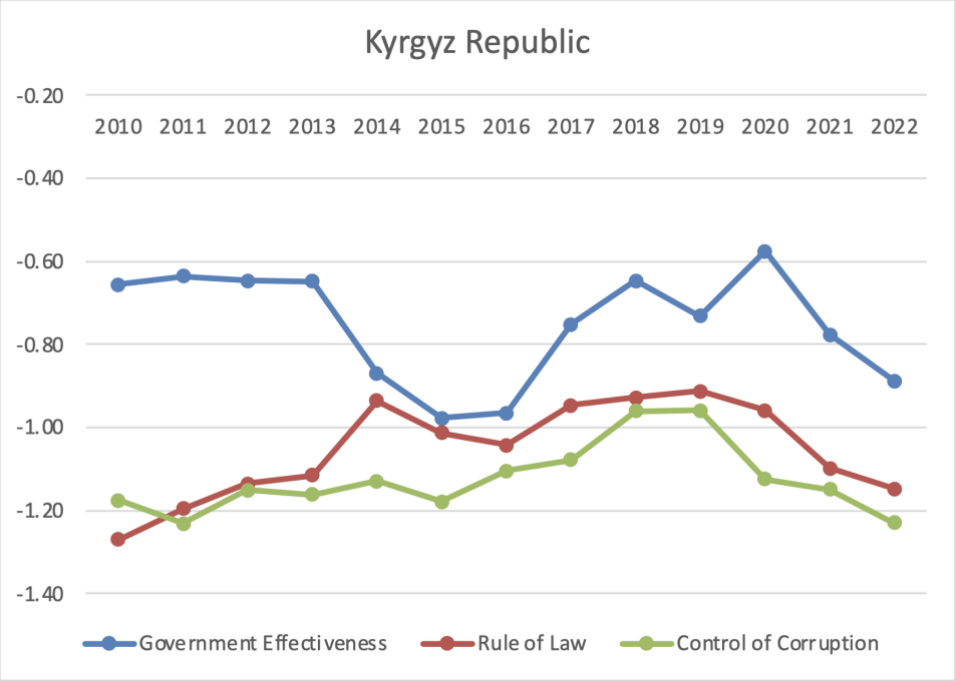
Kyrgyz Republic	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	mean
Government Effectiveness	-0.66	-0.64	-0.65	-0.65	-0.87	-0.98	-0.97	-0.75	-0.65	-0.73	-0.58	-0.78	-0.89	-0.75
Rule of Law	-1.27	-1.20	-1.13	-1.11	-0.94	-1.01	-1.04	-0.95	-0.93	-0.91	-0.96	-1.10	-1.15	-1.05
Control of Corruption	-1.18	-1.23	-1.15	-1.16	-1.13	-1.18	-1.10	-1.08	-0.96	-0.96	-1.12	-1.15	-1.23	-1.13
Formal Enforcement Capacity	-1.03	-1.02	-0.98	-0.98	-0.98	-1.06	-1.04	-0.93	-0.84	-0.87	-0.89	-1.01	-1.09	-0.99

Note. Compiled by author based on WGI dataset.

Figure 4 illustrates the estimated values of the three dimensions, also presented in Table 11, to facilitate analysis and comparison. Every dimension represents one of the three graphs.

[16] As calculated by the author
[17] As calculated by the author

Figure 4: Government Effectiveness, Rule of Law and Control of Corruption in the Kyrgyz Republic, 2010-2022



Note. Compiled by author based on WGI dataset.

The first dimension to measure formal enforcement capacity is *government effectiveness.* According to the mean of -0.75 for the period from 2010 to 2022, government effectiveness in the Kyrgyz Republic is publicly viewed as relatively weak. Thereby, the WGI data suggests that the government effectiveness of the Kyrgyz Republic ranges between its lowest value of -0.98 in 2015 and its highest value of -0.58 in 2020. Interestingly, the perception of government effectiveness between 2010 and 2013 was weak yet stable. This period of constant government effectiveness was followed by a substantial decline of -0.32 in the two succeeding years. Thereby, public perception of government effectiveness reached its weakest point in 2015, with -0.98. Remarkably, public perception of government effectiveness in the Kyrgyz Republic enhanced from 2016 until 2020 by a total of 0.40, resulting in a value of -0.58, thus the best moment of how government effectiveness was perceived. However, from 2020 to 2022, public perception of government effectiveness decreased significantly, with a total weakening of -0.31. In 2022, government effectiveness in the Kyrgyz Republic is publicly perceived as weak, with an estimated value of -0.89. In sum, government effectiveness in the Kyrgyz Republic was perceived as weakest in 2009, 2014 to 2016 and 2022, while its perception was strongest between 2010 and 2013 as well as in 2018 and 2020.

The second dimension to measure formal enforcement capacity is the *rule of law.* Between 2010 and 2022, the perception of the rule of law oscillated between -1.27 at its lowest in 2010 and -0.91 at its highest in 2019. Hence, following the WGI data, the rule of law in the Kyrgyz Republic was continuously perceived as weak, which is also reflected in the dimension's mean of -1.05. In the period between 2009 and 2014, the rule of law was publicly perceived as strengthening, with a total increase of 0.33 and reaching -0.94 in 2014. However, in 2015 and 2016, as well as from 2020 onwards, the perception of the rule of law deteriorated, with a decrease of -0.10 and -0.24, respectively. In contrast, it was fortified from 2016 to 2019, with an increase of 0.13, reaching its highest point in 2019 with a continuously low value of -0.91.

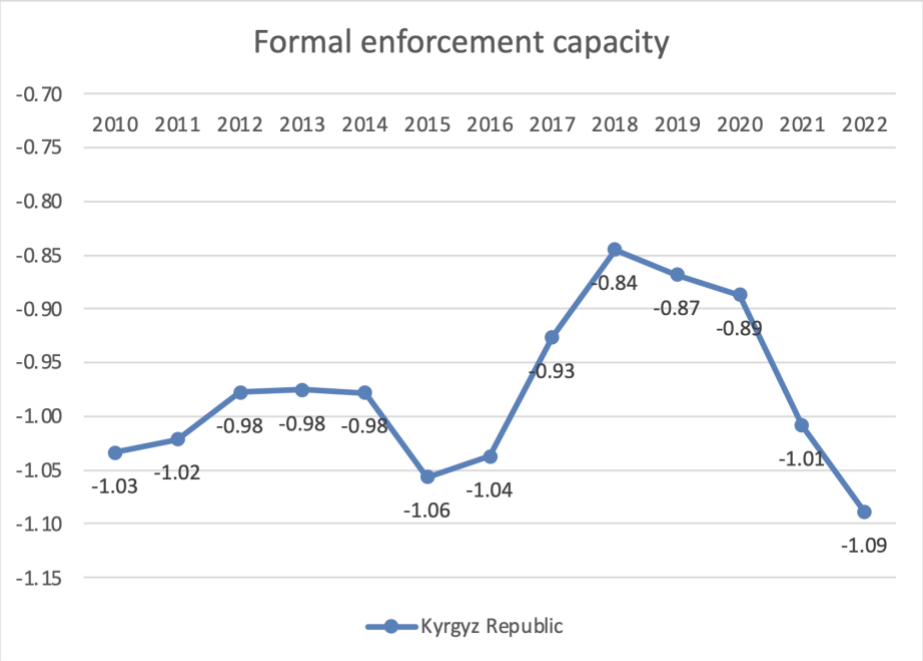
Control of Corruption is operationalized as the third dimension of formal enforcement capacity. Interestingly, the WGI data indicates that the control of corruption in the Kyrgyz Republic from 2010 to 2022 is perceived as weak, as its values span between its lows of -1.23 in 2011 and 2022 and its high of -0.96 in 2018 and 2019. The mean of -1.13 further reveals the weak control of corruption in the Kyrgyz Republic. Meanwhile, between 2009 and 2018, control of corruption was increasingly perceived as strengthening, with a total increase of 0.35, besides slight declines in 2011 and 2015 compared to the prior years. However, from 2019 to 2022, control of corruption weakened with a total of -0.27, and in 2022 even dropped as low as in 2011. Thus, the control of corruption in the Kyrgyz Republic was most robust in 2018 and 2019 and lowest in 2009, 2011 and 2022.

Hence, all three dimensions of formal enforcement capacity remained relatively constant or experienced a slight increase from 2010 to 2013. However, from 2013 (or 2014) onwards and again starting in 2019 (or 2020), all three dimensions faced a significant weakening. In contrast, all three dimensions were publicly perceived as strengthened considerably between 2016 and 2018.

Our analysis indicates that the intervening variable of formal enforcement capacity, which is constituted from the mean of the three dimensions as operationalized, remains weak throughout the period under examination, with a mean of -0.99 and values ranging between the lowest point in 2022 (-1.09) and the highest in 2018 (-0.84). Thereby, formal enforcement capacity slightly increased from 2010 to 2014. 2015, as well as the period from 2018 onwards, while it then weakened significantly, reaching its lowest point in 2022 with a value of -1.09. After its low in 2015, formal enforcement capacity increased by 0.22 until 2018, yet the

following significant decline of -0.25 from 2018 to 2022 has reserved its earlier progress. Figure 5 illustrates the development of formal enforcement capacity in the Kyrgyz Republic between 2010 and 2022.

Figure 5: Formal Enforcement Capacity in the Kyrgyz Republic, 2010-2022



Note. Compiled by author's calculations based on WGI dataset.

5.2.2. Discussion

The first part of the theorized causal mechanism and hypothesis H1.1. postulate that increased political stability reduces formal enforcement capacity, indicated by higher corruption, decreased government effectiveness, and weakened regulatory enforcement. To assess whether the first part of the expected causal mechanism, namely hypothesis H1.1. can be validated, the chronological estimated values of formal enforcement capacity are compared with the ones of political stability. These are summarized in the first two columns of Table 12.

Table 12: Political Stability, Formal Enforcement Capacity and Regulatory Quality in the Kyrgyz Republic, 2010-2022

Year	Political Stability*	Formal Enforcement Capacity*	Regulatory Quality**
2010	-1.04 (-0.42)	-1.03 (+0.17)	-0.26 (+0.07)
2011	-1.10 (-0.06)	-1.02 (+0.01)	-0.22 (+0.04)
2012	-0.91 (+0.19)	-0.98 (+0.04)	-0.34 (-0.12)
2013	-0.91 (0.00)	-0.98 (0.00)	-0.33 (+0.01)
2014	-0.80 (+0.11)	-0.98 (0.00)	-0.45 (-0.12)
2015	-0.88 (-0.08)	-1.06 (-0.08)	-0.54 (-0.09)
2016	-0.65 (+0.23)	-1.04 (+0.02)	-0.39 (+0.15)
2017	-0.36 (+0.29)	-0.93 (+0.11)	-0.38 (+0.01)
2018	-0.53 (-0.17)	-0.84 (+0.09)	-0.40 (-0.02)
2019	-0.27 (+0.26)	-0.87 (-0.03)	-0.39 (+0.01)
2020	-0.46 (-0.19)	-0.89 (-0.02)	-0.45 (-0.06)
2021	-0.47 (-0.01)	-1.01 (-0.12)	-0.63 (-0.18)
2022	-0.55 (-0.08)	-1.09 (-0.08)	-0.63 (0.00)

* Estimated values range from -2.5 (weak) to 2.5 (strong). In brackets () annual change in estimated value**

** author's calculations

Note. Compiled by author based on WGI dataset.

As theorized, the first part of the causal mechanism is validated by the findings of the years 2015 and 2020 to 2022, as political instability increased - and as predicted by the causal mechanism - formal enforcement capacity decreased. More concretely, the findings of the content analysis of the BTI reports imply that political stability in the Kyrgyz Republic in 2015 was affected by shifts in the domestic political sphere, namely parliamentary elections, and most importantly, a significant change in the realm of cross-border trade due to the accession of the Kyrgyz Republic to the EAEU. While public perception of political stability weakened by -0.08, the same development can be observed for formal enforcement capacity.

Likewise, from 2020 onwards, political stability was increasingly perceived as eroding, with a total decrease of -0.28 in 2022 compared with 2019. This development is equally reflected in the findings of the content analysis of the BTI reports, which suggests various shifts in all three spheres of domestic (such as large-scale protests, elections, new constitutions) and foreign politics (such as the Covid-19 pandemic, border closures, militarized clashes with Tajikistan, Russian invasion of Ukraine), as well as cross-border trade (for more details, see Table 10). Thus, while political instability increased, formal enforcement capacity decreased

simultaneously by a total of -0.22 in 2022 compared with 2019. As hypothesized, our findings suggest that increased political stability led to decreased formal enforcement capacity in 2015 and from 2020 onwards, indicated by a weakening in all three operationalized dimensions, namely government effectiveness, rule of law and control of corruption.

Interestingly, the comparison of the data for 2012, 2013, 2014, 2016, and 2017 suggests that the Kyrgyz Republic politically stabilized, and formal enforcement capacity stayed constant or increased. However, for 2010, 2011, and 2018, the theorized causal mechanism and hypothesis H1.1. have not been confirmed since political instability grew, yet formal enforcement capacity strengthened. Also, in 2019, the causal mechanism did not take place as expected, as formal enforcement capacity weakened, even though political stability increased. Thus, future research needs to assess which other factors influenced formal enforcement capacity in the Kyrgyz Republic in these years specifically.

5.3. Part 2: Creation of Regulatory Gaps

To examine whether weakened formal enforcement capacity caused by political instability prompts the creation of regulatory gaps, as theorized in the second part of the causal mechanism and in hypothesis H1.2., the regulatory quality of the Kyrgyz Republic as measured by the WGI is analysed. This chapter first presents the results and then proceeds to examine them.

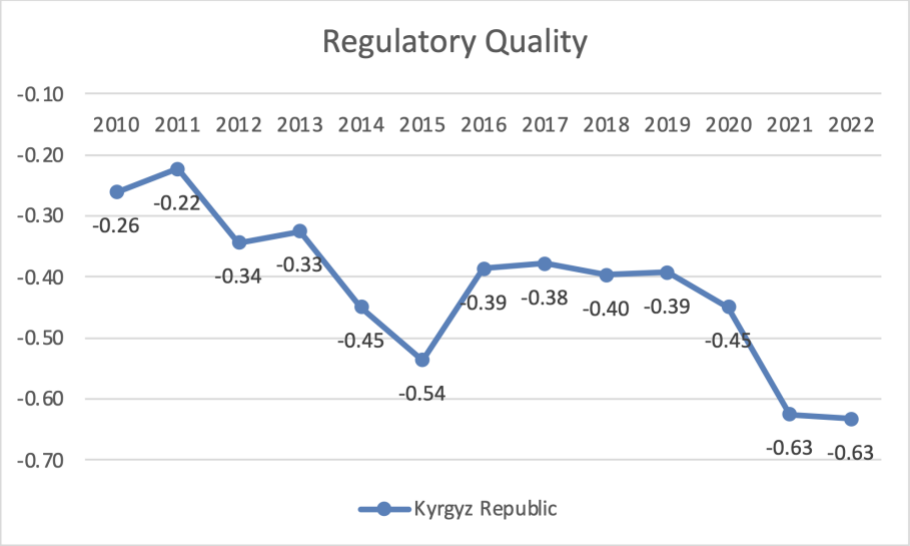
5.3.1. Results

Following the WGI data, regulatory quality in the Kyrgyz Republic evolved between 2010 and 2022, as summarized in Table 13. Like the other dimensions of the WGI, regulatory quality is also estimated for values ranging between -2.5, weak, and 2.5, strong (World Bank, 2024). Figure 6 illustrates the data of the WGI in a chronological graph to facilitate analysis. Table 13: Regulatory Quality in the Kyrgyz Republic, 2010-2022

Regulatory Quality	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	mean
Kyrgyz Republic	-0.26	-0.22	-0.34	-0.33	-0.45	-0.54	-0.39	-0.38	-0.40	-0.39	-0.45	-0.63	-0.63	-0.42

Note. Compiled by author based on WGI dataset.

Figure 6: Regulatory Quality in the Kyrgyz Republic, 2010-2022



Note. Compiled by author based on WGI dataset.

The calculated mean of -0.42 implies that the public viewed regulatory quality in the Kyrgyz Republic as relatively weak from 2010 to 2022. The data and Figure 6 suggest that the perception of regulatory quality in the Kyrgyz Republic ranges between -0.22 (in 2011) at its highest and -0.63 (in 2021 and 2022) at its lowest. Thereby, the perception of regulatory quality was reduced in 2012, 2014, 2015, 2018, 2020 and 2021 compared to the prior year. Interestingly, regulatory quality weakened significantly between 2011 and 2015, with a total of -0.32. In contrast, from 2016 to 2019, public perception of regulatory quality remained remarkably stable, then weakening again between 2019 and 2022, with a total decline of -0.24.

5.3.2. Discussion

For the first part of its causal mechanism, this study hypothesises that increasing political instability weakens formal enforcement capacity. As presented in greater detail in Chapter 5.2.2., this research found partial evidence for this theorized mechanism, particularly for 2012 to 2017 and 2020 to 2022. The second part of the hypothesized causal mechanism expects that weakened formal enforcement capacity creates regulatory gaps, and thus, regulatory quality is reduced. A partial validation can be observed while comparing the values of formal enforcement capacity with regulatory quality over the period from 2010 to 2022. To facilitate this comparative analysis, the estimated values of the three variables are summarized in Table 12. Furthermore, the shift compared to the previous year is stated in brackets.

In brief, the comparative analysis indicates that political stability and formal enforcement capacity decreased in 2015. As expected by the theorized causal mechanism, regulatory quality also decreased. As the content analysis of the BTI country reports has shown, the year 2015 was characterized by parliamentary elections as well as the accession of the Kyrgyz Republic to the EAEU. Thus, for the year 2015, the first two parts of the theorized causal mechanism are validated. Similarly, for the years 2020, 2021 and 2022, the findings validate the hypotheses H1.1. and H1.2. In the period between 2020 and 2022, political instability increases and as predicted, formal enforcement capacity weakens and reduces regulatory quality, which suggests the creation of regulatory gaps. However, in 2022, the decrease in regulatory quality is extremely minimal, with -0.0074. Also, in 2016 and 2017, all three variables experienced a rise.

That being said, the hypothesized causal mechanism is not present as expected for some of the years under review. For instance, 2010 and 2011 are characterized by a decrease in political stability, yet formal enforcement capacity and regulatory quality increase rather than decrease. Similarly, in 2012 and 2018, regulatory quality declined while formal enforcement capacity rose. Such findings suggest additional factors influencing regulatory quality, which future research needs to assess.

5.4. Dependent Variable: Informal Trade Volume

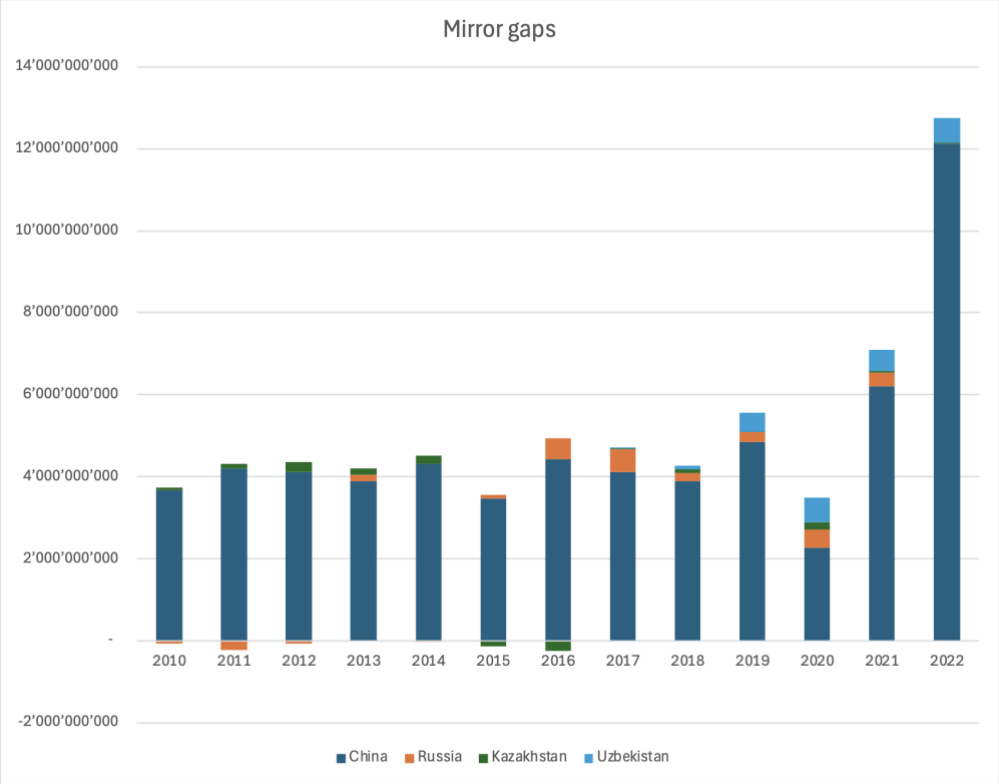
This study hypothesizes that a rise in the volume of informal cross-border trade of the Kyrgyz Republic results from increased political instability, which weakens formal enforcement capacity and creates regulatory gaps. This would then lead to a rise in informal governance mechanisms such as informal cross-border trade. To test whether the theorized causal mechanism is present, this chapter reveals the findings of the mirror statistics analysis of the imports and exports of the Kyrgyz Republic with the following trade partners: Rest of the World (ROW), China, Russia, Kazakhstan and Uzbekistan. The complete data on which the findings are based is depicted in Tables A.1. to A.6., available in the appendix and online[18]. This chapter starts by presenting the findings of Kyrgyz imports and, subsequently, turns towards Kyrgyz exports before discussing the results.

[18] Available under https://www.dropbox.com/scl/fi/fnke1pg7yrzkku5o2xahc/Knobel_MAmirrorstat.xlsx?rlkey=643i5dasqxwhxb7qieg320l0e&st=l87w484k&dl=0

5.4.1. Results

Tables A.1., A.2. and A.3., available in the appendix, present the complete data of Kyrgyz official imports and mirror imports[19] of the five trade partners (ROW, China, Russia, Kazakhstan and Uzbekistan). Figure 7 demonstrates how the mirror gap of Kyrgyz imports of *all commodities* of its four main trading partners over the period 2010 to 2022 developed.

Figure 7: Mirror Gaps of Kyrgyz Imports of All Commodities, 2010-2022



Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

Interestingly, the mirror gap between the four trade partners remained relatively stable from 2010 to 2019, except for a decline in 2015 and a subsequent increase in 2016. However, particularly the mirror trade gap of imports from China experienced a substantial decrease in 2020, growing significantly in 2021 and 2022. Overall, the annual change of the total mirror gap of Kyrgyz imports of *all commodities* from its four partners under investigation[20] was

[19] Reported exports by trade partners
[20] China, Russia, Kazakhstan and Uzbekistan

positive in 2011, 2012, 2014, 2016, 2019, 2021 and 2022. In contrast, 2010, 2013, 2015, 2018 and 2020 were characterized by a decrease.

As summarized in Tables A.1., A.2. and A.3. in the appendix, the mirror gap of Kyrgyz imports of *all commodities* from ROW compared to the annual Kyrgyz GDP ranges between 51% and 106%, except for 2020, when it only accounted for 27.5% of Kyrgyzstan's GDP. This indicates the potentially high level of informal cross-border trade and its significance for the Kyrgyz economy.

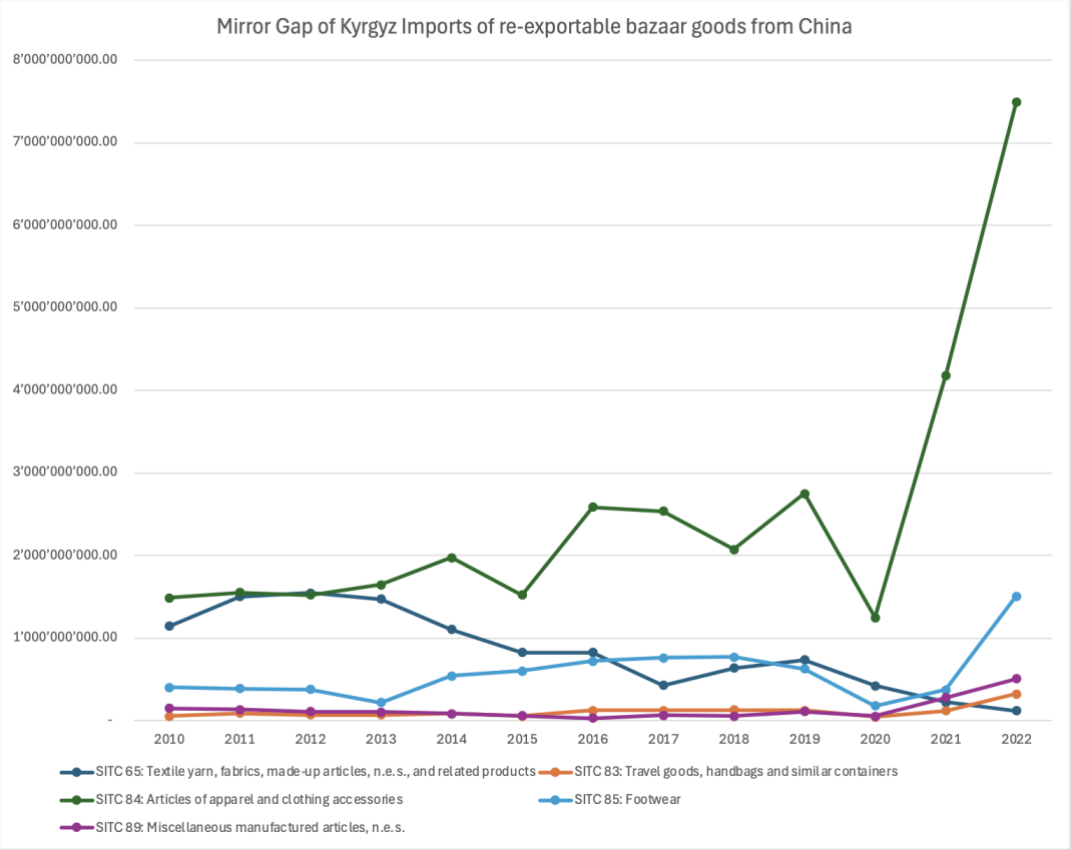
As Table A.1., displayed in the appendix, illustrates, the mirror gap of Kyrgyz imports of *all commodities* from China exceeded 90% of the total mirror gap from the ROW between 2010 and 2016 and again in 2022. It accounted for more than 70% between 2017 and 2021, respectively, with a notable drop to 50% in 2020. When assessing Kyrgyz imports of *bazaar-traded goods* from 2010 to 2022, the mirror gap of imports from China accounted for more than 90%, with a one-time low in 2020 of 80.2% of the mirror gap of imports of *bazaar-traded goods* from the ROW. The mirror gap of Kyrgyz imports of China of *bazaar-traded goods* also represented more than 83% of the total mirror gap of *all commodities* with the ROW between 2010 and 2016 and more than 69% between 2017 and 2022, with a low of 40% in 2020. Similarly, the mirror gap of Kyrgyz imports of *re-exportable bazaar goods* from China accounted for more than 92% from 2010 to 2022, with two lows in 2020 (78%) and 2021 (86.7%) of the total mirror gap of Kyrgyz imports. The mirror gap of Kyrgyz imports from China of *re-exportable bazaar goods* was similarly high, with more than 85% of the total mirror gap of *all commodities* of imports from ROW between 2010 and 2016 and more than 43% between 2017 and 2022.

The above findings underline the importance of Kyrgyz imports from China, specifically when assessing informal cross-border trade. Therefore, the following analysis of Kyrgyz imports focuses on its imports from China. However, the complete results of the analysis for all trade partners examined are presented in Tables A.1, A.2 and A.3, which are available in the appendix. China's share in the mirror import gap of the Kyrgyz Republic is further underlined when comparing it with the mirror gaps of the other trade partners included in this analysis. The share of mirror gaps of Kyrgyz imports of bazaar-traded goods and re-exportable bazaar goods from Russia and Kazakhstan stayed below 1% of the total mirror gap with the ROW between 2010 and 2022. The share of the mirror gap of Kyrgyz imports of bazaar-traded goods from

Uzbekistan remained below 7% between 2017 and 2022. However, in 2020, it reached its highest point at 12.1%.

Figure 8 illustrates the results of the mirror statistics analysis of Kyrgyz imports of *re-exportable bazaar goods* from China. Interestingly, SITC 84 and 65 were the main drivers for the mirror import gap from 2010 to 2016. After 2016, the goods classified as SITC 65 decreased their contribution to the mirror gap of Kyrgyz imports, while goods with SITC 85 classification contributed more to the mirror gap. Overall, the mirror gap of SITC 84 classified goods grew considerably in 2021 and 2022, constituting the most significant share of the mirror gap, followed by SITC 85.

Figure 8: Mirror Gap of Kyrgyz Imports of Re-Exportable Bazaar Goods from China, 2010-2022

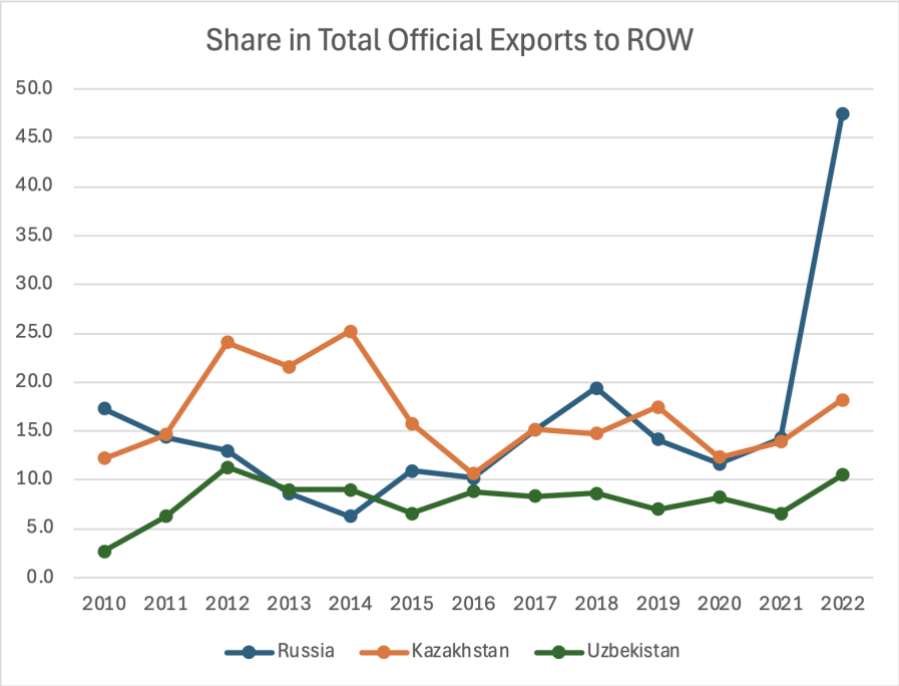


Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

Interestingly, in contrast to China's relevance as a trade partner when assessing Kyrgyz imports, China does not take on this position when calculating Kyrgyz exports between 2010 and 2022. This is reflected in the share of official Kyrgyz exports to China in total official

Kyrgyz exports to the ROW. Thus, between 2010 and 2022, Kyrgyz exports to China constitute only between 1.8% (in 2014) and 5.6% (in 2016) of total Kyrgyz exports to the ROW. Therefore, the following analysis focuses on Kyrgyz exports to the other three trade partners included in the analysis, namely Russia, Kazakhstan and Uzbekistan. Russia accounts for between 6.3% and 47.4%, Kazakhstan between 10.6% and 25.2%, and Uzbekistan between 2.7% and 11.3% of total Kyrgyz exports of *all commodities* to the ROW. Figure 9 illustrates how the share of Kyrgyz exports to these three trade partners in total Kyrgyz exports to the ROW have developed. The comprehensive data is available in Tables A.4., A.5. and A.6. in the appendix.

Figure 9: Share in Total Official Exports to ROW, 2010-2022

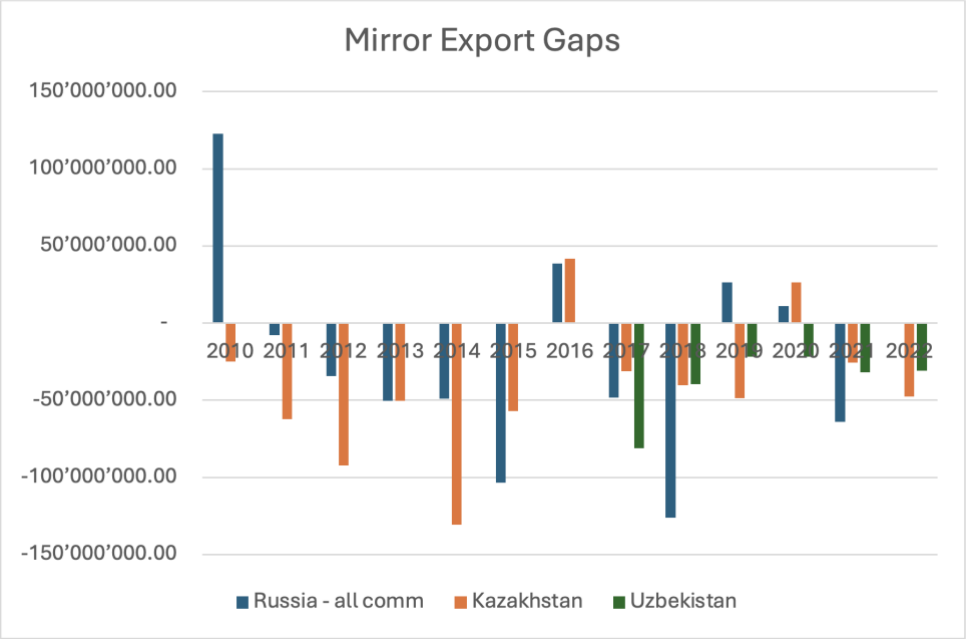


Note. Compiled by author. Author's calculation based on trade data from UN Comtrade.

The mirror export gap of Kyrgyz exports of *all commodities* to its key trade partners is illustrated in Figure 10. Thus, from 2010 to 2022, the mirror gap was negative for Russia, with the exception of 2010, 2016, 2019, and 2020. Similarly, for Kazakhstan, mirror export gaps are negative, excluding for 2016 and 2020. Uzbekistan, for which trade data is only fully available after 2017, has a negative mirror export gap for Kyrgyz exports during the whole period under examination. A negative mirror export gap suggests that officially reported Kyrgyz exports to its partner countries are higher than the reported imports by the partner countries from the

Kyrgyz Republic. It is essential to note that Russia and Kazakhstan are also member states of the EAEU, a customs union that the Kyrgyz Republic joined in 2015. With Kyrgyzstan's accession to the EAEU, internal border controls were de-established. Due to the limited informative value of the mirror export gaps, this analysis focuses on the development of official Kyrgyz export patterns in parallel to the evolution of mirror imports from China.

Figure 10: Mirror Export Gaps of All Commodities, 2010-2022



Note. Compiled by author. Author's calculation based on trade data from UN Comtrade.

Looking at the evolution of official Kyrgyz exports in parallel to Chinese mirror imports[21] provides a fascinating insight into the evolution of (informal) cross-border trade patterns. First, mirror imports of all three types of goods[22] from China to the Kyrgyz Republic, illustrated in Figure 11, developed relatively similarly to official Kyrgyz exports to Russia and Kazakhstan after 2014. Figure 12 depicts how official Kyrgyz exports of bazaar-traded goods to Russia, Kazakhstan and Uzbekistan developed between 2010 and 2022.

The most significant change in mirror imports from China to the Kyrgyz Republic is the decline in 2015 and 2020, the increase in 2016 and, most importantly, in 2021 and 2022. Comparably, Kyrgyz official exports of *bazaar-traded goods* to Russia, Kazakhstan and

[21] Chinese mirror imports represent China's reported exports to the Kyrgyz Republic.
[22] *All commodities*, *bazaar-trade goods* and *re-exportable bazaar goods*

Uzbekistan also decreased in 2015 and 2020. In 2016, 2021 and 2022, mirror imports of *bazaar-traded goods* from China increased, and official Kyrgyz exports to Russia, Kazakhstan, and Uzbekistan of the same goods also rose, except for Kyrgyz exports to Kazakhstan in 2016.

Figure 11: Mirror Imports from China to the Kyrgyz Republic, 2010-2022

Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

Figure 12: Official Kyrgyz Exports of Bazaar-Traded Goods, 2010-2022

Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

5.4.2. Discussion

The causal mechanism and hypothesis H1 predicted that shifts in the political sphere lead to higher political instability and weaken formal enforcement capacity, then fuelling the creation of regulatory gaps. As a result, an increase in the mirror trade gap, indicating an increase in the volume of informal cross-border trade, is expected. The findings of this research partially validate this mechanism. According to the findings of the analysis of the previous parts of the causal mechanism, an increase in informal cross-border trade is expected in 2015 and from 2020 onwards.

As presented, China is the most crucial trade partner when assessing informal cross-border trade of Kyrgyz imports. In contrast to hypotheses H1 and H1.3, the mirror trade gap of Kyrgyz imports from China for all three types of commodity groups shrunk in 2015 and 2020 despite increased political stability and weakened formal enforcement capacity and regulatory quality. The results of the content analysis provide possible explanations for why the hypothesized causal mechanism did not unfold as expected. The decrease in the mirror gap in 2015 corresponds to insights from the BTI country report of 2016, which states that "China's economic presence in Kyrgyzstan has grown vastly in recent years, but the future of this relationship is uncertain in light of Kyrgyzstan's EEU accession" (Bertelsmann Stiftung, 2016, p. 3). Therefore, not only has the mirror gap decreased by 837 million USD, but also China's officially reported exports of *all commodities* to the Kyrgyz Republic decreased by 1.008 billion USD.

Similarly, against expectations, the mirror gap of Kyrgyz imports from China for all three categories of commodities decreased significantly in 2020 despite increased political instability, deteriorated formal enforcement capacity and regulatory quality. The content analysis again proposes suggestions for this unexpected decrease in potential informal cross-border trade, as approximated by the mirror trade gap. Therefore, the findings of the content analysis of the BTI country reports indicate a strong weakening effect of the Covid-19 pandemic on the economy. The BTI country report of 2024 mentions, for instance, China's closure of its borders with the Kyrgyz Republic due to the Covid-19 pandemic (Bertelsmann Stiftung, 2024). This border closure might partly explain the decrease in potential informal cross-border trade. The reduction in official Chinese exports to the Kyrgyz Republic by 3.586 billion USD and the mirror trade gap of 2.587 billion in 2020 was substantial.

Nonetheless, the findings suggest that the hypotheses H1 and H1.3. can be confirmed for Kyrgyz imports from China for the years 2021 and 2022. In 2021 and 2020, political instability increased, and formal enforcement capacity and regulatory quality weakened. As hypothesized, the mirror trade gap of Kyrgyz imports from China, and, thus, also potential informal cross-border trade increased significantly. More concretely, it accounts for 75.6% of the total trade gap of the Kyrgyz Republic, with the ROW in 2021 and 94.9% in 2022. The mirror trade gap of Kyrgyz imports from China multiplied 2.7 times in 2021 and doubled in 2022 compared to the previous year. Thus, all parts of the hypothesized causal mechanism are confirmed for these two years.

Similarly, the results of the mirror statistics approach of Kyrgyz exports to Russia, Kazakhstan and Uzbekistan partly validate the hypothesized causal mechanism, which predicts an increase in informal cross-border trade in 2015 and from 2020 onwards. When assessing the mirror export gaps, hypotheses H1 and H1.3 are confirmed for Kyrgyz exports of *all commodities* for Russia and Kazakhstan in 2020. According to the content analysis of the BTI reports, 2020 faced various shifts in Kyrgyzstan's domestic (protests, forced political turnover, parliamentary elections) and foreign (Covid-19 pandemic, Chinese border closure) politics, leading to increased political instability, weakened formal enforcement capacity and decreased regulatory quality. The mirror export gaps of Kyrgyz exports to Russia in 2010 and to Russia and Kazakhstan in 2016 are also positive and, thus, could suggest an underreporting of Kyrgyz exports. However, in these two years, the causal mechanism is not validated. This is the case, as except for decreased political stability in 2010, the other parts of the theorized causal mechanism cannot be observed.

According to the author's calculation based on trade data from UN Comtrade, the mirror gaps in Kyrgyz exports to Russia, Kazakhstan, and Uzbekistan remain negative for most of the years between 2010 and 2022. Hence, the theorized causal mechanism is not validated in 2015, 2021 and 2022. This negative mirror export gap insinuates an underreporting, or informal entering, of imports by Kyrgyzstan's trade partners. Thereby, a share of the negative mirror export gap could be explained by goods re-exported to third countries and thus reported in Kyrgyzstan's export statistics yet undocumented in its trade partners' import statistics.

5.5. Limitations

This research is characterized by various limitations, mainly due to the limited temporal scope of the project. These limitations are methodological and contextual and are also reinforced by data-related constraints. Most importantly, a potential researcher bias influencing the entire research process cannot be excluded. As the role of the Kyrgyz Republic in informal trade is unique due to the reasons highlighted in the literature review, the results of this study do not apply to different post-Soviet states nor countries with varying political and/or economic structures. Also, the findings of this research are constrained by the data source, which is entirely based on secondary data. This is further reinforced by limited data availability, as data on UN Comtrade for Uzbek-Kyrgyz trade is only fully available from 2017 onwards, and for Russian-Kyrgyz trade only until 2021.

Additionally, the theoretical framework based on institutionalist theory and the everyday-governance framework allows the inclusion of both bottom and top actors in the causal mechanism. However, this theoretical framework may overlook additional factors influencing informal trade. The study demonstrates a correlation between political instability and informal trade. However, due to the potential presence of confounding variables, this research project is impeded by its difficulties in establishing direct causation between the independent and dependent variables. More concretely, internal validity is limited as it is probable that other factors, such as global market trends or the introduction of new laws excluded in this research, also influence informal trade patterns. Due to the interwovenness of informal trade in various elements, such as political instability, but also social and cultural dynamics, and economic background, it is challenging to completely rule out the impact of other potentially intervening variables on the volume of informal trade. This is also reflected in the fact that the predicted causal mechanism and the derived hypotheses can only partially be validated. Thus, future research needs to assess what other factors influence the hypothesized causal mechanism.

6. Conclusion

This research sought to analyse how shifts in the political arena affected informal cross-border trade of the Kyrgyz Republic between 2010 and 2022, focusing on the country's total trade volumes, and more specifically the trade volumes with China, Russia, Kazakhstan, and Uzbekistan. This study aimed to test whether the theorized causal mechanism based on institutionalist theory and the everyday governance framework is present and unfolds as expected. The causal mechanism hypothesized an increase in the volume of informal cross-border trade due to the shifts in the political landscape, further leading to a rise in political instability, reducing formal enforcement capacity and, thus, creating regulatory gaps.

Our findings have shown that the theorized causal mechanism can partially be confirmed for informal cross-border trade of the Kyrgyz Republic between 2010 and 2022. As expected, the years characterized by main shifts in the spheres of domestic and foreign politics, as well as cross-border trade of the Kyrgyz Republic, did, except for 2017, lead to increased political instability. Although most of the years experienced a rise in political instability and reduced formal enforcement capacity, this was not the case in 2018 and 2019. Also, the formal enforcement capacity faced a decrease despite increased political stability. Hence, hypothesis H1.1. is partially validated. Similarly, hypothesis H1.2., which expects the creation of regulatory gaps as a result of weakened formal enforcement capacity caused by political instability, is also partially confirmed due to the outliers of 2012, 2013 and 2018.

Furthermore, hypotheses H1 and H1.3., which expect an increase in informal cross-border trade due to regulatory gaps caused by increased political stability and reduced formal enforcement capacity, are only partially validated. For instance, an increase in the mirror gap of Kyrgyz imports from China, suggesting an increase in the volume of the informal-cross border, can be observed in the politically unstable years of 2021 and 2022, characterized by weakened formal enforcement capacity and regulatory quality. However, this is not the case for the years 2015 and 2020, despite the increased political instability, reduced formal enforcement capacity and regulatory quality. China officially reported exports to the Kyrgyz Republic dropped in 2015 and 2020, possibly due to the Kyrgyz accession to the EAEU and/or the Covid-19 pandemic along with the border closure. These events might account for the decrease in the mirror gaps. In contrast, trade gaps of Kyrgyz exports to Russia, Kazakhstan and Uzbekistan

do not provide meaningful assumptions about informal cross-border trade due to the EAEU membership of the Kyrgyz Republic and two of its main trade partners, Russia and Kazakhstan, establishing a customs union among its members. Yet, analysis has suggested that official Kyrgyz exports to Russia and Kazakhstan have developed comparably to its mirror imports from China since 2015.

Possible explanations for the partial validation of the theorized causal mechanism might be the presence of confounding variables impacting the causal relationship, thus leading to alternative mechanisms unfolding between the dependent and independent variables. Additionally, it can be assumed that economic or cultural factors also affect political stability and, consequently, informal cross-border trade.

Various additional limitations have already been developed in the respective chapters. First, as this research employed only secondary data and a limited number of sources to analyse whether the causal mechanism is present, future research needs to include additional sources and primary data to comprehensively investigate how political instability impacts informal cross-border trade of Kyrgyzstan. A deeper assessment of political shifts in the partner countries remains necessary. Also, the content analysis has considered whether shifts were present in one of the three dimensions under investigation. However, future research needs to assess how the nature of a shift impacts political instability. It can be expected that positively viewed political shifts impact political instability and informal cross-border trade differently than shifts which are perceived negatively. Based on the shortcomings of this research project, future studies could further gain insights from analysing how the nature of informal trade adapts or changes in politically unstable times and how re-export patterns of the Kyrgyz Republic evolve under the presence of political shifts.

Nevertheless, this study contributed to the existing scholarly literature by shedding some light on the impact of shifts in the political landscape on the informal cross-border trade of the Kyrgyz Republic. Thereby, the findings of this research partly challenge the institutionalist theory and the everyday governance framework, as formal enforcement capacity did not decrease due to increased political instability in all years under examination. Additionally, the findings of some of the years under examination reveal that regulatory quality decreased in years characterized by decreased political stability and formal enforcement capacity. Yet this

development was also observable in certain years characterized by strengthened political stability.

The findings of this research encompass practical relevance, as they indicate how informal cross-border trade depends on political instability, formal enforcement capacity and regulatory quality. Thus, it guides policymakers in recognizing possible motors of informal cross-border trade. Overall, this research highlights the significance of studying informal cross-border trade in transitional contexts and contributes to the understanding of informality by emphasizing the importance of assessing how changes in the political sphere affect informal cross-border trade.

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8. Appendix[23]

[23] All tables are also available online under the following link: https://www.dropbox.com/scl/fi/fnke1pg7yrzkku5o2xahc/Knobel_MAmirrorstat.xlsx?rlkey=643i5dasqxwhxb7qieg320l0e&st=l87w484k&dl=0

Table A. 1. Kyrgyz Mirror Imports of All Commodities (Appendix)

Year	Country	Mirror imports (reported exports by partner, FOB, in USD)	Official imports (CIF, in USD)	CIF adjustment (5%)	Adjusted mirror imports (CIF, in USD)	Mirror import gap (mirror imports - official imports, in USD)	GDP (current USD)	Mirror gap as % of GDP	Mirror imports to official imports ratio	Annual change in mirror imports (FOB, in USD)	Annual change in mirror import gap (in USD)	Share in total mirror import gap of ROW (in %)
2009	World	7'354'499'821.62	2'973'866'766	0.05	7'722'224'812.70	4'748'358'046.70	4'690'061'381	101.2	2.6			100.0
2010	World	6'470'016'654.33	3'222'635'177	0.05	6'793'517'487.04	3'570'882'310.04	4'794'361'863	74.5	2.1	-884'483'167	-1'177'475'737	100.0
2011	World	8'140'246'078.74	4'260'687'274	0.05	8'547'258'382.68	4'286'571'108.68	6'197'765'984	69.2	2.0	1'670'229'424	715'688'799	100.0
2012	World	9'143'693'064.05	5'373'176'213	0.05	9'600'877'717.25	4'227'701'504.25	6'605'142'884	64.0	1.8	1'003'446'985	-58'869'604	100.0
2013	World	9'562'894'147.02	5'983'024'298	0.05	10'041'038'854.37	4'058'014'556.37	7'335'033'801	55.3	1.7	419'201'083	-169'686'948	100.0
2014	World	9'568'063'714.90	5'681'474'037	0.05	10'046'466'900.65	4'364'992'863.65	7'468'102'413	58.4	1.8	5'169'568	306'978'307	100.0
2015	World	7'130'581'105.78	4'068'083'799	0.05	7'487'110'161.07	3'419'026'362.07	6'678'177'512	51.2	1.8	-2'437'482'609	-945'966'502	100.0
2016	World	8'169'253'514.55	3'844'473'299	0.05	8'577'716'190.28	4'733'242'891.28	6'813'095'379	69.5	2.2	1'038'672'409	1'314'216'529	100.0
2017	World	9'104'247'555.33	4'487'291'617	0.05	9'559'459'933.09	5'072'168'316.09	7'702'938'379	65.8	2.1	934'994'041	338'925'425	100.0
2018	World	10'272'259'114.60	5'291'945'776	0.05	10'785'872'070.33	5'493'926'294.33	8'271'106'235	66.4	2.0	1'168'011'559	421'757'978	100.0
2019	World	11'347'389'647.89	4'988'946'048	0.05	11'914'759'130.28	6'925'813'082.28	9'371'275'264	73.9	2.4	1'075'130'533	1'431'886'788	100.0
2020	World	7'541'790'824.07	3'386'672'664	0.05	7'918'880'365.27	4'532'207'701.27	8'270'468'614	54.8	2.3	-3'805'598'824	-2'393'605'381	100.0
2021	World	13'117'516'753.94	5'580'186'463	0.05	13'773'392'591.63	8'193'206'128.63	9'249'133'946	88.6	2.5	5'575'725'930	3'660'998'427	100.0
2022	World	21'507'090'870.64	9'802'959'420	0.05	22'582'445'414.17	12'779'485'994.17	12'134'931'018	105.3	2.3	8'389'574'117	4'586'279'866	100.0
2009	Total 4 CA	6'534'017'928	2'096'481'912	0.05	6'860'718'824.40	4'878'659'750.40	4'690'061'381	104.0	3.3			102.7
2010	Total 4 CA	5'527'144'333	2'229'475'959	0.05	5'803'501'549.65	3'667'857'816.65	4'794'361'863	76.5	2.6	-1'006'873'595	-1'210'801'934	102.7
2011	Total 4 CA	6'542'547'401	2'848'288'111	0.05	6'869'674'771.05	4'105'700'178.05	6'197'765'984	66.2	2.4	1'015'403'068	437'842'361	95.8
2012	Total 4 CA	7'431'543'135	3'576'750'857	0.05	7'803'120'291.75	4'289'523'270.75	6'605'142'884	64.9	2.2	888'995'734	183'823'093	101.5
2013	Total 4 CA	7'779'949'516	4'073'920'988	0.05	8'168'946'991.80	4'192'635'818.80	7'335'033'801	57.2	2.0	348'406'381	-96'887'452	103.3
2014	Total 4 CA	7'684'166'679	3'680'292'966	0.05	8'068'375'012.95	4'494'598'052.95	7'468'102'413	60.2	2.2	-95'782'837	301'962'234	103.0
2015	Total 4 CA	6'089'257'830	3'037'379'113	0.05	6'393'720'721.50	3'415'560'839.50	6'678'177'512	51.1	2.1	-1'594'908'849	-1'079'037'213	99.9
2016	Total 4 CA	7'227'409'175	2'970'093'378	0.05	7'588'779'633.75	4'688'452'985.75	6'813'095'379	68.8	2.6	1'138'151'345	1'272'892'146	99.1
2017	Total 4 CA	7'721'476'647	3'410'098'033	0.05	8'107'550'479.35	4'697'452'446.35	7'702'938'379	61.0	2.4	494'067'472	8'999'461	92.6
2018	Total 4 CA	8'100'244'608	4'233'657'907	0.05	8'505'256'838.40	4'271'598'931.40	8'271'106'235	51.6	2.0	378'767'961	-425'853'515	77.8
2019	Total 4 CA	9'098'499'437	3'989'477'065	0.05	9'553'424'408.85	5'563'947'343.85	9'371'275'264	59.4	2.4	998'254'829	1'292'348'412	80.3
2020	Total 4 CA	5'657'492'205	2'449'849'142	0.05	5'940'366'815.27	3'490'517'673.27	8'270'468'614	42.2	2.4	-3'441'007'232	-2'073'429'671	77.0
2021	Total 4 CA	10'896'418'021	4'347'093'486	0.05	11'441'238'921.83	7'094'145'435.83	9'249'133'946	76.7	2.6	5'238'925'816	3'603'627'763	86.6
2022	Total 4 CA	17'093'448'965	7'605'106'820	0.05	17'948'121'413.25	12'748'018'916.25	12'134'931'018	105.1	2.4	6'197'030'944	5'653'873'480	99.8
2009	China	5'227'522'345	617'267'637	0.05	5'488'898'462.25	4'871'630'825.25	4'690'061'381	103.9	8.9			102.6
2010	China	4'127'513'399	666'303'131	0.05	4'333'889'068.95	3'667'585'937.95	4'794'361'863	76.5	6.5	-1'100'008'946	-1'204'044'887	102.7
2011	China	4'878'288'660	923'544'479	0.05	5'122'203'093.00	4'198'658'614.00	6'197'765'984	67.7	5.5	750'775'261	531'072'676	97.9
2012	China	5'073'515'540	1'210'252'903	0.05	5'327'191'317.00	4'116'938'414.00	6'605'142'884	62.3	4.4	195'226'880	-81'720'200	97.4
2013	China	5'075'346'113	1'432'045'817	0.05	5'329'113'418.65	3'897'067'601.65	7'335'033'801	53.1	3.7	1'830'573	-219'870'812	96.0
2014	China	5'242'519'736	1'200'340'825	0.05	5'504'645'722.80	4'304'304'897.80	7'468'102'413	57.6	4.6	167'173'623	407'237'296	98.6
2015	China	4'282'122'824	1'029'111'003	0.05	4'496'228'965.20	3'467'117'962.20	6'678'177'512	51.9	4.4	-960'396'912	-837'186'936	101.4
2016	China	5'605'425'556	1'464'956'968	0.05	5'885'696'833.80	4'420'739'865.80	6'813'095'379	64.9	4.0	1'323'302'732	953'621'904	93.4
2017	China	5'336'808'026	1'493'693'988	0.05	5'603'648'427.30	4'109'954'439.30	7'702'938'379	53.4	3.8	-268'617'530	-310'785'427	81.0
2018	China	5'556'792'814	1'942'257'729	0.05	5'834'632'454.70	3'892'374'725.70	8'271'106'235	47.1	3.0	219'984'788	-217'579'714	70.8
2019	China	6'280'519'944	1'734'970'508	0.05	6'594'545'941.20	4'859'575'433.20	9'371'275'264	51.9	3.8	723'727'130	967'200'708	70.2
2020	China	2'865'336'494	736'518'932	0.05	3'008'603'318.70	2'272'084'386.70	8'270'468'614	27.5	4.1	-3'415'183'450	-2'587'491'047	50.1
2021	China	7'289'086'932	1'457'433'215	0.05	7'653'541'278.60	6'196'108'063.60	9'249'133'946	67.0	5.3	4'423'750'438	3'924'023'677	75.6
2022	China	15'421'270'984	4'069'465'296	0.05	16'192'334'533.20	12'122'869'237.20	12'134'931'018	99.9	4.0	8'132'184'052	5'926'761'174	94.9
2009	Russia	916'000'000	1'089'623'346	0.05	961'800'000.00	-127'823'346.00	4'690'061'381	-2.7	0.9			-2.7
2010	Russia	975'377'179	1'083'862'764	0.05	1'024'146'037.95	-59'716'726.05	4'794'361'863	-1.2	0.9	59'377'179	68'106'620	-1.7
2011	Russia	1'156'416'368	1'429'569'088	0.05	1'214'237'186.40	-215'331'901.60	6'197'765'984	-3.5	0.8	181'039'189	-155'615'176	-5.0
2012	Russia	1'634'061'295	1'784'623'739	0.05	1'715'764'359.75	-68'859'379.25	6'605'142'884	-1.0	1.0	477'644'927	146'472'522	-1.6
2013	Russia	2'029'443'426	1'989'242'886	0.05	2'130'915'597.30	141'672'711.30	7'335'033'801	1.9	1.1	395'382'131	210'532'091	3.5
2014	Russia	1'737'661'049	1'839'928'038	0.05	1'824'544'101.45	-15'383'936.55	7'468'102'413	-0.2	1.0	-291'782'377	-157'056'648	-0.4
2015	Russia	1'289'412'624	1'271'642'379	0.05	1'353'883'255.20	82'240'876.20	6'678'177'512	1.2	1.1	-448'248'425	97'624'813	2.4
2016	Russia	1'245'849'173	799'821'892	0.05	1'308'141'631.65	508'319'739.65	6'813'095'379	7.5	1.6	-43'563'451	426'078'863	10.7
2017	Russia	1'700'141'550	1'232'494'220	0.05	1'785'148'627.50	552'654'407.50	7'702'938'379	7.2	1.4	454'292'377	44'334'668	10.9
2018	Russia	1'635'408'173	1'510'699'065	0.05	1'717'178'581.65	206'479'516.65	8'271'106'235	2.5	1.1	-64'733'377	-346'174'891	3.8
2019	Russia	1'559'457'220	1'404'285'223	0.05	1'637'430'081.00	233'144'858.00	9'371'275'264	2.5	1.2	-75'950'953	26'665'341	3.4
2020	Russia	1'456'872'158	1'089'836'020	0.05	1'529'715'765.92	439'879'745.92	8'270'468'614	5.3	1.4	-102'585'062	206'734'888	9.7
2021	Russia	2'156'018'568	1'911'144'389	0.05	2'263'819'496.18	352'675'107.18	9'249'133'946	3.8	1.2	699'146'410	-87'204'639	4.3
2022	Russia	n/a	2'405'004'323	0.05	n/a	n/a	12'134'931'018	n/a	n/a	n/a	n/a	n/a
2009	Kazakhstan	390'495'583	275'168'091	0.05	410'020'362.15	134'852'271.15	4'690'061'381	2.9	1.5			2.8
2010	Kazakhstan	424'253'755	385'477'838	0.05	445'466'442.75	59'988'604.75	4'794'361'863	1.3	1.2	33'758'172	-74'863'666	1.7
2011	Kazakhstan	507'842'373	410'861'026	0.05	533'234'491.65	122'373'465.65	6'197'765'984	2.0	1.3	83'588'618	62'384'861	2.9
2012	Kazakhstan	723'966'300	518'720'379	0.05	760'164'615.00	241'444'236.00	6'605'142'884	3.7	1.5	216'123'927	119'070'770	5.7
2013	Kazakhstan	675'159'977	555'022'470	0.05	708'917'975.85	153'895'505.85	7'335'033'801	2.1	1.3	-48'806'323	-87'548'730	3.8
2014	Kazakhstan	703'985'894	533'508'097	0.05	739'185'188.70	205'677'091.70	7'468'102'413	2.8	1.4	28'825'917	51'781'586	4.7
2015	Kazakhstan	517'722'382	677'406'500	0.05	543'608'501.10	-133'797'998.90	6'678'177'512	-2.0	0.8	-186'263'512	-339'475'091	-3.9
2016	Kazakhstan	376'134'446	635'547'788	0.05	394'941'168.30	-240'606'619.70	6'813'095'379	-3.5	0.6	-141'587'936	-106'808'621	-5.1
2017	Kazakhstan	516'725'906	520'295'756	0.05	542'562'201.30	22'266'445.30	7'702'938'379	0.3	1.0	140'591'460	262'873'065	0.4
2018	Kazakhstan	656'886'566	602'712'831	0.05	689'730'894.30	87'018'063.30	8'271'106'235	1.1	1.1	140'160'660	64'751'618	1.6
2019	Kazakhstan	624'088'498	649'333'709	0.05	655'292'922.90	5'959'213.90	9'371'275'264	0.1	1.0	-32'798'068	-81'058'849	0.1
2020	Kazakhstan	580'520'259	434'670'501	0.05	609'546'271.95	174'875'770.95	8'270'468'614	2.1	1.4	-43'568'239	168'916'557	3.9
2021	Kazakhstan	674'755'155	661'748'937	0.05	708'492'912.75	46'743'975.75	9'249'133'946	0.5	1.1	94'234'896	-128'131'795	0.6
2022	Kazakhstan	745'307'923	768'029'497	0.05	782'573'319.15	14'543'822.15	12'134'931'018	0.1	1.0	70'552'768	-32'200'154	0.1
2009	Uzbekistan	n/a	114'422'838	0.05	n/a	n/a	4'690'061'381	n/a	n/a	n/a	n/a	n/a
2010	Uzbekistan	n/a	93'832'226	0.05	n/a	n/a	4'794'361'863	n/a	n/a	n/a	n/a	n/a
2011	Uzbekistan	n/a	84'313'518	0.05	n/a	n/a	6'197'765'984	n/a	n/a	n/a	n/a	n/a
2012	Uzbekistan	n/a	63'153'836	0.05	n/a	n/a	6'605'142'884	n/a	n/a	n/a	n/a	n/a
2013	Uzbekistan	n/a	97'609'815	0.05	n/a	n/a	7'335'033'801	n/a	n/a	n/a	n/a	n/a
2014	Uzbekistan	n/a	106'516'006	0.05	n/a	n/a	7'468'102'413	n/a	n/a	n/a	n/a	n/a
2015	Uzbekistan	n/a	59'219'231	0.05	n/a	n/a	6'678'177'512	n/a	n/a	n/a	n/a	n/a
2016	Uzbekistan	n/a	69'766'730	0.05	n/a	n/a	6'813'095'379	n/a	n/a	n/a	n/a	n/a
2017	Uzbekistan	167'801'165	163'614'069	0.05	176'191'223.25	12'577'154.25	7'702'938'379	0.2	1.1	n/a	n/a	0.2
2018	Uzbekistan	251'157'055	177'988'282	0.05	263'714'907.75	85'726'625.75	8'271'106'235	1.0	1.5	83'355'890	73'149'472	1.6
2019	Uzbekistan	634'433'775	200'887'625	0.05	666'155'463.75	465'267'838.75	9'371'275'264	5.0	3.3	383'276'720	379'541'213	6.7
2020	Uzbekistan	754'763'294	188'823'689	0.05	792'501'458.70	603'677'769.70	8'270'468'614	7.3	4.2	120'329'519	138'409'931	13.3
2021	Uzbekistan	776'557'366	316'766'945	0.05	815'385'234.30	498'618'289.30	9'249'133'946	5.4	2.6	21'794'072	-105'059'480	6.1
2022	Uzbekistan	926'870'058	362'607'704	0.05	973'213'560.90	610'605'856.90	12'134'931'018	5.0	2.7	150'312'692	111'987'568	4.8

Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

Table A. 2. Kyrgyz Mirror Imports of Bazaar-Traded Goods (Appendix)

Year	Country	Mirror imports (reported exports by partner, FOB, in USD)	Official imports (CIF, in USD)	CIF adjustment (5%)	Adjusted mirror imports (CIF, in USD)	Mirror import gap (mirror imports - official imports, in USD)	GDP (current USD)	Mirror gap as % of GDP	Ratio mirror imports to official imports	Annual change in mirror imports (FOB, in USD)	Annual change in mirror gap (in USD)	Share in total mirror import gap of all commodities with ROW (in %)	Share in total mirror import gap of bazaar goods with ROW (in %)	Share in total mirror import gap of bazaar goods of 4 CA)	Total mirror import gap of KG-ROW (all commodities, in USD)
2009	ROW	4'423'304'490	298'572'563	0.05	4'644'469'714	4'345'897'151	4'690'061'381	92.7	15.6			91.5			4'748'358'047
2010	ROW	3'394'630'457	302'684'425	0.05	3'564'361'980	3'261'677'555	4'794'361'863	68.0	11.8	-1'028'674'032	-1'084'219'596	91.3			3'570'882'310
2011	ROW	3'934'331'820	431'836'402	0.05	4'131'048'411	3'699'212'009	6'197'765'984	59.7	9.6	539'701'363	437'534'454	86.3			4'286'571'109
2012	ROW	4'065'575'252	548'828'488	0.05	4'268'854'015	3'720'025'527	6'605'142'884	56.3	7.8	131'243'432	20'813'518	88.0			4'227'701'504
2013	ROW	4'002'807'122	548'066'981	0.05	4'202'947'478	3'654'880'497	7'335'033'801	49.8	7.7	-62'768'130	-65'145'030	90.1			4'058'014'556
2014	ROW	4'138'974'742	490'699'208	0.05	4'345'923'479	3'855'224'271	7'468'102'413	51.6	8.9	136'167'620	200'343'774	88.3			4'364'992'864
2015	ROW	3'405'974'704	474'081'804	0.05	3'576'273'439	3'102'191'635	6'678'177'512	46.5	7.5	-733'000'038	-753'032'636	90.7			3'419'026'362
2016	ROW	4'907'305'091	888'318'764	0.05	5'152'670'345	4'264'351'581	6'813'095'379	62.6	5.8	1'501'330'387	1'162'159'946	90.1			4'733'242'891
2017	ROW	4'760'083'961	1'097'817'060	0.05	4'998'088'159	3'900'271'099	7'702'938'379	50.6	4.6	-147'221'129	-364'080'482	76.9			5'072'168'316
2018	ROW	4'673'801'676	1'255'055'462	0.05	4'907'491'760	3'652'436'298	8'271'106'235	44.2	3.9	-86'282'285	-247'834'802	66.5			5'493'926'294
2019	ROW	5'045'206'187	943'836'627	0.05	5'297'466'497	4'353'629'870	9'371'275'264	46.5	5.6	371'404'511	701'193'572	62.9			6'925'813'082
2020	ROW	2'576'689'421	414'848'357	0.05	2'705'523'892	2'290'675'535	8'270'468'614	27.7	6.5	-2'468'516'767	-2'062'954'335	50.5			4'532'207'701
2021	ROW	6'146'775'439	1'058'840'622	0.05	6'454'114'211	5'395'273'589	9'249'133'946	58.3	6.1	3'570'086'019	3'104'598'055	65.9			8'193'206'129
2022	ROW	11'618'540'486	2'357'563'339	0.05	12'199'467'510	9'841'904'171	12'134'931'018	81.1	5.2	5'471'765'047	4'446'630'582	77.0			12'779'485'994
				0.05	-	-									
2009	SUM 4 CA	4'280'125'707	257'568'061	0.05	4'494'131'992	4'239'747'832	4'690'061'381	90.4	17.4			89.3	97.6	100.0	
2010	SUM 4 CA	3'249'140'615	254'001'279	0.05	3'411'597'646	3'161'471'622	4'794'361'863	65.9	13.4	-1'030'985'092	-1'078'276'211	88.5	96.9	100.0	
2011	SUM 4 CA	3'735'040'188	367'634'668	0.05	3'921'792'197	3'558'250'749	6'197'765'984	57.4	10.7	485'899'573	396'779'128	83.0	96.2	100.0	
2012	SUM 4 CA	3'830'438'403	452'504'067	0.05	4'021'960'323	3'575'645'439	6'605'142'884	54.1	8.9	95'398'215	17'394'690	84.6	96.1	100.0	
2013	SUM 4 CA	3'694'392'636	448'160'403	0.05	3'879'112'268	3'441'923'923	7'335'033'801	46.9	8.7	-136'045'767	-133'721'516	84.8	94.2	100.0	
2014	SUM 4 CA	3'850'464'823	396'540'735	0.05	4'042'988'064	3'662'702'094	7'468'102'413	49.0	10.2	156'072'187	220'778'171	83.9	95.0	100.0	
2015	SUM 4 CA	3'190'234'049	380'788'313	0.05	3'349'745'751	2'983'988'144	6'678'177'512	44.7	8.8	-660'230'774	-678'713'950	87.3	96.2	100.0	
2016	SUM 4 CA	4'649'436'830	758'776'367	0.05	4'881'908'672	4'149'710'781	6'813'095'379	60.9	6.4	1'459'202'781	1'165'722'636	87.7	97.3	100.0	
2017	SUM 4 CA	4'466'882'295	941'481'881	0.05	4'690'226'409	3'748'744'528	7'702'938'379	48.7	5.0	-182'554'535	-400'966'252	73.9	96.1	100.0	
2018	SUM 4 CA	4'372'066'674	1'053'381'597	0.05	4'590'670'008	3'537'288'411	8'271'106'235	42.8	4.4	-94'815'620	-211'456'117	64.4	96.8	100.0	
2019	SUM 4 CA	4'759'535'026	805'961'588	0.05	4'997'511'777	4'191'550'189	9'371'275'264	44.7	6.2	387'468'351	654'261'778	60.5	96.3	100.0	
2020	SUM 4 CA	2'337'343'296	319'516'390	0.05	2'454'210'461	2'134'694'071	8'270'468'614	25.8	7.7	-2'422'191'730	-2'056'856'118	47.1	93.2	100.0	
2021	SUM 4 CA	5'811'118'824	872'557'691	0.05	6'101'674'765	5'229'117'074	9'249'133'946	56.5	7.0	3'473'775'528	3'094'423'003	63.8	96.9	100.0	
2022	SUM 4 CA	11'118'891'989	2'037'423'329	0.05	11'674'836'589	9'680'716'843	12'134'931'018	79.8	5.7	5'307'773'165	4'451'599'769	75.8	98.4	100.0	
				0.05											
2009	China	4'254'558'182	231'864'651	0.05	4'467'286'091	4'235'421'440	4'690'061'381	90.3	19.3			89.2	97.5	99.9	
2010	China	3'222'470'498	222'089'774	0.05	3'383'594'023	3'161'504'249	4'794'361'863	65.9	15.2	-1'032'087'684	-1'073'917'191	88.5	96.9	100.0	
2011	China	3'706'821'157	333'875'283	0.05	3'892'162'215	3'558'286'932	6'197'765'984	57.4	11.7	484'350'659	396'782'683	83.0	96.2	100.0	
2012	China	3'803'828'887	416'194'886	0.05	3'994'020'331	3'577'825'445	6'605'142'884	54.2	9.6	97'007'730	19'538'514	84.6	96.2	100.1	
2013	China	3'661'488'316	403'398'801	0.05	3'844'562'732	3'441'163'931	7'335'033'801	46.9	9.5	-142'340'571	-136'661'515	84.8	94.2	100.0	
2014	China	3'816'180'001	348'174'567	0.05	4'006'989'001	3'658'814'434	7'468'102'413	49.0	11.5	154'691'685	217'650'503	83.8	94.9	99.9	
2015	China	3'159'943'360	328'578'874	0.05	3'317'940'528	2'989'361'654	6'678'177'512	44.8	10.1	-656'236'641	-669'452'780	87.4	96.4	100.2	
2016	China	4'610'483'128	705'940'654	0.05	4'841'007'284	4'135'066'630	6'813'095'379	60.7	6.9	1'450'539'768	1'145'704'976	87.4	97.0	99.6	
2017	China	4'351'444'306	828'486'234	0.05	4'569'016'521	3'740'530'287	7'702'938'379	48.6	5.5	-259'038'822	-394'536'343	73.7	95.9	99.8	
2018	China	4'236'961'870	961'234'303	0.05	4'448'809'964	3'487'575'661	8'271'106'235	42.2	4.6	-114'482'436	-252'954'627	63.5	95.5	98.6	
2019	China	4'566'906'220	701'511'217	0.05	4'795'251'531	4'093'740'314	9'371'275'264	43.7	6.8	329'944'350	606'164'654	59.1	94.0	97.7	
2020	China	1'965'787'356	225'965'046	0.05	2'064'076'724	1'838'111'678	8'270'468'614	22.2	9.1	-2'601'118'864	-2'255'628'636	40.6	80.2	86.1	
2021	China	5'302'400'828	699'725'850	0.05	5'567'520'869	4'867'795'019	9'249'133'946	52.6	8.0	3'336'613'472	3'029'683'342	59.4	90.2	93.1	
2022	China	10'542'391'584	1'806'126'592	0.05	11'069'511'163	9'263'384'571	12'134'931'018	76.3	6.1	5'239'990'756	4'395'589'552	72.5	94.1	95.7	
				0.05	-	-									
2009	Russia	22'057'386	21'690'996	0.05	23'160'255	1'469'259	4'690'061'381	0.0	1.1			0.0	0.0	0.0	
2010	Russia	24'494'531	27'143'394	0.05	25'719'258	-1'424'136	4'794'361'863	0.0	0.9	2'437'145	-2'893'396	0.0	0.0	0.0	
2011	Russia	25'746'765	27'673'462	0.05	27'034'103	-639'359	6'197'765'984	0.0	1.0	1'252'234	784'778	0.0	0.0	0.0	
2012	Russia	25'225'416	29'598'256	0.05	26'486'687	-3'111'569	6'605'142'884	0.0	0.9	-521'349	-2'472'210	-0.1	-0.1	-0.1	
2013	Russia	31'271'720	32'423'087	0.05	32'835'306	412'219	7'335'033'801	0.0	1.0	6'046'304	3'523'788	0.0	0.0	0.0	
2014	Russia	31'922'894	30'753'873	0.05	33'519'039	2'765'166	7'468'102'413	0.0	1.1	651'174	2'352'947	0.1	0.1	0.1	
2015	Russia	27'881'879	32'027'292	0.05	29'275'973	-2'751'319	6'678'177'512	0.0	0.9	-4'041'015	-5'516'485	-0.1	-0.1	-0.1	
2016	Russia	32'694'949	23'278'154	0.05	34'329'696	11'051'542	6'813'095'379	0.2	1.5	4'813'070	13'802'862	0.2	0.3	0.3	
2017	Russia	44'559'046	46'662'684	0.05	46'786'998	124'314	7'702'938'379	0.0	1.0	11'864'097	-10'927'228	0.0	0.0	0.0	
2018	Russia	43'540'366	36'730'390	0.05	45'717'384	8'986'994	8'271'106'235	0.1	1.2	-1'018'680	8'862'680	0.2	0.2	0.3	
2019	Russia	48'500'856	39'695'689	0.05	50'925'899	11'230'210	9'371'275'264	0.1	1.3	4'960'490	2'243'216	0.2	0.3	0.3	
2020	Russia	46'869'550	27'654'686	0.05	49'213'027	21'558'341	8'270'468'614	0.3	1.8	-1'631'306	10'328'131	0.5	0.9	1.0	
2021	Russia	51'997'148	45'640'882	0.05	54'597'006	8'956'124	9'249'133'946	0.1	1.2	5'127'599	-12'602'218	0.1	0.2	0.2	
2022	Russia	n/a	43'303'583	0.05	n/a	n/a	12'134'931'018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2009	Kazakhstan	3'510'139	828'513	0.05	3'685'646	2'857'133	4'690'061'381	0.1	4.4			0.1	0.1	0.1	
2010	Kazakhstan	2'175'586	892'856	0.05	2'284'365	1'391'509	4'794'361'863	0.0	2.6	-1'334'553	-1'465'624	0.0	0.0	0.0	
2011	Kazakhstan	2'472'266	1'992'703	0.05	2'595'879	603'176	6'197'765'984	0.0	1.3	296'680	-788'333	0.0	0.0	0.0	
2012	Kazakhstan	1'384'100	521'742	0.05	1'453'305	931'563	6'605'142'884	0.0	2.8	-1'088'166	328'387	0.0	0.0	0.0	
2013	Kazakhstan	1'632'600	1'366'457	0.05	1'714'230	347'773	7'335'033'801	0.0	1.3	248'500	-583'790	0.0	0.0	0.0	
2014	Kazakhstan	2'361'928	1'357'530	0.05	2'480'024	1'122'494	7'468'102'413	0.0	1.8	729'328	774'721	0.0	0.0	0.0	
2015	Kazakhstan	2'408'810	5'151'441	0.05	2'529'251	-2'622'191	6'678'177'512	0.0	0.5	46'882	-3'744'685	-0.1	-0.1	-0.1	
2016	Kazakhstan	6'258'753	2'979'083	0.05	6'571'691	3'592'608	6'813'095'379	0.1	2.2	3'849'943	6'214'798	0.1	0.1	0.1	
2017	Kazakhstan	7'220'797	12'594'196	0.05	7'581'837	-5'012'359	7'702'938'379	-0.1	0.6	962'044	-8'604'967	-0.1	-0.1	-0.1	
2018	Kazakhstan	9'451'659	9'285'745	0.05	9'924'242	638'497	8'271'106'235	0.0	1.1	2'230'862	5'650'856	0.0	0.0	0.0	
2019	Kazakhstan	7'126'688	10'441'485	0.05	7'483'022	-2'958'463	9'371'275'264	0.0	0.7	-2'324'972	-3'596'960	0.0	-0.1	-0.1	
2020	Kazakhstan	5'661'911	7'290'851	0.05	5'945'007	-1'345'844	8'270'468'614	0.0	0.8	-1'464'777	1'612'618	0.0	-0.1	-0.1	
2021	Kazakhstan	5'057'327	13'024'268	0.05	5'310'193	-7'714'075	9'249'133'946	-0.1	0.4	-604'584	-6'368'230	-0.1	-0.1	-0.1	
2022	Kazakhstan	6'946'627	37'434'248	0.05	7'293'958	-30'140'290	12'134'931'018	-0.2	0.2	1'889'299	-22'426'216	-0.2	-0.3	-0.3	
2009	Uzbekistan	n/a	3'183'901	0.05	n/a	n/a	4'690'061'381	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2010	Uzbekistan	n/a	3'875'255	0.05	n/a	n/a	4'794'361'863	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2011	Uzbekistan	n/a	4'093'220	0.05	n/a	n/a	6'197'765'984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2012	Uzbekistan	n/a	6'189'183	0.05	n/a	n/a	6'605'142'884	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2013	Uzbekistan	n/a	10'972'058	0.05	n/a	n/a	7'335'033'801	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2014	Uzbekistan	n/a	16'254'765	0.05	n/a	n/a	7'468'102'413	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2015	Uzbekistan	n/a	15'030'706	0.05	n/a	n/a	6'678'177'512	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2016	Uzbekistan	n/a	26'578'476	0.05	n/a	n/a	6'813'095'379	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2017	Uzbekistan	63'658'145	53'738'767	0.05	66'841'053	13'102'286	7'702'938'379	0.2	1.2	n/a	n/a	0.3	0.3	0.3	
2018	Uzbekistan	82'112'779	46'131'159	0.05	86'218'418	40'087'259	8'271'106'235	0.5	1.9	18'454'634	26'984'973	0.7	1.1	1.1	
2019	Uzbekistan	137'001'262	54'313'197	0.05	143'851'325	89'538'128	9'371'275'264	1.0	2.6	54'888'483	49'450'869	1.3	2.1	2.1	
2020	Uzbekistan	319'024'479	58'605'807	0.05	334'975'703	276'369'896	8'270'468'614	3.3	5.7	182'023'218	186'831'768	6.1	12.1	12.9	
2021	Uzbekistan	451'663'521	114'166'691	0.05	474'246'697	360'080'006	9'249'133'946	3.9	4.2	132'639'041	83'710'110	4.4	6.7	6.9	
2022	Uzbekistan	569'553'779	150'558'906	0.05	598'031'468	447'472'562	12'134'931'018	3.7	4.0	117'890'258	87'392'556	3.5	4.5	4.6	

Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

Table A. 3. Kyrgyz Mirror Imports of Re-Exportable Bazaar Goods (Appendix)

Year	Country	Mirror imports (reported exports by partner, FOB, in USD)	Official imports (CIF, in USD)	CIF adjustment (5%)	Adjusted mirror imports (CIF, in USD)	Mirror import gap (mirror imports - official imports, in USD)	GDP (current USD)	Mirror gap as % of GDP	Ratio mirror imports to official imports	Annual change in mirror imports (FOB, in USD)	Annual change in mirror gap (in USD)	Share in total mirror import gap of all commodities with ROW (in %)	Share in total mirror import gap of re-exportable bazaar goods with ROW (in %)	Share in total mirror import gap of re-exportable bazaar goods of 4 CA)	Total mirror import gap of KG-ROW (all commodities, in USD)
2009	ROW	4'591'105'576	303'390'256	0.05	4'820'660'855	4'517'270'599	4'690'061'381	96.3	15.9			95.1			4'748'358'047
2010	ROW	3'470'416'500	309'293'479	0.05	3'643'937'325	3'334'643'846	4'794'361'863	69.6	11.8	-1'120'689'076	-1'182'626'753	93.4			3'570'882'310
2011	ROW	4'043'157'217	435'049'323	0.05	4'245'315'078	3'810'265'755	6'197'765'984	61.5	9.8	572'740'717	475'621'909	88.9			4'286'571'109
2012	ROW	4'143'581'706	555'818'832	0.05	4'350'760'791	3'794'941'959	6'605'142'884	57.5	7.8	100'424'489	-15'323'795	89.8			4'227'701'504
2013	ROW	4'154'361'296	566'763'090	0.05	4'362'079'361	3'795'316'271	7'335'033'801	51.7	7.7	10'779'590	374'312	93.5			4'058'014'556
2014	ROW	4'374'196'250	500'106'846	0.05	4'592'906'062	4'092'799'216	7'468'102'413	54.8	9.2	219'834'954	297'482'945	93.8			4'364'992'864
2015	ROW	3'554'132'037	494'955'645	0.05	3'731'838'638	3'236'882'993	6'678'177'512	48.5	7.5	-820'064'213	-855'916'223	94.7			3'419'026'362
2016	ROW	5'128'927'214	927'332'179	0.05	5'385'373'575	4'458'041'396	6'813'095'379	65.4	5.8	1'574'795'177	1'221'158'402	94.2			4'733'242'891
2017	ROW	5'016'611'281	1'125'440'885	0.05	5'267'441'845	4'142'000'960	7'702'938'379	53.8	4.7	-112'315'933	-316'040'435	81.7			5'072'168'316
2018	ROW	5'013'432'661	1'372'669'577	0.05	5'264'104'294	3'891'434'717	8'271'106'235	47.0	3.8	-3'178'620	-250'566'244	70.8			5'493'926'294
2019	ROW	5'452'885'674	1'016'831'474	0.05	5'725'529'958	4'708'698'484	9'371'275'264	50.2	5.6	439'453'014	817'263'767	68.0			6'925'813'082
2020	ROW	2'820'842'315	455'188'263	0.05	2'961'884'431	2'506'696'168	8'270'468'614	30.3	6.5	-2'632'043'359	-2'202'002'316	55.3			4'532'207'701
2021	ROW	6'772'877'175	1'138'456'286	0.05	7'111'521'034	5'973'064'748	9'249'133'946	64.6	6.2	3'952'034'861	3'466'368'581	72.9			8'193'206'129
2022	ROW	12'789'207'608	2'642'721'646	0.05	13'428'667'988	10'785'946'342	12'134'931'018	88.9	5.1	6'016'330'433	4'812'881'594	84.4			12'779'485'994
2009	SUM 4 CA	4'436'446'444	248'305'776	0.05	4'658'268'766	4'412'400'991	4'690'061'381	94.1	18.8			92.9	97.7		
2010	SUM 4 CA	3'320'776'545	247'979'517	0.05	3'486'815'372	3'241'470'034	4'794'361'863	67.6	14.1	-1'115'669'899	-1'170'930'957	90.8	97.2		
2011	SUM 4 CA	3'835'376'631	352'252'559	0.05	4'027'145'463	3'678'555'703	6'197'765'984	59.4	11.4	514'600'086	437'085'668	85.8	96.5		
2012	SUM 4 CA	3'881'489'403	446'175'051	0.05	4'075'563'873	3'635'691'902	6'605'142'884	55.0	9.1	46'112'772	-42'863'800	86.0	95.8		
2013	SUM 4 CA	3'771'872'262	443'709'879	0.05	3'960'465'875	3'527'707'472	7'335'033'801	48.1	8.9	-109'617'141	-107'984'430	86.9	92.9		
2014	SUM 4 CA	3'971'444'614	384'284'140	0.05	4'170'016'845	3'800'826'840	7'468'102'413	50.9	10.9	199'572'352	273'119'368	87.1	92.9		
2015	SUM 4 CA	3'279'353'942	385'545'898	0.05	3'443'321'639	3'072'203'217	6'678'177'512	46.0	8.9	-692'090'672	-728'623'623	89.9	94.9		
2016	SUM 4 CA	4'832'238'218	789'660'492	0.05	5'073'850'129	4'309'382'545	6'813'095'379	63.3	6.4	1'552'884'276	1'237'179'328	91.0	96.7		
2017	SUM 4 CA	4'663'915'539	952'198'773	0.05	4'897'111'316	3'944'912'543	7'702'938'379	51.2	5.1	-168'322'679	-364'470'002	77.8	95.2		
2018	SUM 4 CA	4'646'136'657	1'151'824'132	0.05	4'878'443'490	3'726'619'358	8'271'106'235	45.1	4.2	-17'778'882	-218'293'185	67.8	95.8		
2019	SUM 4 CA	5'058'607'701	859'780'342	0.05	5'311'538'086	4'451'757'744	9'371'275'264	47.5	6.2	412'471'044	725'138'386	64.3	94.5		
2020	SUM 4 CA	2'482'337'051	350'605'796	0.05	2'606'453'904	2'255'848'108	8'270'468'614	27.3	7.4	-2'576'270'650	-2'195'909'636	49.8	90.0		
2021	SUM 4 CA	6'165'990'765	929'022'614	0.05	6'474'290'303	5'545'267'689	9'249'133'946	60.0	7.0	3'683'653'714	3'289'419'582	67.7	92.8		
2022	SUM 4 CA	11'977'393'988	2'283'472'230	0.05	12'576'263'687	10'370'447'910	12'134'931'018	85.5	5.5	5'811'403'223	4'825'180'221	81.1	96.1		
2009	China	4'412'752'044	228'514'270	0.05	4'633'389'646	4'404'875'376	4'690'061'381	93.9	20.3			92.8	97.5	99.8	
2010	China	3'299'323'660	224'439'258	0.05	3'464'289'843	3'239'850'585	4'794'361'863	67.6	15.4	-1'113'428'384	-1'165'024'791	90.7	97.2	100.0	
2011	China	3'807'810'644	328'166'688	0.05	3'998'201'176	3'670'034'488	6'197'765'984	59.2	12.2	508'486'984	430'183'903	85.6	96.3	99.8	
2012	China	3'857'760'524	415'903'879	0.05	4'050'648'550	3'634'744'671	6'605'142'884	55.0	9.7	49'949'880	-35'289'817	86.0	95.8	100.0	
2013	China	3'740'582'069	403'992'196	0.05	3'927'611'172	3'523'618'976	7'335'033'801	48.0	9.7	-117'178'455	-111'125'695	86.8	92.8	99.9	
2014	China	3'941'008'986	344'655'602	0.05	4'138'059'435	3'793'403'833	7'468'102'413	50.8	12.0	200'426'917	269'784'857	86.9	92.7	99.8	
2015	China	3'253'082'653	341'741'110	0.05	3'415'736'786	3'073'995'676	6'678'177'512	46.0	10.0	-687'926'333	-719'408'158	89.9	95.0	100.1	
2016	China	4'797'303'725	743'512'012	0.05	5'037'168'911	4'293'656'899	6'813'095'379	63.0	6.8	1'544'221'072	1'219'661'224	90.7	96.3	99.6	
2017	China	4'551'457'197	858'799'174	0.05	4'779'030'057	3'920'230'883	7'702'938'379	50.9	5.6	-245'846'528	-373'426'016	77.3	94.6	99.4	
2018	China	4'511'486'702	1'062'051'503	0.05	4'737'061'037	3'675'009'534	8'271'106'235	44.4	4.5	-39'970'495	-245'221'349	66.9	94.4	98.6	
2019	China	4'868'810'467	759'758'909	0.05	5'112'250'990	4'352'492'081	9'371'275'264	46.4	6.7	357'323'765	677'482'547	62.8	92.4	97.8	
2020	China	2'103'450'883	253'214'775	0.05	2'208'623'427	1'955'408'652	8'270'468'614	23.6	8.7	-2'765'359'584	-2'397'083'429	43.1	78.0	86.7	
2021	China	5'643'469'708	747'169'616	0.05	5'925'643'193	5'178'473'577	9'249'133'946	56.0	7.9	3'540'018'825	3'223'064'925	63.2	86.7	93.4	
2022	China	11'387'985'074	2'005'948'095	0.05	11'957'384'328	9'951'436'233	12'134'931'018	82.0	6.0	5'744'515'366	4'772'962'655	77.9	92.3	96.0	
2009	Russia	16'176'132	14'353'619	0.05	16'984'939	2'631'320	4'690'061'381	0.1	1.2			0.1	0.1	0.1	
2010	Russia	16'898'073	18'570'321	0.05	17'742'977	-827'344	4'794'361'863	0.0	1.0	721'941	-3'458'664	0.0	0.0	0.0	
2011	Russia	15'337'516	15'786'410	0.05	16'104'392	317'982	6'197'765'984	0.0	1.0	-1'560'557	1'145'326	0.0	0.0	0.0	
2012	Russia	17'770'979	20'812'835	0.05	18'659'528	-2'153'307	6'605'142'884	0.0	0.9	2'433'463	-2'471'289	-0.1	-0.1	-0.1	
2013	Russia	23'431'255	24'198'289	0.05	24'602'818	404'529	7'335'033'801	0.0	1.0	5'660'276	2'557'836	0.0	0.0	0.0	
2014	Russia	21'752'430	20'069'444	0.05	22'840'052	2'770'608	7'468'102'413	0.0	1.1	-1'678'825	2'366'079	0.1	0.1	0.1	
2015	Russia	18'206'713	21'986'381	0.05	19'117'049	-2'869'332	6'678'177'512	0.0	0.9	-3'545'717	-5'639'940	-0.1	-0.1	-0.1	
2016	Russia	23'245'035	13'076'107	0.05	24'407'287	11'331'180	6'813'095'379	0.2	1.9	5'038'322	14'200'512	0.2	0.3	0.3	
2017	Russia	35'042'301	27'024'512	0.05	36'794'416	9'769'904	7'702'938'379	0.1	1.4	11'797'266	-1'561'276	0.2	0.2	0.2	
2018	Russia	35'196'659	26'377'203	0.05	36'956'492	10'579'289	8'271'106'235	0.1	1.4	154'358	809'385	0.2	0.3	0.3	
2019	Russia	40'855'041	32'141'066	0.05	42'897'793	10'756'727	9'371'275'264	0.1	1.3	5'658'382	177'438	0.2	0.2	0.2	
2020	Russia	46'451'417	25'972'021	0.05	48'773'988	22'801'967	8'270'468'614	0.3	1.9	5'596'376	12'045'240	0.5	0.9	1.0	
2021	Russia	55'258'229	43'889'637	0.05	58'021'141	14'131'504	9'249'133'946	0.2	1.3	8'806'812	-8'670'463	0.2	0.2	0.3	
2022	Russia	n/a	77'656'453	0.05	n/a	n/a	12'134'931'018	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2009	Kazakhstan	7'518'268	2'999'886	0.05	7'894'181	4'894'295	4'690'061'381	0.1	2.6			0.1	0.1	0.1	
2010	Kazakhstan	4'554'812	2'335'759	0.05	4'782'553	2'446'794	4'794'361'863	0.1	2.0	-2'963'456	-2'447'502	0.1	0.1	0.1	
2011	Kazakhstan	12'228'471	4'636'662	0.05	12'839'895	8'203'233	6'197'765'984	0.1	2.8	7'673'659	5'756'439	0.2	0.2	0.2	
2012	Kazakhstan	5'957'900	3'155'257	0.05	6'255'795	3'100'538	6'605'142'884	0.0	2.0	-6'270'571	-5'102'695	0.1	0.1	0.1	
2013	Kazakhstan	7'858'938	4'567'918	0.05	8'251'885	3'683'967	7'335'033'801	0.1	1.8	1'901'038	583'429	0.1	0.1	0.1	
2014	Kazakhstan	8'683'198	4'464'959	0.05	9'117'358	4'652'399	7'468'102'413	0.1	2.0	824'260	968'432	0.1	0.1	0.1	
2015	Kazakhstan	8'064'576	7'390'931	0.05	8'467'805	1'076'874	6'678'177'512	0.0	1.1	-618'622	-3'575'525	0.0	0.0	0.0	
2016	Kazakhstan	11'689'458	7'879'465	0.05	12'273'931	4'394'466	6'813'095'379	0.1	1.6	3'624'882	3'317'592	0.1	0.1	0.1	
2017	Kazakhstan	14'849'704	14'464'939	0.05	15'592'189	1'127'250	7'702'938'379	0.0	1.1	3'160'246	-3'267'216	0.0	0.0	0.0	
2018	Kazakhstan	17'343'859	18'339'887	0.05	18'211'052	-128'835	8'271'106'235	0.0	1.0	2'494'155	-1'256'085	0.0	0.0	0.0	
2019	Kazakhstan	14'644'237	14'945'878	0.05	15'376'449	430'571	9'371'275'264	0.0	1.0	-2'699'622	559'406	0.0	0.0	0.0	
2020	Kazakhstan	11'232'686	13'500'206	0.05	11'794'320	-1'705'886	8'270'468'614	0.0	0.9	-3'411'551	-2'136'457	0.0	-0.1	-0.1	
2021	Kazakhstan	13'815'287	25'360'233	0.05	14'506'051	-10'854'182	9'249'133'946	-0.1	0.6	2'582'601	-9'148'296	-0.1	-0.2	-0.2	
2022	Kazakhstan	19'381'256	49'649'992	0.05	20'350'319	-29'299'673	12'134'931'018	-0.2	0.4	5'565'969	-18'445'491	-0.2	-0.3	-0.3	
2009	Uzbekistan	n/a	2'438'001	0.05	n/a	n/a	4'690'061'381	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2010	Uzbekistan	n/a	2'634'179	0.05	n/a	n/a	4'794'361'863	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2011	Uzbekistan	n/a	3'662'799	0.05	n/a	n/a	6'197'765'984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2012	Uzbekistan	n/a	6'303'080	0.05	n/a	n/a	6'605'142'884	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2013	Uzbekistan	n/a	10'951'476	0.05	n/a	n/a	7'335'033'801	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2014	Uzbekistan	n/a	15'094'135	0.05	n/a	n/a	7'468'102'413	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2015	Uzbekistan	n/a	14'427'476	0.05	n/a	n/a	6'678'177'512	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2016	Uzbekistan	n/a	25'192'908	0.05	n/a	n/a	6'813'095'379	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2017	Uzbekistan	62'566'337	51'910'148	0.05	65'694'654	13'784'506	7'702'938'379	0.2	1.3	n/a	n/a	0.3	0.3	0.3	
2018	Uzbekistan	82'109'437	45'055'539	0.05	86'214'909	41'159'370	8'271'106'235	0.5	1.9	19'543'100	27'374'864	0.7	1.1	1.1	
2019	Uzbekistan	134'297'956	52'934'489	0.05	141'012'853	88'078'364	9'371'275'264	0.9	2.7	52'188'519	46'918'994	1.3	1.9	2.0	
2020	Uzbekistan	321'202'065	57'918'794	0.05	337'262'169	279'343'375	8'270'468'614	3.4	5.8	186'904'110	191'265'010	6.2	11.1	12.4	
2021	Uzbekistan	453'447'541	112'603'128	0.05	476'119'918	363'516'790	9'249'133'946	3.9	4.2	132'245'476	84'173'415	4.4	6.1	6.6	
2022	Uzbekistan	570'027'658	150'217'690	0.05	598'529'040	448'311'350	12'134'931'018	3.7	4.0	116'580'117	84'794'561	3.5	4.2	4.3	

Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

Table A. 4. Kyrgyz Mirror Exports of All Commodities (Appendix)

Year	Country	Official exports (reported exports by Kyrgyzstan, FOB, in USD)	Mirror exports (reported imports by partner (CIF, in USD)	CIF adjustment (5%)	Adjusted official Kyrgyz exports (CIF, in USD)	Mirror export gap (partner's reported imports - adjusted exports of Kyrgyzstan, in USD)	GDP (current USD)	Mirror gap as % of GDP	Ratio mirror exports to official exports	Annual change in official exports (FOB, in USD)	Annual change in mirror gaps (in USD)	Share in total Kyrgyz exports of all commodities (FOB, in %)	Share in total mirror export gap of all commodities with ROW (in %)
2009	ROW	1'178'273'614	974'720'311	0.05	1'237'187'295	-262'466'984	4'690'061'381	-5.6	0.8			100	100
2010	ROW	1'488'400'507	1'138'600'506	0.05	1'562'820'532	-424'220'026	4'794'361'863	-8.8	0.7	310'126'893	-161'753'043	100	100
2011	ROW	1'978'932'373	817'960'187	0.05	2'077'878'992	-1'259'918'804	6'197'765'984	-20.3	0.4	490'531'866	-835'698'778	100	100
2012	ROW	1'683'236'842	1'134'375'870	0.05	1'767'398'684	-633'022'814	6'605'142'884	-9.6	0.6	-295'695'531	626'895'990	100	100
2013	ROW	1'773'228'304	1'335'801'964	0.05	1'861'889'719	-526'087'755	7'335'033'801	-7.2	0.7	89'991'462	106'935'059	100	100
2014	ROW	1'819'460'143	1'277'774'784	0.05	1'910'433'150	-632'658'866	7'468'102'413	-8.5	0.7	46'231'839	-106'571'111	100	100
2015	ROW	1'441'467'621	1'053'587'951	0.05	1'513'541'002	-459'953'051	6'678'177'512	-6.9	0.7	-377'992'522	172'705'815	100	100
2016	ROW	1'423'028'427	817'884'356	0.05	1'494'179'848	-676'295'492	6'813'095'379	-9.9	0.5	-18'439'194	-216'342'441	100	100
2017	ROW	1'757'463'670	1'493'238'843	0.05	1'845'336'854	-352'098'010	7'702'938'379	-4.6	0.8	334'435'243	324'197'482	100	100
2018	ROW	1'835'179'371	1'657'568'305	0.05	1'926'938'340	-269'370'034	8'271'106'235	-3.3	0.9	77'715'701	82'727'976	100	100
2019	ROW	1'986'109'552	1'919'508'044	0.05	2'085'415'030	-165'906'986	9'371'275'264	-1.8	0.9	150'930'181	103'463'049	100	100
2020	ROW	1'863'531'157	1'811'546'557	0.05	1'956'707'715	-145'161'157	8'270'468'614	-1.8	0.9	-122'578'395	20'745'828	100	100
2021	ROW	2'752'163'636	2'874'933'734	0.05	2'889'771'818	-14'838'084	9'249'133'946	-0.2	1.0	888'632'479	130'323'073	100	100
2022	ROW	2'254'702'312	1'336'740'140	0.05	2'367'437'428	-1'030'697'287	12'134'931'018	-8.5	0.6	-497'461'324	-1'015'859'203	100	100
2009	SUM 4 CA	490'774'444	531'927'529	0.05	515'313'166	191'554'731	4'690'061'381	4.1	1.0			41.7	-73.0
2010	SUM 4 CA	507'871'850	631'079'463	0.05	533'265'443	139'996'347	4'794'361'863	2.9	1.2	17'097'406	-51'558'384	34.1	-33.0
2011	SUM 4 CA	740'601'750	630'920'241	0.05	777'631'838	-16'052'408	6'197'765'984	-0.3	0.8	232'729'900	-156'048'755	37.4	1.3
2012	SUM 4 CA	875'548'469	617'813'757	0.05	919'325'892	-101'878'022	6'605'142'884	-1.5	0.7	134'946'719	-85'825'614	52.0	16.1
2013	SUM 4 CA	733'119'133	523'629'534	0.05	769'775'090	-79'184'522	7'335'033'801	-1.1	0.7	-142'429'336	22'693'500	41.3	15.1
2014	SUM 4 CA	769'513'513	477'510'341	0.05	807'989'189	-158'595'502	7'468'102'413	-2.1	0.6	36'394'380	-79'410'980	42.3	25.1
2015	SUM 4 CA	515'910'541	302'470'108	0.05	541'706'068	-139'454'646	6'678'177'512	-2.1	0.6	-253'602'972	19'140'857	35.8	30.3
2016	SUM 4 CA	501'136'264	462'979'823	0.05	526'193'077	68'114'414	6'813'095'379	1.0	0.9	-14'774'277	207'569'060	35.2	-10.1
2017	SUM 4 CA	775'179'747	638'256'497	0.05	813'938'734	-175'682'238	7'702'938'379	-2.3	0.8	274'043'483	-243'796'652	44.1	49.9
2018	SUM 4 CA	846'552'913	673'216'666	0.05	888'880'559	-215'663'893	8'271'106'235	-2.6	0.8	71'373'166	-39'981'655	46.1	80.1
2019	SUM 4 CA	848'667'327	827'808'227	0.05	891'100'693	-63'292'467	9'371'275'264	-0.7	0.9	2'114'414	152'371'426	42.7	38.1
2020	SUM 4 CA	642'919'673	680'329'211	0.05	675'065'657	5'263'554	8'270'468'614	0.1	1.0	-205'747'654	68'556'021	34.5	-3.6
2021	SUM 4 CA	1'018'785'243	961'027'934	0.05	1'069'724'505	-108'696'571	9'249'133'946	-1.2	0.9	375'865'570	-113'960'126	37.0	732.6
2022	SUM 4 CA	1'777'711'205	683'341'628	0.05	1'866'596'765	-60'373'220	12'134'931'018	-0.5	0.4	758'925'962	48'323'351	78.8	5.9
2009	China	19'328'377	48'450'429	0.05	20'294'796	28'155'633	4'690'061'381	0.6	2.4			1.6	-10.7
2010	China	28'254'995	72'069'065	0.05	29'667'745	42'401'320	4'794'361'863	0.9	2.4	8'926'618	14'245'687	1.9	-10.0
2011	China	42'040'298	98'121'281	0.05	44'142'313	53'978'968	6'197'765'984	0.9	2.2	13'785'303	11'577'648	2.1	-4.3
2012	China	61'374'073	89'020'942	0.05	64'442'777	24'578'165	6'605'142'884	0.4	1.4	19'333'775	-29'400'803	3.6	-3.9
2013	China	38'954'731	62'350'108	0.05	40'902'468	21'447'640	7'335'033'801	0.3	1.5	-22'419'342	-3'130'525	2.2	-4.1
2014	China	32'763'016	55'424'061	0.05	34'401'167	21'022'894	7'468'102'413	0.3	1.6	-6'191'715	-424'746	1.8	-3.3
2015	China	35'876'853	58'570'893	0.05	37'670'696	20'900'197	6'678'177'512	0.3	1.6	3'113'837	-122'697	2.5	-4.5
2016	China	79'702'699	71'234'903	0.05	83'687'834	-12'452'931	6'813'095'379	-0.2	0.9	43'825'846	-33'353'128	5.6	1.8
2017	China	97'473'586	87'055'356	0.05	102'347'265	-15'291'909	7'702'938'379	-0.2	0.9	17'770'887	-2'838'978	5.5	4.3
2018	China	61'237'831	54'327'492	0.05	64'299'723	-9'972'231	8'271'106'235	-0.1	0.8	-36'235'755	5'319'679	3.3	3.7
2019	China	81'469'047	66'041'403	0.05	85'542'499	-19'501'096	9'371'275'264	-0.2	0.8	20'231'216	-9'528'866	4.1	11.8
2020	China	43'234'975	34'801'089	0.05	45'396'724	-10'595'635	8'270'468'614	-0.1	0.8	-38'234'072	8'905'462	2.3	7.3
2021	China	64'090'574	79'739'743	0.05	67'295'103	12'444'640	9'249'133'946	0.1	1.2	20'855'599	23'040'275	2.3	-83.9
2022	China	60'800'135	81'660'648	0.05	63'840'142	17'820'506	12'134'931'018	0.1	1.3	-3'290'439	5'375'866	2.7	-1.7
2009	Russia	185'590'423	367'000'000	0.05	194'869'944	172'130'056	4'690'061'381	3.7	1.9			15.8	-65.6
2010	Russia	257'758'368	393'290'059	0.05	270'646'286	122'643'773	4'794'361'863	2.6	1.5	72'167'945	-49'486'283	17.3	-28.9
2011	Russia	284'418'904	290'837'884	0.05	298'639'849	-7'801'965	6'197'765'984	-0.1	1.0	26'660'536	-130'445'738	14.4	0.6
2012	Russia	219'116'114	195'743'015	0.05	230'071'920	-34'328'905	6'605'142'884	-0.5	0.9	-65'302'790	-26'526'940	13.0	5.4
2013	Russia	152'700'656	110'178'409	0.05	160'335'689	-50'207'280	7'335'033'801	-0.7	0.7	-66'415'458	-15'878'375	8.6	9.5
2014	Russia	114'145'273	70'911'837	0.05	119'852'537	-48'940'700	7'468'102'413	-0.7	0.6	-38'555'383	1'266'580	6.3	7.7
2015	Russia	157'300'977	61'885'891	0.05	165'166'026	-103'280'135	6'678'177'512	-1.5	0.4	43'155'704	-54'339'435	10.9	22.5
2016	Russia	145'208'734	191'165'404	0.05	152'469'171	38'696'233	6'813'095'379	0.6	1.3	-12'092'243	141'976'368	10.2	-5.7
2017	Russia	265'228'092	230'150'120	0.05	278'489'497	-48'339'377	7'702'938'379	-0.6	0.8	120'019'358	-87'035'610	15.1	13.7
2018	Russia	356'526'369	248'325'512	0.05	374'352'687	-126'027'175	8'271'106'235	-1.5	0.7	91'298'277	-77'687'799	19.4	46.8
2019	Russia	281'252'923	321'864'681	0.05	295'315'569	26'549'112	9'371'275'264	0.3	1.1	-75'273'446	152'576'287	14.2	-16.0
2020	Russia	217'486'685	239'569'123	0.05	228'361'019	11'208'104	8'270'468'614	0.1	1.0	-63'766'238	-15'341'008	11.7	-7.7
2021	Russia	392'408'993	348'099'343	0.05	412'029'443	-63'930'100	9'249'133'946	-0.7	0.8	174'922'308	-75'138'204	14.3	430.9
2022	Russia	1'069'411'350	n/a	0.05	1'122'881'918	n/a	12'134'931'018	n/a	n/a	677'002'357	n/a	47.4	n/a
2009	Kazakhstan	119'245'770	116'477'100	0.05	125'208'059	-8'730'959	4'690'061'381	-0.2	0.9			10.1	3.3
2010	Kazakhstan	181'684'843	165'720'339	0.05	190'769'085	-25'048'746	4'794'361'863	-0.5	0.9	62'439'073	-16'317'788	12.2	5.9
2011	Kazakhstan	289'705'226	241'961'076	0.05	304'190'487	-62'229'411	6'197'765'984	-1.0	0.8	108'020'383	-37'180'665	14.6	4.9
2012	Kazakhstan	404'930'555	333'049'800	0.05	425'177'083	-92'127'283	6'605'142'884	-1.4	0.8	115'225'329	-29'897'871	24.1	14.6
2013	Kazakhstan	382'453'238	351'151'017	0.05	401'575'900	-50'424'883	7'335'033'801	-0.7	0.9	-22'477'317	41'702'400	21.6	9.6
2014	Kazakhstan	458'906'800	351'174'443	0.05	481'852'140	-130'677'697	7'468'102'413	-1.7	0.7	76'453'562	-80'252'814	25.2	20.7
2015	Kazakhstan	227'702'888	182'013'324	0.05	239'088'032	-57'074'708	6'678'177'512	-0.9	0.8	-231'203'912	73'602'989	15.8	12.4
2016	Kazakhstan	151'150'861	200'579'516	0.05	158'708'404	41'871'112	6'813'095'379	0.6	1.3	-76'552'027	98'945'820	10.6	-6.2
2017	Kazakhstan	266'192'624	248'446'063	0.05	279'502'255	-31'056'193	7'702'938'379	-0.4	0.9	115'041'763	-72'927'304	15.1	8.8
2018	Kazakhstan	270'289'153	243'613'174	0.05	283'803'611	-40'190'437	8'271'106'235	-0.5	0.9	4'096'529	-9'134'244	14.7	14.9
2019	Kazakhstan	347'065'658	315'687'557	0.05	364'418'941	-48'731'384	9'371'275'264	-0.5	0.9	76'776'505	-8'540'948	17.5	29.4
2020	Kazakhstan	229'648'707	267'582'685	0.05	241'131'142	26'451'542	8'270'468'614	0.3	1.1	-117'416'951	75'182'926	12.3	-18.2
2021	Kazakhstan	382'189'210	375'776'998	0.05	401'298'671	-25'521'673	9'249'133'946	-0.3	0.9	152'540'503	-51'973'215	13.9	172.0
2022	Kazakhstan	410'873'040	383'901'591	0.05	431'416'692	-47'515'101	12'134'931'018	-0.4	0.9	28'683'830	-21'993'428	18.2	4.6
2009	Uzbekistan	166'609'874	n/a	0.05	n/a	n/a	4'690'061'381	n/a	n/a			14.1	n/a
2010	Uzbekistan	40'173'644	n/a	0.05	n/a	n/a	4'794'361'863	n/a	n/a	-126'436'230	n/a	2.7	n/a
2011	Uzbekistan	124'437'322	n/a	0.05	n/a	n/a	6'197'765'984	n/a	n/a	84'263'678	n/a	6.3	n/a
2012	Uzbekistan	190'127'727	n/a	0.05	n/a	n/a	6'605'142'884	n/a	n/a	65'690'405	n/a	11.3	n/a
2013	Uzbekistan	159'010'508	n/a	0.05	n/a	n/a	7'335'033'801	n/a	n/a	-31'117'219	n/a	9.0	n/a
2014	Uzbekistan	163'698'424	n/a	0.05	n/a	n/a	7'468'102'413	n/a	n/a	4'687'916	n/a	9.0	n/a
2015	Uzbekistan	95'029'823	n/a	0.05	n/a	n/a	6'678'177'512	n/a	n/a	-68'668'601	n/a	6.6	n/a
2016	Uzbekistan	125'073'970	n/a	0.05	n/a	n/a	6'813'095'379	n/a	n/a	30'044'147	n/a	8.8	n/a
2017	Uzbekistan	146'285'445	72'604'958	0.05	153'599'717	-80'994'759	7'702'938'379	-1.1	0.5	21'211'475	n/a	8.3	23.0
2018	Uzbekistan	158'499'560	126'950'488	0.05	166'424'538	-39'474'050	8'271'106'235	-0.5	0.8	12'214'115	41'520'709	8.6	14.7
2019	Uzbekistan	138'879'699	124'214'586	0.05	145'823'684	-21'609'098	9'371'275'264	-0.2	0.9	-19'619'861	17'864'952	7.0	13.0
2020	Uzbekistan	152'549'306	138'376'314	0.05	160'176'771	-21'800'457	8'270'468'614	-0.3	0.9	13'669'607	-191'359	8.2	15.0
2021	Uzbekistan	180'096'466	157'411'850	0.05	189'101'289	-31'689'439	9'249'133'946	-0.3	0.8	27'547'160	-9'888'982	6.5	213.6
2022	Uzbekistan	236'626'680	217'779'389	0.05	248'458'014	-30'678'625	12'134'931'018	-0.3	0.9	56'530'214	1'010'814	10.5	3.0

Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

Table A. 5. Kyrgyz Mirror Exports of Bazaar-Traded Goods (Appendix)

Year	Country	Official exports (reported exports by Kyrgyzstan, FOB, in USD)	Mirror exports (reported imports of partner country, CIF, in USD)	CIF adjustment (5%)	Adjusted official Kyrgyz exports (CIF, in USD)	Mirror export gap (partner's reported imports - adjusted exports of Kyrgyzstan, in USD)	GDP (current USD)	Mirror gap as % of GDP	Ratio mirror exports to official exports	Annual change in official exports (FOB, in USD)	Annual change in mirror gap (in USD)	Share in total official Kyrgyz exports to ROW of all commodities (in %, FOB)	Share in total mirror export gap of all commodities with ROW (in %)	Share in total official Kyrgyz exports of bazaar traded goods with ROW (in %, FOB)	Share in total mirror export gap of bazaar-traded goods with ROW (in %)	Share in total official Kyrgyz exports of bazaar traded goods with 4 CA partners (in %, FOB)	Share in total mirror export gap of bazaar traded goods with 4 CA partners (in %)	Total official exports from KG to ROW (all commodities, FOB, in USD)	Total mirror export gap of KG to ROW (all commodities, in USD)
2009	ROW	110'041'349	143'291'004	0.05	115'543'416	27'747'587	4'690'061'381	0.6	1.2			9.3	-10.6	100.0	100.0			1'178'273'614	-262'466'984
2010	ROW	166'444'320	223'405'851	0.05	174'766'536	48'639'315	4'794'361'863	1.0	1.3	56'402'971	20'891'728	11.2	-11.5	100.0	100.0			1'488'400'507	-424'220'026
2011	ROW	195'470'070	213'421'560	0.05	205'243'574	8'177'986	6'197'765'984	0.1	1.0	29'025'750	-40'461'329	9.9	-0.6	100.0	100.0			1'978'932'373	-1'259'918'804
2012	ROW	228'118'128	208'501'055	0.05	239'524'034	-31'022'979	6'605'142'884	-0.5	0.9	32'648'058	-39'200'966	13.6	4.9	100.0	100.0			1'683'236'842	-633'022'814
2013	ROW	174'963'570	159'950'419	0.05	183'711'749	-23'761'330	7'335'033'801	-0.3	0.9	-53'154'558	7'261'650	9.9	4.5	100.0	100.0			1'773'228'304	-526'087'755
2014	ROW	172'399'541	151'040'675	0.05	181'019'518	-29'978'843	7'468'102'413	-0.4	0.8	-2'564'029	-6'217'513	9.5	4.7	100.0	100.0			1'819'460'143	-632'658'866
2015	ROW	107'171'299	76'569'118	0.05	112'529'864	-35'960'746	6'678'177'512	-0.5	0.7	-65'228'242	-5'981'903	7.4	7.8	100.0	100.0			1'441'467'621	-459'953'051
2016	ROW	122'996'233	68'168'586	0.05	129'146'045	-60'977'459	6'813'095'379	-0.9	0.5	15'824'934	-25'016'713	8.6	9.0	100.0	100.0			1'423'028'427	-676'295'492
2017	ROW	218'504'132	126'402'997	0.05	229'429'339	-103'026'342	7'702'938'379	-1.3	0.6	95'507'899	-42'048'883	12.4	29.3	100.0	100.0			1'757'463'670	-352'098'010
2018	ROW	262'363'105	138'071'684	0.05	275'481'260	-137'409'577	8'271'106'235	-1.7	0.5	43'858'973	-34'383'235	14.3	51.0	100.0	100.0			1'835'179'371	-269'370'034
2019	ROW	216'615'696	190'409'181	0.05	227'446'481	-37'037'300	9'371'275'264	-0.4	0.8	-45'747'409	100'372'277	10.9	22.3	100.0	100.0			1'986'109'552	-165'906'986
2020	ROW	119'638'576	123'827'090	0.05	125'620'505	-1'793'415	8'270'468'614	0.0	1.0	-96'977'120	35'243'885	6.4	1.2	100.0	100.0			1'863'531'157	-145'161'157
2021	ROW	231'315'640	185'229'266	0.05	242'881'422	-57'652'156	9'249'133'946	-0.6	0.8	111'677'064	-55'858'741	8.4	388.5	100.0	100.0			2'752'163'636	-14'838'084
2022	ROW	655'254'446	107'728'714	0.05	688'017'168	-580'288'454	12'134'931'018	-4.8	0.2	423'938'806	-522'636'298	29.1	56.3	100.0	100.0			2'254'702'312	-1'030'697'287
2009	SUM OF 4 CA	100'995'846	135'423'604	0.05	106'045'638	29'377'966	4'690'061'381	0.6	1.3			8.6	-11.2	91.8	105.9	100.0	100.0		
2010	SUM OF 4 CA	155'554'524	208'086'686	0.05	163'332'250	44'754'436	4'794'361'863	0.9	1.3	54'558'678	15'376'470	10.5	-10.5	93.5	92.0	100.0	100.0		
2011	SUM OF 4 CA	188'596'794	200'248'930	0.05	198'026'634	2'222'296	6'197'765'984	0.0	1.0	33'042'270	-42'532'140	9.5	-0.2	96.5	27.2	100.0	100.0		
2012	SUM OF 4 CA	218'957'190	196'226'059	0.05	229'905'050	-33'678'991	6'605'142'884	-0.5	0.9	30'360'396	-35'901'287	13.0	5.3	96.0	108.6	100.0	100.0		
2013	SUM OF 4 CA	166'322'285	148'194'750	0.05	174'638'399	-26'443'649	7'335'033'801	-0.4	0.8	-52'634'905	7'235'341	9.4	5.0	95.1	111.3	100.0	100.0		
2014	SUM OF 4 CA	158'085'593	138'824'543	0.05	165'989'873	-27'165'330	7'468'102'413	-0.4	0.8	-8'236'692	-721'680	8.7	4.3	91.7	90.6	100.0	100.0		
2015	SUM OF 4 CA	93'888'094	65'118'789	0.05	98'582'499	-33'463'710	6'678'177'512	-0.5	0.7	-64'197'499	-6'298'380	6.5	7.3	87.6	93.1	100.0	100.0		
2016	SUM OF 4 CA	104'320'501	49'832'858	0.05	109'536'526	-59'703'668	6'813'095'379	-0.9	0.5	10'432'407	-26'239'958	7.3	8.8	84.8	97.9	100.0	100.0		
2017	SUM OF 4 CA	199'040'540	103'856'290	0.05	208'992'567	-105'136'277	7'702'938'379	-1.4	0.5	94'720'039	-45'432'609	11.3	29.9	91.1	102.0	100.0	100.0		
2018	SUM OF 4 CA	238'559'857	109'420'918	0.05	250'487'850	-141'066'932	8'271'106'235	-1.7	0.4	39'519'317	-35'930'654	13.0	52.4	90.9	102.7	100.0	100.0		
2019	SUM OF 4 CA	183'301'898	156'655'614	0.05	192'466'993	-35'811'379	9'371'275'264	-0.4	0.8	-55'257'959	105'255'553	9.2	21.6	84.6	96.7	100.0	100.0		
2020	SUM OF 4 CA	89'310'780	90'021'741	0.05	93'776'319	-3'754'578	8'270'468'614	0.0	1.0	-93'991'118	32'056'801	4.8	2.6	74.7	209.4	100.0	100.0		
2021	SUM OF 4 CA	184'052'042	140'901'076	0.05	193'254'644	-52'353'568	9'249'133'946	-0.6	0.7	94'741'262	-48'598'990	6.7	352.8	79.6	90.8	100.0	100.0		
2022	SUM OF 4 CA	608'788'894	66'269'642	0.05	639'228'339	-572'958'697	12'134'931'018	-4.7	0.1	424'736'852	-520'605'129	27.0	55.6	92.9	98.7	100.0	100.0		
2009	China	1'866'041	2'903'444	0.05	1'959'343	944'101	4'690'061'381	0.0	1.5			0.2	-0.4	1.7	3.4	1.8	3.2		
2010	China	2'389'983	3'393'313	0.05	2'509'482	883'831	4'794'361'863	0.0	1.4	523'942	-60'270	0.2	-0.2	1.4	1.8	1.5	2.0		
2011	China	1'340'033	2'610'680	0.05	1'407'035	1'203'645	6'197'765'984	0.0	1.9	-1'049'950	319'815	0.1	-0.1	0.7	14.7	0.7	54.2		
2012	China	679'373	1'190'863	0.05	713'342	477'521	6'605'142'884	0.0	1.7	-660'660	-726'124	0.0	-0.1	0.3	-1.5	0.3	-1.4		
2013	China	1'730'028	1'036'712	0.05	1'816'529	-779'817	7'335'033'801	0.0	0.6	1'050'655	-1'257'339	0.1	0.1	1.0	3.3	1.0	2.9		
2014	China	1'041'632	1'297'614	0.05	1'093'714	203'900	7'468'102'413	0.0	1.2	-688'396	983'718	0.1	0.0	0.6	-0.7	0.7	-0.8		
2015	China	5'810'315	1'492'417	0.05	6'100'831	-4'608'414	6'678'177'512	-0.1	0.2	4'768'683	-4'812'314	0.4	1.0	5.4	12.8	6.2	13.8		
2016	China	3'676'160	1'578'033	0.05	3'859'968	-2'281'935	6'813'095'379	0.0	0.4	-2'134'155	2'326'479	0.3	0.3	3.0	3.7	3.5	3.8		
2017	China	1'470'930	2'295'546	0.05	1'544'477	751'070	7'702'938'379	0.0	1.5	-2'205'230	3'033'005	0.1	-0.2	0.7	-0.7	0.7	-0.7		
2018	China	1'302'007	2'938'080	0.05	1'367'107	1'570'973	8'271'106'235	0.0	2.1	-168'923	819'903	0.1	-0.6	0.5	-1.1	0.5	-1.1		
2019	China	1'276'551	4'334'257	0.05	1'340'379	2'993'878	9'371'275'264	0.0	3.2	-25'456	1'422'906	0.1	-1.8	0.6	-8.1	0.7	-8.4		
2020	China	409'479	1'062'618	0.05	429'953	632'665	8'270'468'614	0.0	2.5	-867'072	-2'361'213	0.0	-0.4	0.3	-35.3	0.5	-16.9		
2021	China	952'334	4'469'211	0.05	999'951	3'469'260	9'249'133'946	0.0	4.5	542'855	2'836'595	0.0	-23.4	0.4	-6.0	0.5	-6.6		
2022	China	417'463	3'624'111	0.05	438'336	3'185'775	12'134'931'018	0.0	8.3	-534'871	-283'485	0.0	-0.3	0.1	-0.5	0.1	-0.6		
2009	Russia	93'854'994	129'946'617	0.05	98'547'744	31'398'873	4'690'061'381	0.7	1.3			8.0	-12.0	85.3	113.2	92.9	106.9		
2010	Russia	148'484'664	202'183'240	0.05	155'908'897	46'274'343	4'794'361'863	1.0	1.3	54'629'670	14'875'470	10.0	-10.9	89.2	95.1	95.5	103.4		
2011	Russia	168'054'131	188'201'967	0.05	176'456'838	11'745'129	6'197'765'984	0.2	1.1	19'569'467	-34'529'213	8.5	-0.9	86.0	143.6	89.1	528.5		
2012	Russia	115'919'782	119'085'196	0.05	121'715'771	-2'630'575	6'605'142'884	0.0	1.0	-52'134'349	-14'375'705	6.9	0.4	50.8	8.5	52.9	7.8		
2013	Russia	31'473'405	35'604'727	0.05	33'047'075	2'557'652	7'335'033'801	0.0	1.1	-84'446'377	5'188'227	1.8	-0.5	18.0	-10.8	18.9	-9.7		
2014	Russia	21'040'639	22'874'717	0.05	22'092'671	782'046	7'468'102'413	0.0	1.0	-10'432'766	-1'775'606	1.2	-0.1	12.2	-2.6	13.3	-2.9		
2015	Russia	11'241'258	13'965'361	0.05	11'803'321	2'162'040	6'678'177'512	0.0	1.2	-9'799'381	1'379'994	0.8	-0.5	10.5	-6.0	12.0	-6.5		
2016	Russia	48'526'713	34'210'657	0.05	50'953'049	-16'742'392	6'813'095'379	-0.2	0.7	37'285'455	-18'904'432	3.4	2.5	39.5	27.5	46.5	28.0		
2017	Russia	129'146'480	53'722'317	0.05	135'603'804	-81'881'487	7'702'938'379	-1.1	0.4	80'619'767	-65'139'095	7.3	23.3	59.1	79.5	64.9	77.9		
2018	Russia	171'366'082	58'463'198	0.05	179'934'386	-121'471'188	8'271'106'235	-1.5	0.3	42'219'602	-39'589'701	9.3	45.1	65.3	88.4	71.8	86.1		
2019	Russia	91'638'566	72'961'880	0.05	96'220'494	-23'258'614	9'371'275'264	-0.2	0.8	-79'727'516	98'212'574	4.6	14.0	42.3	62.8	50.0	64.9		
2020	Russia	58'605'051	57'418'503	0.05	61'535'304	-4'116'800	8'270'468'614	0.0	0.9	-33'033'515	19'141'814	3.1	2.8	49.0	229.6	65.6	109.6		
2021	Russia	93'765'654	61'628'607	0.05	98'453'937	-36'825'329	9'249'133'946	-0.4	0.6	35'160'603	-32'708'529	3.4	248.2	40.5	63.9	50.9	70.3		
2022	Russia	509'792'373	n/a	0.05	535'281'992	n/a	12'134'931'018	n/a	n/a	416'026'719	n/a	22.6	n/a	77.8	n/a	83.7	n/a		
2009	Kazakhstan	3'389'683	2'573'543	0.05	3'559'167	-985'624	4'690'061'381	0.0	0.7			0.3	0.4	3.1	-3.6	3.4	-3.4		
2010	Kazakhstan	2'896'761	2'510'133	0.05	3'041'599	-531'466	4'794'361'863	0.0	0.8	-492'922	454'158	0.2	0.1	1.7	-1.1	1.9	-1.2		
2011	Kazakhstan	11'878'849	9'436'283	0.05	12'472'791	-3'036'508	6'197'765'984	0.0	0.8	8'982'088	-2'505'042	0.6	0.2	6.1	-37.1	6.3	-136.6		
2012	Kazakhstan	99'112'741	75'950'000	0.05	104'068'378	-28'118'378	6'605'142'884	-0.4	0.7	87'233'892	-25'081'870	5.9	4.4	43.4	90.6	45.3	83.5		
2013	Kazakhstan	130'622'379	111'553'311	0.05	137'153'498	-25'600'187	7'335'033'801	-0.3	0.8	31'509'638	2'518'191	7.4	4.9	74.7	107.7	78.5	96.8		
2014	Kazakhstan	125'243'143	114'652'212	0.05	131'505'300	-16'853'088	7'468'102'413	-0.2	0.9	-5'379'236	8'747'099	6.9	2.7	72.6	56.2	79.2	62.0		
2015	Kazakhstan	73'016'352	49'661'011	0.05	76'667'170	-27'006'159	6'678'177'512	-0.4	0.6	-52'226'791	-10'153'070	5.1	5.9	68.1	75.1	77.8	80.7		
2016	Kazakhstan	44'787'421	14'044'168	0.05	47'026'792	-32'982'624	6'813'095'379	-0.5	0.3	-28'228'931	-5'976'465	3.1	4.9	36.4	54.1	42.9	55.2		
2017	Kazakhstan	54'173'021	41'709'967	0.05	56'881'672	-15'171'705	7'702'938'379	-0.2	0.7	9'385'600	17'810'919	3.1	4.3	24.8	14.7	27.2	14.4		
2018	Kazakhstan	46'710'315	36'421'996	0.05	49'045'831	-12'623'835	8'271'106'235	-0.2	0.7	-7'462'706	2'547'871	2.5	4.7	17.8	9.2	19.6	8.9		
2019	Kazakhstan	77'446'900	66'571'001	0.05	81'319'245	-14'748'244	9'371'275'264	-0.2	0.8	30'736'585	-2'124'410	3.9	8.9	35.8	39.8	42.3	41.2		
2020	Kazakhstan	21'608'165	24'767'975	0.05	22'688'573	2'079'401	8'270'468'614	0.0	1.1	-55'838'735	16'827'646	1.2	-1.4	18.1	-115.9	24.2	-55.4		
2021	Kazakhstan	78'332'262	64'835'037	0.05	82'248'875	-17'413'839	9'249'133'946	-0.2	0.8	56'724'097	-19'493'240	2.8	117.4	33.9	30.2	42.6	33.3		
2022	Kazakhstan	84'427'704	49'784'853	0.05	88'649'089	-38'864'236	12'134'931'018	-0.3	0.6	6'095'442	-21'450'398	3.7	3.8	12.9	6.7	13.9	6.8		
2009	Uzbekistan	1'885'128	n/a	0.05	1'979'384	n/a	4'690'061'381	n/a	n/a			0.2	n/a	1.7	n/a	1.9	n/a		
2010	Uzbekistan	1'783'116	n/a	0.05	1'872'272	n/a	4'794'361'863	n/a	n/a	-102'012	n/a	0.1	n/a	1.1	n/a	1.1	n/a		
2011	Uzbekistan	7'323'781	n/a	0.05	7'689'970	n/a	6'197'765'984	n/a	n/a	5'540'665	n/a	0.4	n/a	3.7	n/a	3.9	n/a		
2012	Uzbekistan	3'245'294	n/a	0.05	3'407'559	n/a	6'605'142'884	n/a	n/a	-4'078'487	n/a	0.2	n/a	1.4	n/a	1.5	n/a		
2013	Uzbekistan	2'496'473	n/a	0.05	2'621'297	n/a	7'335'033'801	n/a	n/a	-748'821	n/a	0.1	n/a	1.4	n/a	1.5	n/a		
2014	Uzbekistan	10'760'179	n/a	0.05	11'298'188	n/a	7'468'102'413	n/a	n/a	8'263'706	n/a	0.6	n/a	6.2	n/a	6.8	n/a		
2015	Uzbekistan	3'820'169	n/a	0.05	4'011'177	n/a	6'678'177'512	n/a	n/a	-6'940'010	n/a	0.3	n/a	3.6	n/a	4.1	n/a		
2016	Uzbekistan	7'330'207	n/a	0.05	7'696'717	n/a	6'813'095'379	n/a	n/a	3'510'038	n/a	0.5	n/a	6.0	n/a	7.0	n/a		
2017	Uzbekistan	14'250'109	6'128'460	0.05	14'962'614	-8'834'154	7'702'938'379	-0.1	0.4	6'919'902		0.8	2.5	6.5	8.6	7.2	8.4		
2018	Uzbekistan	19'181'453	11'597'644	0.05	20'140'526	-8'542'882	8'271'106'235	-0.1	0.6	4'931'344	291'273	1.0	3.2	7.3	6.2	8.0	6.1		
2019	Uzbekistan	12'939'881	12'788'476	0.05	13'586'875	-798'399	9'371'275'264	0.0	0.9	-6'241'572	7'744'483	0.7	0.5	6.0	2.2	7.1	2.2		
2020	Uzbekistan	8'688'085	6'772'645	0.05	9'122'489	-2'349'844	8'270'468'614	0.0	0.7	-4'251'796	-1'551'445	0.5	1.6	7.3	131.0	9.7	62.6		
2021	Uzbekistan	11'001'792	9'968'221	0.05	11'551'882	-1'583'661	9'249'133'946	0.0	0.9	2'313'707	766'184	0.4	10.7	4.8	2.7	6.0	3.0		
2022	Uzbekistan	14'151'354	12'860'678	0.05	14'858'922	-1'998'244	12'134'931'018	0.0	0.9	3'149'562	-414'583	0.6	0.2	2.2	0.3	2.3	0.3		

Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.

Table A. 6. Kyrgyz Mirror Exports of Re-Exportable Bazaar Goods (Appendix)

Year	Country	Official exports (reported exports by Kyrgyzstan, FOB, in USD)	Mirror exports (reported imports of partner country (CIF, in USD)	CIF adjustment (5%)	Adjusted official Kyrgyz exports (CIF, in USD)	Mirror export gap (partner's reported imports - adjusted exports of Kyrgyzstan, in USD)	GDP (current USD)	Mirror gap as % of GDP	Ratio mirror exports to official exports	Annual change in official exports (FOB, in USD)	Annual change in mirror gap (in USD)	Share in total official Kyrgyz exports to ROW of all commodities (in %, FOB)	Share in total mirror export gap of all commodities with ROW (in %)	Share in total official Kyrgyz exports of re-exportable bazaar goods with ROW (in %, FOB)	Share in total mirror gap of re-exportable bazaar goods with ROW (in %)	Share in total official Kyrgyz exports of re-exportable bazaar goods with 4 CA partners (in %, FOB)	Share in total mirror export gap of re-exportable bazaar goods with 4 CA partners (in %)	Total Official Exports from KG to ROW (all commodities, FOB, in USD)	Total Mirror Export Gap of KG to ROW (all commodities, in USD)
2009	ROW	91'255'388	120'656'836	0.05	95'818'157	24'838'678	4'690'061'381	0.5	1.3			7.7	-9.5	100	100			1'178'273'614	-262'466'984
2010	ROW	143'696'186	193'467'768	0.05	150'880'995	42'586'773	4'794'361'863	0.9	1.3	52'440'798	17'748'095	9.7	-10.0	100	100			1'488'400'507	-424'220'026
2011	ROW	175'125'671	178'111'046	0.05	183'881'955	-5'770'909	6'197'765'984	-0.1	1.0	31'429'485	-48'357'682	8.8	0.5	100	100			1'978'932'373	-1'259'918'804
2012	ROW	188'786'815	162'811'431	0.05	198'226'156	-35'414'725	6'605'142'884	-0.5	0.8	13'661'144	-29'643'816	11.2	5.6	100	100			1'683'236'842	-633'022'814
2013	ROW	139'344'911	117'705'095	0.05	146'312'157	-28'607'062	7'335'033'801	-0.4	0.8	-49'441'904	6'807'663	7.9	5.4	100	100			1'773'228'304	-526'087'755
2014	ROW	136'840'082	120'389'116	0.05	143'682'086	-23'292'970	7'468'102'413	-0.3	0.8	-2'504'829	5'314'092	7.5	3.7	100	100			1'819'460'143	-632'658'866
2015	ROW	87'612'158	55'875'047	0.05	91'992'766	-36'117'719	6'678'177'512	-0.5	0.6	-49'227'924	-12'824'749	6.1	7.9	100	100			1'441'467'621	-459'953'051
2016	ROW	91'545'304	43'367'761	0.05	96'122'569	-52'754'808	6'813'095'379	-0.8	0.5	3'933'146	-16'637'090	6.4	7.8	100	100			1'423'028'427	-676'295'492
2017	ROW	165'703'343	80'043'335	0.05	173'988'510	-93'945'175	7'702'938'379	-1.2	0.5	74'158'039	-41'190'366	9.4	26.7	100	100			1'757'463'670	-352'098'010
2018	ROW	215'427'313	81'463'363	0.05	226'198'679	-144'735'316	8'271'106'235	-1.7	0.4	49'723'970	-50'790'141	11.7	53.7	100	100			1'835'179'371	-269'370'034
2019	ROW	170'976'714	130'825'199	0.05	179'525'550	-48'700'351	9'371'275'264	-0.5	0.7	-44'450'599	96'034'965	8.6	29.4	100	100			1'986'109'552	-165'906'986
2020	ROW	96'488'059	83'968'918	0.05	101'312'462	-17'343'544	8'270'468'614	-0.2	0.8	-74'488'655	31'356'808	5.2	11.9	100	100			1'863'531'157	-145'161'157
2021	ROW	123'281'639	110'855'602	0.05	129'445'721	-18'590'119	9'249'133'946	-0.2	0.9	26'793'580	-1'246'576	4.5	125.3	100	100			2'752'163'636	-14'838'084
2022	ROW	639'507'006	51'046'295	0.05	671'482'356	-620'436'061	12'134'931'018	-5.1	0.1	516'225'367	-601'845'941	28.4	60.2	100	100			2'254'702'312	-1'030'697'287
2009	SUM OF 4 CA	86'719'517	117'592'860	0.05	91'055'493	26'537'367	4'690'061'381	0.6	1.3			7.4	-10.1	95.0	106.8	100	100		
2010	SUM OF 4 CA	138'295'213	189'291'613	0.05	145'209'974	44'081'639	4'794'361'863	0.9	1.3	51'575'696	17'544'272	9.3	-10.4	96.2	103.5	100	100		
2011	SUM OF 4 CA	168'590'682	174'197'856	0.05	177'020'216	-2'822'360	6'197'765'984	0.0	1.0	30'295'469	-46'903'999	8.5	0.2	96.3	48.9	100	100		
2012	SUM OF 4 CA	184'936'700	160'213'144	0.05	194'183'535	-33'970'391	6'605'142'884	-0.5	0.8	16'346'018	-31'148'031	11.0	5.4	98.0	95.9	100	100		
2013	SUM OF 4 CA	133'442'485	114'023'771	0.05	140'114'609	-26'090'838	7'335'033'801	-0.4	0.8	-51'494'215	7'879'553	7.5	5.0	95.8	91.2	100	100		
2014	SUM OF 4 CA	131'483'474	117'308'863	0.05	138'057'648	-20'748'785	7'468'102'413	-0.3	0.8	-1'959'011	5'342'054	7.2	3.3	96.1	89.1	100	100		
2015	SUM OF 4 CA	84'518'720	54'210'814	0.05	88'744'656	-34'533'842	6'678'177'512	-0.5	0.6	-46'964'754	-13'785'057	5.9	7.5	96.5	95.6	100	100		
2016	SUM OF 4 CA	86'192'819	35'644'393	0.05	90'502'460	-54'858'067	6'813'095'379	-0.8	0.4	1'674'099	-20'324'225	6.1	8.1	94.2	104.0	100	100		
2017	SUM OF 4 CA	161'548'391	74'160'351	0.05	169'625'811	-95'465'460	7'702'938'379	-1.2	0.4	75'355'572	-40'607'393	9.2	27.1	97.5	101.6	100	100		
2018	SUM OF 4 CA	209'478'278	73'344'727	0.05	219'952'192	-146'607'465	8'271'106'235	-1.8	0.3	47'929'887	-51'142'005	11.4	54.4	97.2	101.3	100	100		
2019	SUM OF 4 CA	159'371'139	117'405'858	0.05	167'339'696	-49'933'838	9'371'275'264	-0.5	0.7	-50'107'139	96'673'628	8.0	30.1	93.2	102.5	100	100		
2020	SUM OF 4 CA	87'816'757	73'974'870	0.05	92'207'595	-18'232'725	8'270'468'614	-0.2	0.8	-71'554'382	31'701'113	4.7	12.6	91.0	105.1	100	100		
2021	SUM OF 4 CA	113'704'073	100'051'087	0.05	119'389'277	-19'338'190	9'249'133'946	-0.2	0.8	25'887'316	-1'105'465	4.1	130.3	92.2	104.0	100	100		
2022	SUM OF 4 CA	633'992'770	38'111'095	0.05	665'692'409	-627'581'313	12'134'931'018	-5.2	0.1	520'288'697	-608'243'123	28.1	60.9	99.1	101.2	100	100		
2009	China	298'525	522'730	0.05	313'451	209'279	4'690'061'381	0.0	1.7			0.0	-0.1	0.3	0.8	0.3	0.8		
2010	China	373'326	107'485	0.05	391'992	-284'507	4'794'361'863	0.0	0.3	74'801	-493'786	0.0	0.1	0.3	-0.7	0.3	-0.6		
2011	China	220'049	227'720	0.05	231'051	-3'331	6'197'765'984	0.0	1.0	-153'277	281'176	0.0	0.0	0.1	0.1	0.1	0.1		
2012	China	193'458	67'184	0.05	203'131	-135'947	6'605'142'884	0.0	0.3	-26'591	-132'615	0.0	0.0	0.1	0.4	0.1	0.4		
2013	China	823'764	37'834	0.05	864'952	-827'118	7'335'033'801	0.0	0.0	630'306	-691'171	0.0	0.2	0.6	2.9	0.6	3.2		
2014	China	515'397	57'062	0.05	541'167	-484'105	7'468'102'413	0.0	0.1	-308'367	343'013	0.0	0.1	0.4	2.1	0.4	2.3		
2015	China	4'992'824	n/a	0.05	5'242'465	n/a	6'678'177'512	n/a	n/a	4'477'427	n/a	0.3	n/a	5.7	n/a	5.9	n/a		
2016	China	2'940'609	30'622	0.05	3'087'639	-3'057'017	6'813'095'379	0.0	0.0	-2'052'215	n/a	0.2	0.5	3.2	5.8	3.4	5.6		
2017	China	755'394	15'611	0.05	793'164	-777'553	7'702'938'379	0.0	0.0	-2'185'215	2'279'465	0.0	0.2	0.5	0.8	0.5	0.8		
2018	China	92'457	15'065	0.05	97'080	-82'015	8'271'106'235	0.0	0.2	-662'937	695'538	0.0	0.0	0.0	0.1	0.0	0.1		
2019	China	54'747	20'109	0.05	57'484	-37'375	9'371'275'264	0.0	0.3	-37'710	44'640	0.0	0.0	0.0	0.1	0.0	0.1		
2020	China	264'193	517'554	0.05	277'403	240'151	8'270'468'614	0.0	1.9	209'446	277'527	0.0	-0.2	0.3	-1.4	0.3	-1.3		
2021	China	103'698	75'823	0.05	108'883	-33'060	9'249'133'946	0.0	0.7	-160'495	-273'211	0.0	0.2	0.1	0.2	0.1	0.2		
2022	China	193'586	1'672'954	0.05	203'265	1'469'689	12'134'931'018	0.0	8.2	89'888	1'502'749	0.0	-0.1	0.0	-0.2	0.0	-0.2		
2009	Russia	78'590'796	111'552'638	0.05	82'520'336	29'032'302	4'690'061'381	0.6	1.4			6.7	-11.1	86.1	116.9	90.6	109.4		
2010	Russia	129'383'101	182'792'394	0.05	135'852'256	46'940'138	4'794'361'863	1.0	1.3	50'792'305	17'907'836	8.7	-11.1	90.0	110.2	93.6	106.5		
2011	Russia	143'477'435	159'458'017	0.05	150'651'307	8'806'710	6'197'765'984	0.1	1.1	14'094'334	-38'133'428	7.3	-0.7	81.9	-152.6	85.1	-312.0		
2012	Russia	80'431'808	81'839'060	0.05	84'453'398	-2'614'338	6'605'142'884	0.0	1.0	-63'045'627	-11'421'049	4.8	0.4	42.6	7.4	43.5	7.7		
2013	Russia	5'936'917	6'496'693	0.05	6'233'763	262'930	7'335'033'801	0.0	1.0	-74'494'891	2'877'269	0.3	0.0	4.3	-0.9	4.4	-1.0		
2014	Russia	4'150'019	4'260'846	0.05	4'357'520	-96'674	7'468'102'413	0.0	1.0	-1'786'898	-359'604	0.2	0.0	3.0	0.4	3.2	0.5		
2015	Russia	3'213'471	2'068'637	0.05	3'374'145	-1'305'508	6'678'177'512	0.0	0.6	-936'548	-1'208'834	0.2	0.3	3.7	3.6	3.8	3.8		
2016	Russia	42'216'526	26'902'089	0.05	44'327'352	-17'425'263	6'813'095'379	-0.3	0.6	39'003'055	-16'119'756	3.0	2.6	46.1	33.0	49.0	31.8		
2017	Russia	116'533'874	42'417'376	0.05	122'360'568	-79'943'192	7'702'938'379	-1.0	0.3	74'317'348	-62'517'928	6.6	22.7	70.3	85.1	72.1	83.7		
2018	Russia	161'584'799	48'222'231	0.05	169'664'039	-121'441'808	8'271'106'235	-1.5	0.3	45'050'925	-41'498'616	8.8	45.1	75.0	83.9	77.1	82.8		
2019	Russia	81'671'857	64'520'961	0.05	85'755'450	-21'234'489	9'371'275'264	-0.2	0.8	-79'912'942	100'207'319	4.1	12.8	47.8	43.6	51.2	42.5		
2020	Russia	58'839'293	50'000'566	0.05	61'781'258	-11'780'892	8'270'468'614	-0.1	0.8	-22'832'564	9'453'797	3.2	8.1	61.0	67.9	67.0	64.6		
2021	Russia	69'563'034	57'626'231	0.05	73'041'186	-15'414'955	9'249'133'946	-0.2	0.8	10'723'741	-3'634'263	2.5	103.9	56.4	82.9	61.2	79.7		
2022	Russia	561'670'195	n/a	0.05	589'753'705	n/a	12'134'931'018	n/a	n/a	492'107'161	n/a	24.9	n/a	87.8	n/a	88.6	n/a		
2009	Kazakhstan	6'334'917	5'517'492	0.05	6'651'663	-1'134'171	4'690'061'381	0.0	0.8			0.5	0.4	6.9	-4.6	7.3	-4.3		
2010	Kazakhstan	6'801'329	6'391'734	0.05	7'141'395	-749'661	4'794'361'863	0.0	0.9	466'412	384'509	0.5	0.2	4.7	-1.8	4.9	-1.7		
2011	Kazakhstan	17'452'263	14'512'119	0.05	18'324'876	-3'812'757	6'197'765'984	-0.1	0.8	10'650'934	-3'063'096	0.9	0.3	10.0	66.1	10.4	135.1		
2012	Kazakhstan	101'935'841	78'306'900	0.05	107'032'633	-28'725'733	6'605'142'884	-0.4	0.7	84'483'578	-24'912'976	6.1	4.5	54.0	81.1	55.1	84.6		
2013	Kazakhstan	126'452'140	107'489'244	0.05	132'774'747	-25'285'503	7'335'033'801	-0.3	0.8	24'516'299	3'440'230	7.1	4.8	90.7	88.4	94.8	96.9		
2014	Kazakhstan	125'461'638	112'990'955	0.05	131'734'720	-18'743'765	7'468'102'413	-0.3	0.9	-990'502	6'541'738	6.9	3.0	91.7	80.5	95.4	90.3		
2015	Kazakhstan	75'579'705	52'142'177	0.05	79'358'690	-27'216'513	6'678'177'512	-0.4	0.7	-49'881'933	-8'472'748	5.2	5.9	86.3	75.4	89.4	78.8		
2016	Kazakhstan	40'913'539	8'711'682	0.05	42'959'216	-34'247'534	6'813'095'379	-0.5	0.2	-34'666'166	-7'031'021	2.9	5.1	44.7	64.9	47.5	62.4		
2017	Kazakhstan	41'969'495	30'384'818	0.05	44'067'970	-13'683'152	7'702'938'379	-0.2	0.7	1'055'956	20'564'382	2.4	3.9	25.3	14.6	26.0	14.3		
2018	Kazakhstan	45'661'432	23'553'587	0.05	47'944'504	-24'390'917	8'271'106'235	-0.3	0.5	3'691'937	-10'707'765	2.5	9.1	21.2	16.9	21.8	16.6		
2019	Kazakhstan	75'705'424	50'942'554	0.05	79'490'695	-28'548'141	9'371'275'264	-0.3	0.6	30'043'992	-4'157'224	3.8	17.2	44.3	58.6	47.5	57.2		
2020	Kazakhstan	27'187'703	22'611'125	0.05	28'547'088	-5'935'963	8'270'468'614	-0.1	0.8	-48'517'721	22'612'178	1.5	4.1	28.2	34.2	31.0	32.6		
2021	Kazakhstan	39'534'492	38'895'640	0.05	41'511'217	-2'615'577	9'249'133'946	0.0	0.9	12'346'789	3'320'386	1.4	17.6	32.1	14.1	34.8	13.5		
2022	Kazakhstan	64'883'004	31'464'323	0.05	68'127'154	-36'662'831	12'134'931'018	-0.3	0.5	25'348'512	-34'047'254	2.9	3.6	10.1	5.9	10.2	5.8		
2009	Uzbekistan	1'495'279	n/a	0.05	1'570'043	n/a	4'690'061'381	n/a	n/a			0.1	n/a	1.6	n/a	1.7	n/a		
2010	Uzbekistan	1'737'457	n/a	0.05	1'824'330	n/a	4'794'361'863	n/a	n/a	242'178	n/a	0.1	n/a	1.2	n/a	1.3	n/a		
2011	Uzbekistan	7'440'935	n/a	0.05	7'812'982	n/a	6'197'765'984	n/a	n/a	5'703'478	n/a	0.4	n/a	4.2	n/a	4.4	n/a		
2012	Uzbekistan	2'375'593	n/a	0.05	2'494'373	n/a	6'605'142'884	n/a	n/a	-5'065'342	n/a	0.1	n/a	1.3	n/a	1.3	n/a		
2013	Uzbekistan	229'664	n/a	0.05	241'147	n/a	7'335'033'801	n/a	n/a	-2'145'929	n/a	0.0	n/a	0.2	n/a	0.2	n/a		
2014	Uzbekistan	1'356'420	n/a	0.05	1'424'241	n/a	7'468'102'413	n/a	n/a	1'126'756	n/a	0.1	n/a	1.0	n/a	1.0	n/a		
2015	Uzbekistan	732'720	n/a	0.05	769'356	n/a	6'678'177'512	n/a	n/a	-623'700	n/a	0.1	n/a	0.8	n/a	0.9	n/a		
2016	Uzbekistan	122'145	n/a	0.05	128'252	n/a	6'813'095'379	n/a	n/a	-610'575	n/a	0.0	n/a	0.1	n/a	0.1	n/a		
2017	Uzbekistan	2'289'628	1'342'546	0.05	2'404'109	-1'061'563	7'702'938'379	0.0	0.6	2'167'483	n/a	0.1	0.3	1.4	1.1	1.4	1.1		
2018	Uzbekistan	2'139'590	1'553'844	0.05	2'246'570	-692'726	8'271'106'235	0.0	0.7	-150'038	368'838	0.1	0.3	1.0	0.5	1.0	0.5		
2019	Uzbekistan	1'939'111	1'922'234	0.05	2'036'067	-113'833	9'371'275'264	0.0	0.9	-200'479	578'893	0.1	0.1	1.1	0.2	1.2	0.2		
2020	Uzbekistan	1'525'568	845'625	0.05	1'601'846	-756'221	8'270'468'614	0.0	0.5	-413'543	-642'389	0.1	0.5	1.6	4.4	1.7	4.1		
2021	Uzbekistan	4'502'849	3'453'393	0.05	4'727'991	-1'274'598	9'249'133'946	0.0	0.7	2'977'281	-518'377	0.2	8.6	3.7	6.9	4.0	6.6		
2022	Uzbekistan	7'245'985	4'973'818	0.05	7'608'284	-2'634'466	12'134'931'018	0.0	0.7	2'743'136	-1'359'868	0.3	0.3	1.1	0.4	1.1	0.4		

Note. Compiled by author. Author's calculation based on trade data derived from UN Comtrade.