

The Exchange Rate Volatility During Political Protests: Event Study and the Case of Belarus

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Abstract

The exchange rate reacts on political protests. Market agents affected by unrest increase exchange rate volatility. This may be converted into currency devaluation if monetary authorities decide to join protesters rather than supporting the exchange rate. Based on the event study methodology, three hypotheses were tested on 1,220 event windows of 77 political protests, in 54 economies, in 2017-2022, on three points: (1) the types of political protests with the highest abnormal exchange rate volatility and currency returns; (2) the influence of protests on daily currency devaluation; (3) the effects of unrest on intraday exchange rate volatility. The findings show that the highest exchange rate volatility was in the groups of events with short duration, with a small number of participants, which were non-violent, motivated by electoral fraud, without outcomes, and in partly free countries. The highest currency devaluation was in the groups of unrest with the greatest number of protesters, lasting more than a month, and in free countries. Only rare cases prove a high statistically significant influence of protests on exchange rate volatility and currency devaluation. As the case-by-case approach is preferable, the case of Belarus, and the country's 14 largest political protests in 2020, was studied. This showed that four-month street unrests affected the abnormal intraday volatility of USD/BYN. After two weeks of protests, market volatility would have led to devaluation, if the National Bank hadn't intervened, and in two months of unrest, exchange rate volatility started falling.

Keywords: exchange rate, political economy of protests, event study, Belarus

1. Introduction

Around 1355, French philosopher Nicholas Oresme wrote, in his *Treatise on the Origin, Nature, Law and Alterations of Money*: "The currency does not belong to the 'prince' but to the people, and therefore should not be manipulated" (Oresme & Johnson, 2011).

This quote outlines the nature of exchange rate volatility during political protests. If the public feels it is ethical to put pressure on the exchange rate, to increase its volatility and undermine state's economic strengths during political unrest, should the central bank let the currency devalue, or support it? Which set of norms should prevail on exchange rate market in this case: the political ethics of the protesters or the professional norms of the monetary authorities?

This paper continues the discussion about social responsibility, honesty, and fairness in the field of 'financial ethics', not only of market agents, but financial authorities as well (Sandberg, 2019). It adds to the classical political economy debates on protests as the turning point from the authoritative to a democratic system (Egorov & Sonin, 2020), and encompasses their effects on the exchange rate volatility. The paper is also a part of the bigger recent discussion on the financial confrontation between the public and the state, i.e., decentralized digital currencies versus the state monetary system (Bagus & De la Horra, 2021, Larue et al., 2022), but with the focus on the transformation of financial ethics during political events.

The paper consists of several parts. The next one provides the literature review. The part on empirical research describes the hypotheses on the exchange rate volatility during political protests, the event study methodology, and the data used to test them. The next part shows analyses and estimation results based on data from 77 events of political protest in 54 economies in 2017–2022. It also focuses on the case of Belarus, and 14 of the country's largest street protests in 2020, with their effects on the exchange rate. Conclusion is at the end.

2. Literature Review

The exchange rate volatility during political protests have a theoretical background, both from the public point of view, as market agents that influence exchange rate behaviour, and from the state's point of view, as monetary authorities which are responsible for currency stability.

From the public point of view, political protests can be justified as civil responsibility to legitimize democracy (Smith, 2018). Among the motives for collective actions are injustice, efficacy, and identity (Sabusedo et al., 2018). Recent political protest cases reveal a list of the most frequent reasons for public political unrest, such as electoral fraud, corruption, violation of term limits, and opposition imprisonment (Carnegie, 2022). There are some other popular demands of protesters beyond the failure of political representation, such as economic injustice, violation of civil rights, and global issues (Ortiz et al., 2022).

Political protesters are ethically free to use different violent or non-violent instruments. Some philosophers defend anger and violence as morally apt responses to injustice, but there is no consensus among scholars, as to whether it's necessary (MacDonald & Symmonds, 2018). There are also different views, on whether it is efficient for protesters to use both violent and non-violent instruments (Gross, 2018). Moral obligations, norms, and personal conviction can motivate protesters to focus on non-violent (e.g., economic) instruments.

Economic instruments of political protest include strikes, refusing goods and services to political opponents, changes in public consumer behavior, and savings and investment ethics, behavior, and norms (Johnston et al., 2013; Orts, et al., 2018). Public financial behaviour is transforming during political protests. It pushes the public to make runs on the banks, withdraw deposits, cash out savings, and exchange national currency for foreign currency, not only to mitigate risk, but from an ethical perspective. The following exchange rate volatility becomes a reflection of the instruments of non-violent economic protest. Empirical studies prove the negative consequences of such instruments of protest on the costs of manufacturing enterprises, and banks' and stock market firms' performances (Shonchoy & Tsubota, 2015; Abdelbaki, 2013; Acemoglu et al., 2018; Chivakul et al., 2021; Liew & Rowland, 2016). Under the influence of unrest, old political connections become unethical and affect the firms' financial behavior. Companies can either wait for better times, or implement policies to decrease political risk, to save the political connections that used to give them competitive advantages (Kabiru et al., 2015; Boubakri et al., 2012). All this worsens the economic situation during protests.

In turn, poor economic performance can itself add economic motives and strengths to the political unrest. Studies show that individual and collective economic grievances, such as real income decline, rise of inequality, unemployment, and savings loss can stimulate citizens' inclination to protest (Grasso & Giugni, 2016; Kurer et al., 2018; Dodson, 2016; Richards & Gelleny, 2006). Rising exchange rate volatility with devaluation can become a self-sustaining motive for political protests, as is proven by recent cases in Belarus in 2011, Kazakhstan in 2014, Venezuela in 2018, Sudan in 2019, Syria in 2020, Algeria in 2021, Yemen in 2021, Iraq in 2022, and Lebanon in 2019-2022.

From the state's point of view, political protests become the alternative to the failed social dialog (Chaves, 2002), to the bad experience of non-free regimes, including more successful type of spinning dictatorship (Guriev & Treisman, 2022). In a non-democratic context, civil servants, like other individuals, are considering sharing protesters' ethics and joining collective action, based on information received and assurance of successful outcomes (Egorov & Sonin, 2020, 2021). Economic authorities in autocratic regimes represented by liberal technocrats may also have incentives to maintain the 'status quo' and resist bank runs, business bankruptcies, or currency or stock exchange attacks, even if this leads to further negative consequences for the public (Seddon & Ivanova, 2022). In this regard, professional and corporate norms, and the personal benefits to government officials prevail over political public ethics and social responsibility.

From the monetary authority's point of view, the ethics of currency (not money), depend on two issues (Villeroy de Galhau, 2022). The first is the importance of the institution; there is no currency without public authority. The second is the importance of trust, which relies on the independence, mandate and accountability of the central bank. Political protests can undermine both the public authority of, and trust in, the central bank. Studies show that the ethical standards of monetary authorities and exchange rate stability are vulnerable to political events (Armour et al., 2016). Monetary authorities use their expansion policies to influence public opinion during elections, (Grier, 1989). For example, pre-election expansive monetary policy can lead to exchange rate volatility and post-election devaluation of national currency (Bird & Willet, 2008). Unexpected results of elections can bring unexpected variations in foreign exchange rates (Garfinkel et al., 1999).

The influence of political protests on the central bank, exchange rate volatility, and devaluation, is rarely studied. It is not usually an ethical issue for the central bank to keep the exchange rate stable during street unrest, but a

matter of its competence and capability. Exchange rate behavior depends largely on the amount of currency reserves available for monetary authorities to intervene, control capital, and maintain the central bank's independence and commitment to maintain fixed or floating exchange rate regimes (Alpanda & Honig, 2009; Bernhard & Leblang, 1999). There are cases when monetary authorities have publicly admitted the effect of street unrest on currency devaluation. In December 2022, the Governor of the Iranian central bank partly blamed the devaluation of the Iranian real on political protests (Reuters, 2022).

3. Empirical Research

3.1 Hypotheses

Three hypotheses are tested here, based on the theoretical literature review and the logic of exchange rate volatility during political protests.

Hypothesis 1. Numerous, long-term and non-violent political protests against electoral fraud in non-democratic countries with political outcomes are accompanied by high intraday exchange rate volatility and daily currency devaluation. As financial behavior on the exchange rate market could be a non-violent economic instrument of political protest, exchange rate dynamics may reflect the number of protesters, duration of protest, its political motives, and its efficiency.

Hypothesis 2. Political protests can cause the daily devaluation of national currency. The cases that prove this hypothesis deserve further research on the nature of the political protest, and the ethics of monetary authorities.

Hypothesis 3. Political unrest can influence intraday exchange rate volatility by reflecting the financial behaviour of market agents in the foreign exchange market which are affected by unrest.

3.2 Methodology

Event study methodology (ESM) is used to test these hypotheses. This is the common methodology used to analyze an event and the observation period, e.g., an event window, over which an asset price will be examined. ESM has been popular for studying financial market behavior for decades (Brown & Warner, 1980). It has been adapted to study the foreign exchange market (Kwok & Brooks, 1990) and the effect of macroeconomic news on the exchange rate (Kočenda & Moravcová 2018).

ESM is used here to absorb abnormal exchange rate behavior shortly before, during, and after, political protests. The ESM includes event day, observation, and estimation periods. The event day [0] here is the day of the start of the political protest or the first day after the beginning of the protest when exchange rate data is available. Event windows are taken as the days before and after the event day. As the start of political protests is usually announced at least a week before the event day, and the market participants and authorities have time to prepare and create expectations about their values, so abnormal exchange rate behavior can occur in the pre-event period within the event window. The short-term observation periods are three days before event, the event day and three days after event day [-3; +3], and also five and seven days respectively [-5; +5], [-7; +7]. The long-term observation periods are one week before the event, the event day, and two weeks, one month, two months, and 100 days after the event: [-7; +14], [-7; +30], [-7; +60], [-7; +100]. The estimation period cannot overlap, and should be larger than event windows. Here, the estimation period includes the day before the long-term observation period [-8] till the first day of the current year; for example [-262; -8] for the case of Haiti. If the number of days in the observation period [-7; +100] is bigger than the number of days in the estimation period, then the latter ends on the first day of the previous, not the current year, for example [-427; -80] for the case of Thailand.

Exchange rate dynamics are studied using two variables; daily currency returns and intraday exchange rate volatility, by using the nominal exchange rate of national currency with respect to USD (1, 2).

$$\Delta E_{it} = \ln(E_{it}/E_{it-1}) * 100\% \quad (1)$$

E_{it} – nominal exchange rate of quoting currency i in a day t ,

E_{it-1} – nominal exchange rate of currency i in a day previous to the day t .

If $\Delta E_{it} < 0$, it shows an appreciation of the quoting currency i or positive returns.

If $\Delta E_{it} > 0$, it means a depreciation of the quoting currency i or negative returns.

$$\Delta E_{itv} = \ln((E_{iht} - E_{ilt}) / (E_{iht-1} - E_{ilt-1})) * 100\% \quad (2)$$

E_{iht} – highest nominal exchange rate of currency i within a day t , E_{iht-1} – within a day before the day t .

E_{ilt} – lowest nominal exchange rate i within a day t and E_{ilt-1} – within a day before the day t .

If $E_{iht} > 0$, it represents the rise of exchange rate volatility in day t in comparison with the previous day $t-1$.

If $E_{iht} < 0$, it shows the fall of exchange rate volatility in day t .

ESM provides the tool to evaluate the results of financial behavior in the foreign exchange market during political protests, by comparing currency returns in observation protests periods, and in estimation of pre-protests periods. Cumulative mean abnormal return (CAR_{it}) is determined here by the constant mean return model, as the difference between the sum of actual returns in the observation period t_1 and the expected average daily returns in the estimation period t_2 multiplied by the number of days in event window Nt_1 (3).

$$CAR_{it} = \left(\sum_{t_1} \Delta E_{it} - [Nt_1 * \overline{\sum_{t_2} \Delta E_{it}}] \right) \quad (3)$$

If $CAR_{it} > 10\%$, the term ‘devaluation’ is used as the result of daily financial behavior during political protests.

If $10\% > CAR_{it} > 0$, the exchange rate is leaning to daily devaluation during political protests.

If $CAR_{it} < 0$, the exchange rate is not leading or resulting in daily devaluation during political protests.

ESM can also be used to evaluate public financial behavior in the foreign exchange market during protests. It is analyzed with cumulative mean abnormal volatility (CAV_{it}), determined similar to CAR_{it} with the formula (4) and shows intraday exchange rate volatility during protests, in comparison with non-protests periods.

$$CAV_{it} = \left(\sum_{t_1} \Delta E_{itv} - [Nt_1 * \overline{\sum_{t_2} \Delta E_{itv}}] \right) \quad (4)$$

If $CAV_{it} > 20\%$, intraday exchange rate volatility can lead to daily devaluation during political unrest.

If $CAV_{it} < 20\%$, intraday exchange rate volatility can barely lead to daily devaluation within the protests period.

The statistical significance of CAR_{it} and CAV_{it} is estimated with t-statistics as the ratio of cumulative abnormal returns or cumulative abnormal volatility and its corresponding standard deviations for the total analyzed periods of pre-event, window-event, and after-event, till the end of 2022.

If t-statistics $> |2|$ or p-value $< 0,05$, it shows that political protests have statistically significant influence on currency returns and volatility. The focus of the study is on the relative event windows with high statistical significance for further discussion.

The financial behaviour of monetary authorities during political protests is evaluated with the changes in the central bank’s international reserves in foreign currency and deposits (ΔRES_{it}) during the protests period, with available monthly data. The formula is used in log-quoted series (5).

$$\Delta RES_{it} = \ln(RES_{it}/RES_{it-1}) * 100\% \quad (5)$$

RES_{it} – reserve assets of central bank in foreign currency and deposits of country i in a month t ,

RES_{it-1} – reserve assets in foreign currency and deposits of country i in a month previous to the month t .

If $\Delta RES_{it} < 0$, there is an assumption, that central bank uses its foreign currency reserves to support exchange rate, and this behavior contradicts the political norms of protesters.

3.3 Data

The data for the political protest events is taken from the database of Carnegie Endowment for International Peace (Carnegie, 2022). Some studies use other databases of protests as well (Fisher etc., 2019). In this paper, 425 protest events in 133 economies were observed from 2017 to 2022. Out of these cases, only 77 protests in 54 economies (Note 1, Note 2) were selected using two factors. First, the countries have their own currency and independent monetary policy. So, the members of the Eurozone, and CFA Central and Western African region are not included in the research. Second, the protests have political motives and potentially lead to changes by the authorities. The motives for such kind of political protests are chosen as: electoral fraud, violation of the President’s terms limits, the imprisonment of political opponents, and corruption. Some cases of protests with autonomy demands in SAR Hong Kong and Uzbekistan, anti-quarantine protests in China, anti-inflation protests in Czech Republic, and some others, are also included in the research, as they had a political background and could have been transformed into politically-motivated events.

Raw data on exchange rates (E_t) is taken from Investing.com database (Investing.com, 2022) for the period from 2016 to 2022, and transformed into log-quoted series’ of currency returns.

The data on international reserves is taken from the websites of the relevant central banks (for example,

Bulgarian National Bank, 2022, National Bank of the Republic of Belarus, 2022, Central Bank of Uzbekistan, 2022).

To test *Hypothesis 1*, all selected 77 protest events in 54 economies from 2017-2022 were divided into groups (Carnegie, 2022). There are groups of economies with different democracy ratings (free, partly free, not free), level of violence (violent, non-violent), number of protesters (fewer than 10,000, from 10,000 to 50,000, above 50,000), the number of days the protest lasts (1 day, from 1 day to 1 month, above 1 month), motives (electoral fraud, violation of term's limits, imprisonment of opposition, corruption), and outcomes (with or without outcomes). CAR_{it} and CAV_{it} are estimated for each single protest event in 7 event windows. Then these variables are grouped, and the mean value of the variable is calculated for intergroup comparison and analyses.

To test *Hypothesis 2*, CAR_{it} and its t-statistics variables are calculated for all 77 protest events in each of 7 event windows. Statistically significant event windows and corresponding cases are analyzed.

To test *Hypothesis 3*, CAV_{it} with its t-statistics are estimated for 77 protest events in 7 event windows. ΔRES_{it} is also calculated for cases with high statistical significance of CAV_{it} . Both variables are used to analyze public and central bank financial behaviour during protests.

ESM is also used to evaluate the separate case of Belarussian political protests in 2020 with the 14 largest events being analyzed.

4. Analysis and Results

4.1 Estimation Results on 77 Political Protests in 54 Economies

Table 1 and Table 2 show high abnormal exchange rate volatility during political protests. From the short event window to the longest one, intraday exchange rate volatility increases and leads to devaluation. But daily devaluation didn't happen on average for the whole group of analyzed events: the cumulative mean abnormal return was below 1%.

Table 1. Cumulative mean abnormal currency return during 77 political protests in 54 economies in different groups of events in 2017-2022 (%)

Groups (number of events)	Cumulative mean currency return (CAR_{it})						
	[-3; +3]	[-5; +5]	[-7; +7]	[-7; +14]	[-7; +30]	[-7; +60]	[-7; +100]
Event window [days]							
Less than 10,000 participants (49)	-0,53	-0,86	-1,19	-1,88	-3,72	-6,68	-11,31
Participants from 10,000-50,000 (8)	0,29	0,34	0,49	1,65	3,95	4,26	4,17
More than 50,000 participants	1,45	2,38	3,89	5,63	8,64	13,63	21,95
Lasted 1 day (12)	0,25	0,88	0,81	1,47	1,55	4,43	6,16
Lasted 1 day – 1 month (26)	-1,38	-2,06	-3,07	-4,60	-8,15	-14,66	-23,5
Lasted more than 1 month (27)	1,22	1,95	3,18	4,65	6,66	11,22	16,98
Violent (21)	0,66	0,75	1,62	2,25	2,47	2,64	3,44
Non-violent (54)	-0,14	-0,07	-0,14	-0,32	-0,92	-1,37	-2,72
Electoral fraud (25)	-1,76	-2,26	-3,11	-4,25	-7,19	-14,67	-25,12
Term limits violation (5)	0,29	0,48	1,37	2,12	3,60	4,79	7,57
Opponents imprisoned (18)	0,75	0,59	0,90	0,89	1,08	2,44	0,91
Corruption (14)	-0,28	-0,16	-0,21	-0,70	-1,12	-0,45	0,59
Free countries (12)	1,74	3,29	4,77	7,01	12,40	22,82	37,35
Partly free (35)	-0,89	-1,33	-2,06	-3,13	-5,96	-10,70	-17,03
Not free (28)	0,62	0,71	1,50	2,35	3,13	3,47	3,22
With outcome (29)	0,04	0,07	0,01	-0,08	0,03	0,00	-0,01
Without outcome (48)	0,12	0,20	0,59	0,87	0,61	0,02	-1,23
Total mean (77)	0,12	0,22	0,50	0,70	0,62	0,29	-0,50

Note. Own elaboration with data from Carnegie, 2022, Investing.com, 2022.

Table 2. Cumulative mean abnormal exchange rate volatility n during 77 political protests in 54 economies in different groups of events in 2017-2022 (%)

Groups (number of events)	Cumulative mean exchange rate volatility (CAV _{it})						
	[-3; +3]	[-5; +5]	[-7; +7]	[-7; +14]	[-7; +30]	[-7; +60]	[-7; +100]
Less than 10,000 participants (49)	114,41	149,00	223,72	333,03	596,89	1033,06	1651,75
Participants from 10,000-50,000 (8)	-146,34	-43,56	-27,24	-8,61	-12,97	-32,99	-60,46
More than 50,000 participants	32,94	26,89	86,15	129,76	203,93	345,66	508,86
Lasted 1 day (12)	-3,45	-70,87	-54,25	-36,89	-24,69	-47,08	-51,78
Lasted 1 day – 1 month (26)	183,61	286,43	434,54	618,88	1103,73	1950,91	3136,90
Lasted more than 1 month (27)	26,30	26,68	47,55	85,83	117,36	196,21	286,43
Violent (21)	-22,22	-34,07	15,90	47,11	96,83	148,92	239,20
Non-violent (54)	123,51	154,45	227,01	332,99	580,94	1011,82	1597,70
Electoral fraud (25)	222,05	318,88	441,74	679,10	1173,73	2048,73	3228,66
Term limits violation (5)	-4,82	-4,80	-13,20	-78,67	-41,09	-68,88	-104,57
Opponents imprisoned (18)	10,76	-7,29	-16,25	3,97	-9,36	-28,28	-17,17
Corruption (14)	-0,08	-4,21	59,50	75,69	102,34	138,97	198,45
Free countries (12)	68,53	70,82	179,76	169,07	302,41	488,83	749,66
Partly free (35)	161,89	212,67	313,97	444,83	763,53	136,14	2204,67
Not free (28)	-9,97	-32,27	4,62	4,67	109,69	141,83	168,10
With outcome (29)	0,39	-9,38	31,22	38,76	71,82	117,53	177,95
Without outcome (48)	128,04	161,77	241,69	372,35	653,34	1130,82	1791,20
Total mean (77)	95,23	114,60	194,29	295,24	518,85	891,17	1405,60

Note. Own elaboration with data from Carnegie, 2022, Investing.com, 2022.

Hypothesis 1 doesn't prove to be true in all of its elements. The highest abnormal mean intraday exchange rate volatility is in the groups of events with fewer protesters, which lasted less than 1 month, and were non-violent, motivated against electoral fraud, in partly free countries, and without reaching demanded outcomes (see Table 2). The longer the analyzed event window of political protests in the mentioned groups of countries, the higher the abnormal exchange rate volatility.

Devaluation happened during political protests in only three groups of selected economies: (1) The group of events with the number of protesters above 50,000 in the event windows 60 days and longer after the first day of unrest; (2) Protests which lasted more than 1 month in the event windows 60 and more days after the public uprising started; (3) The group of free democratic countries in the event windows of 1 month and longer after the first protest.

Hypothesis 2 about the political protests' influence on national currency devaluation seems to be true only for a small number of countries and observation periods. Statistical significance with a high t-statistics indicator for cumulative mean abnormal currency return was found only in 21 out of 1,220 analyzed event windows in 15 out of 54 studied economies (Table 3).

Political protests caused abnormal devaluation in only 9 event windows in 4 countries: Angola, Chile, Haiti, and Myanmar. In the first three countries, statistically significant protests' effects on devaluation were found only in the long-term windows [-7; +100]. They were also witnessed in Angola in the observation period [-7, +60]. As the devaluation effect in these cases is rather far from the event day, and doesn't have confirmation in other event windows, there is the assumption that the found abnormal devaluation is coincidental, or caused by other factors.

The case of Myanmar is the only exception that proves that *Hypothesis 2* can be true. It shows statistically significant political protests' influence on devaluation in one short-term, and all long-term event windows. Public uprising against the military coup in Myanmar was numerous, long lasting, and violent. This is a suitable case for further research on the monetary authority's behaviour during political protests.

Table 3. Some features of political protests events that influenced currency returns in 2017 - 2022.

Economy	Event date	Event window	Estimation period	CAR _{it} %	t-statistics	Motives for protests	Number of protesters, peak size	Lasted days	Violence (1=yes, 0=no)	Outcome (1=yes, 0=no)
Haiti	07.02.2021	[-7;+100]	[-262;-8]	38,20	-2,94	Term limits violation	1000	150	0	0
Myanmar	02.01.2021	[-7;+7]	[-259;-8]	21,77	5,20	Military coup	100000	547	1	0
		[-7;+14]	[-259;-8]	32,79	6,47					
		[-7;+30]	[-259;-8]	37,72	5,58					
		[-7;+60]	[-259;-8]	31,58	3,32					
		[-7;+100]	[-259;-8]	33,14	2,62					
Angola	08.24.2022	[-7;+60]	[-417;-8]	23,99	2,93	Electoral fraud	1000	30	0	0
		[-7;+100]	[-417;-8]	28,09	2,46					
Chile	10.07.2019	[-7;+100]	[-389;-8]	16,04	2,12	Corruption	1000000	1	1	1
Russia	02.08.2020	[-7;+14]	[-269;-8]	6,95	3,51	Electoral law change	22000	30	1	0
Moldova	06.19.2018	[-7;+100]	[-381;-8]	5,75	-24,63	Electoral fraud	20000	60	0	0
Thailand	08.23.2022	[-5;+5]	[-427;-8]	2,22	2,10	Term limits violation	200	14	0	1
		[-7;+7]	[-427;-8]	3,97	2,99					
		[-7; +30]	[-427;-8]	4,84	2,69					
South Africa	07.09.2021	[-7;+14]	[-397;-8]	1,26	6,41	Opponents imprisoned	10000	14	0	0
Kenya	08.16.2022	[-7;+60]	[-397;-8]	0,07	1,97	Electoral fraud	1000	1	0	0
Brazil	10.31.2022	[-3;+3]	[-448;-8]	-5,30	-2,05	Electoral fraud	1000	30	0	0
China	11.26.2022	[-5;+5]	[-491;-8]	-2,11	-2,00	Quarantine	1000	30	0	1
Hong Kong	06.09.2019	[-7;+7]	[-375;-8]	-0,33	-1,98	Autonomy	2000000	365	1	1
		[-7;+14]	[-375;-8]	-0,48	-2,39					
		[-7;+30]	[-375;-8]	-0,54	-1,95					

Note. Own elaboration with data from Carnegie, 2022, Investing.com, 2022.

Hypothesis 3 on the protests' effect on the intraday exchange rate volatility is true only for three cases: Belarus, Bulgaria, and Uzbekistan (Table 4). Other analyzed event windows for political protests in 51 economies in 2017-2022 show low statistical significance of the unrests' influence on exchange rate volatility.

Table 4. The cases of intraday exchange rate volatility affected by political protests in 2017-2022.

Country	Event date	Event window	Estimation period	CAV _{it} %	CAR _{it} %	Δ RES _{it} Month %	Motives	Peak number of protesters	Lasted days	Violence (1=yes, 0=no)	Outcome (1=yes, 0=no)		
Belarus	08.12.2020	[-3;+3]	[-422;-8]	-9,81	0,75	08.2020	-35,10	10000	41	1	0		
		[-5;+5]	[-422;-8]	41,58	0,92								
		[-7;+7]	[-422;-8]	317,21	2,95								
		[-7;+14]	[-422;-8]	696,28	6,60								
		[-7;+30]	[-422;-8]	1248,23	4,80								
		[-7;+60]	[-422;-8]	2070,46	4,61							09.2020	-11,88
		[-7;+100]	[-422;-8]	2516,64	2,56							10.2020	-0,87
Bulgaria	09.07.2020	[-3;+3]	[-389;-8]	240,66	-1,43	09.2020	-19,92	400000	180	0	1		
		[-5;+5]	[-389;-8]	269,65	-1,22								
		[-7;+7]	[-389;-8]	380,36	-1,88								
		[-7;+14]	[-389;-8]	688,42	-4,87								
		[-7;+30]	[-389;-8]	1360,38	-5,53								
		[-7;+60]	[-389;-8]	1856,83	-4,72							10.2020	8,61
		[-7;+100]	[-389;-8]	2297,36	-6,32							11.2020	59,71
Uzbekistan	07.01.2022	[-3;+3]	[-390;-8]	-121,88	0,53	07.2020	-6,44	1000	7	1	1		
		[-5;+5]	[-390;-8]	-103,58	0,73								
		[-7;+7]	[-390;-8]	260,74	0,08								
		[-7;+14]	[-390;-8]	184,51	-0,16								
		[-7;+30]	[-390;-8]	812,47	-0,20								
		[-7;+60]	[-390;-8]	1486,69	0,61							08.2020	-3,53
		[-7;+100]	[-390;-8]	2271,02	1,88	09.2020	-4,61						

Note. Own elaboration with data from Bulgarian National Bank, 2022, Carnegie, 2022, Central Bank of Uzbekistan, 2022, Investing.com, 2022, National Bank of the Republic of Belarus, 2021, 2022.

The cases of Belarus, Bulgaria and Uzbekistan have different motives, instruments, duration, number of protesters, and outcomes. But they have similar high devaluation-leading influence on intraday exchange rate volatility (CAV_{it}) with strong statistical significance from seven days and longer observation periods with increasing effect. This abnormal volatility didn't lead to devaluation (CAR_{it}) in those countries, and abnormal currency returns had low statistical significance there. The hypothetical reason why raising volatility didn't result in daily devaluation in those three countries, is the reaction of their central banks to support the exchange rate. This assumption was proved by the drop in currency reserves of all three central banks (ΔRES_{it}) in the month when protests started.

Estimation results on 77 political protests in 54 economies show that a case-by-case approach is preferable in studying exchange rate behavior during political protests, so the separate case of Belarussian unrest is studied further.

4.2 Estimation Results on 14 Political Protests in the Republic of Belarus

In August 2020, during street unrest in Belarus after the Presidential election, one of the protesters held up a slogan addressed to the authorities: *"Doesn't exchange rate listen to you? Try a baton"* (Pearse, 2021). It symbolized how protesters hid their individual resistance behind collective action towards the foreign exchange market, to undermine exchange rate stability.

Political protests in Belarus in 2020 had electoral fraud motives, were numerous, long-term, periodic, violent from the state perspective (non-violent from the protesters' view), and without outcome. Political scholars see the background of these political protests in the media and geopolitical polarization of Belarusian society (Green, 2022; Onuch & Sasse, 2022a): some people focus on state-owned media, others read independent sources, some are leaning to the West, others are mentally closer to Russia. The tools used to mobilize protesters were social networks, pre-election campaign rallies and telegram-channels (Mateo, 2022; Wijermars & Lokot, 2022).

Forceful state reaction to public uprising in Belarus (Amnesty International, 2020) looks typical in terms of such types of political systems (Onuch & Sasse, 2022b). It expanded the motives for protests, although it had its reasons. In general, there is a common rule both for autocracies and democracies to react repressively to protests (Carey, 2006). The authorities consider any peaceful unrest as soon-to-be violent, when social media is used for the threat and moralization of violence (Mooijman et al., 2018; Neu et al., 2022). Besides, there is always a part of society that supports 'law and order' responses to protests (Goff et al., 2022). In the case of Belarus, the forceful state reaction also aimed to increase the fear, and the costs, of participation in the protests (Nikolayenko, 2022).

The political context of the Belarussian case had some common features with some other similar countries in non-violent protest instruments, and in near-protest activities. There are some limits to being socially responsible for corporations in an autocratic context (Maier & Gilbert, 2022), such as: making decisions for directors to use corporate funds for political donations (Lu et al., 2016); broadcasting and commenting events for journalists (Smyth, 2020); and getting reliable data during field research for scholars (Wackenhut, 2018). So it's getting personally safer in such political context to participate in non-public forms of collective protest, for example on the foreign exchange market.

Although the case of Belarus in 2020 looks typical, even for itself, with its election cycles (Ash, 2015), there are at least three features of Belarussian unrest that make it an outlier from the empirical point of view.

First, Belarussian protests were strictly political. They didn't have any of the direct economic, social, corruption, or Covid-19 motives that were often intermixed in other countries. Long-term anemic economic growth in Belarus has been caused by slow economic reforms, and compensated by Russian support. Deep state involvement in the economy has provided low income inequality and high anti-corruption pressure on firms (Rudy, 2020), as well as the tools to control politically connected management of the state-owned enterprises (Liang et al., 2015). In 2020, there was real GDP growth -0.9%, increase in CPI of 7.4%, and real income growth of 4.6% in Belarus. Despite the Covid-19 cases, there were no quarantine rules or workplace closures in the country in 2020. National homogeneity didn't provide any reasons for minority or BLM protests.

Secondly, Belarussian protests were periodic. According to the telegram channel of the Ministry of Internal Affairs of Belarus, there were daily multiple episodes of protest in different cities in the first days after President's election on August 9 2020 (Ministry of Internal Affairs of Belarus, 2021). From September to early December 2020, protests were at least once a week, on every Sunday, with multiple regional episodes. Belarussian protesters didn't stay on the streets until they achieved an outcome, or give up their periodic attempts. This untypical protest behavior had its influence on the exchange rate, as every Sunday protest was

anticipated to be crucial and final for the political system.

Thirdly, Belarussian protests had a high significant statistical effect on the intraday exchange rate volatility. Out of 90 studied events of political protests in 2017-2022 in 54 economies, only 16 events in 3 countries had a high statistically significant influence on intraday exchange rate volatility. Out of those 16 observed events, 14 happened in Belarus in 2020. Other studies also show the changes in public financial behavior in Belarus, and the rise in volatility of the number and value of banking deposits and token (digital) corporate bonds during protests in 2020 (Rudy, 2021).

Event study methodology is used here to evaluate the effects of political protests on the exchange rate of USD/BYN. Out of 41 analyzed protests in Belarus in 2020, the 14 largest events were chosen, starting from August 12 2020. There were protests on August 9-11 as well, but due to the lack of data because of internet lockdown on those days, the following political protests were analyzed. The selection of 14 events was based on the official number of arrested protesters; over 300 people at each protest event. As every event had multiple episodes in different cities, the number of episodes was also analyzed. As a rule, there are always events when the ratio of number arrested to number of participants is above average, due to political motives or police violence (McLaughlin, 2021). But here, it's admitted that the number arrested and the number of episodes reflect the number of protesters. The data on the people arrested is from the Telegram Channel of the Ministry of Internal Affairs of the Republic of Belarus (Ministry of Internal Affairs of Belarus, 2021). In late November 2020, this telegram channel stopped publishing the number of protest episodes.

An event study of 14 political protests shows high statistical significance of the unrests' influence on intraday USD/BYN volatility (Table 5). In every event, CAV and t-statistics are not only high, but also rising from the short to the longest event windows. This proves the protest's ethics on the exchange rate market was strong and increasing. Relatively low intraday volatility of the exchange rate in the short event windows, for example, within three days before and after the event, can be explained by the preparation of the monetary authorities to defend the exchange rate on the event day. Later on, when effect of one protest event was added to another, intraday volatility increased in longer event windows. After two months of first intensive, then periodic, large protests, exchange rate volatility started decreasing. From the event day on October 11 2020, cumulative abnormal volatility started falling to lower levels than in estimation periods. After the event day of November 29 2020, there were more and more event windows with cumulative mean abnormal volatility lower than in normal times.

Table 5. Event study estimation results of USD/BYN behavior during the 14 largest protests in Belarus in 2020.

Event window [days]	[0]	[-3; +3]	[-5; +5]	[-7; +7]	[-7; +14]	[-7; +30]	[-7; +60]	[-7; +100]
Event day (M-D-Y): 08.12.2020								
Estimation period: [-422; -8]								
Number of protests episodes: 25								
Number of arrested protesters: 700								
Cumulative mean abnormal volatility of USD/BYN (CAV), %	56,01	-9,81	41,58	317,21	696,28	1248,23	2070,46	2516,64
t-statistics (CAV)	-3,85	-11,87	-14,69	-16,41	-19,34	-25,34	-34,11	-43,81
Cumulative mean abnormal return of USD/BYN (CAR), %	-0,49	0,75	0,92	2,95	6,61	4,80	4,61	2,56
t-statistics (CAR)	-0,51	0,39	0,41	0,96	1,70	1,05	0,88	0,61
Event day: 09.07.2020								
Estimation period: [-440; -8]								
Number of protests episodes: 42								
Number of arrested protesters: 633								
Cumulative mean abnormal volatility of USD/BYN (CAV), %	28,37	320,38	445,67	604,37	745,52	1142,38	1876,84	2562,61
t-statistics (CAV)	-4,14	-10,46	-13,31	-15,55	-19,16	-25,45	-34,26	-43,62
Cumulative mean abnormal return of USD/BYN (CAR), %	-0,1	-1,55	-2,51	-3,84	-2,37	-5,36	-5,66	-8,28
t-statistics (CAR)	-0,05	-0,51	-0,66	-0,89	-0,31	-0,64	-0,33	-0,34
Event day: 09.13.2020								
Estimation period: [-445; -8]								
Number of protests episodes: 28								
Number of arrested protesters: 774								
Cumulative mean abnormal volatility of USD/BYN (CAV), %	3,62	229,63	312,74	455,82	773,01	873,28	1530,47	2494,37
t-statistics (CAV)	-4,41	-10,82	-13,73	-15,95	-19,07	-25,89	-34,67	-43,63
Cumulative mean abnormal return of USD/BYN (CAR), %	0,02	-2,75	-2,44	-2,73	-2,45	-6,36	-6,88	-5,77
t-statistics (CAR)	0,08	-1,01	-0,64	-0,57	-0,33	-0,81	-0,49	-0,07

Event day: 09.20.2020

Estimation period: [-450; -8]

Number of protests episodes: 24

Number of arrested protesters: 442

Cumulative mean abnormal volatility of USD/BYN (CAV), %	43,14	141,73	257,65	442,99	740,25	141,73	257,65	442,99
t-statistics (CAV)	-3,97	-11,17	-13,89	-15,96	-19,12	-25,82	-35,06	-43,80
Cumulative mean abnormal return of USD/BYN (CAR), %	0,55	0,44	0,86	-0,91	-2,42	-0,02	-6,17	-5,17
t-statistics (CAR)	0,65	0,30	0,43	-0,08	-0,35	0,28	-0,44	-0,06

Event day: 09.23.2020

Estimation period: [-452; -8]

Number of protests episodes: 59

Number of arrested protesters: 364

Cumulative mean abnormal volatility of USD/BYN (CAV), %	27,65	156,53	346,64	495,88	639,34	934,45	1132,88	2312,43
t-statistics (CAV)	-4,14	-11,11	-13,59	-15,81	-19,35	-25,74	-35,15	-43,75
Cumulative mean abnormal return of USD/BYN (CAR), %	0,46	2,00	0,25	0,28	-1,88	-0,55	-5,91	-5,07
t-statistics (CAR)	0,55	0,95	0,23	0,25	-0,23	0,176	-0,42	-0,07

Event day: 09.27.2020

Estimation period: [-455; -8]

Number of protests episodes: 22

Number of arrested protesters: 350

Cumulative mean abnormal volatility of USD/BYN (CAV), %	33,80	269,13	421,69	458,45	506,35	1053,52	1079,36	2223,20
t-statistics (CAV)	-4,07	-10,64	-13,34	-15,91	-19,65	-25,51	-35,20	-43,83
Cumulative mean abnormal return of USD/BYN (CAR), %	0,42	0,21	1,26	1,11	-0,76	0,21	1,26	1,11
t-statistics (CAR)	0,50	0,19	0,55	0,47	0,01	-0,01	-0,15	0,05

Event day: 10.04.2020

Estimation period: [-460; -8]

Number of protests episodes: 10

Number of arrested protesters: 317

Cumulative mean abnormal volatility of USD/BYN (CAV), %	31,94	277,57	446,38	424,40	446,90	993,07	969,24	2118,65
t-statistics (CAV)	-4,09	-10,59	-13,25	-15,99	-19,78	-25,61	-35,33	-43,91
Cumulative mean abnormal return of USD/BYN (CAR), %	-0,17	-1,18	-2,36	-1,72	-3,57	-3,76	-3,95	-4,48
t-statistics (CAR)	-0,14	-0,37	-0,63	-0,31	-0,62	-0,39	-0,15	-0,01

Event day: 10.11.2020

Estimation period: [-465; -8]

Number of protests episodes: 25

Number of arrested protesters: 713

Cumulative mean abnormal volatility of USD/BYN (CAV), %	-6,56	895,47	209,75	1016,26	382,10	836,66	1358,61	2063,76
t-statistics (CAV)	-4,50	-8,02	-14,02	-14,30	-19,91	-25,85	-35,12	-43,92
Cumulative mean abnormal return of USD/BYN (CAR), %	-0,18	-2,29	-1,53	-2,29	-0,16	-3,29	-3,80	-4,01
t-statistics (CAR)	-0,16	-0,83	-0,36	-0,47	0,16	-0,31	-0,14	0,03

Event day: 10.25.2020

Estimation period: [-467; -8]

Number of protests episodes: 19

Number of arrested protesters: 523

Cumulative mean abnormal volatility of USD/BYN (CAV), %	-46,51	203,24	291,70	406,96	696,60	829,83	1544,01	2424,68
t-statistics (CAV)	-5,01	-11,085	-13,98	-16,30	-19,51	-26,31	-35,12	-44,29
Cumulative mean abnormal return of USD/BYN (CAR), %	0,08	2,57	2,62	1,25	-1,22	-1,99	-3,62	0,03
t-statistics (CAR)	0,13	1,17	1,00	0,51	-0,09	-0,10	-0,14	0,05

Event day: 11.01.2020

Estimation period: [-472; -8]

Number of protests episodes: 13

Number of arrested protesters: 313

Cumulative mean abnormal volatility of USD/BYN (CAV), %	51,20	466,10	573,18	641,07	692,01	717,38	1682,76	2536,08
t-statistics (CAV)	-3,94	-9,99	-13,05	-15,64	-19,52	-26,50	-34,92	-44,16
Cumulative mean abnormal return of USD/BYN (CAR), %	1,11	0,33	1,01	0,43	-0,33	-1,92	-1,25	-0,19
t-statistics (CAR)	1,25	0,24	0,46	0,27	0,09	-0,10	0,14	0,37

Event day: 11.15.2020									
Estimation period: [-490; -8]									
Number of protests episodes: 35									
Number of arrested protesters: 700									
Cumulative mean abnormal volatility of USD/BYN (CAV), %	5,45	9,86	109,60	326,99	258,57	171,58	1149,27	1569,48	
t-statistics (CAV)	-4,36	-11,66	-14,31	-16,20	-20,14	-26,96	-34,95	-44,32	
Cumulative mean abnormal return of USD/BYN (CAR), %	-0,74	-0,30	-1,30	-2,91	-3,18	-3,40	-3,70	-2,77	
t-statistics (CAR)	-0,77	-0,01	-0,28	-0,65	-0,54	-0,33	-0,13	0,15	
Event day: 11.22.2020									
Estimation period: [-495; -8]									
Number of protests episodes: n/a									
Number of arrested protesters: 345									
Cumulative mean abnormal volatility of USD/BYN (CAV), %	40,92	76,70	89,47	20,93	-70,63	508,78	971,01	1440,70	
t-statistics (CAV)	-3,96	-11,37	-14,35	-17,05	-20,89	-26,33	-35,14	-44,4	
Cumulative mean abnormal return of USD/BYN (CAR), %	0,18	0,22	0,58	0,08	-2,12	-0,93	-1,58	-1,96	
t-statistics (CAR)	0,24	0,19	0,31	0,17	-0,32	0,06	0,10	0,18	
Event day: 11.29.2020									
Estimation period: [-500; -8]									
Number of protests episodes: n/a									
Number of arrested protesters: 313									
Cumulative mean abnormal volatility of USD/BYN (CAV), %	-37,73	-43,17	-8,55	8,99	-134,46	541,05	989,49	1674,02	
t-statistics (CAV)	-4,83	-11,87	-14,68	-17,08	-21,04	-26,27	-35,12	-44,15	
Cumulative mean abnormal return of USD/BYN (CAR), %	0,09	0,85	-0,08	-0,70	-2,60	-0,74	-0,47	-1,91	
t-statistics (CAR)	0,13	0,45	0,09	-0,05	-0,43	0,09	0,23	0,17	
Event day: 12.06.2020									
Estimation period: [-505; -8]									
Number of protests episodes: n/a									
Number of arrested protesters: 344									
Cumulative mean abnormal volatility of USD/BYN (CAV), %	-12,68	38,15	-221,25	-196,59	-144,95	378,22	1069,46	1721,87	
t-statistics (CAV)	-4,55	-11,84	-15,38	-17,66	-21,05	-26,55	-35,00	-44,08	
Cumulative mean abnormal return of USD/BYN (CAR), %	-0,11	-1,63	-2,69	-2,32	0,27	1,85	-0,31	-3,52	
t-statistics (CAR)	-0,08	-0,58	-0,77	-0,51	0,10	-0,10	0,26	0,01	

Note. Own elaboration with data from Carnegie, 2022, Ministry of Internal Affairs of Belarus, 2021, National Bank of the Republic of Belarus, 2021, 2022.

Monetary authorities' interventions saved USD/BYN from daily devaluation during political protests. They used currency reserves to support the exchange rate. Table 6 shows that ΔRES_{it} dropped by 35% in the first month of protests in August, 2020, then by another 11.8% fall in September, and a slight 0.8% drop in October. When intraday abnormal volatility decreased after October-November, the National Bank also stopped decreasing its currency reserves. The biggest threat for devaluation was in the first weeks after the first large protest. The highest cumulative mean abnormal return (6.61%) was in the [-7; +14] event-window around the protests on August 12 2020. According to the National Bank of Belarus data, the maximum daily devaluation of BYN in 2020 was 1.8% on August 26 2020 (National Bank of the Republic of Belarus, 2021). In other event windows, CAR was lower, and sometimes it was showing abnormal revaluation. Non-significant t-statistics for CAR in every event window of every studied protest also confirm the low influence of protests on USD/BYN daily devaluation.

Table 6. Monthly changes of National Bank of the Republic of Belarus reserve assets in currency and deposits (ΔRES_t), %

May, 2020	June, 2020	July, 2020	August, 2020	September, 2020	October, 2020	November, 2020	December, 2020
-2,09	-6,61	0,98	-35,1	-11,88	-0,87	1,02	-1,17

Note. Own elaboration with data from National Bank of the Republic of Belarus, 2021, 2022.

The Belarussian case proves some test results of *Hypothesis 1*. There were non-violent political protests against electoral fraud in a partly free (not-free) country which did not reach the demanded outcome, with high intraday exchange rate volatility. Even though Belarussian protests were long-lasting and periodic, their biggest impact on

abnormal exchange rate volatility was in the two weeks after the first event, and it started decreasing after two months of protest. So, the Belarussian case can support the test results that protests of less than one month have the highest exchange rate volatility. On the other hand, the number of protesters in Belarus (the numbers arrested and of intraday protest episodes) doesn't support the test results of *Hypothesis 1*. Pearson's correlation coefficient between cumulative mean abnormal volatility and the number of Belarussian protest episodes is from -0.004 to -0.223. Relatively high correlation between the number arrested and abnormal exchange rate volatility during the 14 events studied is in the event window [-7; +14] with the value 0.401, and in the event window [-7; +60] with the value 0.584.

The case of Belarus proves *Hypothesis 2* to be false. Low t-statistics shows statistically insignificant influence of Belarussian protests on abnormal currency devaluation for all 14 analyzed events. It is worth mentioning, that if Belarussian monetary authorities hadn't spent more than third of their currency reserves to support the exchange rate in August, the abnormal depreciation of 6.6% in first two weeks after the first protest could have been converted into bigger devaluation. As Belarus has a long history of devaluations and relevant protests, for example in 2011, the devaluation in August 2020 would definitely have added new energy to protesters. So, if it was not for the National Bank's massive currency interventions during political protests, the case of Belarus could have proved *Hypothesis 2* to be true.

The test results of *Hypothesis 3* show that the case of Belarus is one of an outlier. Cumulative mean abnormal exchange rate volatility caused by political protests was only in 5% of observed economies in 2017-2022, and the Belarussian case took 1.8%. Belarus is the only case out of 54 estimated economies demonstrating a significant influence of political protests on exchange rate volatility in all event windows, including the event day.

5. Conclusion

Political protest is one of the mechanisms to change the political system; to overcome electoral fraud, imprisonment of opponents, corruption, violation of term limits, and other state failures. Financial behaviour has been transformed under this political distress; political connections of enterprises are being disrupted, banks are trying to resist bank runs, the protesting public is willing to undermine the state's economic strength on the foreign exchange market, and authorities are re-evaluating their personal risks and outcomes. Exchange rate dynamics become the reflection of financial behaviour' transformation during political protests. If the new financial ethics of protesters prevails on the foreign exchange market, abnormal exchange rate volatility increases. If the central bank shares new market norms, national currency devaluation may happen. This can be a sign of authorities losing capabilities, and their willingness to support the current political system. If the central bank supports the exchange rate with interventions, it can restore old financial behaviour to the market. Findings show that professional norms of the central banks prevail over political ethics during political protests.

The current research of exchange rate volatility during political protests has its limitations that provide some suggestions for future works.

First, political protests might take several days, weeks or even months, as the case of Belarus shows that. In this regard, some macroeconomic indicators of international trade, foreign debt, inflation, economic growth could be included in the model as the economic factors affecting long-term exchange rate volatility during protracted political protests.

Second, the event study methodology is most valuable to study short-term second-by-second intraday exchange rate fluctuations, while longer currency return volatility effects under political protests could be researched in the future with other methods like regression and correlation.

Third, political protests are widespread mostly in partly free and not free countries without fast and obvious outcomes and with long-term effects on political system and side-effects on different markets. So in the future it can be suggested to study not only direct effects of political protests on spot official exchange rate, but also some indirect influences of monetary authority and public economic behavior during protests on other financial markets: parallel, shadow, and forward foreign exchange market, deposit and lending market in different currencies, stock exchange and bond markets, consumer markets, etc.

Fourth, the ethical issues of monetary authorities' behavior on the foreign exchange market during political protests can also be part of a further discussion on the professional ethics of the civil service at the tipping point of autocratic context. One can study the question what kind of ethical norms are expected most from the civil servants during the break down of political system: professional, corporate, social, political, moral or any other.

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Notes

Note 1. The list of analyzed economies include: Afghanistan, Albania, Algeria, Angola, Argentina, Azerbaijan, Armenia, Bahrain, Belarus, Bolivia, Brazil, Bulgaria, Chile, China, Columbia, Czech Republic, Dominican Republic, Egypt, Ethiopia, Georgia, Guinea, Haiti, Honduras, SAR Hong Kong, Hungary, Indonesia, Iraq, Israel, Kazakhstan, Kenya, Kyrgyzstan, Lebanon, Madagascar, Malawi, Malaysia, Mauritania, Mexico, Moldova, Morocco, Myanmar, Nepal, North Macedonia, Pakistan, Peru, Romania, Russia, South Africa, South Korea, Sri-Lanka, Thailand, Tunisia, Turkey, Uganda, Uzbekistan.

Note 2. The term ‘economies’ was used here, but not ‘countries’, as SAR Hong Kong was included in the group.

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