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OPPORTUNISTIC POLITICAL CYCLES IN BELARUS

An explanation to why dictatorship works

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Abstract

The study of the prevalence of dictatorial regimes has long been at the forefront of political science, but it is only recently that it has risen to prominence also within economic research. To date, the main economic explanations of dictatorship center on the distributions of economic rents *across groups*, i.e. from an autocrat to a societal elite. In contrast, this study extends the theory of opportunistic political cycles from its traditional democratic domain to explore how broad material redistributions *across time* may be used to perpetuate dictatorship. Employing a case study of the Belarusian political economy, we develop a formal model of opportunistic political cycles in an authoritarian setting and use econometric testing to examine empirically whether or not its implications are present in modern day Belarus. Our results support the conclusion that the government deliberately induces political cyclicity in real average wages and real average pensions and yield tentative evidence of a political cycle in real GDP. The cycles are predominantly driven by strong countercyclicity in inflation, which in turn is achieved through extensive state control over prices. Thus, we conclude that opportunistic political cycles contribute to the perpetuation of autocracy in Belarus.

Keywords: political economy of dictatorship, opportunistic political cycles, political business cycle, political budget cycle, command economy, Belarus

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You can fool some of the people all of the time, and all of the people some of the time, but you cannot fool all of the people all of the time“

Attributed to Abraham Lincoln, 1809–1865¹

¹ Cited in Akhmedov and Zhuravskaya (2004 p. 1301).

Introduction

Over the last decades, the world has witnessed an unprecedented ascent of democracy (Boettke 2000). However, the ensuing democratization has also highlighted the question of why dictatorship seemingly prevails in some countries. In Europe, the case in point has been Belarus, which recurrently has been labeled “the last dictatorship in Europe” (Leshchenko 2008 p. 1419, Bennett 2011). Thus, there is reason for altering the premises of the question of democratization and instead examine the kind of mechanisms that allow dictatorial regimes to persist.

As of date, economic explanations of dictatorship have predominately focused on how an autocrat can retain power by redistribution of economic rents *across groups* to evoke the support of a favored elite (Wintrobe 1998, Weingast 2005, Schofield & Levinson 2008). In contrast, this study sets out to explore the notion that autocrats may employ a broader set of economic levers to retain the necessary popular support, including economic redistribution *across time*. For instance, a government could arguably take measures to lower short-term unemployment to suboptimal levels in order to boost popular support, even though such measures would entail severe long-term costs in the form of higher inflation (Nordhaus 1975). Such a mechanism of power preservation, albeit in the domain of democratic regimes, has long been the focus of economists in the field of opportunistic political cycles. Thus, the purpose of this thesis is to contribute to the understanding of the mechanisms underlying dictatorship by formally extending existing theories on opportunistic political cycles from their current democratic domain into that of authoritarian regimes.

To address the outlined purpose we employ a case study of opportunistic political cycles in Belarus. We recognize the difficulty of generalizing findings from an individual case study (Yin 2009), especially as several studies have indicated that opportunistic political cycle theory in many instances is contingent on the political context at hand (Gonzalez 2002b, Shi & Svensson 2003). Nevertheless, we believe that it is exactly such idiosyncrasies that corroborate the use of a case study methodology in applying the theory of opportunistic political cycles to the authoritarian context. Whereas an extensive approach would run the risk of the fundamental mechanism being clouded by the presence of national variances, an intensive case study may to a greater degree unearth the complex processes underlying the generation of opportunistic political cycles in an authoritarian setting. Thereby it may also develop a basis for further research (Rueschemeyer 2003).

The choice of Belarus as our case subject is made for three reasons. First, under current president Alexander Lukashenko its politics have been unquestionably authoritarian for almost two decades (Bennett 2011).² Second, the command structure of the Belarusian economy assures that the autocratic regime retains control over the major economic levers that might influence the political behavior of the public (Nuti 2000, Chubrik & Giucci 2006). Third, since its inception in the mid-1990's the current Belarusian regime has regularly conducted presidential elections and referenda, in which it has registered a high degree of public support (Central Commission 2012). Based on the format of a case study, the main research questions addressed are whether or not Belarus exhibits opportunistic political cycles and, if so, whether or not these cycles have been induced by the incumbent regime.

The study is structured as follows. The next section reviews the previous literature on the political economy of dictatorship, the theory of opportunistic political cycles and the political economy of Belarus. Successively, in the third section we synthesize the different theoretical components into a formal model of opportunistic political cycles in an authoritarian setting in order to identify some testable predictions. The fourth section introduces our data and presents the empirical methods used for our analysis. Our results are presented in the fifth section. Finally, the last section discusses the results in relation to the study's purpose and the current state of knowledge and highlights some potential areas for future research.

Previous Research

The Political Economy of Dictatorship

"It's the economy, stupid!"—Slogan of the Bill Clinton presidential campaign, 1992

Dating back to Niccolò Machiavelli, the study of dictatorship is far from novel in the sphere of political science, but it is only recently that it has risen to prominence within the field of economics (Schofield & Levinson 2008, Debs 2010).³ Whereas economic theories of democracy started to emerge already in the early twentieth century (see e.g. Schumpeter 1950), it is only over

² In scientific literature the surname of the Belarusian president is sometimes transcribed from Russian (Lukashenko). In acknowledgement that Belarusian is in fact a distinctive language by its own right, we consistently use the Belarusian transcription (Lukashenka).

³ Ever since the term dictatorship was coined in ancient Rome, it has been continuously reinterpreted to suit new political contexts. Therefore, there today exists little consensus among scholars on how to formally define dictatorship (Gandhi 2008 pp. 1–3). The definition used for the purpose of this study will be presented in the section on our model specification.

the last decades that economists have turned their attention to the mechanisms underlying autocracy (Debs 2010).

According to Debs (2010 p. 21), the economic theories presented up to date have mainly focused on the impact of modernization (Lipset 1959) or material inequality (Boix 2003, Acemoglu & Robinson 2006) on the prevalence of dictatorship. However, in an important contribution, Weingast (2005) deepens the field by introducing formal game-theoretic modeling of the very mechanisms an autocrat might utilize to stay in power. Weingast's model consists of a society with three actors: a sovereign, who governs and values to retain power, and two citizens, who are engaged in the production of social surplus. The sovereign has the power to transgress against any or both citizens in order to expropriate their social surplus and redistribute it in accordance with his purposes. However, in the face of a transgression, the citizens may choose to either acquiesce to or challenge the sovereign, who needs the political support of at least one citizen to remain in power. Weingast shows that the model has two pure-strategy subgame perfect Nash equilibria: one *asymmetric equilibrium*, in which the sovereign transgresses against one citizen while retaining the support of the other by sharing the expropriated surplus, and one *self-enforcing liberty equilibrium*, in which the citizens successfully coordinate to challenge together if either one or both of them are subject to transgression, and the sovereign as a result chooses not to transgress at all. The divide-and-conquer strategy implied by the asymmetric equilibrium is also used, albeit less formally, as the main explanatory mechanism in many other works on the political economy of dictatorship (Wintrobe 1998, Schofield & Levinson 2008).

Malhotra and Carnes (2007) add additional complexity to Weingast's model by taking uncertainty and bounded rationality into account.⁴ The analysis shows that the ability of the citizens to join forces against the autocrat also depends on the difficulty to anticipate the costs and benefits associated with either challenging the regime or accepting status quo. This means that if the reprisal exerted against a single challenger is sufficiently more severe than current living conditions and if the benefit of a successful revolt is not sufficiently enticing, then the uncertainty of payoffs will cause both citizens to acquiesce to transgressions. In other words, the benefit of challenging has to surpass a threshold level sufficiently distanced from the benefit of acquiescence to warrant the risk of rebellion.

⁴ Malhotra and Carnes (2007) use an earlier version of Weingast's model than the one presented here as the basis for their extension, but the fundamental logic still applies.

This reasoning implies that an autocrat may want to deliberately raise the public's perceived opportunity cost of insurgence in order to discourage rebellion. The model presented by Malhotra and Carnes suggests that this can be done not only by adopting severe punishments for unilateral rebellion, but also by raising the citizens' payoff of acquiescence relative to the payoff of simultaneous revolt. Leaving punishments aside as less relevant for our outlined purpose, a higher payoff of acquiescence means that the autocrat uses public goods to reward the whole of society instead of providing private goods to the select few (Smith 2008). Thus, we reach the admittedly trivial conclusion that, in order to raise the opportunity cost of revolt and maximize political support, a dictator should opt to favor all citizens.

However, although broad wealth-increasing distribution to the general public may be a feasible way for autocrats to stay in power in countries abundantly endowed with natural resources—something Michael Ross has termed the *rentier effect* of the resource curse—the notion of a more-for-all strategy clearly runs into trouble when faced with a binding resource constraint (Ross 2001 p. 332, Debs 2010). In the absence of abundant natural endowments, Pešić and Boričić (2004 p. 40) argue that wealth transfers to the general public are so expensive that they are only feasible if accompanied by foreign financial support, as was the case in Yugoslavia under Tito. In contrast to this view, we propose the employment of intertemporal transfers as an alternative way for autocrats to circumvent the apparent resource constraint at especially crucial points in time. Drawing on Cox's (2008) work on authoritarian elections, we consider electoral events as such decisive dates for authoritarian regimes, as regular elections provide an ostensible opportunity for peaceful removal of the dictator and thus reduce the risk of violent uprisings in between elections. To explore the possibility of intertemporal transfers, we next turn our attention to the theory of opportunistic political cycles.

Opportunistic Political Cycles

*“Panem et circenses!”—Juvenal, Satire, circa 100AD*⁵

Opportunistic political cycles are periodic fluctuations in economic outcomes and policy variables induced by the timing of popular elections.⁶ As a theoretical concept, political cyclicity

⁵ “Bread and circuses” was a metaphor used by the Roman satirist Juvenal to denote the political strategy of creating public approval through diversion and mere satisfaction of the imminent (Toner 1995).

⁶ Some research articles distinguish between ‘political *business* cycles’ that relate to political cyclicity in economic outcomes and ‘political *budget* cycles’ that concern fiscal policy variables (Drazen 2008a, Drazen 2008b). For our purposes such a dichotomy is superfluous, which is why we term both phenomena ‘opportunistic political cycles’ in line with Akhmedov and Zhuravskaya (2004). Also, the term *opportunistic* implies that all governments are treated as homogenous with regards to their behavior to win reelection (Alesina *et al.* 1998 p. 2). This assumption stands in contrast to *partisan* models that focus on how governments’ different ideological orientations induce different

was introduced almost 70 years ago by the Polish economist Michal Kalecki, who pioneered the notion that individual economic interest might affect overall economic output through its influence on political choices (Olters 2004). In 1975, William Nordhaus used the Phillips curve relation between inflation and unemployment to construct the first formal model based on Kalecki's thinking. Using the assumption that voters base their political decisions on the past performance of the government, Nordhaus' model predicts that the incumbent will induce pre-electoral inflationary booms to boost popular support despite the cost of a subsequent post-electoral recession (Nordhaus 1975).

Even though Nordhaus' work has spurred a wide range of further research, it is not uncontested (McCallum 1978, Rogoff & Sibert 1988, Rogoff 1990 p. 34). The critique has mainly focused on two areas. First, questions have been raised concerning Nordhaus' assumption that voters' decisions are governed by backward-looking adaptive expectations of economic performance rather than on rational expectations of future, post-electoral, outcomes. The reasoning goes that, even though it is easily acknowledged that a politician up for re-election may have strong incentives to stimulate the economy, it is harder to see why rational, forward-looking voters would not be skeptical to economic improvements that seem tied to the upcoming election (Gonzalez 2002b p. 1). Second, there has only been mixed empirical evidence of the predicted movements in aggregate macroeconomic variables prior to elections, which has partly been explained by the limited ability of governments to directly control real economic outcomes in the short term (Drazen 2001, Shi & Svensson 2003). As a consequence of this, the research agenda has mainly shifted focus from the effects of elections on aggregates in the real economy to the effects on fiscal instruments that are more readily controlled by policy makers.

An influential contribution that addresses both concerns raised toward Nordhaus' model is made by Rogoff and Sibert (1988) and Rogoff (1990), who introduce the notion of asymmetric information to model how rational expectations of voters induce fluctuations in fiscal variables. Their model presupposes two kinds of politicians with either a high or low level of competence. The politician can judge his own competence, but it is not easily observable to the electorate. As a result of this information asymmetry, the model predicts that highly competent politicians will use a pre-election increase in the provision of public goods to credibly signal their competence to the electorate, knowing that such signaling would be too costly for a low-competence politician due to a more limited capacity to cope with the distortion losses incurred by the suboptimal

policies and outcomes, e.g. that left-wing governments are more concerned with unemployment while right-wing governments focus more on inflation in the short-run Phillips curve trade-off.

allocation. In addition, Rogoff (1990 p. 21) predicts that the incumbent will shift public spending toward immediate consumption rather than long-term investment as the election approaches.

Recent literature has further expanded Rogoff's model by incorporating institutional factors into the analysis and applying the theory to a wider array of both developed and developing countries (Alesina *et al.* 1998, Gonzalez 2002a, Shi & Svensson 2003, Akhmedov & Zhuravskaya 2004). Interestingly, Gonzalez (2002b) explicitly incorporates the level of democracy into the model by arguing that a higher level of democracy may dampen the cycle, as voters get access to an increasing set of institutions that raise transparency and allow them to observe politicians' competence more directly. However, it is notable that Gonzalez hereby assumes that dictatorships do not experience any cycles at all (Gonzalez 2002a p. 220, Gonzalez 2002b p. 3). The rationale for this assumption is that the supposedly prohibitively high costs to voters of incurring a political turnover mean that the dictator faces a miniscule risk of being deposed and therefore has no incentive to incur the costs of signaling.

To summarize, research on opportunistic political cycles has shifted focus from movements in real aggregates to fluctuations in policy instruments that are more easily manipulated by the government. Moreover, early models with myopic voters and adaptive expectations have yielded way to more modern ones based on rational expectations and asymmetric information. However, little attention has been devoted to political cyclicity in non-democratic regimes, which is why an in-depth study of Belarus is warranted to uncover the potential mechanisms for opportunistic policies in such a setting.

The Belarusian Political Economy

"Statehood is the most sacred treasure of Belarusians"—Alexander Lukashenka, 2003

In 1991, the state of Belarus emerged from the remnants of the collapsed Soviet Union. Although the newly born state initially set out to follow the transition of other post-communist countries toward democracy and market economy, the reform agenda soon disintegrated into a destructive spiral of surging inflation and unemployment, accompanied by extensive self-enrichment by the political establishment (World Bank 1997, Korosteleva 2007). In this chaotic situation, Alexander Lukashenka was elected president in 1994 on a populist platform aimed at reducing political rent-seeking and restoring the Belarusian economy to its Soviet heyday (Ioffe 2004 p. 89, Korosteleva 2007 p. 222).

Since taking office, Lukashenka has commanded Belarus in an increasingly authoritarian fashion (Cukrowski 2006 p. 80). The first major step toward authoritarian rule was taken in November

1996, when a referendum accepted constitutional amendments to prolong the presidential term and marginalize the parliament (Korosteleva 2007). In 2001, Lukashenka was reelected president, with official sources awarding him over seventy-five percent of the vote. To allow the president to stand for more than two consecutive terms, a second referendum on the constitution was called in 2004. After an overwhelming approval with over eighty percent of voters in favor of an amendment, Lukashenka was subsequently reelected also in 2006 and 2010. During his time in office, Belarus has been widely seen as a stark example of authoritarian resurgence (Gandhi 2008 p. 15, Manaev *et al.* 2011 p. 93). Correspondingly, all editions of the Economist Democracy Index have consistently classified Belarus as one of the world's authoritarian regimes with a steady ranking around 130 out of 167 countries in terms of democracy (The Economist Intelligence Unit 2007, 2008, 2010, 2011).

Economically, as Belarus abandoned the Marxist-Leninist ideology it also discarded the ambition of full central planning in favor of economic liberalization (Pešić & Boričić 2004, Korosteleva 2007). However, with the ascent of Lukashenka, this market-oriented trend was soon disrupted, as the state retained a heavy hand in coordinating the economy. As a result, some observers have begun referring to the country as “a command economy without central planning” (Nuti 2000).⁷

The command economy manifests itself in the presence of several control mechanisms. The perhaps most crucial is widespread state ownership in all sectors of the economy. Directly state-owned enterprises still comprise the lion's share of the economy, and since 2004 the state is also entitled to a ‘golden share’ with full control rights in all private companies (Korosteleva 2007 p. 225). In addition, the state's control over the economy is further emphasized by economic policies. Although the central bank is formally independent, the regime in practice retains full monetary as well as fiscal discretion (Nuti 2000 p. 61, Cukrowski 2006 p. 81).

The primary objective of the Belarusian command economy is regarded to be the reconciliation of full employment and non-inflationary output growth (Nuti 2000 p. 53, Korosteleva 2007 p. 228). Low unemployment is ensured through the large public sector and an overtly lax monetary policy. To contain the inflationary pressures induced by the monetary over-expansion, the regime

⁷ Making sense of this seemingly contradictory statement requires some theoretical definitions. Generally, economists define a centrally planned economy as an economy where decisions regarding production and investment are embodied in a centrally formulated plan. In contrast, a command economy focuses on employing certain coordinative mechanisms, such as price controls, to alleviate the undesired effects of the market. As such, the Belarusian economy in fact accommodates market elements such as private enterprises, albeit within heavily restricted boundaries (Korosteleva 2007 p. 224, Frye 2011 p. 747). Conversely, the practice of long-term investment planning, which was the subject of the notorious Soviet five-year plans, has been abandoned.

has used its control over the economy to apply repressive financial measures in the form of price ceilings and wage controls (Nuti 2000). By law, the government is authorized to regulate price levels, enact compulsory trade mark-ups and discounts, set maximum rates of return and determine enterprises' price-calculation procedures (Babicki *et al.* 2004 p. 2). Price interference is especially extensive in large enterprises, as the strict antimonopoly legislation enables the Ministry of Economy to directly set prices and profit levels in any company that is deemed dominant on the national, regional or even local level (Glambotskaya and Rakova 2007 p. 3). Moreover, the regime has introduced a list of 'socially significant goods', whose prices are set by administrative decree (Nuti 2000, p. 55). To guarantee that these measures achieve a coordinated outcome, the Belarusian Council of Ministers also defines maximum rates for price increases on the basis of the planned inflation rate (Babicki *et al.* 2004 p. 2). Even though these rates are not formally mandatory they still serve as an effective tool, since an onerous process of registration and justification is imposed on any economic agent that overreaches the target level. Wages are similarly controlled both through target wage setting within the state-owned sector and through an official pay-scale with twenty-seven categories applicable to all public and private companies with some minor exceptions (Nuti 2000 p. 56, Chubrik & Giucci 2006, Korosteleva 2007 p. 229, Bonatti & Haiduk 2010 p. 15). Further inflationary control is exercised through the wholly state-owned pension system, where pension levels are directly tied to wage developments (Korosteleva 2007 p. 231, Chubrik *et al.* 2009 p. 62). However, despite these controls, inflation has mostly remained at high levels, partly due to extensive state credits directed to support loss-making public enterprises (Nuti 2000, Korosteleva 2007 p. 234).

On the upside, Belarus has in fact achieved substantial output growth over the last decade, averaging seven percent annually during 1997–2009 (Korosteleva & Lawson 2010 p. 33). This performance has largely been attributed to a favorable external environment rather than conscious policy design, with a high dependence on subsidies and debt write-downs from Russia (Korosteleva 2007 p. 234, Chubrik *et al.* 2009 p. 7, Frye 2011 p. 748). However, Korosteleva (2007 p. 234) claims that the extensive state focus on funding loss-making enterprises instead of pursuing necessary reforms has rendered the current system fundamentally unsustainable. As international competitiveness declines due to deteriorating external conditions and decreasing productivity levels in state-owned companies, increasing government subsidies will be required

to stave off bankruptcy and layoffs.⁸ Consequently, Belarus will be bound to compensate mounting budget deficits with either increased seigniorage or international borrowing (Korosteleva 2007 p. 236). However, as surging inflation puts pressure on the already overvalued ruble, obtaining international funds will be increasingly difficult. In such a case, the printing press, currency devaluations and, finally, sales of state assets will be Belarus' last resort, rendering a financing situation that is incapable of sustaining long-term growth (Korosteleva 2007, Åslund 2011, Frye 2011). Thus, Korosteleva (2007) reaches the conclusion that economic policy seems to be aimed at immediate political survival at the expense of sustainable economic progress.

Concluding Remarks on Previous Research

To conclude, we return to our opening quote by Abraham Lincoln. We argue that by focusing on distribution of rents *across groups* traditional economic research into dictatorship has been limited to the first part of Lincoln's famous dictum—*the dictator's ability to fool some of the people all of the time*. By introducing the ability to distribute wealth *across time*, the theory of opportunistic political cycles allows us to explore the second part—*the dictator's ability to fool all of the people some of the time*. Thus, in contrast to Gonzalez's (2002b) argument that dictatorships do not exhibit opportunistic political cycles, we hypothesize that intertemporal wealth transfers might allow dictators to escape an otherwise binding resource constraint, enabling society-wide rewards at crucial points in time. To explore this possibility we turn to Belarus, which during the last two decades has experienced authoritarian rule and a firmly state-controlled economy in combination with regular elections.

At this stage it is important to note that the intersection of the above theories has attracted some attention in previous studies (Chubrik & Giucci 2006 pp. 5–6, Bonatti & Haiduk 2010 pp. 15–16). The arguably most extensive treatment of opportunistic political cyclicity in Belarus is presented by Kiryl Haiduk in the book *Growth for all? Economy of Belarus: Challenges ahead* (2007 pp. 87–99). Haiduk focuses on political cyclicity on the labor market during 1995–2007 and finds descriptive support for an opportunistic cycle in real wages as well as an inverse cycle in employment.⁹ The reason for the latter is deemed to be that employers are reluctant to hire in the face of rising real wages.

⁸ For instance, the Belarusian economy faced an enormous supply shock in 2007 when Russia decided to raise the gas price toward Belarus from 15 to 33 percent of the gas price paid by Germany. Since then, Russia has announced that it will gradually increase the Belarusian price to the level of the European average (Chubrik *et al.* 2009 p. 8).

⁹ Haiduk reaches this conclusion by incorporating data on the informal sector into the overall employment figures. This is done on the basis of the Household Budget Survey conducted by the Belarusian Ministry of Statistics and

Adding to these studies, our contribution is mainly twofold. First, we explicitly incorporate the theories on the political economy of dictatorship into the study of political cyclicity in Belarus to provide a theoretical underpinning for empirical analysis. This incorporation is achieved by formalizing the fundamental assumptions behind such a synthesis, which is why we in the next section turn our attention to the modeling of opportunistic political cycles in authoritarian regimes. Second, in the fifth and penultimate section, we improve the power of the empirical results by employing econometric tests for the presence of political cyclicity rather than relying exclusively on descriptive data.

Model

In this section we introduce a formal model of opportunistic political cycles in an authoritarian setting. In doing so, we draw heavily on the ideas initially put forth by Rogoff (1990). Our presentation follows the logic, albeit not the structure, of Gonzalez's (2002b) exposition of Rogoff's original ideas with some minor simplifications in the model specification.¹⁰ Any substantial deviations from Gonzalez's model are pointed out continuously.

Model Specification

Consider an economy populated by a continuum of identical citizens such that they can be embodied in a single representative individual.¹¹ The representative individual derives utility from two different types of normal goods: a consumption good x_t and an investment good y_t . His expected intertemporal utility is equal to

$$E_t W_t = E_t \left\{ \sum_{s=t}^T \beta^{s-t} [U(x_s) + V(y_s)] \right\} \quad (1)$$

Analysis and results in a consistently higher employment than reported in the official statistics of the same ministry. See Haiduk (2007 p. 93) for reference.

¹⁰ Gonzalez (2002b) studies the effect of democratization and transparency on the magnitude of political budget cycles and thus includes a function $c(D)$ to account for the cost of government turnover at different levels of democracy D as well as a transparency parameter η regulating the probability that the incumbent's competence will be public knowledge at the election date. Since these aspects are nonessential for our purpose, we abstract them from our model.

¹¹ By imposing homogeneity of action, this assumption abstracts from any Weingastian divide-and-conquer strategy on behalf of the dictator. Even though this may seem simplistic, it corresponds to our purpose, as it allows us to isolate the mechanism of the intertemporal more-for-all strategy of political cyclicity. Furthermore, the assumption also allows us to abstract from collective action problems such as free-riding, where individuals prefer to abstain from challenging the incumbent dictator in the hope that other individuals will bear the full cost of doing so. We thus assume that every citizen is willing to pay the individual cost of challenging when this is economically profitable.

where $\beta \leq 1$ denotes a time-constant discount factor and U and V are utility functions for x and y respectively. To ensure that maximizing the utility function renders an interior solution, we impose the conditions that U and V are twice continuously differentiable and such that $U', V' > 0$; $U'', V'' < 0$; $\lim_{x \rightarrow 0} U(x) \rightarrow -\infty$ and $\lim_{y \rightarrow 0} V(y) \rightarrow -\infty$.

The citizens live in an isolated economy ruled by an opportunistic autocrat. Like the citizens, the leader derives utility from the consumption and investment goods. In addition, the leader also receives an exogenous and time-invariant rent χ from being in power, reflecting immaterial benefits associated with the leadership position such as social status or increased self-esteem. His expected intertemporal utility is therefore equal to

$$E_t R_t = E_t \left\{ \sum_{s=t}^T \beta^{s-t} [(U(x_s) + V(y_s)) + \pi_s \chi] \right\} \quad (2)$$

where π_s denotes the probability the leader attaches to being in office in period s .

The leader can be characterized as being of either high or low administrative competence, $\epsilon \in \{\epsilon^L, \epsilon^H\}$. The competence level can be either public or private information, which will have different implications for the following analysis. The autocrat's competence is relevant, because he is the one producing the two goods. In every period t , the leader decides on the allocation between the goods given the production function

$$\epsilon = x_t + y_{t+1} \quad (3)$$

There are two differences between the consumption good and the investment good. First, the distribution of investment has a one-period delay, whereas the consumption good can be instantly distributed to the citizens in every period. Second, we assume that because the investment good takes one period to produce, it cannot be observed until it is complete and renders its service.

The representative citizen inhabits a country with a system of nominal rules replicating the legal organization that would normally exist in a developed democracy. There is a constitution that explicitly defines the calendar of elections.¹² We treat the timing of elections as exogenous.¹³

¹² Although it would be of interest to explicitly model the autocrat's incentives to hold regular elections, this falls beyond the scope of our study. One might hypothesize that the reason why even autocracies hold elections has to do with legitimizing the ruler or creating an ostensible opportunity for political action (Cox 2008). Thus, the presence of elections does not necessarily imply the possibility of a democratic regime change. In this sense,

Furthermore, let c denote an expected cost in terms of repression and social unrest incurred by the representative citizen when enforcing a political turnover after a particular election. While this transition cost is zero in an ideal democracy, we will treat it as a positive and exogenously given cost of rebellion, $c = \bar{c} > 0$.

The cost of enforcing the political turnover is taken into account by the representative citizen at the end of the period when deciding whether to acquiesce to the current dictator ($v_t = 1$) or to challenge ($v_t = 0$). The following rule governs the decision

$$v_t = \begin{cases} 1 = \text{acquiesce, iff } E_t\{W_{t+1}^I\} \geq E_t\{W_{t+1}^A\} - \bar{c} \\ 0 = \text{challenge, otherwise} \end{cases} \quad (4)$$

where $E_t\{W_{t+1}^I\}$ represents the citizen's expected utility if the incumbent remains in office for another period and $E_t\{W_{t+1}^A\}$ is the expected utility under an alternative (e.g. democratic) regime. The citizen will compare the alternative levels of expected utility and decide in favor of either acquiescence or challenging. Clearly, the citizen's decision entails an implicit commitment to undergo the enforcement cost \bar{c} whenever he chooses to challenge the incumbent regime.

Returning to Malhotra and Carnes (2007), the above decision rule explicates the idea that the autocrat may want to deliberately raise the opportunity cost of insurgence in order to discourage rebellion. While $E\{W_{t+1}^A\}$ is beyond the dictator's control, the terms $E\{W_{t+1}^I\}$ and \bar{c} constitute the instruments available to the autocrat to secure his rule (given that we have already abstracted from Weingastian cross-group transfers). In this setting, \bar{c} can be seen as the dictator's stick—the sum of repressive measures that decrease the likelihood of a successful turnover and punish rebellion. Conversely, $E\{W_{t+1}^I\}$ is the carrot—the expected utility from the rule of the incumbent that the citizen forsakes by rebelling. Thus, while \bar{c} can be interpreted as the direct cost of insurgence, the opportunity cost is embodied in the term $E\{W_{t+1}^I\}$. Importantly, in order to isolate the mechanism underlying a more-for-all strategy of political cyclicity, we choose to hold both the direct cost \bar{c} and the expected utility under the alternative regime $E\{W_{t+1}^A\}$ fixed

elections in autocracies can be considered symbolic rather than effective tools of government change. However, given that even symbolic elections can serve as focal points for rallying against the incumbent regime, they may nonetheless be considered as crucial points in time where the citizens' choice of acquiescence or challenging is made particularly explicit.

¹³ As the timing of Belarusian elections is predetermined by the constitution, such a treatment appears reasonable for our empirical purposes. However, in 2010 the National Assembly of Belarus voted to reschedule the presidential elections by four months. See e.g. Ginsburgh and Michel (1983) or Heckelman and Berument (1998) for models where the government holds the right to call snap elections to match booms in the general business cycle.

as $\bar{a} \equiv E_t\{W_{t+1}^A\} - \bar{c}$, so that we may study the importance of $E\{W_{t+1}^I\}$ for any given level of \bar{a} . In doing so we deviate from Gonzalez's (2002b) set-up, as she treats the cost of turnover as endogenous and lets c vary with the level of democracy, $c(D)$. However, this deviation does not change Gonzalez's basic premises, given that our study is only concerned with c under full autocracy, $c(D = 0)$. As the cost of turnover is exogenous in Gonzalez's model if D is held fixed, our specification thus constitutes a subset of her model when the level of democracy converges to zero.

Furthermore, in order to analyze the role of $E\{W_{t+1}^I\}$ as the carrot in perpetuating dictatorship, we have to make one crucial assumption about \bar{a} : that the stick is not self-sufficient to sustain dictatorship. Clearly, if the repressive cost associated with challenging the dictator is prohibitively high, the term \bar{c} will in itself be large enough to outweigh $E\{W_{t+1}^A\}$, rendering $E\{W_{t+1}^I\}$ superfluous as a tool for the dictator. In order to exclude this case from our analysis, we impose that $\bar{a} \in A$ where

$$A \equiv \{\bar{a} : \epsilon_H \Rightarrow E_t\{W_{t+1}^H\} \geq \bar{a} \text{ and } \epsilon_L \Rightarrow E_t\{W_{t+1}^L\} < \bar{a} \mid \epsilon^H > \epsilon^L\} \quad (5)$$

In other words, the representative individual is better off with acquiescence if the autocrat is of high competence, while challenging is preferred if the autocrat is of low competence. It is paramount to acknowledge that this does *not* imply that the high-competence autocrat is more competent than the alternative ruler; it merely states that the high-competence autocrat is skilled enough for the cost \bar{c} to be sufficient to deter rebellion. Conversely, the definition of A implies that the alternative leader is sufficiently more competent than the low-competence autocrat to render challenging preferable even at the incurrence of the cost \bar{c} .

In imposing that $\bar{a} \in A$ we make a more substantial deviation from Gonzalez (2002b), who chooses to *define* dictatorships as societies where the cost \bar{c} is large enough to render $E\{W_{t+1}^I\}$ superfluous regardless of the competence of the dictator. In contrast, we define dictatorships not on the basis of model parameters, but rather as the more general case of a form of government where one person or a small group possesses absolute power without constitutional constraints. The difference in definitions and corresponding assumptions is perhaps best explicated by way of example. Previously, we have noted that Belarus is regularly labeled a dictatorship and persistently ranked as authoritarian in renowned indices of democracy (The Economist Intelligence Unit 2007, 2008, 2010, 2011, Gandhi 2008 p. 25, Leshchenko 2008 p. 1419, Bennett 2011). However, in Gonzalez's framework, Belarus would only qualify as dictatorial if the

Lukashenka government relied exclusively on repressive measures to deter revolt. Thus, if we find opportunistic political cyclicity in Belarus, Gonzalez’s model would force us to conclude that Belarus is in fact not a dictatorship. As evident from our definition, we disagree with such a claim. We view dictatorship as an exogenous measure of unconstrained government rather than solely the outcome of a single mechanism underpinning the dictator’s ability to escape constitutional constraints. Thereby, in contrast to Gonzalez, we acknowledge that the persistence of dictatorship may rest on several levers available to the autocrat to neutralize threats to his rule, including raising $E\{W_{t+1}^I\}$ in a more-for-all strategy, raising \bar{c} by increased repression or pursuing a Weingastian divide-and-conquer strategy. This view is congruent with Gandhi (2008 pp. 76–77), who asserts that even dictators with an absolute monopoly over the means of coercion may be obliged to make concessions, such as bribes to individuals or distribution of rents to the wider society by means of state employment or public works programs, in order to retain power.

Finally, assumptions on the time-variance of the leader’s competence and on the nature of the time periods considered are imposed in order to allow for cyclicity. First, we presuppose that the competence for a specific leader is time-varying and follows a serially correlated first-order moving average MA(1) stochastic process

$$\epsilon_t = \alpha_t + \alpha_{t-1} \tag{6}$$

where α_t is an independent and identically distributed variable with $\alpha_t \in \{\alpha_L, \alpha_H\}$ and where $\Pr(\alpha_t = \alpha_H) = p$. This assumption reflects that the leader’s ability to run the government may change over time as certain leadership abilities may be better suited to deal with particular circumstances. Crucially, the MA(1) process implies that the leader’s competence in a given period t is only dependent on his competence in the preceding period $t - 1$ and the current competence shock α_t . This allows us to make an important simplification, as it implies that any competence shock will only affect the upcoming election and not subsequent ones. Thus, by assuming MA(1) we can restrict our analysis to consider a model with only two consecutive periods ($T = 2$) after which the world ends, without loss of further generality.¹⁴

¹⁴ By assuming a higher order moving average process more periods would have to be considered, as the leader’s allocation decision would convey information on his competence for several future periods. However, as pointed out by Rogoff (1990 p. 23), the qualitative results from a simplified process carry over to more general stochastic processes.

Second, we assume that the periods in our model are either election periods or non-election periods. The events occurring in an election period are summarized as follows

$$\text{Election period } t \left\{ \begin{array}{l} 1. \text{Incumbent chooses } x_t \text{ and } y_{t+1} \\ 2. \text{Citizen observes } x_t \text{ and } y_t \\ 3. \text{Election takes place} \\ 4. \text{If } v_t = 1 \text{ citizen acquiesces, otherwise challenges} \end{array} \right. \quad (7)$$

while the sequence occurring in a non-election period is limited to events 1 and 2.

Importantly, our MA(1) assumption implies that the autocrat's observed allocation in a non-election period conveys no useful information to the citizen about the leader's competence after the next election period, as there is no serial correlation between the leader's competence in two non-adjacent periods. Recognizing this, the leader will not find it useful to exploit any informational advantage about his own competence level during such periods, why his allocation decision will be equivalent to his optimal choice under full information. Conversely, during election periods the presence of private information has important implications, as the allocation observed in such periods will convey information about the politician's post-electoral competence. Consequently, a political term comprising several non-election periods followed by one election period can be analyzed by modeling non-election periods as the case when the politician's competence level is public information and election periods as the case when it is private information. Combining the results of the full information and asymmetric information equilibria then allows us to derive the politician's optimal allocation policy over the whole political term.

Equilibrium under Full Information

Consider first a model with full information where the dictator's competence is readily observable to the population. We first focus on the policy choice in the second (and last) period. Clearly, as the world ends after the second election, any autocrat, regardless of ability, will only produce the consumption good in the second period as neither the investment good nor reelection will bring him any future utility. More formally, since $T = 2$ the leader will act as if $y_3 = 0$ and $\pi_3 = 0$, which together with the production technology (3) implies that the leader will maximize his utility by devoting his entire productive capacity to the consumption good

$$x_2^* + y_3 = \epsilon \Leftrightarrow x_2^* + 0 = \epsilon \Leftrightarrow x_2^* = \epsilon \quad (8)$$

In the first period, the leader recognizes that his re-appointment odds are determined *ex-ante* by his own competence level. Under full information, our definition of A in (5) implies that the representative voter will reelect the high-competence leader with probability $\pi_2^H = 1$. Acknowledging this, the high-competence leader faces the maximization problem

$$\begin{aligned} \text{Max } E_1 R_1^H &= \text{Max } E_1 \{ \sum_{s=1}^2 \beta^{s-1} [(U(x_s^H) + V(y_s^H)) + \pi_s^H \chi] \} = \\ \text{Max } \{ &\beta^0 [U(x_1^H) + V(\bar{y}_1) + \chi] + \beta^1 [U(x_2^H) + V(y_2^H) + \chi] \} = \text{Max } \{ U(x_1^H) + \\ &\beta V(y_2^H) + \beta U(x_2^H) + V(\bar{y}_1) + \chi + \beta \chi \} \end{aligned} \quad (9)$$

where $x_2^H = \epsilon^H$ is given by the utility maximizing choice in period 2, $\bar{y}_1 > 0$ is an exogenously given starting value of investment and χ , as mentioned above, is constant.¹⁵ Thus, the leader's optimal solution is only contingent on the allocation of x_1^H and y_2^H and can therefore be determined by differentiating a Lagrangian with respect to x_1^H and y_2^H subject to the constraint $x_1^H + y_2^H = \epsilon^H$

$$F(x_1^H, y_2^H) = U(x_1^H) + \beta V(y_2^H) - \lambda(x_1^H + y_2^H - \epsilon^H) \quad (10)$$

$$f'_x(x_1^H, y_2^H) = U'(x_1^H) - \lambda = 0 \quad (11)$$

$$f'_y(x_1^H, y_2^H) = \beta V'(y_2^H) - \lambda = 0 \quad (12)$$

$$s.t. x_1^H + y_2^H = \epsilon^H$$

By combining (11) and (12), the first order condition for an interior solution for the high-competence leader is

$$U'(x_1^H) = \beta V'(y_2^H) \quad (13)$$

$$s.t. x_1^H + y_2^H = \epsilon^H$$

Similarly, given the presence of full information, the low-competence leader stands no chance of a prolonged tenure, $\pi_2^L = 0$. His maximization problem for the whole horizon thus reduces to

$$\begin{aligned} \text{Max } E_1 R_1 &= \text{Max } E_1 \{ \sum_{s=1}^2 \beta^{s-1} [(U(x_s^L) + V(y_s^L)) + \pi_s^L \chi] \} = \\ \text{Max } \{ &\beta^0 [U(x_1^L) + \chi] + \beta^1 [U(x_2^A) + V(y_2^L)] \} = \text{Max } \{ U(x_1^L) + \beta V(y_2^L) + \\ &\beta U(x_2^A) + \chi \} \end{aligned} \quad (14)$$

¹⁵ Given our assumption of $\lim_{y \rightarrow 0} V(y) \rightarrow \infty$ we cannot simply assume that no investment good will be distributed in the first period. Therefore, in congruence with our MA(1) assumption and subsequent restriction to a two-period time horizon, we assume that there indeed exists a certain starting provision of the investment good, but that the autocrat has no possibility to affect the amount of this provision. For the sake of brevity, we will omit the term $V(\bar{y}_1)$ in subsequent equations without affecting the solutions attained.

where x_2^A denotes the expected provision of the consumption good by the alternative government in period 2. Analogously to the high-competence leader, we see that the low-competence leader's allocation problem concerns only x_1^L and y_2^L . Thus, the same optimal solution applies

$$\begin{aligned} U'(x_1^L) &= \beta V'(y_2^L) \\ \text{s. t. } x_1^L + y_2^L &= \epsilon^L \end{aligned} \tag{15}$$

Hence, we have arrived at the conclusion that under full information both leaders will end up with the same optimal allocation of consumption and investment regardless of skill level. Since $\epsilon^H > \epsilon^L$, this implies that the population will always be strictly better off under the high-competence leader. Furthermore, the allocation is a first best solution for the society as a whole in the sense that only the resource constraint binds and there are no distortion losses from suboptimal allocation. Thus, under full information the incumbent's economic policy generates the society welfare-maximizing outcome.

Proposition 1

To summarize, given $\bar{a} \in A$, in the unique equilibrium of the full information case

1. *Every leader will implement his first best economic policy*
2. *The society as a whole is better off under the high-competence leader*
3. *The high-competence leader will always face acquiescence*
4. *The low-competence leader will always be challenged*

Therefore, given the implications of the MA(1) assumption on the leader's competence, we conclude that no distortion of economic policy will take place in non-election periods.

Equilibrium under Asymmetric Information

Now assume that the leader's competence is private information such that the representative citizen cannot observe the incumbent's skill ϵ or the value of y_{t+1} before casting his vote, whereas the incumbent is fully aware of both his own competence and the allocation decision.

How does this information asymmetry affect the incumbent's policy decisions? First, we note that in the last period every leader will still devote his entire production to the consumption good, for reasons analogous to those stated in our analysis of the full information case. In contrast, we recognize that during the first period the skilled autocrat may have incentives to distort the budget's composition to signal his competence and thus ensure political acquiescence. Likewise, the unskilled autocrat may be willing to undertake similar distortions to mimic the

behavior of a high-competence leader if this prolongs his tenure in power. As a consequence, the society becomes engaged in a signaling problem.

The amount of the consumption good provided in the first period is the only public information on the current leader's competence available at the election date. Therefore, the citizen will use this information to assess the incumbent's competence before deciding to acquiesce or challenge, why the decided provision constitutes the politician's strategy set $x_1(\epsilon) \forall \epsilon$. Thus, we denote by $\mu \equiv \Pr(\epsilon = \epsilon^H | x_1)$ the probability the citizen assigns to the politician being of high competence and define the citizen's strategy set as choosing $v_2 = v(\mu)$. Given our definition of A in (5), it is apparent that μ is crucial to the citizen's decision rule in (4). Consequently, μ determines the incumbent's likelihood of a prolonged tenure, π_2 . As a result, the leader's utility maximizing criterion in (2) reduces to

$$\begin{aligned}
Max E_1 R_1(x_1) &= Max E_1 \left\{ \sum_{s=1}^2 \beta^{s-1} [(U(x_s) + V(y_s)) + \pi_s(\mu)\chi] \right\} \\
&= Max \{ \beta^0 [U(x_1) + \chi] + \beta^1 [\pi_2(\mu)\{U(x_2) + V(y_2) + \chi\} \\
&\quad + (1 - \pi_2(\mu))\{U(x_2^A) + V(y_2)\}] \} \\
&= Max \{ U(x_1) + \beta V(y_2) + \beta [\pi_2(\mu)\{U(x_2) + \chi\} + (1 \\
&\quad - \pi_2(\mu))U(x_2^A)] \} \\
&\quad s. t. x_1 + y_2 = \epsilon \forall \epsilon
\end{aligned} \tag{16}$$

This equation explicates that, while the incumbent is certain to receive $U(x_1) + \chi$ in the first period, his utility in the second period is dependent on μ . Hence, the autocrat's expected utility in the second period equals the probability-weighted average of the utility from remaining in power, $\pi_2(\mu)\{U(x_2) + V(y_2) + \chi\}$, and the utility received under an alternative ruler, $(1 - \pi_2(\mu))\{U(x_2^A) + V(y_2)\}$. This implies that as long as $U(x_2) + \chi > U(x_2^A)$, any incumbent in risk of losing power may have incentives to distort his policy choices to raise μ if this improves his chances of attaining acquiescence. These incentives may give rise to a separating equilibrium of particular interest.¹⁶ In any signaling game, a separating equilibrium is characterized by all parties being fully identified due to the presence of a credible signal. Thus, given that the level of the consumption good is the only available signal, the levels of x_1 must differ between the two

¹⁶ We here restrict our attention to the unique undominated separating equilibrium. Thereby, we discard separating equilibria that require the citizen to believe that the autocrat would play a dominated strategy. We also exclude pooling equilibria, as Rogoff (1990 p. 29) has shown that these fail to meet the intuitive criterion put forth by Cho and Kreps (1987) under reasonable extensions of our model.

types, $x_1^H(\epsilon^H) \neq x_1^L(\epsilon^L)$, for them to be identified in the first period. Furthermore, for the difference to be sufficient to convey credible information about the identity of the incumbent, two additional conditions must be met. First, the low-skilled autocrat must not have any incentive to mimic the allocation decision of the high-competence leader. Second, the amount of the consumption good needed to deter the low-skilled autocrat from mimicking must entail a sufficiently small distortion for it to be profitable for the high-competence leader to undergo the distortion rather than to accept dismissal. If any of these conditions are not met, the budget distortion does not constitute a credible signal and the requirements for a separating equilibrium are not fulfilled.

In order to formally characterize this logic, we proceed by determining the equilibrium economic policies of the first period for the two types of leaders in order to examine whether or not the two conditions for a separating equilibrium can be met. Starting with the first condition, we recognize that in a separating equilibrium, the low-competence incumbent will choose the same first-period allocation as under full information. This follows from the fact that both leaders are fully identified and that any alternative x_1 for which the prospects of prolonged rule are naught cannot maximize (16). In other words, the incompetent leader will find no benefit from distorting the budget composition when this fails to induce acquiescence from the population. Conversely, as the unskilled autocrat would be tempted to imitate the policies of his competent counterpart if he thereby could remain in power, $\pi_2^L = 1$, he would find it worthwhile to mimic any x_1 such that $x_1 \in B$, where

$$\begin{aligned} B \equiv \{x_1 : U(x_1(\epsilon^L)) + \chi + \beta V(y_2(\epsilon^L)) + \beta[U(x_2^*(\epsilon^L)) + \chi] \geq U(x_1^*(\epsilon^L)) + \\ \chi + \beta V(y_2^*(\epsilon^L)) + \beta U(x_2^A)\} \end{aligned} \quad (17)$$

$$s. t. x_1 + y_2 = \epsilon^L$$

and x_1^* and y_2^* denote the optimal allocations under full information such that $U(x_1^*) + \beta V(y_2^*) > U(x_1) + \beta V(y_2)$ due to distortion losses from suboptimization. The left-hand side of inequality (17) denotes the incumbent's benefit from mimicking x_1 when such an activity implies attaining acquiescence. More precisely, $U(x_1) + \chi + \beta V(y_2)$ represents the utility arising from the choice of x_1 made in the first period, while $\beta[U(x_2^*) + \chi]$ represents the consumption utility and power rents that the low-competence autocrat would attain in the second period if his tenure were prolonged. The right-hand side of the equation reflects the incompetent leader's alternative: to follow his full information policy in the first period deriving the utility $U(x_1^*) + \chi + \beta V(y_2^*)$, be deposed with certainty and subsequently enjoy the consumption good produced

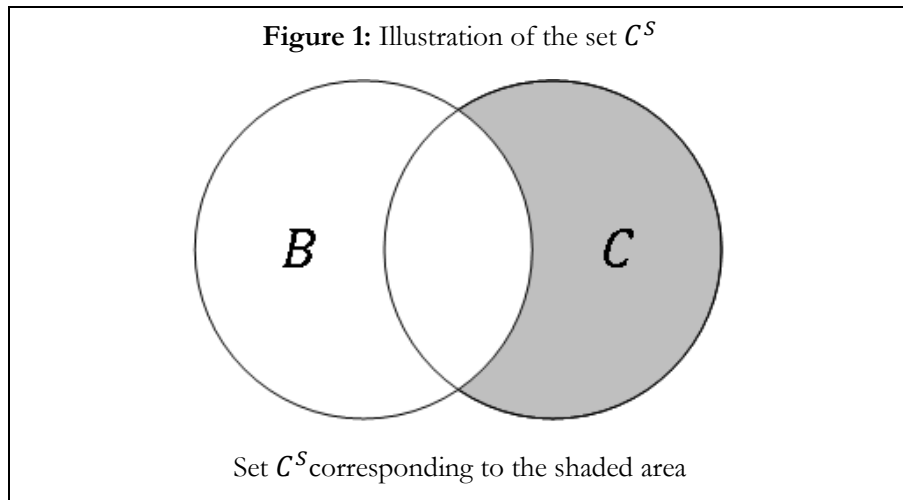
by the alternative leader in the last period.¹⁷ Hence, every x_1 contained in the set B is a consumption level that the incompetent leader would prefer to his full information policy as long as acquiescence were granted after implementing such a distorting decision. By contrast, the strategy of mimicking a point outside B is strictly dominated by that of producing x_1^* and accepting dismissal from office. Thus, for the first condition of credible signaling to be fulfilled, the skilled leader must select a level of x_1 such that $x_1 \notin B$.

Moreover, as shown by the second condition, there is also a limit to the magnitude of the budget distortion that a competent leader would be willing to generate in order to achieve acquiescence. More precisely, in a separating equilibrium, any amount of x_1 produced by a high-competence autocrat must be such that $x_1 \in C$, where

$$\begin{aligned} C \equiv \{x_1 : U(x_1(\epsilon^H)) + \chi + \beta V(y_2(\epsilon^H)) + \beta[U(x_2^*(\epsilon^H)) + \chi] \geq U(x_1^*(\epsilon^H)) + \\ \chi + \beta V(y_2^*(\epsilon^H)) + \beta U(x_2^A)\} \end{aligned} \quad (18)$$

$$s. t. x_1 + y_2 = \epsilon^H$$

which follows the same logic as the incentive constraint of the low-skilled autocrat. Indeed, as shown by equations (17) and (18) the only difference between the sets B and C is that the former is subject to a tighter resource constraint ($x_1 + y_2 = \epsilon^L$) than the latter ($x_1 + y_2 = \epsilon^H$). This implies that there exists a separating equilibrium for the relative complement of B with respect to C , comprising all elements $x_1 \in C^S$ where $C^S = (C - B) = \{x_1 \in C \mid x_1 \notin B\}$ as illustrated by the shaded area in Figure 1.



¹⁷ Hereby, we assume that the deposed autocrat returns to living as an ordinary citizen. Thus, his utility function becomes identical to that of the representative citizen.

All points within C^S are strictly dominated for the low-competence type, and hence cannot profitably be mimicked. Therefore, the representative citizen should assign $\mu(x_1) = 1$ to any $x_1 \in C^S$ given that he is sophisticated enough to believe that an incumbent would never undertake a strictly dominated strategy. Moreover, no point in the intersection $B \cap C$ would ever be undertaken by a high-ability incumbent in a separating equilibrium, since such a position can be profitably mimicked by a low-skilled politician. Thus, the voter should assign $\mu(x_1) = 0$ after observing any $x_1 \in B \cap C$.

Since the citizen thus recognizes that any observation $x_1 \in C^S$ will only be generated by a competent politician, the latter is free to set the least distorting level of the consumption good as long as it remains within C^S . Note that beyond a certain magnitude in the competence difference between the two leaders, the low-ability politician will not find it profitable to mimic even the full information policy of the skilled type. In such a case $x_1^* \in C^S$, and the competent leader is able to induce a separating equilibrium simply by choosing his first best budget composition.

However, if $x_1^* \notin C^S$, the incompetent leader will be tempted to pursue the skilled leader's full information policy. Hence, the competent autocrat must select a higher x_1 than his optimal allocation under full information in order to be recognized by the public. He then solves

$$\begin{aligned} \text{Max}_{x_1} \quad & U(x_1) + \chi + \beta V(y_2) + \beta \{U(x_2^*) + \chi\} \\ \text{s.t.} \quad & x_1 + y_2 = \epsilon^H \text{ and } x_1 \in C^S \end{aligned} \tag{19}$$

which yields the intuitive solution that the competent leader will select x_1 to equal the upper bound of the set B , as this minimizes the distortion loss while guaranteeing acquiescence.

Proposition 2

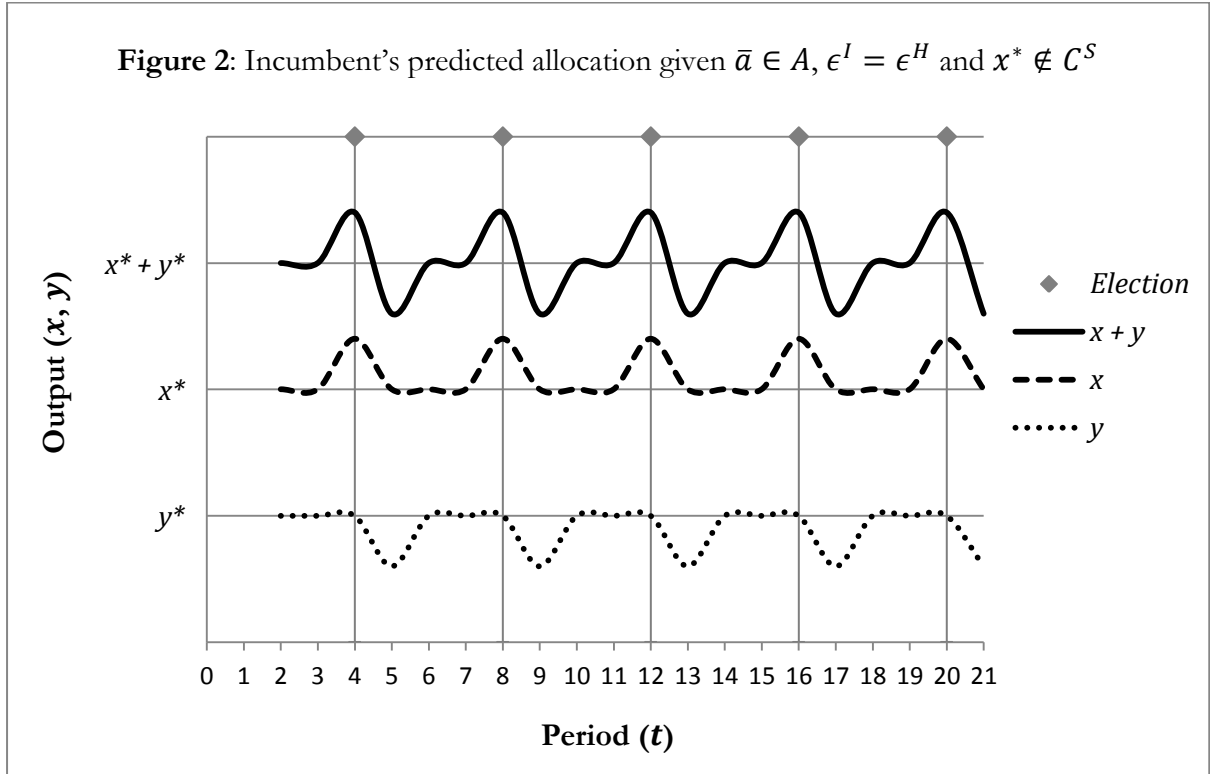
To summarize, given $\bar{a} \in A$ and $x_1^*(\epsilon^H) \notin C^S$, there exists a separating equilibrium of the asymmetric information case, in which

5. *In the first period, the competent autocrat will produce an amount of the consumption good that is strictly higher than his full information policy*
6. *The incompetent autocrat will produce his full information economic policy*
7. *The citizen will identify the leaders by their choices of economic policy*
8. *The citizen will acquiesce to the competent autocrat and challenge the incompetent one*

Therefore, every competent autocrat will distort the composition of the public budget away from public investment and toward consumption. In other words, under a skilled leader, public investment will be lower and public consumption higher than under full information.

Hypotheses

To summarize, the outcomes generated under full information and asymmetric information respectively entail that economic policy will be distorted in election periods and be equivalent to the societal optimum in non-election periods. Accordingly, by connecting alternating non-election and election periods into a multi-period political term, we predict the occurrence of an opportunistic political cycle, in which the high-competence politician deliberately distorts economic policy prior to elections in order to remain in power. This prediction is illustrated schematically in Figure 2 for a four-period political term, assuming that $x^* > y^*$.



Deriving testable predictions from this pattern requires precise economic interpretations of the variables x and y . As mentioned in the literature review, there are essentially two alternative approaches to this problem: either x and y are considered to correspond to economic outcomes, or they are related to relevant policy instruments (Alesina *et al.* 1998 p. 3). While the former approach has the advantage of focusing on fluctuations in variables frequently found to affect voters' behavior, the latter provides more insight into government intentions, as it acknowledges that the government might have imperfect control of the real economy. In accordance with our initial research questions, we apply both approaches to test the following hypotheses for a country governed by an authoritarian regime:

H1: Economic outcomes will exhibit short-run output increases prior to elections followed by corresponding slumps after elections, as well as short-run shifts from aggregate real investment toward aggregate real consumption prior to elections followed by a reversal after elections.

By focusing on the effect of election timing on *economic outcomes*, this hypothesis directly addresses the research question of whether or not Belarus exhibits opportunistic political cycles.

H2: Government fiscal policy will shift spending from investment expenditure toward consumption expenditure in the months prior to elections followed by a reversal to previous policies after elections.

Through its focus on *direct spending policy*, this hypothesis addresses the research question of whether or not the potential political cyclicity in the Belarusian real economy is deliberately induced by the incumbent regime.¹⁸

Empirical Methodology

Econometric Specification

Early empirical work on political business cycles has generally rendered limited significant results, which primarily has been attributed to its use of low-frequency yearly or quarterly data (Akhmedov & Zhuravskaya 2004 p. 1302). Low-frequency variables might on the aggregated level shroud important findings, since any positive effects prior to elections might be cancelled out by negative post-election effects. In order to avoid this issue, we draw on the empirical work conducted by Akhmedov and Zhuravskaya (2004) on regional elections in Russia and use monthly data to estimate the following equation

$$\log(y_t) = \sum_{j \in \{-k; k\}} \alpha_j m_{jt} + \beta(L) \log(y_{t-1}) + t + \tau_t + \sum_{s(t) \in \{1; 12\}} \gamma_s n_s + \varepsilon_t \quad (20)$$

where the dependent variable y represents the economic outcome or policy variable examined and t is the time in months.¹⁹ The independent variable m_{jt} is a dummy that equals 1 if t is j

¹⁸ It is noteworthy that our second hypothesis only concerns the distribution of fiscal spending (the allocation between x and y) and not any fluctuations in aggregate fiscal measures (the level of x and y combined). The reason for this exclusion is that our model considers the national economy in isolation, implying that fiscal spending is always equal to the national resource constraint. In the presence of international capital markets, one could view total budget expenditures in a given period as the sum of x and y in the sense that the autocrat can borrow internationally to relax his resource constraint prior to elections at the cost of repayment in subsequent periods. However, such modeling falls beyond the scope of this study.

months away from the election date ($j = 0$ on the election date, $j < 0$ when t is before the election and $j > 0$ when t is after the election). While Akhmedov and Zhuravskaya consider $k = 12$, we limit the scope of m_{jt} to half a year before and half a year after the election period to avoid overlapping dummies between adjacent elections. Thus, we hold $k = 6$. Furthermore, the term $(L)\log(y_{t-1})$ is a lag structure that accounts for autocorrelation in y . The number of lags has been determined for each dependent variable using a test for residual autocorrelation in the error term with general regressors and is reported in the appendix. In contrast to Akhmedov and Zhuravskaya, we add a term t to capture the overall exponential trend in the dependent variable.²⁰ Hence, the coefficients for our election dummies, α_j , capture deviations from the underlying trend in connection to elections.

Further modifying Akhmedov and Zhuravskaya's original specification, we include the variable τ_t denoting the Russian industrial production index to control for any external macroeconomic shocks to the economy. During Lukashenka's time in office, Belarus has been exposed to several such shocks, most notably the Russian ruble crisis of 1998 and the global financial crisis of 2008. Given the strong dependency of the Belarusian economy on Russian subsidies and demand factors and its limited integration with other countries in the region, we choose to use Russia's economic performance to control for fluctuations induced by these events. Desirably, we would include GDP as a measure of Russia's performance, but as no monthly GDP data are reported for the Russian economy, we use the industrial production index to capture current economic activity. Finally, n_s is a dummy variable that controls for seasonality in each calendar month s , which means that our election coefficients estimate the seasonally adjusted deviations from the trend incurred in the months surrounding the analyzed elections.

Given the inclusion of a lagged dependent variable, it follows that our econometric specification does not satisfy the classic linear model assumptions for time-series regressions (Wooldridge 2009 p. 377). Thus, in order for OLS-regression to be justified, we must rely on asymptotic analysis using large sample properties. Crucially, in order for the central limit theorem to apply, the series must be weakly dependent. To determine whether or not this holds true, we apply a Dickey-Fuller test to the detrended natural logarithms of our dependent variables. As shown in the appendix, we can reject the null-hypothesis of a unit root process for all detrended

¹⁹ When the government budget balance is used as the dependent variable it is included in level form, as the budget frequently exhibits deficits and the log is not defined for negative numbers.

²⁰ Trends have been added for all dependent variables except monthly inflation and the government budget balance, since these variables do not exhibit any trending pattern.

dependent variables on a five percent significance level with the exception of the real minimum wage.²¹ Thus, we conclude that the asymptotical properties of OLS are valid for estimating equation (20).

In accordance with our twin hypotheses, we test for two groups of dependent variables: economic outcomes and fiscal policy instruments. Ideally, we would like to test for both fluctuations in aggregate output as well as distribution effects between investment and consumption. For economic outcomes, aggregate output fluctuations would be captured by real GDP or real industrial production, while distribution effects would be visible in pre-election shifts toward aggregate real consumption and higher average wage levels and away from aggregate real investment in fixed capital and inventories. Similarly, for fiscal policy instruments, distribution shifts would manifest themselves in the composition of the government budget, for example with increases in pensions, social transfers and health spending and downturns in industrial subsidies and education spending prior to elections.

Unfortunately, due to the limited availability of reliable data for Belarus, such an exhaustive approach is not possible. In addition to measures of real aggregate output in terms of real GDP and real industrial production, we thus focus our analysis on the three major sources of income for the Belarusian population: wages, pensions and social transfers, as represented by unemployment benefits and minimum wage regulations (Haiduk 2007 p. 89).²² The focus on income variables is warranted as real income has been found to be a major determinant of voting behavior in Eastern Europe and thus ought to be a target for potential government manipulations (Dimitrova 2000 p. 74). Thus, even though our selection lamentably does not contain investment variables, it provides good indicators for the increase in consumption anticipated by our model. Admittedly, this means that we can only test one half of the predictions provided by the model, why we cannot assess empirically to what extent it describes how the presumed increases in consumption spending are financed. However, we include variables on the aggregate revenue and expenditure of the government budget as potential

²¹ The MacKinnon approximate p -value for a Dickey-Fuller test of the real minimum wage is either 0.1524 or 0.2021 depending on the deflator, why the null-hypothesis of a unit root cannot be rejected even at the 15 percent significance level. Given the presumed impact of minimum wage regulations on welfare levels for low-income earners, we nevertheless choose to include it in our regressions, albeit with careful interpretation of its results.

²² Up till 2003, Belarusian wage policy also included the management of wage arrears, which we leave out of our specification due to the limited amount of data points. Since a manipulative government can be presumed to decrease wage arrears as well as raise wages prior to elections, our specification thus probably underestimates the total political cyclicity in wages for the early elections in our sample. See Chubrik and Giucci (2006 p. 6) for a discussion of fluctuations in wage arrears in connection to the 1996 referendum and 2001 presidential election.

indicators of electorally induced fiscal variation.²³ Finally, we also incorporate the monthly growth rate in a set of price indices due to the crucial influence of the price level on real variables as the basis for deflation. Apart from the general consumer price index, CPI, we include the producer price index, PPI, and an index of consumer food prices, CPFS.

Returning to our hypotheses, we treat real GDP, real industrial production, real average wages and inflation as economic outcomes under H1, since these variables are not fully controlled by the government. Similarly, we regard real average pensions and real average unemployment benefits as fiscal policy variables under H2, since they are included in the government budget as parts of the Social Security Fund managed by the Ministry of Labor and Social Protection (Chubrik *et al.* 2009 p. 38).²⁴ We also include the real minimum wage under H2, given that it is a regulation set by administrative decree. We expect the income variables to move in accordance with the consumption term x in our model and increase prior to elections and subsequently return to normal levels. As our model captures the incremental monthly deviations from the trend controlling for the deviations of the preceding months, we thus predict that α_j will be positive before elections and negative immediately after elections.²⁵ Furthermore, we predict that real GDP and real industrial production will move in accordance with the aggregate output $x + y$ in our model and thus also exhibit positive α_j prior to elections followed by negative α_j after elections. Finally, as inflation is negatively correlated with real variables, we expect the price indices to exhibit countercyclical patterns with negative α_j before elections and positive α_j after.

Data

Since the installment of the current regime, Belarus has experienced twenty-four nationwide electoral events including three presidential elections, eleven parliamentary elections to two separate chambers of the National Assembly, six elections to Local Councils and three constitutional referenda. Data on the timing and outcome of these events have been obtained

²³ See Chubrik *et al.* (2009 p. 9) for a discussion of the difficulty of constructing consistent data series on the composition of public revenues and expenditures.

²⁴ The pension level is set as a percentage of the individual's wage base and indexed to growth in nominal average wages. Thus, it can be viewed as a rule-based rather than a discretionary policy instrument. Nevertheless, it does include some potentially discretionary components, such as the timing of indexation, which can be employed for electoral manipulations. Moreover, the pension system is funded by current payroll taxes on a one-pillar pay-as-you-go basis, which makes it directly contingent on fiscal policy. See Chubrik *et al.* (2009 pp. 62-64) for reference.

²⁵ One could presume that α_j will never be negative for the income variables, since our model predicts that x will never be lower than its trend level. However, such reasoning does not account for the lags included in our econometric specification. What matters is that, following an election, x will be lower than the sum of its trend and the residual effects from the trend deviations incurred in the lagged months. Thus, the incremental deviation in x will be negative, rendering $\alpha_j < 0$ immediately after elections.

from the Central Commission of the Republic of Belarus on Elections and Holding Republican Referenda and are described in Table 6 in the appendix.

We restrict our analysis to only consider presidential elections and referenda. The reason for this limitation is that Lukashenka has no firm affiliation with any party or bloc within the National Assembly, which furthermore consists of a large majority of independents (Leshchenko 2008 p. 1430). As a consequence, we argue that the outcome of parliamentary elections do not to the same extent as presidential elections reflect the popular support for and acceptance of president Lukashenka himself. Moreover, excluding parliamentary elections simplifies the analysis, as we avoid overlap of dummy variables associated with adjacent electoral events and as the multi-round parliamentary elections complicate the determination of a specific event date. Conversely, the conducted constitutional referenda have all been directly concerned with the privileges and confines of presidential power, which is why we choose to include them in our analysis as substantial events measuring the citizens' support for the incumbent president. For comparison, we will however estimate our model for only presidential elections as well.

Haiduk (2007 p. 89) asserts that the official Belarusian statistics can be of questionable reliability, especially for labor market data. Therefore, to ensure the highest possible quality of our data, all economic time series have been obtained from the IPM Research Center in Minsk. IPM regularly compiles data from multiple state-affiliated and independent sources in Belarus, including the National Bank of Belarus, the Ministry of Statistics and Analysis of Belarus and the Independent Institute for Socio-Economic and Political Studies in Minsk. Where possible, the IPM data have been compared with time series from IMF's International Financial Statistics database with no relevant discrepancies noted. Descriptive statistics on the economic data are provided in Table 7 in the appendix. As shown, real GDP is computed using the consumer price index, as the GDP deflator is not reported on a monthly basis.

Results

Political Cycles in Economic Outcomes

The results of estimating equation (20) for economic outcomes in connection to both presidential elections and referenda are presented in Table 1. The coefficients are measured as the seasonally adjusted incremental log point deviations from the trend around elections with the exception of the inflation variables and the government balance, whose coefficients are measured

as the incremental deviations from their respective average levels.²⁶ Furthermore, the deviations in the government balance are measured in billions of Belarusian rubles instead of log points, as the variable is included in its level form. As noted in the previous section, the effect is incremental in the sense that we estimate the deviation in the current month while controlling for the deviations incurred in the immediately preceding months.

First, we note that all inflation variables exhibit clear countercyclical patterns. For the consumer price index, CPI, we observe economically large and highly significant incremental reductions in the monthly inflation rate for both months immediately prior to elections, with a 32 percent decline two months before elections compared to the average level and a 49 percent decline in the month immediately adjacent to an election.²⁷ In concurrence with our predictions of countercyclical movements, CPI inflation also exhibits statistically significant increases in the two months immediately following an election amounting to 58 and 66 percent respectively. Finally, we note that, contrary to our predictions, CPI inflation experiences an increase of 50 percent four months prior to elections. Looking at producer prices, we observe a less significant cyclicity for PPI inflation. The only significant coefficient is an economically large decrease of 48 percent two months prior elections, which concurs with our predictions. However, we do not observe any of the predicted increases in producer price inflation after the election. For food prices, the significant countercyclical pattern is compressed to the months immediately adjacent to the election, with a pre-election decrease in the monthly inflation rate of CPFS of 57 percent compared to the trend and a post-election upswing of 71 percent. Finally, it is worth noting that the three inflation variables exhibit lower R^2 -values than the other economic outcomes. As the bulk of the disparity in R^2 -values is contingent on whether or not a highly significant time trend is included among the independent variables, this difference can be referred to the fact that the inflation variables are the only economic outcomes that are not detrended. Furthermore, given the high significance of the time trend, the R^2 -values should generally not be interpreted as evidence for the explanatory power of the election coefficients. Therefore, we will not put any further emphasis on them when analyzing our results.

²⁶ In the result tables our coefficients are presented as log points, which are approximately equal to the percentage deviation from the trend of the dependent variable for each unit change in the independent variable. However, for large coefficients the approximation is increasingly less precise, which is why we in the subsequent discussion consistently refer to the corresponding exact percentage deviations instead of the log point values. Thereby, the exact percentage deviation is calculated by taking the natural exponent of the log point coefficient and subtracting unity. For instance, a deviation of 5 log points corresponds to a percentage deviation of $e^{0.05} - 1 = 5.1$ percent, whereas a deviation of 50 log points corresponds to a percentage deviation of $e^{0.50} - 1 = 64.9$ percent.

²⁷ In accordance with note 26 these effects are calculated as $e^{-0.385} - 1 = -32.0$ percent and $e^{-0.679} - 1 = -49.3$ percent.

Concerning output measures, real GPD experiences significant procyclical fluctuations during two of the three months immediately prior to elections. The coefficients for one and three months before elections have the expected positive sign and amount to positive deviations from the trend of 4 percent each. Especially the coefficient for the month adjacent to the election period is interesting, as it retains the highest economic as well as statistical significance. On the contrary, industrial production does not provide any statistically significant support for our predictions apart from a negative coefficient for the fourth month after an election. If anything, the negative coefficient signs for the three periods before an election and the positive signs for the three following periods, including the election month, suggest a countercyclical rather than a procyclical variation.

Finally, when deflated by CPI, real average wages exhibit positive and significant coefficients for four of the six months preceding an election. The three months immediately prior to elections are all individually significant and economically large with incremental deviations of 2, 6 and 4 percent respectively. Taken together, these coefficients amount to a cumulative deviation in real average wages of close to 9 percent above the trend in the month adjacent to the election.²⁸ Interestingly, we also note that the sign of the coefficients changes from positive to negative as the election date passes, even though none of the post-electoral coefficients are statistically significant. The results are roughly the same when wages are deflated by the food price index CPFS, even though the significant effect is compressed to the two months immediately preceding elections. We also observe a larger statistical significance and greater economic magnitude of the coefficient in the month directly prior to the election compared to the corresponding value for wages deflated by CPI, which is congruent with the more compressed and economically larger swings in CPFS compared to CPI. Lastly, when real average wages are deflated by CPFS we observe a statistically significant increase of on average 3 percent in the month following an election, which runs contrary to our predictions.

Table 2 shows the result from regressing equation (20) for economic outcomes when referenda are excluded from the analyzed elections. The logic behind such a treatment would be that the incumbent regime might put more emphasis on presidential elections due to their more

²⁸ As two lags are used in the specification for real wages, the cumulative effect is computed by adding the incremental effect in the first month before the elections with the residual effects of the two preceding months. The residual effects are estimated by multiplying the incremental effects of the two preceding months with the estimates of the one- and two-period lags respectively, so that the cumulative effect equals $0.037 + 0.061 \cdot 0.694 + 0.017 \cdot 0.250 = 8.4$ log points. The corresponding percentage deviation from the trend is $e^{0.084} - 1 = 8.8$ percent.

immediate affiliation with president Lukashenka, which would result in a more extensive pre-electoral manipulation of the economy.

As shown in the results, we observe an even larger countercyclical effect in the inflation variables when the election sample is limited to only presidential elections. In this treatment, the pre-election incremental deviations in the growth rate of CPI amount to declines of 25, 61 and 28 percent respectively when the two months leading up to an election are combined with the election month. The corresponding numbers for CPFS are decreases of 24, 67 and 46 percent. Also in line with our predictions, the inflation rate of CPI exhibits incremental increases of 85 and 62 percent respectively for the first and fourth month after elections, while we observe an incremental hike of on average 168 percent in the growth rate of food prices in the month after the election. The effect is also larger for the growth in PPI, which exhibits a statistically significant decline of 54 percent two months before elections compared to 48 percent when the referenda are included. However, contrary to our predictions, both PPI and CPFS exhibit statistically significant decreases in their growth rates in the fifth and sixth months after elections, which was not the case in the previous treatment. Conversely, the previously statistically significant and unexplained rise in the growth rate of CPI four months prior to elections is no longer significant in the second treatment.

Moreover, for real GDP, the second treatment also shows a larger effect in the quarter prior to the election. We observe increases of 6 percent both three months and one month before elections, which is congruent with the observed greater magnitude of inflation fluctuations. Interestingly, the countercyclical tendencies in industrial production are, however, replaced by a procyclical increase of 5 percent in the month prior to an election. We also note a statistically significant and positive coefficient of 2 percent two months after the election.

Finally, the results for real average wages show strong support for procyclicality when only presidential elections are considered. When real average wages are deflated by CPI, we observe economically large, positive and statistically significant coefficients for all six months before an election followed by small, predominately negative and statistically insignificant coefficients from the election month and onwards. Taken together, the coefficients for the three months immediately preceding an election now amount to a cumulative wage increase of 10 percent above the trend in the month adjacent to the election. The cyclicity is slightly less pronounced when real wages are deflated by CPFS, but the procyclical effects are still larger than in the first treatment. However, in contrast to the previous results, we observe an unexpected significant increase of 2 percent in real average wages deflated by CPFS in the third month after an election.

TABLE 1:

Economic outcomes, presidential elections and referenda

	CPI month-on-month inflation	PPI month-on-month inflation	CPFS month-on-month inflation	Real GDP (deflated by CPI)	Real industrial production (PPI)	Real average wage (CPI)	Real average wage (CPFS)
Month -6	-0.445 (0.349)	-0.182 (0.183)	-0.629 (0.430)	0.002 (0.024)	0.013 (0.023)	0.023** (0.009)	0.025** (0.010)
Month -5	0.140 (0.360)	0.088 (0.340)	0.630 (0.399)	0.003 (0.011)	0.006 (0.020)	0.014 (0.009)	0.010 (0.009)
Month -4	0.406** (0.200)	-0.120 (0.315)	0.308 (0.237)	0.001 (0.038)	0.024 (0.025)	0.014 (0.010)	0.008 (0.012)
Month -3	0.303 (0.210)	0.179 (0.240)	-0.045 (0.262)	0.035* (0.020)	-0.010 (0.014)	0.017** (0.007)	0.014 (0.010)
Month -2	-0.385*** (0.127)	-0.660*** (0.210)	-0.241 (0.172)	-0.020 (0.021)	-0.008 (0.015)	0.062* (0.032)	0.059* (0.033)
Month -1	-0.679** (0.268)	-0.159 (0.138)	-0.840*** (0.239)	0.041** (0.018)	-0.008 (0.038)	0.037** (0.018)	0.047*** (0.014)
Month 0: elections	-0.365 (0.295)	-0.046 (0.242)	-0.278 (0.342)	-0.011 (0.022)	0.002 (0.018)	-0.007 (0.014)	-0.002 (0.013)
Month 1	0.458* (0.273)	0.065 (0.305)	0.537** (0.259)	-0.001 (0.017)	0.018 (0.030)	0.018 (0.016)	0.028* (0.016)
Month 2	0.505** (0.222)	0.199 (0.346)	-0.085 (0.329)	0.006 (0.019)	0.014 (0.015)	-0.017 (0.012)	-0.013 (0.019)
Month 3	-0.080 (0.254)	0.143 (0.278)	-0.247 (0.496)	0.024 (0.021)	-0.045 (0.041)	-0.000 (0.008)	0.006 (0.009)
Month 4	0.141 (0.227)	0.144 (0.280)	-0.093 (0.228)	-0.026 (0.020)	-0.029* (0.017)	-0.013 (0.009)	-0.012 (0.009)
Month 5	0.366 (0.351)	-0.435 (0.284)	-0.161 (0.299)	0.024 (0.018)	0.014 (0.030)	-0.017 (0.021)	0.008 (0.013)
Month 6	0.052 (0.245)	-0.605 (0.305)	-0.044 (0.291)	0.006 (0.015)	-0.018 (0.031)	-0.022 (0.015)	-0.008 (0.012)
No. of obs.	181	177	166	188	191	202	190
R²	0.8018	0.6838	0.7879	0.9906	0.9677	0.9969	0.9969

Note: All regressions include a full set of seasonal dummies. Robust standard errors are in parenthesis. ***, **, and * denote significance at the 1, 5, and 10 percent level, respectively. As no real GDP numbers are reported on a monthly basis we deflate nominal GDP using CPI instead of the GDP deflator.

TABLE 2:
Economic outcomes,
presidential elections

	CPI month-on- month inflation	PPI month-on- month inflation	CPFS month-on- month inflation	Real GDP (deflated by CPI)	Real industrial production (PPI)	Real average wage (CPI)	Real average wage (CPFS)
Month -6	-0.485 (0.636)	0.033 (0.200)	-0.739 (0.892)	0.009 (0.038)	0.016 (0.031)	0.026** (0.012)	0.031** (0.013)
Month -5	-0.072 (0.113)	-0.181 (0.368)	0.424 (0.272)	-0.007 (0.012)	0.014 (0.031)	0.022*** (0.007)	0.016** (0.008)
Month -4	0.423 (0.323)	-0.281 (0.475)	0.102 (0.329)	-0.032 (0.049)	0.017 (0.025)	0.024* (0.014)	0.016 (0.018)
Month -3	0.429 (0.291)	0.171 (0.318)	-0.142 (0.212)	0.056** (0.023)	-0.004 (0.017)	0.026*** (0.007)	0.027** (0.012)
Month -2	-0.294*** (0.095)	-0.786** (0.332)	-0.272* (0.145)	-0.020 (0.034)	0.008 (0.012)	0.037* (0.022)	0.032 (0.025)
Month -1	-0.939*** (0.343)	-0.122 (0.215)	-1.112*** (0.349)	0.055** (0.022)	0.048*** (0.016)	0.063*** (0.023)	0.060*** (0.017)
Month 0: elections	-0.477** (0.200)	0.244 (0.398)	-0.625* (0.322)	-0.003 (0.030)	0.005 (0.028)	0.018 (0.019)	0.022 (0.016)
Month 1	0.613* (0.328)	0.244 (0.342)	0.985** (0.391)	0.019 (0.015)	-0.011 (0.019)	-0.012 (0.010)	-0.006 (0.013)
Month 2	0.323 (0.398)	0.179 (0.202)	-0.155* (0.090)	-0.002 (0.016)	0.018* (0.011)	-0.008 (0.008)	-0.008 (0.010)
Month 3	0.056 (0.186)	-0.205 (0.230)	-0.935 (0.690)	-0.002 (0.023)	0.002 (0.015)	0.003 (0.010)	0.017** (0.008)
Month 4	0.482* (0.255)	-0.150 (0.333)	0.069 (0.263)	-0.012 (0.011)	-0.033 (0.024)	-0.006 (0.011)	-0.001 (0.009)
Month 5	0.887 (0.662)	-0.667* (0.403)	-0.759*** (0.126)	-0.012 (0.012)	0.003 (0.033)	-0.034 (0.035)	0.012 (0.016)
Month 6	0.277 (0.302)	-0.737 * (0.413)	-0.295** (0.146)	0.033** (0.015)	0.010 (0.018)	-0.033 (0.023)	-0.001 (0.014)
No. of obs.	181	177	166	188	191	202	190
R²	0.8011	0.6788	0.7913	0.9906	0.9668	0.9967	0.9965

Note: All regressions include a full set of seasonal dummies. Robust standard errors are in parenthesis. ***, **, and * denote significance at the 1, 5, and 10 percent level, respectively. As no real GDP numbers are reported on a monthly basis we deflate nominal GDP using CPI instead of the GDP deflator.

Political Cycles in Policy Instruments

Table 3 presents the results of estimating equation (20) for policy instruments considering both presidential elections and referenda. As for income variables, the real minimum wage exhibits no significant cyclicity around elections regardless of whether CPI or CPFS is used as deflator. In contrast, in real average pensions we observe significant incremental increases compared to the trend for the two months preceding elections independent of deflator. The economically largest and statistically most significant increase of 7 percent occurs two months prior to an election, whereas the following month exhibits increases of 3 and 4 percent depending on the deflator. Similarly to real average wages, we note that the rise in the month adjacent to the election is about one percentage point larger when pensions are deflated by CPFS, which is congruent with the larger decline in food prices relative to overall consumer prices immediately before an election. As expected, we also observe a statistically significant and negative coefficient of 3 percent for the fourth month after elections for both measures of real pensions. Finally, real unemployment benefits do not exhibit any significant coefficients for the observed period.

Concerning the government budget, we do not discern any statistically significant fluctuations in government revenues in connection to elections. On the other hand, government expenditures exhibit a procyclical pattern with a significant increase of 8 percent above the trend in the month prior to elections and significant incremental decreases of 7 percent in both the election month and the month immediately after an election. This pattern is partly mirrored in the government budget balance, which shows a significant decrease of approximately 550 million Belarusian rubles below its average in the month leading up to an election.

As shown in Table 4, the results roughly hold when removing referenda from the elections considered. The real minimum wage still does not exhibit any cyclicity, even though the coefficient for the third month after the election becomes significant when the minimum wage is deflated by CPI. Likewise, real average pensions retain their significant procyclicity for both deflators, albeit with more widely dispersed increases when computed with CPI. Similarly to the real minimum wage, real unemployment benefits still lack significant cyclicity in the second treatment but exhibit one month with a significant post-election increase. As for budget variables, government revenue is still statistically unaffected by the political cycle, whereas some procyclical evidence for government expenditure is apparent in the first post-election month. Likewise, the statistical evidence for cyclicity in the government budget balance is weaker in the second treatment, as none of the months adjacent to an election exhibit statistically significant coefficients.

TABLE 3:
Policy instruments,
presidential elections and referenda

	Real minimum wage (CPI)	Real minimum wage (CPFS)	Real average pension (CPI)	Real average pension (CPFS)	Real unempl. benefits (CPI)	Real unempl. benefits (CPFS)	Real gov't revenue (CPI)	Real gov't expenditure (CPI)	Real gov't balance (CPI)
Month -6	0.073 (0.059)	0.077 (0.060)	0.012 (0.030)	0.012 (0.029)	-0.022 (0.028)	-0.016 (0.027)	0.088 (0.080)	0.036 (0.049)	-0.071 (0.364)
Month -5	-0.004 (0.019)	-0.006 (0.019)	-0.014 (0.014)	-0.019 (0.017)	0.070 (0.052)	0.072 (0.053)	-0.034 (0.047)	-0.049 (0.031)	-0.007 (0.140)
Month -4	0.005 (0.013)	0.000 (0.013)	0.019 (0.027)	0.014 (0.026)	0.005 (0.019)	0.001 (0.019)	0.083 (0.079)	0.060 (0.049)	-0.205 (0.197)
Month -3	0.002 (0.015)	0.000 (0.015)	-0.036 (0.034)	-0.041 (0.036)	0.025 (0.021)	0.024 (0.023)	-0.041 (0.031)	0.033 (0.059)	-0.777 (0.637)
Month -2	0.047 (0.047)	0.044 (0.048)	0.070*** (0.025)	0.067** (0.027)	-0.035 (0.036)	-0.039 (0.037)	0.012 (0.043)	-0.043 (0.033)	-0.079 (0.203)
Month -1	0.078 (0.071)	0.085 (0.069)	0.034* (0.020)	0.043* (0.025)	0.047 (0.036)	0.045 (0.036)	-0.024 (0.049)	0.081* (0.047)	-0.545* (0.284)
Month 0: elections	0.018 (0.021)	0.017 (0.021)	0.056 (0.041)	0.056 (0.041)	0.014 (0.017)	0.014 (0.017)	0.003 (0.036)	-0.074* (0.044)	-0.018 (0.136)
Month 1	0.063 (0.076)	0.075 (0.090)	0.016 (0.012)	0.020 (0.016)	0.001 (0.027)	-0.001 (0.029)	-0.001 (0.044)	-0.072* (0.039)	0.433 (0.474)
Month 2	-0.021 (0.032)	-0.019 (0.033)	-0.029 (0.021)	-0.014 (0.023)	0.022 (0.029)	0.019 (0.029)	-0.017 (0.047)	0.016 (0.045)	-0.117 (0.379)
Month 3	0.032 (0.056)	0.029 (0.057)	-0.002 (0.015)	0.002 (0.017)	-0.016 (0.042)	-0.022 (0.043)	0.030 (0.038)	0.008 (0.049)	0.325 (0.452)
Month 4	-0.056 (0.053)	-0.061 (0.057)	-0.029*** (0.009)	-0.029** (0.012)	0.086 (0.060)	0.076 (0.056)	0.012 (0.039)	-0.043 (0.027)	0.158 (0.291)
Month 5	0.018 (0.038)	0.022 (0.040)	-0.016 (0.033)	0.016 (0.026)	-0.011 (0.014)	-0.013 (0.014)	0.027 (0.036)	0.012 (0.034)	0.330 (0.225)
Month 6	0.081 (0.080)	0.082 (0.083)	0.000 (0.025)	-0.004 (0.029)	-0.008 (0.022)	-0.009 (0.022)	-0.006 (0.034)	0.040** (0.019)	0.113 (0.193)
No. of obs.	190	189	203	191	119	119	188	176	178
R²	0.9922	0.9920	0.9923	0.9923	0.9586	0.9622	0.9821	0.9715	0.3660

Note: All regressions include a full set of seasonal dummies. Robust standard errors are in parenthesis. ***, ** and * denote significance at the 1, 5, and 10 percent level, respectively.

TABLE 4:
Policy instruments,
presidential elections

	Real minimum wage (CPI)	Real minimum wage (CPFS)	Real average pension (CPI)	Real average pension (CPFS)	Real unempl. benefits (CPI)	Real unempl. benefits (CPFS)	Real gov't revenue (CPI)	Real gov't expenditure (CPI)	Real gov't budget balance (CPI)
Month -6	0.139 (0.089)	0.145 (0.090)	0.036 (0.044)	0.034 (0.043)	-0.011 (0.029)	-0.006 (0.028)	-0.017 (0.059)	-0.025 (0.059)	-0.368 (0.366)
Month -5	-0.013 (0.017)	-0.015 (0.016)	-0.010 (0.022)	-0.019 (0.025)	0.085 (0.074)	0.086 (0.074)	-0.016 (0.067)	-0.073* (0.043)	-0.069 (0.190)
Month -4	-0.003 (0.020)	-0.005 (0.019)	0.050* (0.030)	0.045 (0.029)	-0.005 (0.022)	-0.009 (0.020)	0.011 (0.067)	0.035 (0.045)	-0.404** (0.199)
Month -3	0.010 (0.017)	0.012 (0.017)	0.000 (0.010)	-0.004 (0.013)	0.015 (0.025)	0.015 (0.027)	-0.015 (0.033)	0.055 (0.084)	-1.190 (0.936)
Month -2	0.052 (0.080)	0.050 (0.079)	0.049*** (0.016)	0.041* (0.021)	-0.047 (0.044)	-0.050 (0.045)	0.021 (0.069)	-0.049 (0.032)	0.082 (0.234)
Month -1	0.165 (0.110)	0.164 (0.111)	0.025 (0.029)	0.025 (0.026)	0.059 (0.048)	0.056 (0.047)	0.029 (0.040)	0.085 (0.073)	-0.590 (0.424)
Month 0: elections	0.041 (0.027)	0.042 (0.028)	0.047* (0.027)	0.043 (0.030)	0.022 (0.016)	0.023 (0.017)	0.003 (0.052)	-0.059 (0.073)	-0.125 (0.170)
Month 1	-0.025 (0.036)	-0.038 (0.040)	0.007 (0.010)	0.002 (0.012)	-0.015 (0.035)	-0.018 (0.037)	-0.039 (0.049)	-0.049* (0.027)	-0.175 (0.163)
Month 2	-0.058 (0.035)	-0.061 (0.035)	-0.019 (0.036)	0.005 (0.038)	-0.013 (0.014)	-0.018 (0.014)	0.041 (0.019)	-0.047 (0.033)	0.276 (0.191)
Month 3	0.138* (0.076)	0.138 (0.075)	-0.006 (0.014)	-0.005 (0.022)	-0.053 (0.045)	-0.057 (0.048)	-0.022 (0.048)	-0.009 (0.070)	0.715 (0.721)
Month 4	-0.132 (0.102)	-0.142 (0.107)	-0.031** (0.013)	-0.030* (0.016)	0.137** (0.065)	0.128** (0.057)	-0.069 (0.031)	-0.048 (0.031)	-0.198 (0.283)
Month 5	0.025 (0.020)	0.033 (0.018)	-0.020 (0.064)	0.051 (0.054)	-0.014 (0.019)	-0.012 (0.020)	0.002 (0.056)	-0.040 (0.034)	0.275 (0.346)
Month 6	0.240 (0.146)	0.244 (0.150)	0.020 (0.014)	0.014 (0.012)	-0.012 (0.029)	-0.010 (0.028)	0.021 (0.039)	0.040 (0.031)	0.219 (0.329)
No. of obs.	190	189	203	191	119	119	188	176	178
R²	0.9928	0.9926	0.9917	0.9916	0.9618	0.9653	0.9813	0.9707	0.3707

Note: All regressions include a full set of seasonal dummies. Robust standard errors are in parenthesis. ***, ** and * denote significance at the 1, 5, and 10 percent level, respectively.

Interpretation of Results

Given the statistically significant estimates prior to elections, data support political cyclicity for all measures of inflation, real GDP, real average wages and real average pensions. For both types of inflation in consumer prices, the cyclicity is reinforced by statistically significant coefficients with opposite signs for some of the post-election months. Furthermore, dubious indications of cyclicity are detected in real industrial production and aggregate government expenditures. For real industrial production, no cyclicity is observed when considering all elections, but a statistically significant indication of pre-election procyclicality is obtained when the regression is limited to only presidential elections. Conversely, government expenditures, and thus also the government budget balance, exhibit significant cyclicity when all elections are considered, but the results turn inconclusive when excluding referenda. Finally, no evidence is found for cyclicity in the real minimum wage, real unemployment benefits or real government revenue. Overall, we conclude that the significant results are generally economically larger when considering only presidential elections, suggesting that the incumbent government puts more emphasis on these events. To visualize the results, the predicted values for the variables exhibiting statistically significant political cyclicity are graphically illustrated in Figure 3 and Figure 4.

The economically largest effects are visible in the monthly inflation rates of CPI and CPFS. Notably, the significant effect is compressed in time to the months immediately surrounding the election date, which supports Akhmedov and Zhuravskaya's (2004) assessment that monthly data are the proper level of analysis as the effects might cancel out in higher frequency data. Furthermore, the results for CPFS are even more compressed around the election date than the results for CPI, which presumably can be explained by the higher proportion of fast-moving consumer goods in the food price index, allowing for a faster impact of inflation changes on people's real consumption. Finally, given the Belarusian government's high degree of direct control of price developments, the strong countercyclicity in consumer prices suggests that manipulations of price growth are a major lever for the incumbent to deliberately influence real income in connection to elections.

In turn, this conclusion implies that a large part of the cyclicity observed in real variables is caused by price manipulations rather than by nominal fluctuations, which is supported by the more compressed effect observed in real average wages and real average pensions when CPFS is used as deflator instead of CPI. This implication is especially important for our interpretation of the cyclicity in real GDP, as it is possible that the results are induced by using CPI instead of

the standard GDP deflator to compute the real figures.²⁹ Indeed, as shown in Table 5, where equation (20) is estimated for nominal as well as real variables, nominal GDP does not exhibit any of the procyclicality evident in real GDP when CPI is used as deflator. Rather, we observe a significant countercyclical downswing in nominal GDP two months prior to elections, which suggests that the procyclical results for real GDP should be treated with care until the effect is estimated using the proper GDP deflator instead of consumer prices.

TABLE 5: Real and nominal cyclicality	CPI	Nominal GDP	Real GDP (CPI)	Nominal wages	Real wages (CPI)	Nominal pensions	Real pensions (CPI)
Month -6	-0.445 (0.349)	0.004 (0.024)	0.002 (0.024)	0.010 (0.015)	0.023** (0.009)	-0.008 (0.031)	0.012 (0.030)
Month -5	0.140 (0.360)	0.002 (0.016)	0.003 (0.011)	-0.008 (0.010)	0.014 (0.009)	-0.030** (0.014)	-0.014 (0.014)
Month -4	0.406** (0.200)	-0.001 (0.033)	0.001 (0.038)	0.001 (0.009)	0.014 (0.010)	0.006 (0.031)	0.019 (0.027)
Month -3	0.303 (0.210)	0.030 (0.031)	0.035* (0.020)	0.000 (0.009)	0.017** (0.007)	-0.014 (0.009)	-0.036 (0.034)
Month -2	-0.385*** (0.127)	-0.047* (0.025)	-0.020 (0.021)	0.064 (0.060)	0.062* (0.032)	0.071 (0.047)	0.070*** (0.025)
Month -1	-0.679** (0.268)	0.015 (0.024)	0.041** (0.018)	-0.006 (0.020)	0.037** (0.018)	0.018 (0.031)	0.034* (0.02)
Month 0: elections	-0.365 (0.295)	-0.045 (0.028)	-0.011 (0.022)	-0.039*** (0.013)	-0.007 (0.014)	0.027 (0.040)	0.056 (0.041)
Month 1	0.458* (0.273)	-0.018 (0.021)	-0.001 (0.017)	0.011 (0.020)	0.018 (0.016)	-0.006 (0.014)	0.016 (0.012)
Month 2	0.505** (0.222)	0.016 (0.024)	0.006 (0.019)	-0.018 (0.009)	-0.017 (0.012)	-0.030 (0.023)	-0.029 (0.021)
Month 3	-0.080 (0.254)	0.028 (0.023)	0.024 (0.021)	0.003 (0.009)	-0.000 (0.008)	-0.012 (0.018)	-0.002 (0.015)
Month 4	0.141 (0.227)	-0.038 (0.027)	-0.026 (0.020)	-0.016 (0.013)	-0.013 (0.009)	-0.035*** (0.010)	-0.029*** (0.009)
Month 5	0.366 (0.351)	0.016 (0.018)	0.024 (0.018)	0.001 (0.016)	-0.017 (0.021)	-0.009 (0.021)	-0.016 (0.033)
Month 6	0.052 (0.245)	-0.010 (0.022)	0.006 (0.015)	-0.019 (0.017)	-0.022 (0.015)	-0.002 (0.035)	0.000 (0.025)
No. of obs.	181	188	188	202	202	203	203
R²	0.8018	0.9994	0.9906	0.9997	0.9969	0.9995	0.9923

Note: All regressions include election dummies both presidential elections and referenda and a full set of seasonal dummies. Robust standard errors are in parenthesis. ***, ** and * denote significance at the 1, 5, and 10 percent level, respectively.

The regression results for the nominal variables presented in Table 5 also reveal interesting findings with bearing on the cyclicality in real average wages and real average pensions. Except for an ambiguous yet significant decline in nominal wages in the election month and significant

²⁹ Chubrik and Giucci (2006 p. 3) find that the cumulative levels of CPI and the GDP deflator differ substantially for the period 1995–2005. They attribute the difference to price regulations that cause the prices of certain consumer goods to grow more slowly than average prices.

decreases for nominal pensions in the fifth month before and the fourth month after an election, nominal income variables do not show any significant cyclicity. Hence, we conclude that the significant cyclicity evident in real income variables is mainly driven by manipulations of the price level rather than of nominal income. This implies that the Belarusian government makes relatively less use of its extensive control over wage and pension formation to induce political cyclicity and instead predominantly relies on its, similarly extensive, command over prices. This can possibly be explained by the fact that nominal wage hikes are more difficult to reverse after the election, as nominal wage decreases are bound to be highly unpopular.

Interestingly, the reliance on inflation to induce real income increases runs contrary to Nordhaus' (1975) original Phillips curve prediction that the incumbent government will let inflation rise to reduce unemployment prior to elections. On the other hand, it is congruent with Haiduk's (2007 p. 93) finding of a countercycle in employment in the Belarusian informal sector. One can hypothesize that the reason for this inversed cyclicity in the short-run Phillips curve trade-off is inherent in the organization of the Belarusian economy, as the command structure allows the government to repress surging unemployment in the short run by administrative means, such as guaranteed employment in the state-controlled sector. This repression allows it to reap the benefits of higher real average wages prior to elections without the disadvantage of mounting unemployment, which would not be possible to achieve in an economy with freer labor markets.

Moreover, if inflation management constitutes the government's main instrument to induce political cyclicity, it is prudent to ask why some real variables exhibit political cyclicity while others apparently do not. Should not all real variables be equally affected by changes in the price level? Not necessarily. As shown in Table 5, both nominal wages and nominal pensions exhibit large and positive coefficients two months prior to elections, even though these are not statistically significant. If other nominal variables do not exhibit similar insignificant hikes, it is possible that the inflation fluctuations are not sufficient to induce significant cyclicity in their corresponding real variables. Furthermore, if the nominal variables for some reason are positively correlated with inflation, they will stabilize their corresponding real variables even in connection to large swings in prices.

Looking further into the Belarusian case, we note that it is possible that such reasoning can help explain the absence of significant cyclicity in real unemployment benefits and the real minimum wage. According to Chubrik *et al.* (2009 p. 15), the minimum wage has since 2004 been set to

equal the official subsistence minimum.³⁰ Since 1999, the subsistence level is in turn determined as the monetary equivalent of 2,700 calories per adult per day, which means that it is anchored in a real rather than a nominal value (Chubrik *et al.* 2009 p. 51). This implies that the nominal minimum wage will rise and fall in parallel with the price level for basic foodstuffs, causing the real minimum wage to remain roughly stable even in the presence of large inflation fluctuations.³¹ Thus, the real minimum wage will not be affected by electoral inflation manipulations. It should, however, be noted that this conclusion is contingent on the assumption that adjustments to the nominal minimum wage are made on a high-frequency basis, as administrative lags would mean that the real level still would be susceptible to short-term inflation swings. Concerning real unemployment benefits, the argument is less compelling, as they are not formally tied to the subsistence level. However, the Ministry of Labor and Social Protection has proposed to link the size of the unemployment benefits to the minimum wage, which would lead to the same outcome (Chubrik *et al.* 2009 p. 37). Finally, it should also be acknowledged that the lack of significance in real unemployment benefits may be influenced by the more limited number of observations. Similarly, the evidence for the real minimum wage should be treated with care, as we are unable to reject the null-hypothesis that the series follows a unit root process.

For output variables, we must address the question of why political cyclicity is observed in real GDP but not in industrial production. In congruence with our caveats about the findings for real GDP, it is possible that the differing results arise from using different deflators. The limited cyclicity of industrial production is thus connected to the more stable developments in PPI, while the observed procyclicality in real GDP follows the more volatile CPI. However, such an explanation does not account for the shifting results for industrial production between the two treatments. One can thus assume that at least some of the difference lies in the composition of the industrial production index. In contrast to GDP, industrial production is limited to capital-intensive heavy industries, such as mining or oil and gas production. Therefore, one might suspect that the index is susceptible to decreases in investment levels, which is supported by the countercyclical, albeit insignificant, tendencies for industrial production in the first treatment. It is possible that any procyclicality in production, as predicted by our model, is offset by such countercyclical variation in investment. In contrast, the investment component of real GDP is proportionally smaller, explaining why the predicted pattern of political cyclicity emerges.

³⁰ Before 2004 the minimum wage was so far below the official poverty line that it was regarded as a regulatory technicality (Chubrik *et al.* 2009 p. 15).

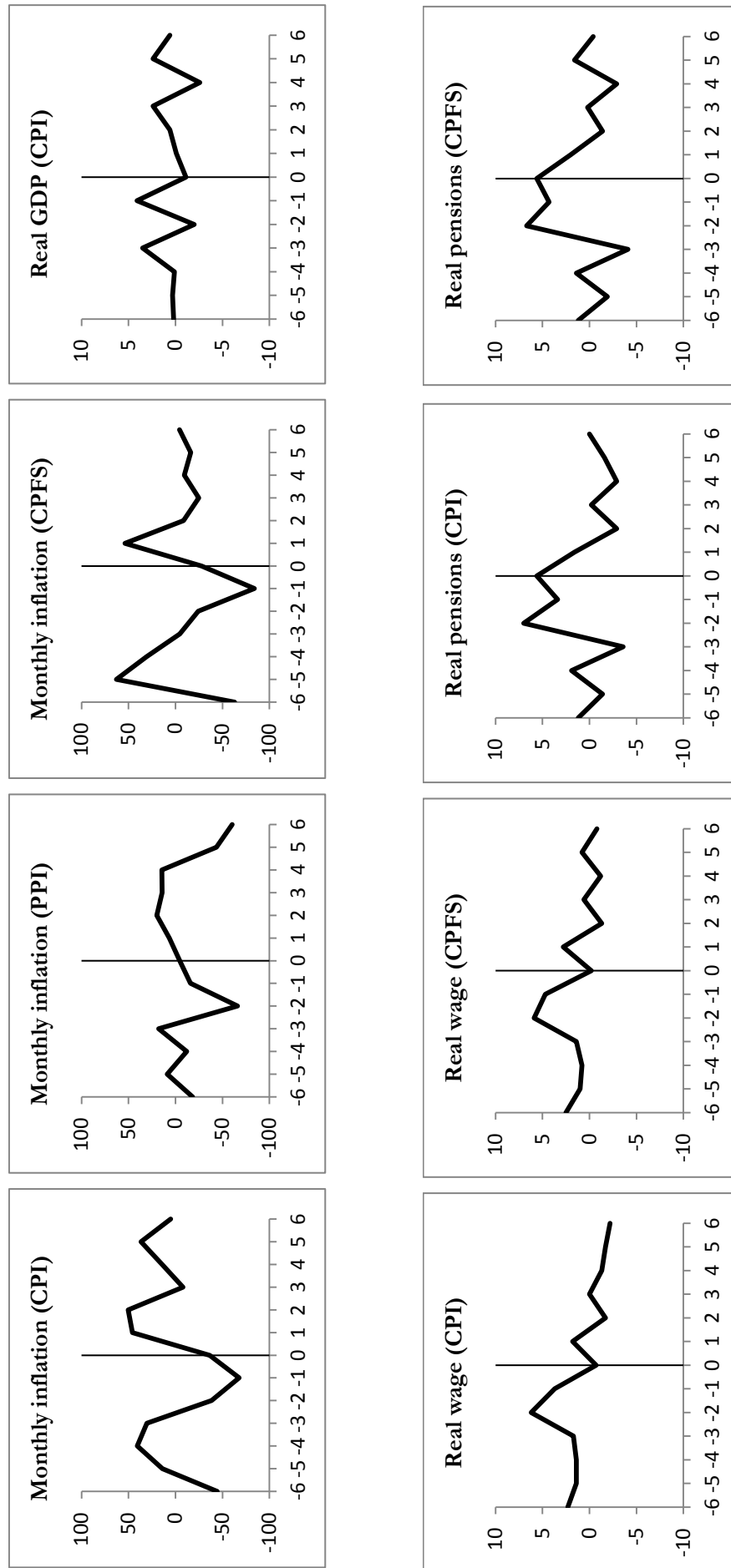
³¹ Historically, the minimum wage has equaled approximately 60 percent of the so-called minimum consumption basket (Babicki *et al.* 2004 p. 7).

Next, we turn our attention to the ambiguous cyclical in the government budget. As noted, we observe some cyclical in real expenditures with matching fluctuations in the budget balance. Potentially, these fluctuations could arise as a result of cyclical manipulations, but one might also conjecture that at least some of the increase is due to the incremental expenditures involved in the staging of the election in question. Thus, in order to credibly infer political cyclical in we would need to look at the composition of government spending rather than mere fluctuations at the aggregate level, which unfortunately has not been feasible due to data limitations. For this reason, we cannot use the observed budget cyclical in to draw any conclusions with bearing on our model.

Finally, it is prudent to comment on the occasional unexpected findings in the results. First, one can imagine that some of the counterintuitive results for the immediate post-electoral months are caused by a spill-over effect from pre-electoral manipulations. For instance, it is possible that the unexpected and isolated, yet statistically significant, increase in real average wages deflated by CPFS in the month immediately after an election is but a lagged expression of pre-election stimulus. Thus, it should not invalidate our broader and highly significant evidence of pro-cyclical in the months leading up to the elections. Second, it is harder to explain the sporadic unexpected findings in inflation. However, as they vary in significance between the treatments and generally are obtained from months in the periphery of the examined period, we conclude that they do not pose any conclusive evidence in contradiction of our highly significant findings of an economically large countercycle in inflation immediately surrounding the election date.

To summarize, in the absence of data on investment variables and the GDP deflator, we find strong empirical support for our first hypothesis on political cyclical in economic outcomes for inflation and real average wages as well as significant, albeit not uncontested, support for cycles in real GDP. For our second hypothesis on political cyclical in policy instruments, the results are less cohesive, although we do find clear support for political cycles in real pensions. For both hypotheses, we conclude that the main driver behind the observed cyclical in is manipulation of the price level, which, as noted in the section on previous research, is highly controlled by the government. Concordantly, in line with our research questions we assert that the incumbent Belarusian government under president Alexander Lukashenka deliberately induces political cyclical in key real income variables and that such manipulations are reflected in real aggregate output, even though we regrettably cannot confirm our model's prediction that the cyclical in is financed by decreased investment levels. Nevertheless, the observed cyclical in favors that opportunistic political cycles can serve as a valid lever for an autocrat to retain power.

Figure 3: Political cyclicalty when considering both presidential elections and referenda

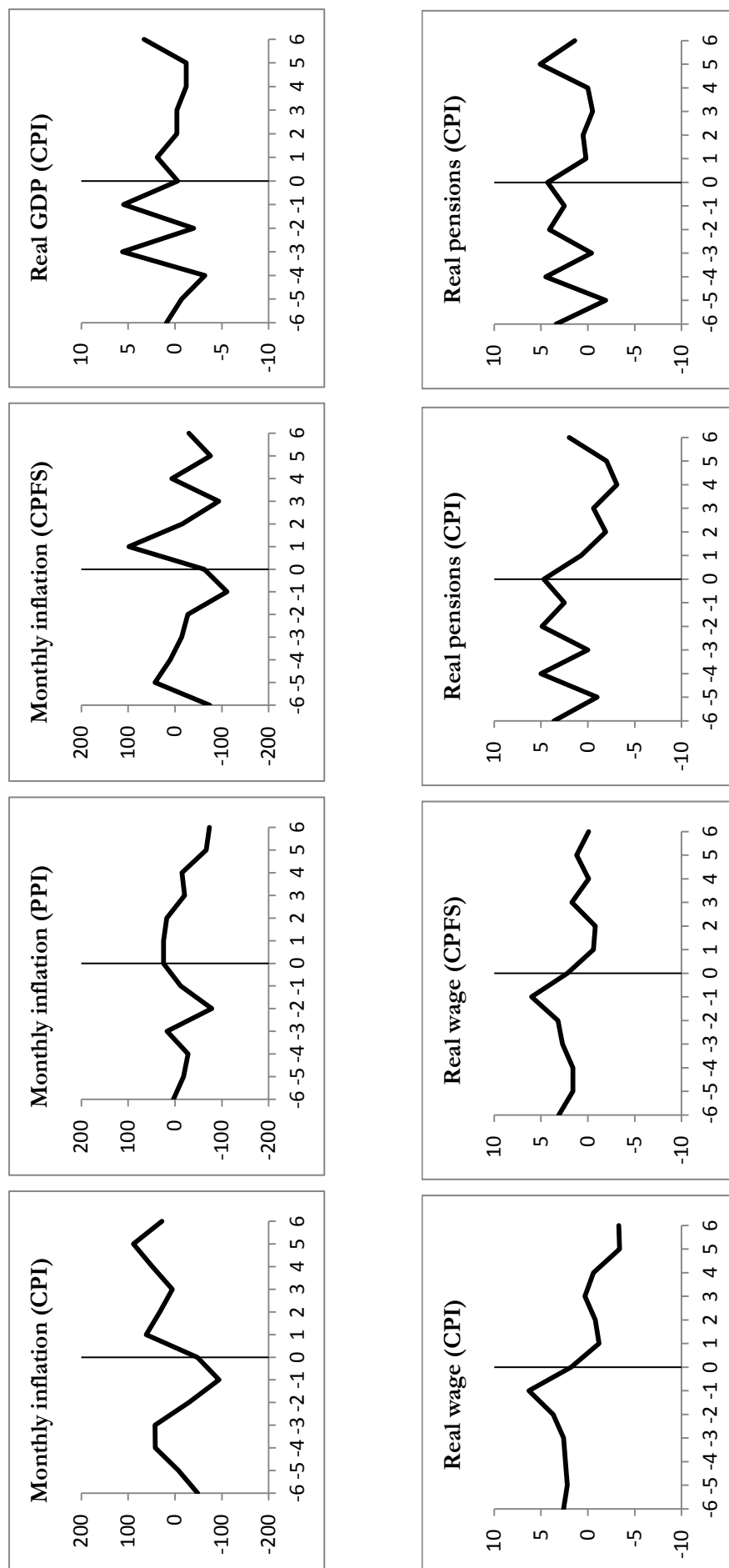


Vertical axis: Incremental log point deviations from the trend

Horizontal axis: Months away from election

Note: All charts show predicted values from estimating equation (20) on presidential elections and referenda. Note that not all estimates are statistically significant.

Figure 4: Political cyclicalities when considering only presidential elections



Vertical axis: Incremental log point deviations from the trend

Horizontal axis: Months away from election

Note: All charts showing predicted values from estimating equation (20) solely on presidential elections. Note that not all estimates are statistically significant.

Concluding Remarks

This thesis set out with the purpose to enhance the understanding of the political economy of dictatorship by studying how broad material distributions across time can be used to perpetuate authoritarian regimes. To this end, we develop a formal model of opportunistic political cycles in an authoritarian setting. Thereby, we predict that in the presence of asymmetric information an autocrat may have incentives to shift production from investment to consumption goods prior to elections in order to convey a credible signal of his competence. By raising the voters' expected future utility under the incumbent government, such signaling may increase the expected opportunity cost of deposing the autocrat and thereby deter the population from revolting in favor of acquiescence to the current ruler.

Applying the predictions of our model in an econometric case study of the Belarusian political economy renders empirical support for authoritarian opportunistic political cycles. Most strikingly, we find highly significant countercyclical movements of considerable economic magnitude in major measures of consumer price inflation. Accordingly, we assert that the fluctuations in consumer prices are a major driver behind the significant procyclicality observed in real average wages and real average pensions, which is reinforced by the fact that no significant cyclicity is observed in their respective nominal counterparts. We also observe a more limited procyclicality in real GDP, although this finding is possibly prompted by the use of CPI to compute real numbers, given a lack of data on the standard GDP deflator. Lamentably, data limitations also prevent us from determining whether or not the procyclicality in income is coupled with any corresponding countercyclicity in investment levels, as predicted by our model. Nevertheless, in the light of the Belarusian government's extensive control over the price level, we conclude that the observed political cyclicity is deliberately induced by the Lukashenka government manipulating the inflation rate in order to raise real income and boost popular support in connection to electoral events.

These findings point to several interesting insights with bearing on previous research. Perhaps most thought-provoking is that our results run opposite to the original predictions of political cyclicity in the short-run Phillips curve as described by Nordhaus (1975). While Nordhaus predicts that the incumbent government will increase inflation prior to elections in order to reduce unemployment, our results show that the Belarusian government deliberately reduces pre-election inflation in order to raise real income. The reason for this disparity might be that the command structure of the Belarusian economy allows the government to alleviate the undesired

effects of lower inflation by repressing unemployment through administrative means, suggesting that the political business cycle might move in different directions in market and command economies. Also, the fact that we find significant cyclicity in economic outcomes and not only in policy instruments runs contrary to much of the empirical criticism directed toward Nordhaus' model. Again, this might be explained by the command economy, as the high degree of government interference in the economy might result in a higher covariance between policy instruments and economic outcomes. Furthermore, as our findings support the occurrence of political cyclicity in dictatorial countries, we conclude that there clearly is room for an extension of Rogoff's (1990) more recent model of opportunistic political cycles with rational expectations beyond the domain of democratic regimes. In presenting such an extension, we disagree with Gonzalez's (2002b) assumption that dictatorships per definition do not exhibit political cyclicity and side with Gandhi (2008) in the conclusion that opportunistic political cycles might be one of several levers available to the dictator to retain power. This also implies that political scientists interested in authoritarian elections, such as Cox (2008), should take the signaling effect of opportunistic political cycles into account when modeling the dictator's incentives to hold regular elections. Finally, regarding methodology, our results support Akhmedov and Zhuravskaya's (2004) assessment that tests for political cyclicity should be performed on monthly data, as the effect is bound to be short-lived and thus might cancel out in low-frequency aggregates.

However, our findings are not entirely without concern. First, in relation to our model, it should be emphasized that we consider a single country in complete isolation. By excluding access to international capital markets, our model abstracts from several potential sources of financing of opportunistic political cycles, which limits its applicability in describing real world situations. Further concerning the model, it is prudent to highlight the strong assumption made about the autocrat's alternative to remaining in office. Given historical evidence of the contrary, it seems somewhat implausible to assume that the dictator's expected future utility after being deposed would equal the utility of the representative citizen. However, we find it hard to construct a less rigid assumption on behalf of the dictator in the light of the large span of alternative outcomes, ranging from prosperous exile to demeaning execution.

Second, there are also limitations to our econometric results. Naturally, the conclusions offered by the econometric analysis are constrained by the data used in the estimations. As data limitations have prevented testing for shifts in the composition of the government budget, we only assess the predictions yielded by our model about consumption procyclicality and not about

investment countercyclicality. Thus, it cannot be determined that the real income fluctuations observed in the data are financed by decreasing investments, as our model predicts. Similar to the above caveat about the financial autarky of our model, it is possible that the Lukashenka government uses different routes, such as international borrowing, to accommodate real income increases prior to elections. If so, the presence of opportunistic political cyclicity could have implications for how foreign lenders can use temporary loan restrictions to reduce the financial freedom of the Belarusian government in connection to elections in order to support democratization. Moreover, the use of a case study methodology for our econometric analysis also raises questions about the external validity of our econometric findings. Given the pronounced role of inflation manipulations observed in the realization of political cyclicity, it could be argued that our results are not translatable to an autocracy with less government command over the economy, as the decline in inflation would lead to unwanted surges in unemployment in the presence of freer labor markets. If such reasoning holds true, the command structure of the Belarusian economy constitutes a key prerequisite behind our results, implying that Belarus ought to be treated as a *sui generis* case with limited generalizability.

These concerns all point to areas suitable for future research. Except for testing our predictions in more general settings to study the external validity of our findings, we deem that the most fruitful inroad is to incorporate access to international capital markets into our model to derive theoretical implications founded in a more realistic view of the world. Such an extension would not only yield further insight into how opportunistic political cyclicity can underpin the perpetuation of dictatorship, but also provide valuable suggestions for what the outside world can do to promote freedom and democracy. Another research area that holds some relevance for foreign policy-makers is to estimate the relative importance of intertemporal transfers for the basis of dictatorship compared to other mechanisms, such as repression and cross-group transfers. If the latter mechanisms are found to be more vital to the autocrat's ability to retain power, one could argue that targeted sanctions leveled at the dictator's inner circle should have prejudice to broad economic sanctions aimed at limiting the financial freedom of the autocrat. Hereby, it would also be of interest to measure the relative influence of short-term pre-electoral economic swings on the electorate's decision to acquiesce compared to the influence of long-term developments in the economic trend during the whole political term, as it can be argued that political cyclicity merely has a marginal effect on the underlying economic conditions. As for this study, we can but conclude that opportunistic political cycles are indeed a valid mechanism contributing to the prevalence of authoritarianism in Belarus today.

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Appendix

Descriptive Statistics of Elections

TABLE 6:

Year	Date	Type of election	Details	Turnout	Incumbent's share of vote	Included in regression
1994	1 st : June 23, 2 nd : July 10 ³²	Presidential	Lukashenka wins in second round	1 st : 79.0 %, 2 nd : 70.6 %	1 st : 44.8 %, 2 nd : 80.1 %	No
1995	May 14	Referendum	The President's right to dismiss the Parliament	64.8 %	81.4 %	Yes
1995	1 st : May 14, 2 nd : May 28	Parliamentary	Supreme Council of the Republic	-	-	No
1995	1 st : June 11, 2 nd : June 15	Local	Local Councils	-	-	No
1995	1 st : November 29, 2 nd : December 10	Local	Local Councils, repeat election	-	-	No
1995	1 st : November 29, 2 nd : December 10	Parliamentary	Supreme Council of the Republic, repeat election	-	-	No
1996	November 24	Referendum	Constitutional proposals by the president	84.1 %	70.5 %	Yes
1999	1 st : April 4, 2 nd : April 16	Local	Local Councils	-	-	No
2000	September 13–December 13	Parliamentary	Council of the Republic	-	-	No
2000	1 st : October 15, 2 nd : October 19	Parliamentary	House of Representatives	-	-	No
2001	December 16	Parliamentary	House of Representatives, repeat election	-	-	No
2001	September 9	Presidential	Lukashenka wins in first round	83.9 %	75.6 %	Yes
2001	1 st : March 18, 2 nd : April 1	Parliamentary	House of Representatives, repeat election	-	-	No
2002	February 1–April 2	Parliamentary	Council of the Republic, repeat election	-	-	No
2003	March 2	Local	Local Councils	-	-	No
2004	October 17	Referendum	The President's right to stand for more than two terms	90.3 %	79.4 %	Yes
2004	October 17	Parliamentary	House of Representatives	-	-	No
2005	March 20	Parliamentary	House of Representatives, repeat election	-	-	No
2006	March 19	Presidential	Lukashenka wins in first round	92.6 %	82.6 %	Yes
2007	January 14	Local	Local Councils	-	-	No
2008	July 14–October 14	Parliamentary	Council of the Republic	-	-	No
2008	September 28	Parliamentary	House of Representatives	-	-	No
2010	December 19	Presidential	Lukashenka wins in first round	90.7 %	79.7 %	Yes
2010	April 25	Local	Local Councils	-	-	No

Note: All election data have been obtained from the Central Commission of the Republic of Belarus on Elections and Holding Republican Referenda.

³² 1st and 2nd denote the first and second round of elections respectively.

Descriptive Statistics of Economic Outcomes and Policy Instruments

TABLE 7:

Economic variable	Obs	Mean	SD	Min	Max	Unit	Time span	Functional form	Trend	Lags	P-value for auto-corr. in the error	Dickey-Fuller
CPIFS, monthly inflation	192	3.674	5.669	-1.552	40.700	Percentage	01/1995–12/2010	log	no	3	0.238	-4.584
CPI, monthly inflation	206	3.815	5.454	-0.660	39.190	Percentage	01/1995–02/2012	log	no	3	0.472	-6.155
PPI, monthly inflation	192	3.792	5.946	-7.313	44.600	Percentage	01/1995–12/2010	log	no	1	0.922	-5.224
Real GDP deflated by CPI	192	13176.270	6977.787	4054.892	32156.850	BYRm/m	01/1995–12/2010	log	yes	4	0.792	-6.552
Real government budget balance deflated by CPI	179	-0.036	1.268	-10.311	4.375	BYRbn/m	01/1996–11/2010	level	no	1	0.238	-16.501
Real government expenditure deflated by CPI	179	5.635	3.619	1.107	22.381	BYRbn/m	01/1996–11/2010	log	yes	3	0.111	-8.729
Real government revenue deflated by CPI	191	5.345	3.493	1.028	14.268	BYRbn/m	01/1995–11/2010	log	yes	3	0.176	-4.044
Real industrial production deflated by PPI	192	14.590	4.158	7.048	24.966	BYRbn/m	01/1995–12/2010	log	yes	1	0.518	-3.763
Real minimum wage deflated by CPFS	192	235.999	210.994	20.442	724.582	BYR/m	01/1995–12/2010	log	yes	3	0.702	-2.212
Real minimum wage deflated by CPI	193	219.746	198.643	19.805	787.109	BYR/m	01/1995–01/2011	log	yes	3	0.726	-2.387
Real average pension deflated by CPFS	192	500.681	272.599	117.098	1058.977	BYR/m	01/1995–12/2010	log	yes	1	0.837	-3.258
Real average pension deflated by CPI	206	488.595	264.371	118.351	1024.358	BYR/m	01/1995–02/2012	log	yes	1	0.447	-3.235
Real average unemployment benefits deflated by CPFS	120	99.957	21.790	35.437	133.669	BYR/m	01/2001–12/2010	log	yes	1	0.404	-3.204
Real average unemployment benefits deflated by CPI	120	91.363	19.179	33.364	120.944	BYR/m	01/2001–12/2010	log	yes	1	0.347	-3.335
Real average wage deflated by CPFS	192	1214.035	659.150	287.002	2845.607	BYR/m	01/1995–12/2010	log	yes	2	0.497	-4.557
Real average wage deflated by CPI	206	1201.735	664.267	290.072	2769.484	BYR/m	01/1995–02/2012	log	yes	2	0.426	-4.571
Russian industrial production index	204	95.098	15.000	61.319	121.539	Index	01/1995–12/2011	-	-	-	-	-

Note: All economic data have been obtained from the IPM Research Institute in Minsk with the exception of the Russian industrial production index, which has been obtained from the IMF International Financial Statistics database. The column with *p*-value for autocorrelation in the error displays the result of a test with general regressors for residual serial correlation in the error term (Woodridge 2009 p. 416). Critical values for the Dickey-Fuller test for unit roots are -3.43 at the 1% significance level, -2.86 at the 5% level, and -2.57 at the 10% level. The null-hypothesis of a unit root process is rejected if the test statistic is lower than the corresponding critical value.