

## In-depth literature review

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# The concept of political instability in economic research

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**Abstract:** This article reviews the use of the concept of political instability in economic research, the importance of which has been growing in recent years due to its potentially profound economic consequences. The article explores this concept by working through the definitions, dimensions, and methods of quantification. It also summarizes the results of the theoretical and empirical research on the economic implications of political instability. In contrast with the previous literature reviews, this article is not limited to the relationship between of political instability and one specific macroeconomic phenomenon but intends to summarize the findings of the research regarding its impact on a variety of economic phenomena investigated in the literature. The review covers the most influential publications in this area characterized by formulation of original research hypotheses, use of novel datasets, and development of innovative research methods. The research reviewed shows that political instability has a detrimental effect on economic growth, investment, inflation, fiscal deficits, public debt, and the functioning of financial markets.

**Keywords:** economic growth, political economy, political instability, political violence

**JEL Classification:** D74, O40, O43

## 1 Introduction

The concept of political instability is used extensively in economic research. The reason for its inclusion is that political instability has profound implications for the functioning of the economy. The purpose of this article is to summarize the literature on the economic implications of political instability by working through the definitions, dimensions, methods of quantification, and theoretical and empirical research on the topic. Contrary to the previous literature reviews, this article is not limited to the relationship between political instability and one specific macroeconomic phenomenon (e.g., economic growth), but intends to summarize the findings of the research regarding the impact of political instability on a variety of economic phenomena investigated in the literature. Moreover, the paper explores the most important channels through which political instability impacts these phenomena.

Importantly, there is no one agreed-upon definition of political instability. Although political scientists agree that political instability is a multi-dimensional phenomenon, there is currently no consensus on the appropriate number of these dimensions. Jong-A-Pin [2009] distinguishes four dimensions of political instability: (1) politically motivated violence, (2) mass civil protests, (3) instability *within* the political regime, and (4) instability *of* the political regime. Some researchers narrow down their definitions and

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focus only on some of these dimensions (e.g., propensity to government change), and others try to capture the complex nature of this phenomenon. Some others, in turn, define political instability as volatility of policies or/and political and economic institutions [see, e.g., Hartwell, 2018a, 2018b].

The bulk of economic research shows that political instability has profound macroeconomic consequences. Theoretical work suggests that political instability should negatively affect fiscal performance [see, e.g., Persson and Svensson, 1989; Alesina and Tabellini, 1990a, 1990b; Hallerberg and von Hagen, 1997] as well as investment and economic growth [see, e.g., Carmignani, 2003] and should lead to higher reliance on seigniorage and growth of inflation [Edwards and Tabellini, 1991a, 1991b; Cukierman et al., 1992]. These theoretical contributions are complemented by extensive empirical research [see, e.g., Grilli et al., 1991; Alesina et al., 1996; Chen and Feng, 1996; Feng, 2001; Aisen and Veiga, 2006, 2008a, 2008b, 2013; Jong-A-Pin, 2009]. Researchers have used a number of different databases and employed various strategies in attempts to quantify political instability and include it in economic modeling.

The remainder of the paper is structured as follows. Section 2 lays the foundation for the analysis by presenting the definitions and dimensions of political instability used in the literature. Section 3 reviews the theoretical literature on the economic consequences of political instability in order to enumerate the phenomena potentially affected by it and the main channels through which it can work. Section 4 discusses the methods of quantifying political instability, which is crucial from the point of view of empirical research. Section 5 summarizes the results of the empirical research on the economic consequences of political instability. Section 6 concludes.

## 2 Methodology

Snyder [2019] distinguishes three types of literature reviews: (1) systematic, (2) semi-systematic (narrative), and (3) integrative. These three types of literature reviews are characterized by different methodological approaches and differ in terms of their purpose, research question(s), search strategy, sample characteristics, analysis and evaluation, and examples of contribution (see Snyder, 2019, Table 1, p. 334). The literature review presented in this article is semi-systematic. This methodological approach was chosen based on the nature of the analyzed problem. The article aims to provide an overview of use of notion of political instability in economic research and track its evolution over time. The research question is specified broadly, as the intention is to identify all economic variables (or phenomena) affected by political instability, rather than to synthesize studies on a particular research question or relationship between two specific variables. When it comes to selection of publications, the search strategy is non-systematic in a sense that the intention was not to cover all articles ever written on the analyzed topic (which is typically the intention of a systematic review) but rather identification of the most relevant and influential studies in the field of interest. The objective was to select publications that had the highest impact on the development of research in the field, i.e., formulated original research hypotheses, used novel datasets, and developed innovative methodologies. Analysis and evaluation of research are of qualitative nature, as different approaches of researchers hinder the ability to use more quantitative approach. The intended contribution of this article is to synthesize the state of knowledge on the impact of political instability on economic processes, provide a historical overview, and identify possible areas for further research.

## 3 Definition and dimensions of political instability

There is no one agreed-upon definition of political instability. According to Jong-A-Pin [2009], political scientists argue that political instability is a multi-dimensional phenomenon, although there is currently no consensus regarding the appropriate number of these dimensions. In his article, he distinguishes four dimensions of political instability, which are the following:

- politically motivated violence;
- mass civil protests;
- instability *within* the political regime; and
- instability *of* the political regime.

Instability *within* the political regime occurs when there is a change in a country's leadership but no change in the type of political regime. Instability *of* the political regime, in turn, occurs when there is a change in a country's type of political regime (e.g., from authoritarianism to democracy or *vice versa*).

Carmignani [2003] proposed a somewhat different taxonomy that distinguishes two dimensions of political instability. The first dimension includes phenomena such as mass violence, assassinations, riots, revolutions, and other forms of social unrest that are caused by ethno-linguistic, religious, ideological, and economic conflicts which cannot be resolved within the existing institutional arrangement. The second dimension includes events that take place within the boundaries established by the existing institutions, such as government terminations and electoral surprises, which are a result of interactions between competing political powers and reflect fluctuations of the political preferences of the electorate.

The early research on political instability focused on politically motivated violence [Rummel, 1963, 1966; Feierabend and Feierabend, 1966; Tanter, 1966]. Morrison and Stevenson [1971] provide a comprehensive review of this early strain of research. They define political instability “*as a condition in political systems in which the institutionalized patterns of authority break down, and the expected compliance to political authorities is replaced by political violence.*” From the 1990s onward, however, the focus of research has shifted toward examining the instability *of* and *within* political regimes [see, e.g., Alesina et al., 1996; Jong-A-Pin, 2009; Aisen and Veiga, 2013]. Although change *of* political regime frequently coincides with political violence, it is not always the case (an example of which is the systemic transformation in Eastern Europe following the collapse of communism). Conversely, it is also not true that political violence must result in a change of the political regime. A change of a country's leadership *within* the political regime can happen in all types of regimes, although changes within authoritarian regimes tend to be associated with political violence, whereas in democratic countries such changes are made peacefully (through elections). Finally, civil unrest does not necessarily need to be of a violent nature and can take the form of peaceful protests; however, it can still have sizeable political consequences.

Political instability frequently coincides with *instability of policies* or *instability of institutions*, which makes it particularly interesting to economists, as their goal is to study the differences in the outcomes of various economic policies. The harshest shifts in policies and institutional frameworks are usually the result of changes *of* political regimes, an example of which is the transition from authoritarianism to democracy in Eastern Europe that resulted in a shift from a centrally planned to a market economy. Instability *within* the political regime can also lead to sharp shifts in economic policies, especially if a government from one end of political spectrum is replaced by a government from the opposite end of this spectrum. Mass civil protests, in turn, both peaceful and violent, can push the incumbent government to relax certain policies or even completely abandon them. A high degree of uncertainty regarding future economic policies and changes of the institutional framework can have a profound influence on the behavior of economic agents, making it even more interesting for economic researchers. There is a large and growing body of literature on economic policy uncertainty that investigates its impact on a variety of economic phenomena, particularly investment [see, e.g., Rodrik, 1991; Feng, 2001] and the behavior of the financial markets [see, e.g., Goodell and Vähämaa, 2013; Hartwell, 2014, 2018a, 2018b].

## 4 Economic implications of political instability – the theory

It is a common belief that political instability has a profound influence on a number of economic indicators. Carmignani [2003] argues that political instability generates uncertainty about the stability of political and economic institutions (e.g., the legal system, security of property rights) and the future course of economic policies (e.g., taxes, the provision of public goods, government spending, redistribution of the national income, exchange rate policy, and inflation management, among others). This uncertainty, in turn, affects the behavior of economic agents regarding investment and the accumulation of the factors of production. Moreover, an unstable political environment affects the incentives of policymakers who might be tempted to pursue myopic economic policies in order to increase their chances of being re-elected or tie the hands of their successors. Examples of such myopic policies are delaying (or even reversing) structural reforms

or backing out of previously made commitments. Aisen and Veiga [2013], in a similar fashion, argue that political instability shortens policymakers' horizons and leads to sub-optimal policies and more frequent policy changes, which, in turn, has detrimental effects on macroeconomic performance. This section investigates the impact of political instability on the specific economic phenomena that have garnered the most attention from researchers – namely, investment and economic growth; seigniorage and inflation; and fiscal deficits and accumulation of public debt.

#### 4.1 Impact on investment and economic growth

When it comes to the economic implications of political instability, the topic that attracted the most attention from researchers was its impact on economic growth. The theoretical models of economic growth that incorporate political instability show that it has a detrimental effect on investment and thus on economic growth. Carmignani [2003] presents the following basic theoretical framework, which incorporates political instability in a growth model similar to the one proposed by Romer [1986]. A generic firm  $i$  has the following production function:

$$Y_i = A(K_i)^\alpha (KL_i)^{1-\alpha}$$

where  $Y_i$  denotes output,  $K_i$  and  $L_i$  are firm-specific inputs of capital and labor,  $K$  is the aggregate stock of capital in the economy, and  $A$  and  $\alpha$  are parameters ( $A > 0$  and  $1 > \alpha > 0$ ). Importantly, the production function exhibits constant returns to scale in  $K_i$  and  $K$ , which yields a positive growth rate in a steady state.

Political instability enters the model through the expected profits function. The logic behind it is that political instability generates uncertainty over critical elements such as future economic policies (e.g., taxation), effective degree of enforcement of property rights and contracts, and the broader socio-economic environment (e.g., shutdowns, and strikes, among others). As a result, the generic company  $i$  is uncertain about the share of the output it will be able to appropriate. The expected profits function takes the following form:

$$E\pi_i = (1 - \sigma)Y_i - wL_i - (r + \delta)K_i + \sigma \lambda Y_i - wL_i - (r + \delta)K_i = (1 - \sigma + \sigma \lambda)Y_i - wL_i - (r + \delta)K_i$$

where  $E$  is the expectations operator,  $\pi_i$  denotes profit,  $\sigma$  ( $0 \leq \sigma \leq 1$ ) is the probability firm  $i$  will be able to retain a fraction  $\lambda$  ( $0 \leq \lambda \leq 1$ ) of output  $Y_i$ ,  $w$  and  $r$  are unitary prices of labor and capital, and  $\delta$  is the depreciation rate of capital. A representative household faces a standard intertemporal utility maximization problem (constant intertemporal elasticity of substitution). The solution of the profit maximization problem yields the following Euler equation:

$$\frac{\dot{c}}{c} = \frac{1}{\theta}(r - \rho) = \frac{1}{\theta} [p\alpha AL^{1-\alpha} - \delta - \rho]$$

where  $c$  denotes per capita consumption,  $\rho$  denotes the rate of time preference, and  $p \equiv (1 - \sigma + \sigma \lambda)$  is an inverse index of political (policy) instability. The Euler equation, which yields the steady-state growth rate of all per capita variables (including output), shows that the larger is the level of political instability, the lower is the steady-state growth rate of capital. Lower investment, in turn, results in lower steady-state growth rates of output and consumption.

There are a number of other theoretical models, many of them being variations of the model summarized above, that investigate the relationship between political instability and economic growth. Svensson [1998] constructed a model that investigated the relationship between political instability, understood as propensity to government change, security of property rights, and investment. The process of reforming the legal system (which is necessary to increase the security property rights) takes time and resources. The incumbent government fully internalizes this cost, but not the future benefits. The model shows that in an environment of high political polarization and instability, the incumbent government does not have sufficient incentives to undertake a reform of the legal system, which leads to a lower equilibrium level of security of property rights, investment, and economic growth. Stevens [2000] focused on foreign direct

investment and created a model with a representative firm maximizing its expected present value under uncertainty. The factors causing policy uncertainty are expropriation and shutdowns. Darby et al. [2004] constructed an endogenous growth model in which the aggregate output depends on the level of public investment which is financed through taxation. A high probability of government change reduces public investment and therefore economic growth. Annett [2000] constructed a model in which the society is fractionalized into different ethnic and/or religious groups and the government appropriates rents that are distributed to only some of these groups. This incentivizes the excluded groups to overthrow the government. A higher degree of fractionalization leads to a higher level of political instability, which in turn lowers investment and the output growth rate. Rodrik [1991] investigated the relationship between policy uncertainty and private investment. He argues that even otherwise desirable reforms may have a negative impact on investment if companies have doubts regarding their permanence, as policy uncertainty has similar effects to a tax on investment.

## 4.2 Impact on seigniorage and inflation

Research on the economic implications of political instability is not limited to economic growth. Another important strain of the literature investigates the relationship between political instability and seigniorage and inflation. The most influential theoretical study in this field is by Cukierman et al. [1992]. The hypothesis of this paper is that countries with more unstable and polarized political systems are characterized by less efficient tax systems (i.e., the costs of administering and enforcing regular taxes are high), as a higher perceived probability of government-change lowers the government's willingness to invest in reforming the tax system. As a result, more politically unstable countries must rely to a larger extent on seigniorage, which leads to higher inflation. Another important theoretical contribution to this topic is made by Edwards and Tabellini [1991a], who explore two political economy models of inflation – a model with a “myopic” government, in which inflation is a deliberate outcome of the strategic behavior of politicians, and a model with a “weak” government, where inflation is an inevitable result of a struggle between different political fractions. The work of Edwards and Tabellini builds on the previous work by Friedman [1969], Phelps [1973], Alesina and Drazen [1991], Végh [1989], Aizenman [1992], and others, who present a positive theory of inflation tax. Finally, Carmignani et al. [2008] argue that political instability can hamper central bank independence and thus indirectly lead to higher inflation.

## 4.3 Impact on fiscal deficits and accumulation of public debt

There are also theoretical arguments that a high degree of political instability has a detrimental effect on fiscal deficits and public debt accumulation, which is attributed to the “strategic use of public debt.” The most important theoretical contributions are by Persson and Svensson [1989], Alesina and Tabellini [1990a, 1990b], Drazen [2000, Chapter 14], and Carmignani [2003, p. 10]. The concept of the strategic use of public debt can be briefly described as follows. If a government faces a high probability of being voted out of office in the upcoming election, it is not *politically optimal* to pursue an *economically optimal* fiscal policy. If the purpose of the incumbent government is to come back to power in yet another term, the optimal policy is to elevate public debt in order to “tie the hands of its successor” (so that it will not be able to pursue desired policies) and therefore decrease its chances of remaining in power. Another strain of research that supports the argument that political instability may increase public deficits and debt focuses on fragmentation of decision-making power. The bottom line of this literature is that governments that are supported by coalitions of parties, as well as minority governments, are more fiscally irresponsible, especially if the level of political polarization is high (parties forming the coalition have different ideologies and/or represent different groups of interest). A higher degree of political polarization results in a higher risk of government collapse and a higher uncertainty regarding future economic policies. Moreover, each party belonging to the coalition internalizes only a fraction of the cost of government spending, which is often referred to as the “tragedy of common goods.” Important theoretical contributions in this strain of literature are made by Alesina and Drazen [1991], Hallerberg and von Hagen [1997], and Velasco [1999].

## 5 Measurement and quantification of political instability

Various strategies have been employed in attempts to quantify political instability using economic models. Some researchers included one or more variables to serve as proxies of political instability in their models. Others use one-dimensional indices intended to capture the complex nature of political instability in a single variable. An array of techniques has been used to construct such indices, including logit analysis, mechanical aggregation, principal components analysis (PCA), and explanatory factor analysis (EFA). Table 1 summarizes the definitions of political instability and measures used for its quantification in the most relevant reviewed literature, as well as provides brief summaries of research results (in chronological order).

The most basic strategy to quantify political instability is the inclusion of one or more variables serving as proxies. According to Brunetti [1997], who provided an early review of the literature on the use of political variables in cross-country growth analysis, Landau [1986] was the first study to empirically investigate the relationship between political instability and economic growth. The author used “number of coups,” taken from the World Handbook of Political and Social Indicators by Jodice and Taylor [1988], as a proxy. Landau’s article was quickly followed by a number of studies investigating the relationship between political instability and economic growth [e.g., Londregan and Poole, 1990; Barro, 1991; Levine and Renelt, 1992; Barro and Lee, 1993; Easterly et al., 1993] and other macroeconomic variables such as inflation [Cukierman et al., 1992], fiscal deficit [Roubini, 1991], and public debt [Grilli et al. 1991]. All studies reviewed by Brunetti [1997] used one or more variables serving as proxies of political instability (e.g., coups,

**Table 1.** Summary of definitions and measures of political instability (selected studies)

| Study                   | Definition of political instability  | Measure of political instability  | Main conclusions  |
|-------------------------|--|---|---|
| Landau [1986]           | Incidence of coups   | Number of coups   | Negative correlation between the number of coups and rate of economic growth.   |
| Barro [1991]            | Incidence of revolutions, coups and political assassinations               | Number of revolutions, coups and political assassinations per year [Banks, 1979]  | Negative correlation between the measures of political instability and rate of economic growth.   |
| Cukierman et al. [1992] | Probability of a government change as perceived by the current government. | Transfer of executive power (two alternative measures). Additional political variables include riots, political repressions, executive adjustments, and unsuccessful attempts to change the government. | Countries with more unstable and polarized political systems have less efficient tax systems and rely to larger extent on seigniorage.                    |
| Grilli et al. [1991]    | Average government durability<br>Political stability index                 | Average government durability<br>Average number of years between significant government changes   | Strong negative correlation between public debt and average government durability. No statistically significant effect for the political stability index. |
| Alesina et al. [1996]   | Probability of a government change   | Transfer of executive power (three alternative measures)  | Political instability negatively affects economic growth. No evidence of reverse causality.   |

(Continued)

| Study                   | Definition of political instability   | Measure of political instability   | Main conclusions   |
|-------------------------|---|--|--|
| Carmignani [2000]       | Probability of government collapse  | Probability of government collapse (estimated with a binary choice model)  | Supporting evidence to the theory of strategic accumulation of debt in the presence of high government volatility  |
| Feng [2001]             | Political instability: variability of political freedom.<br>Policy uncertainty: variability of government capacity to extract resources from the society.                       | Political instability = standard deviation of the variable political freedom.<br>Policy uncertainty = standard deviation of RPE (taken from Organski and Kugler [1980]). | Political freedom promotes private investment. Political instability and policy uncertainty negatively affect private investment.  |
| Aisen and Veiga [2008b] | Basic definition focuses on probability of a government change. Supplemented by multi-dimensional indices of political instability.   | Transfer of executive power. Additional indices include data on assassinations, coups, constitutional changes, revolutions, and government crises.                       | Greater political instability leads to higher seigniorage, especially in developing, less democratic and socially polarized countries, with high inflation, low access to domestic and external debt financing and with higher turnover of central bank governors. |
| Jong-A-Pin [2009]       | Multi-dimensional phenomenon encompassing politically motivated violence, mass civil protests, instability within the political regime and instability of the political regime. | Multi-dimensional index of political instability combining 25 indicators (e.g., assassinations, cabinet changes, civil wars, major constitutional changes).              | Four dimensions of political instability have different effects on economic growth. Only the instability of the political regime has a robust and significant negative effect on economic growth.  |
| Aisen and Veiga [2013]  | Multi-dimensional phenomenon; emphasis put on propensity to a government change   | Cabinet changes in combination with six additional indices capturing instability within and of the political regime and politically motivated violence                   | Higher degrees of political instability are associated with lower growth rates of GDP per capita. Economic freedom and ethnic homogeneity are beneficial for economic growth.  |
| Gurgul and Lach [2013]  | Probability of a government change  | Transfer of executive power (two alternative measures)   | Political instability negatively affects economic growth. No evidence of reverse causality.  |
| Compaoré et al. [2020]  | Multi-dimensional phenomenon  | Transfer of executive power, demonstrations, major government crises, general strikes, political assassinations.   | Conflicts and political instability are associated with higher probability of systemic banking crises. Possible spillovers to neighboring countries.   |

Source: Own elaboration.

RPE, relative political extraction.

revolutions, assassinations, and government changes), most of which were taken from Jodice and Taylor [1988] or the Barro and Wolf [1989] dataset (which is based on Cross-National Time-Series [CNTS] Data Archive provided by the State University of New York at Binghamton).

Another strategy to quantify political instability is to use a logistical regression to estimate the probability of government change. This approach was used in the influential study by Alesina et al. [1996] who constructed a model with two equations to investigate the relationship between political instability and economic growth. The set of explanatory variables in the political instability equation includes three classes of variables: (1) indicators of social unrest, such as recent executive adjustments<sup>1</sup> and recent attempts to overthrow the government; (2) structural differences between countries, such as type of political regime or belonging to a particular geographical region (Latin America and Africa); and (3) indicators of recent economic performance (examples of which include contemporaneous growth rate, lagged growth rate, and lagged world growth rate). The authors use three different dummy variables for government change. The variable *GCHANGE* is obtained directly from Jodice and Taylor [1988] and captures any transfer of executive power (regular or irregular), while the variable *MJCHANGE* captures all irregular changes in executive power (such as coups) as well as regular changes that imply a significant change in leadership (change of governing party or a coalition of parties). The exclusion of government changes that do not imply a shift in the political orientation of the leadership greatly reduces the average frequency of recorded government changes (from 0.28 to 0.11). Finally, their variable *COUP* captures only irregular transfers of executive power such as military coups and was also taken directly from Jodice and Taylor [1988]. The data used by Alesina et al. [1996] show some interesting stylized facts on political instability that are worth mentioning: government changes are most frequent in democratic industrial countries, where they exclusively take the form of regular changes; changes of government are less frequent in Latin America but major changes as well as military coups are more common; government changes are even rarer in Africa but when they occur they are always major and in 60% of cases take the form of a *coup d'état* (which stems from the fact that most African governments are authoritarian). A similar quantification strategy was used by Gurgul and Lach [2013] who investigated the nexus of political instability and economic growth in Central and Eastern European countries after the collapse of communism.

Other researchers constructed variables that capture the multi-dimensional nature of political instability. Feng [2001] investigated the relationship between political freedom, political instability, and policy uncertainty and private investment. The author argues that although these three dimensions of political systems are mutually connected, they are still separate notions and should be distinguished from each other. He constructed three variables quantifying these three dimensions. The variable *political freedom* was constructed by combining two variables – political rights and civil liberties (taken from Gastil [1978-1996]), *political instability* was defined as the standard deviation of the variable *political freedom*, and *policy uncertainty* was defined as the standard deviation of relative political extraction (RPE), a variable introduced by Organski and Kugler [1980] that measures the government's capacity to extract resources from the society.

Jong-A-Pin [2009] examined the multi-dimensionality of political instability using EFA and studied its influence on economic growth. EFA is model-based and its purpose is to separate the information that is common to all indicators from the information that is unique to individual indicators and to extract only the former. The author applied this method to a set of 25 indicators that were selected from commonly used datasets.<sup>2</sup> The result of this study is the identification of four dimensions of political instability, which were presented in Section 2. The author made some observations regarding these four dimensions that are worth mentioning: (1) the dimensions vary both between and within countries and tend to be persistent over time; (2) most (un)stable countries on one dimension are not necessarily similarly (un)stable on other dimensions; and (3) democratic countries tend to have high *within regime* instability, while countries with low *within regime* instability tend to be autocratic (which is quite intuitive).

<sup>1</sup> Executive adjustment is defined as the number of changes in the executive branch that do not result in a change of political leadership (i.e., the number of cabinet “reshuffles”).

<sup>2</sup> Databanks International [2005], International Country Risk Guide [2005], Polity IV [Marshall and Jaggers, 2002], Peace Research Institute Oslo [Gleditsch et al., 2002], and Database of Political Institutions [Beck et al., 2001].

Aisen and Veiga [2013] defined political instability as propensity to government change, measured by the number of “cabinet changes<sup>3</sup>” (taken from CNTS) along with additional indices in order to capture its other dimensions. This type of government change usually implies a significant shift in the political orientation of country’s leadership and can be a sign of both: instability *of* and *within* a political regime. In addition to their main proxy, Aisen and Veiga [2013] also developed six additional indices of political instability by applying the PCA, which is the most commonly used factor analysis method. The authors created six indices: two regime instability indices, two within regime instability indices, and two violence indices. In each case, the first index was based on a smaller set of variables and the second on a larger set.

There are several databases that can be used to construct measures of political instability. Appendix presents the databases that were most commonly used for this purpose in the reviewed literature: the CNTS Data Archive, the World Handbook of Political Indicators IV (WHIV), datasets provided by the Center for Systemic Peace (CSP; mainly known for its Polity Project), and the Database of Political Institutions (World Bank).

## 6 Economic implications of political instability – empirical research

Section 3 presented extensive theoretical evidence that political instability should have a significant impact on a variety of economic indicators, including investment, economic growth, seigniorage, inflation, fiscal deficits, and public debt. This section discusses the most important empirical evidence related to the hypotheses laid down in these theoretical contributions.

### 6.1 Impact on investment and economic growth

Brunetti [1997] stated that early empirical research on the impact of political instability on economic growth was far from being conclusive. Out of 11 studies reviewed by him, only five reported an unqualified negative effect of political instability on economic growth. Three studies also showed a negative relationship, but this result was sensitive to the particular specification chosen, and three other studies showed that there is no statistically significant relationship between the two variables. Brunetti also pointed out that research on this topic faced several methodological problems that were not properly addressed in most of these studies. The first major issue is the problem of endogeneity, as the reviewed studies relied on the assumption that the direction of the causal relationship was from political instability to economic growth and not *vice versa*. This assumption can, however, be questioned, as one can easily imagine economic stagnation or recession being a source of social unrest that could potentially lead to political instability. Moreover, these studies used OLS regressions, which do not reveal the direction of causation and in cases of endogeneity will produce biased estimations. Another cause of concern, according to Brunetti, was the robustness of the results with respect to the specification of the growth equation, as most of these studies did not provide adequate sensitivity analysis. These concerns justified a need for further research in this area.

One of the most influential empirical studies on the relationship between political instability and economic growth is Alesina et al. [1996]. The authors address the problem of endogeneity by simultaneously estimating two equations – one for economic growth and one for political instability. The authors report a strong negative relationship between the two variables under investigation, with major government changes having a somewhat stronger impact than “normal” government changes, as an increase in values of the variables *GCHANGE* and *MJCHANGE* result in a decrease in the growth rate by 1.4% and 1.8%, respectively. These results are statistically significant. At the same time, the coefficients for the growth variables in the political instability equation are small and statistically insignificant, which suggests that the observed negative correlation between political instability and economic growth is the result of a high propensity to government change leading to low growth rates rather than *vice versa*. Gurgul and Lach [2013]

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<sup>3</sup> The variable Cabinet changes shows the number of times in a year in which a new prime minister is named and/or at least 50% of cabinet posts are occupied by new ministers.

used a very similar methodology to examine the nexus between political instability and economic growth in Central and Eastern European countries over the period 1990–2009. They found evidence of negative and statistically significant relationship between major government changes and economic growth. The evidence for regular government changes was only significant at the 10% level. The authors found no evidence of reverse causality.

Feng [2001] investigated the impact of political variables on private investment. The author provides empirical evidence that (1) political freedom facilitates economic growth, particularly through fostering human capital accumulation; (2) political instability, defined as variability of political freedom, has a detrimental effect on private investment; and (3) policy uncertainty negatively affects private investment. The study also shows that the transition toward democracy and openness alleviates the negative consequences of political instability. The author argues that such a transition can help create a better environment for economic development, ultimately boosting both economic growth and political stability.

Campos and Nugent [2002] argue that the empirical research on the political instability–economic growth nexus suffers from a variety of shortcomings, such as the *ad hoc* selection of explanatory and control variables, excessively narrow definitions of political instability, insufficient sensitivity analysis, and failure to conclude the direction of causation. The authors use PCA to construct two indices of political instability for 98 countries and non-overlapping 5-year periods from 1960 to 1995. The first index captures more “severe” forms of political instability (such as political assassinations and coups) and the other “moderate” or “lower-bound” forms (government transfers). Using the Granger causality framework and instrumental variables estimations, they conclude that there is no robust evidence of a long-term relationship between political instability and economic growth. They provide two explanations as to why their results conflict with the results of previous research. First, their analysis shows that the relationship is obtained only contemporaneously. Second, the relationship seems to be strongly region-dependent: Sub-Saharan Africa seems to be the driving force behind the conclusion that there is a negative relationship between the two variables, while for other regions there seems to be no evidence to support this hypothesis.

De Haan [2007] also strongly criticizes the latest empirical research on the political instability–economic growth relationship. He argues that it suffers from four fundamental problems. First, arbitrary model specifications – many studies do not include a rigorous sensitivity analysis. Second, possible sample heterogeneity – the author shows that with the frequently used ordinary OLS models, outliers can be a source of strongly biased results. Third, measurement errors – political instability is a latent variable and has various dimensions, which creates significant measurement problems. The author suggests that factor analysis should be used to alleviate this problem. Fourth, treatment of the time dimension – in many studies data coverage is short and divided into arbitrary periods (like in Campos and Nugent [2002], described in the previous paragraph).

Jong-A-Pin [2009] criticized research on the relationship between political instability and economic growth for not taking into consideration the different dimensions of political instability. He pointed out that measures of political instability suffered from measurement errors, which in turn severely affected the reliability of the estimates obtained. Jong-A-Pin used EFA to distinguish four separate dimensions of political instability, which were later jointly used in a dynamic panel econometric model with a GMM estimator and with lagged political instability variables used as instrumental variables (the purpose of which was to overcome the problem of potential endogeneity). The findings of the study are the following. First, instability of the political regime has a negative impact on economic growth. The author suggests that this might reflect the uncertainty of investors regarding the stability of property rights. Second, the study suggests that instability *within* the political regime is in fact good for economic growth. The author finds this result to be logical, as higher political competition allows the voters to vote incompetent politicians out of office and replace them with ones that introduce more appropriate economic policies. Third, the author finds some evidence for reverse causality, as lack of economic growth triggers politically motivated violence.

Aisen and Veiga [2013] found that the existing literature on the relationship between political instability and economic growth failed to answer some fundamental questions, namely: (1) what are the transmission channels from political instability to economic growth? and (2) how quantitatively important

are the effects of political instability on the main drivers of economic growth? In order to answer these questions, the authors constructed linear dynamic panel data models with a system-GMM estimator based on a sample of 169 countries and 5-year periods from 1960 to 2004. The number of “cabinet changes” and six indices of political instability were used as proxies for political instability. The results of the study are the following. Political instability adversely affects economic growth and, in the authors’ opinion, the results are “strikingly conclusive,” as an additional government change per year reduces the average GDP per capita growth rate by 2.39 percentage points. The main channel of transmission is through a lower total factor productivity (TFP) growth rate and, to a lesser extent, through a negative effect on physical and human capital accumulation. The Aisen and Veiga do not find any evidence that would suggest that political instability has a different impact on economic growth in democratic or autocratic regimes.

## 6.2 Impact on seigniorage and inflation

Section 3 presented the article by Cukierman et al. [1992], which is the most important theoretical contribution in this strain of the literature. In addition to the theoretical model, the article also presented an empirical model, which is described as follows. First, the authors use a probit model to estimate the probability of government change. Next, they estimate five cross-country regressions with the estimates obtained from the probit model as an explanatory variable and seigniorage as the dependent variable. The authors then re-estimate these regressions using the instrumental variables method. In all 10 regressions, the variable for political instability is statistically significant at the 1% level and has the expected sign; therefore, the authors conclude that a higher degree of political instability leads to a higher reliability on seigniorage.

The relationship between political instability and inflation and seigniorage was revisited by Aisen and Veiga [2006, 2008a, 2008b]. In their 2006 study, the authors present evidence that political instability leads to significantly higher inflation, as an additional government crisis per year increases the inflation rate by 16.1% and an additional government change per year increases it by 9.1%. A government crisis is defined as “*a number of rapidly developing situations in a year that threaten to bring the downfall of the present regime, excluding situations of revolt aimed at such overthrow*” and was taken from the CNTS Database. In their 2008 article, the authors present evidence that a higher degree of political instability and social polarization result in the higher volatility of inflation rates [Aisen and Veiga, 2008a]. Moreover, political instability has a stronger effect on inflation volatility in developing countries, which are characterized by a lower degree of central bank independence and economic freedom. In their second study from 2008 [Aisen and Veiga, 2008b], they investigate the impact of political instability on seigniorage. The authors argue that inflation and seigniorage are two separate phenomena and should be studied separately, even though they are to large extent correlated. They present data showing that the correlation between inflation and seigniorage declines as inflation increases and becomes negative with inflation rates above 400% per year. Moreover, the determinants of inflation might not be the same as seigniorage, as inflation might be a result of a supply side shock such as an increase in oil prices. The authors find that the impact of political instability on seigniorage is higher in an environment of high inflation and in developing countries (as opposed to high-income countries). Other factors that strengthen the observed relationship are high political polarization, history of political instability, high central bank governor turnover (a proxy for central bank independence), a lower level of economic freedom, a higher degree of authoritarianism, high domestic debt levels, limited access to international financing (measured by credit ratings), and low openness to trade.

## 6.3 Impact on fiscal deficits and accumulation of public debt

Empirical evidence on this issue was presented by Grilli et al. [1991], Franzese [1998], Lambertini [1998], De Haan et al. [1999], Petterson [1999], and Carmignani [2000]. This evidence is far from being conclusive, which might be connected to the different methods of measurement and quantification of political instability used in these studies, but only to some extent. Grilli et al. [1991], Franzese [1998], and De Haan et al. [1999] used similar indicators of political instability – government duration in office and/or frequency of government turnover – but reached conflicting conclusions. Grilli et al. found a positive correlation

between fiscal deficits and instability, Franzese found no significant effect of instability on accumulation of public debt, and De Haan et al. found a positive correlation between political instability and debt growth. Lambertini [1998], Petterson [1999], and Carmignani [2000] also used similar indicators – probability of defeat of the government – and also reached conflicting results. Lambertini found no significant effect of political instability on public debt accumulation, Petterson found a positive correlation when right-wing governments are in office and a negative correlation when left-wing governments are in office, and Carmignani found some evidence for a positive correlation between political instability and fiscal deficits. These conflicting results suggest that more research is needed in order to discover the true relationship between political instability and public sector deficits and debt accumulation.

## 6.4 Impact on the functioning of the financial markets

Recently, the topic that has been attracting increasing attention among researchers is the impact of political (policy) instability on the functioning of the financial markets. Hartwell [2018a] argues that there are two channels through which political instability affects the functioning of financial markets. The first channel, which has a direct influence, is the execution of monetary policy. The second, indirect channel, is through uncertainty regarding future economic policies and institutions. Hartwell argues that the second channel is related to both the uncertainty regarding the results of regularly scheduled elections and informal instability.

There is an extensive and growing body of empirical research on this topic. Thorbecke [1997] demonstrates that monetary policy affects the level of asset returns. Bernanke and Gertler [2012] provide evidence that uncertainty regarding monetary policy increases the volatility of returns. Carmignani et al. [2008] show that political instability can negatively affect the central bank's independence and Papadamou et al. [2014] present how central bank independence affects stock market volatility, establishing a causal relationship between political instability and financial markets' volatility. Engle and Ng [1993] present the concept of news impact curve and use it to investigate the behavior of the Japanese stock exchange between 1980 and 1988. The analysis shows that the stock exchange is very sensitive to news, but the sensitivity is asymmetrical, as negative news tends to produce more volatility than positive news. Białkowski et al. [2008] and Goodell and Vähämaa [2013] show that market volatility increases around election dates, which is connected to uncertainty regarding the election results. The effect may be intensified by several factors such as a narrow margin of error, change in the political orientation of the government, or a failure to form a government with the support of a parliamentary majority. Arin et al. [2013] employed a Bayesian Model Averaging method to investigate the impact of political variables (including government changes and political fractionalization) for financial volatility in 17 parliamentary democracies and found evidence that while the impact of political variables on excess returns is weak, political variables have a significant impact on return volatility. Hartwell [2018a] used a novel and comprehensive database containing monthly data on political changes in transition economies to construct a GARCH model investigating the impact of political instability on capital markets. His analysis shows that informal political instability has a strong negative effect on stock returns and formal political institutions increase financial volatility to a larger extent than monetary policy. Hartwell [2018b] investigated the determinants of financial volatility in Central and Eastern Europe and countries which formed part of the erstwhile Soviet Union. He shows that institutional changes (in particular of crucial institutions such as property rights) have been a major driver of financial volatility. Compaoré et al. [2020] provide evidence that political instability leads to an increased probability of banking crises. The main transmission channel is occurrence of fiscal crises. Moreover, political instability in one country may result in spillover effects to the banking systems in neighboring countries.

## 7 Conclusion

This paper reviewed the literature regarding the use of the notion of political instability in economic research. Political instability is a complex and multi-dimensional phenomenon, which is the reason why there is no

one agreed-upon definition of it. One can distinguish four dimensions of political instability: (1) politically motivated violence, (2) mass civil protests, (3) instability *within* the political regime, and (4) instability *of* the political regime. Researchers have adopted many different strategies in their attempts to quantify political instability and include it in economic models. Some researchers have included one or more proxies and others have tried to construct one-dimensional indices intending to capture the multi-dimensional nature of political instability in a single variable. Methods used to construct such indices include mechanical aggregation, logit analysis, PCA, and EFA. There are several databases that can be used to construct measures of political instability, the most important of which are the CNTS Data Archive, the WHIV, datasets provided by the CSP, and the Database of Political Institutions published by the World Bank.

This study has some potential limitations. First, the complex and multi-dimensional nature of political instability, as well as the prevalence of various approaches to its quantification, make it hard to compare the results of different studies. Second, substantial differences in terms of research methodology make it impossible to employ more quantitative approach by, for example, performing a meta-analysis. Third, the complex nature of political instability makes it prone to measurement errors, which may result in inability of researchers to reach conclusive results.

The literature reviewed, both theoretical and empirical, shows that political instability has a profound impact on a number of macroeconomic variables, including economic growth, TFP, investment in physical and human capital, inflation, fiscal deficits, and public debt, as well as the functioning of financial markets, which makes it extremely important from the point of view of policymakers. The reviewed research shows that many problems observed on macroeconomic level might be a result of tensions in the political sphere. In such situations, policymakers whose aim is to improve long-term macroeconomic performance should rather focus on designing political institutions in a way that enhances political stability and reduces political polarization, than on technicalities related to economic policy design and implementation.

The review revealed several research gaps that might be worth looking into. First, the evidence regarding the impact of political instability on fiscal deficits and public debt is inconclusive, which constitutes an interesting research gap. Further, the results of the empirical research rely heavily on the measure of political instability used. Therefore, it may be worthwhile to use some of the metrics used in one strain of the literature in another strain to see how it affects the results. In particular, it seems reasonable to investigate the impact of political instability on seigniorage, inflation, fiscal deficits, and the accumulation of public debt by using the metrics constructed with the PCA and EFA methods.

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## Appendix

### Databases that can be used to construct measures of political instability

#### CNTS Data Archive

One of the most commonly used databases for this strain of research is the *CNTS Data Archive* provided by State University of New York in Binghamton. It was launched in 1968 by Professor Arthur S. Banks. The CNTS includes over 200 variables, covers over 200 countries, and—depending on the variable—reaches back to the year 1815. Variables included in this database cover a range of areas, including military spending, urbanization, school enrolment, energy production and consumption, use of computers, highways, and railroads, as well as over two dozen political and domestic conflict variables. Political and domestic conflict variables include, among others, type of regime, number of major constitutional changes, degree of parliamentary responsibility, size of cabinet, number of legislative elections, party fractionalisation index, number of major cabinet changes, coups, anti-government demonstrations, assassinations, general strikes, revolutions, riots, purges, major government crises, terrorism, and guerrilla warfare.

#### World Handbook of Political Indicators IV (WHIV)

Another database commonly used in research on political instability is the *WHIV*, which is based on the work of Jodice and Taylor [1988] and extended to the year 2004. The database provides country-level measures of contentious politics events. The authors define “*contentious politics*” as “*attempts to bring about or resist political change using actions that step outside the bounds of routine politics and entail uncertainty and negative sanction*” [Jenkins et al., 2012]. The events are recorded daily, and the database is available in two forms – one that provides detailed event information on a daily basis and one that provides aggregate information on an annual basis. The WHIV covers 231 countries and territories, as well as major international governmental organizations such as the United Nations or NATO, and includes information on type of event, actors, targets, and date and location of the event. The daily database identifies 264,289 events that occurred from the beginning of 1990 to the end of 2004. The database distinguishes 40 types of events that in the yearly database are classified into four types of meta-events: protest, political violence, political sanction, and political relaxations. Examples of events covered by this database are protest demonstrations, strikes and boycotts, abductions, assassinations, beatings, coups and mutinies, hostage seizures, hijackings, riots, suicide bombings, missile attacks, censorship, political arrests, physical assaults, easement of military blockade, or relaxation of censorship. The database is available for free on the webpage <https://sociology.osu.edu/worldhandbook>.

#### CSP Database

The CSP was founded in 1997 and is primarily known for its Polity Project, the purpose of which is “*coding authority characteristics of states in the world system for purposes of comparative, quantitative analysis.*”<sup>4</sup> The most famous “product” of the CSP is the Polity Score, which categorizes countries by type of political regime. The Polity Score takes values from –10 to 10, where countries with results between 6 and 10 are classified as democracies, between –5 and 5 as anocracies (a type of regime that mixes democratic and autocratic features), and between –10 and –6 as autocracies. The newest wave of the project, Polity 5, is currently under development and covers 167 countries and the period between 1800 and 2018. Apart from the Polity Project dataset, the CSP publishes several other datasets covering information on topics

<sup>4</sup> <https://www.systemicpeace.org/polityproject.html>.

such as forcibly displaced populations, high casualty terrorist bombings, or memberships in conventional intergovernmental organizations. Datasets that are particularly useful for researchers in need of data on political instability measures are the Political Instability Task Force State Failure Problem Set and the Coups d'Etat Dataset. The former provides annual data on cases of ethnic war, revolutionary war, adverse regime change, and genocide/politicide and covers the period between 1955 and 2018. The latter provides an event list of successful, attempted, plotted, and alleged coups and covers the period between 1946 and 2018. All datasets are available free of charge on the webpage <https://www.systemicpeace.org/inscrdata.html>.

### **Database of Political Institutions (World Bank)**

The Database of Political Institutions was first released by the World Bank Development Research Group in 2000 [Beck et al., 2000]. The current version of the database covers the period between 1975 and 2015 and includes approximately 180 countries. The database provides a variety of data on political issues such as electoral results, measures of checks and balances, party affiliation and ideology, fragmentation of opposition, and tenure and stability of government. The authors claim that the Database of Political Institutions is one of the most frequently used databases when it comes to empirical research in comparative political economy, as it was used in almost 3,000 different studies. The database is available free of charge on the webpage <https://datacatalog.worldbank.org/dataset/wps2283-database-political-institutions>.

Each of the described databases has advantages and disadvantages. The WHIV contains the most detailed information on politically motivated violence and mass civil protests. However, data is only available through 2004. The CNTS database covers the longest period of time and contains comprehensive data on politically motivated violence and instability *of* and *within* the political regime, but is not available free of charge. The CSP Database is a comprehensive source of data when it comes to instability *of* and *within* the political regime and covers a relatively long period of time. The Database of Political Institutions has slightly better coverage of countries but covers a shorter time period. This database, however, is particularly good for providing information on political polarization as well as instability *within* the political regime.