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RESEARCH ARTICLE

Autocratic time horizons and the growth effect of foreign direct investment

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Abstract
The positive influence of foreign direct investment (FDI) on host countries' economic growth has been widely debated. Given the mixed empirical evidence, scholars have sought to find the economic preconditions under which FDI spillovers are likely to occur and facilitate economic growth in the host countries. Those preconditions are not exogenously dictated but largely shaped by governments' policy preferences. Particularly in autocracies, an autocrat's policy preferences are the driving force that determines whether a host country is likely to be equipped with growth-friendly institutions and policies. We argue that such economic institutions and policies are dependent on the time horizons of autocrats in power. Our empirical analysis covering 64 autocratic countries from 1970 to 2005 supports our main argument that FDI has a positive effect on growth when autocratic time horizons are sufficiently long, and positive FDI spillovers mainly occur through the protection of property right institutions.

Keywords: Authoritarian regime; FDI spillovers; property rights

Does foreign direct investment (FDI) promote host countries' economic growth? Scholars and practitioners have argued that FDI can play a significant role in invigorating host economies and stimulating economic growth through capital accumulation and technology transfer. In addition, this conventional belief has served as a justification for various investment-friendly policy reforms in many countries. Although the positive externalities from FDI have been widely accepted by both scholars and policy makers, the empirical evidence for FDI-led growth has been debated.

While some studies find evidence for positive FDI spillovers in country case studies (Blomström, 1986; Wei and Liu, 2006; Buckley *et al.*, 2007; Tian, 2007) other empirical literature shows a mixed or null effect of FDI on growth and productivity improvements (Haddad and Harrison, 1993; Aitken and Harrison, 1999; De Mello, 1999; Javorcik, 2004; Carkovic and Levine, 2005; Wang, 2009; Havranek and Irsova, 2011; Iršová and Havránek, 2013). More importantly, scholars find that the positive relation between FDI and growth is conditional upon policy- and country-specific circumstances (Elias, 1990; Balasubramanyam *et al.*, 1996, 1999; Borensztein *et al.*, 1998; De Mello, 1999; Xu, 2000; Nair-Reichert and Weinhold, 2001; Basu *et al.*, 2003; Bengoa and Sanchez-Robles, 2003; Hermes and Lensink, 2003; Blalock and Simon, 2009; Azman-Saini *et al.*, 2010; Javorcik and Spatareanu, 2011; Damijan *et al.*, 2013; Ha and Giroud, 2015). Given the mixed empirical evidence, scholars have emphasized the importance of identifying the economic conditions under which FDI spillovers are likely to occur and facilitate economic growth. In particular, scholars have paid much attention to host countries' absorptive capacities, which are determined by economic preconditions such as the quality and quantity of human capital, and the development of a well-functioning financial system (Borensztein *et al.*, 1998; De Mello, 1999; Bengoa and Sanchez-Robles, 2003; Hermes and Lensink, 2003; Alfaro *et al.*, 2004; Durham, 2004; Blalock and Simon, 2009; Javorcik and Spatareanu, 2011; Damijan *et al.*, 2013; Ha and Giroud, 2015).

However, political determinants of FDI-led growth have been rather underemphasized. This is surprising, because the economic preconditions mentioned above are not purely exogenous but largely shaped by the policy environment that host governments provide, which is usually a function of government preferences. The argument that certain economic preconditions catalyze FDI spillovers obviously helps our understanding of the economic consequences of FDI, but it appears to overlook important political factors that disentangle the relationship between FDI and growth. To fill this gap, this paper examines how political leaders' policy preferences influence FDI-led economic growth, particularly in autocratic countries.

Democratic countries, compared with autocracies, tend to provide more market-friendly institutions, including sound rule of law and domestic political constraint mechanisms. However, democratic leaders' discretion over economic policy-making is often undermined by domestic audiences' preferences and veto players (Li and Resnick, 2003; Jensen, 2003). By contrast in autocracies, rulers' preferences are the driving force of economic policy choices due to the relative lack of institutional checks. Autocrats are better able to construct their country's economic environments in a way that maximizes their own self-interest. Given autocrats' relatively higher political discretion over economic policy making, when it comes to investigating the role host governments' policy preferences play in FDI's growth-enhancing effect, we believe that examining autocratic host countries would be theoretically more relevant and straightforward.

Drawing from the literature on autocratic time horizons (ATHs) (e.g., Olson, 1993; Clague *et al.*, 1996) – that is, leaders' expected stay in power – we argue that autocratic leaders with long-time horizons are likely to facilitate positive spillovers of FDI, mainly by building sound property rights institutions. Autocrats with long-time horizons tend to value economic growth since they expect long-term economic gains to exceed short-term profits from predatory policies such as excessive taxation and confiscation of private properties. Thus, the productivity-oriented political motivation of autocrats with long-time horizons induces a well-functioning property rights system, which provides a safety net under which foreign and domestic firms are assured of being protected by the rule of law. In such a business-friendly environment, foreign firms are less afraid of expropriations of assets or infringement of intellectual property rights, while domestic firms are more willing to adopt FDI spillovers, increase investment, and expand their businesses. Thus, our theory suggests that FDI-led growth is more likely when autocrats' time horizons are sufficiently long. Our empirical analysis, which covers 64 autocratic countries from 1970 to 2005, not only supports this theoretical expectation, but provides evidence for the theoretical mechanism itself.

This paper contributes to two bodies of literature. First, it cuts through the debate on FDI spillovers and growth by identifying the underlying political source of economic preconditions that stimulate FDI-led growth. Second, our findings add to a growing body of literature on autocratic political economy, which has noted significant variations in political and economic performances within autocratic regimes. In the following sections, we briefly review the literature on FDI-led growth, and relate the discussion to ATH. We then present our research design and empirical findings.

1. FDI spillovers and economic growth

Existing literature provides a number of different channels through which positive FDI spillovers occur.[1] These channels include a learning from foreign companies (Wang and Blomström, 1992; Blomström and Kokko, 1998),[2] diffusion of knowledge through the domestic employees of multinational corporations (Fosfuri *et al.*, 2001), positive backward linkages (Spencer, 2008), and domestic competitions with foreign companies (Wang and Blomström, 1992).[3] Interestingly enough, although

[1]See De Mello (1997); Görg and Greenaway (2004); and Zhang et al. (2010) for a comprehensive survey of the channels for positive FDI spillovers.

[2]For example, domestic firms can increase productivity by learning the export process from foreign firms (Aitken et al., 1997; Barrios et al., 2003).

[3]Some argue that competition may decrease the productivity of local businesses if foreign firms reduce local demand for host industries (Aitken and Harrison 1999).

these channels for positive FDI spillovers may well contribute to host countries' economic growth, empirical evidence is contested (e.g., Haddad and Harrison, 1993; Aitken and Harrison, 1999; De Mello, 1999; Javorcik, 2004; Carkovic and Levine, 2005; Havranek and Irsova, 2011; Iršová and Havránek, 2013).

One possible reason for these mixed empirical findings lies in the heterogeneity of host economies.[4] Some countries may be better equipped with absorb technology and know-how from MNCs than others. For example, FDI spillovers are likely to occur only in countries that have sufficient human capital (Borensztein *et al.*, 1998; Xu, 2000; Bengoa and Sanchez-Robles, 2003). Hermes and Lensink (2003) and Azman-Saini *et al.* (2010) show that the development of a sound financial system is a precondition for FDI's positive effect on growth. Similarly, Alfaro *et al.* (2004) contend that FDI has a positive effect on growth in countries with well-developed financial markets. Balasubramanyam *et al.* (1996) demonstrate that the positive effect of FDI on growth is significant for host countries with export promotion policies. Damijan *et al.* (2013) find that positive spillovers appear in medium or high productivity firms with higher absorptive capacities.

In sum, these studies disentangle the FDI-growth nexus by investigating how heterogeneous economic preconditions in host countries affect FDI spillovers. However, to understand the microfoundation of the relation between FDI and growth, the following question needs to be answered: what makes certain host countries more likely to adopt growth-friendly institutions and policies in the first place? The aforementioned preconditions for FDI-led growth are not exogenously dictated, but created and promoted (or demoted) by host governments. More importantly, the literature lacks discussion on the role of property rights protection in moderating the relationship between FDI and growth. In the next section, we attempt to demonstrate how ATHs influence host countries' property rights protection, in turn affecting FDI-led growth.

2. Autocratic time horizons, property rights, and FDI-led growth

FDI is not a magic pill for host countries' economic growth, but can be a catalyst for the development of local businesses and entrepreneurship. For FDI's positive spillovers to occur, domestic economic actors should not only adapt themselves to new technologies and business practices brought by FDI, but must grow to be self-sustaining. Unless domestic businesses do away with significant reliance on foreign capital and productivity, negative spillovers may have an adverse impact on the host country's economic growth. For example, foreign firms may dominate a host country's domestic market, crowd out potential domestic competitors (Aitken and Harrison, 1999), and hurt infant domestic industries by increasing labor costs (Zhang *et al.*, 2010). Thus, FDI-led growth is likely to occur (1) when foreign firms are willing to transfer technologies and know-hows, and (2) when local businesses are willing to make investments to accommodate new operating systems, train local workers, and become competitive in both domestic and global markets. We contend that these two general conditions are likely to be fulfilled in autocratic countries with long-time horizons, particularly through the protection of property rights.

ATH is an autocrat's expectation of job security in the future. As Olson (1993) posits,[5] self-interested autocrats with long-time horizons are likely to adopt optimal (or revenue-maximizing) taxation, promote domestic economic productivity, and build market-friendly domestic institutions, thus protecting property rights strongly and providing public goods to domestic economic actors. That is because they expect their long-term benefits through economic growth to outweigh short-term predatory rents. To the contrary, autocrats with short time horizons resemble roving bandits who tend to be highly myopic and predatory. Their utmost interest is in maximizing their short-term private gains at the expense of domestic economic productivity. Thus they are likely to build and strengthen

[4]Of course, heterogeneity may exist at the industrial level in a single country. However, our analysis focuses on country-level variations.

[5]See also Olson (1991); McGuire and Olson (1996); and Olson (2000).

rent-extraction mechanisms that require significant government control over domestic assets, economic activities, and markets, by imposing excessive taxation and confiscating capital goods. Since Olson's pioneering research, scholars have uncovered empirical evidence for this conjecture. Wright (2008), for example, argues that autocrats with long-time horizons are more likely to use foreign aid effectively for economic growth. Clague *et al.* (1996) find that they are more likely to protect property and contract rights. Moon (2015) demonstrates that autocratic regimes with long-time horizons provide better property rights institutions, thus attracting more FDI. Scholars also find that those farsighted autocrats are less likely to confiscate private properties and expropriate foreign investments (Li, 2009*a*), and less prone to corruption (Chang and Golden, 2007). Similarly, it is also argued that the long-time horizons give governments incentive to maintain greater room to manipulate policy when it comes to designing bilateral investment treaties (Blake, 2013).

This market-friendly preference structure leads autocratic countries with long-time horizons to provide conditions under which FDI-led economic growth is likely to occur. We argue in particular that such countries are liable to benefit from FDI spillover through secure property rights institutions,[6] via property right institutions. Since autocratic governments with long-time horizons are generally interested in economic growth, underlying preference could be realized through a development of infrastructure, human capital, or other market friendly economic policies. We will discuss more on this in the empirical analysis section. First, foreign firms' willingness to transfer technologies and know-how depends on there being sound rule of law under which they are likely to believe that their property rights will not be infringed by the host government and local businesses. The growth of infant domestic industries, often expedited by FDI, starts from imitating advanced technologies and business operations. However, foreign firms would be reluctant to transfer their technology and skills if the host government and local businesses are willing and able to take them without proper payment. Thus, foreign investors' confidence in the enforcement of property rights over their intellectual properties or physical assets is essential. Conversely, the absence of well-enforced property rights should hinder such positive spillovers by making foreign firms more risk-averse and myopic. For example, country case studies find evidence that firms are unwilling to transfer technologies when the developing host countries have a weak system of intellectual property rights protection (Mansfield, 1994; Maskus, 1994). Olofsdotter (1998) also shows evidence that sound property rights institutions and efficient bureaucracies facilitate FDI spillovers.

Property rights protection also reassures domestic firms that their investments will be protected from illegal expropriations. For local businesses to increase their capacity to absorb advanced technologies and efficient management skills, they should invest in training programs for local labor and reforming business operations, which are costly. Similarly, unless local firms have confidence in the legal protection of their investment and subsequent economic outcomes, they would be extremely risk-averse for fear of government exploitation and corrupt (and/or inefficient) bureaucracies. Even when FDI's positive spillovers are available, the host country's economic growth is not guaranteed if local companies remain to be uncompetitive subsidiaries of foreign firms. On the other hand, once domestic economic actors have confidence in the government's credible promise to protect their property rights, they will be more willing to make investments to increase their absorptive capacities and imitate management know-hows.

In sum, we hypothesize that *FDI has positive effect on growth when an autocratic host country's leadership time horizon is sufficiently long*. In the empirical analysis section, we further test whether this conditional relationship is through property right institutions, as Figure 1 denotes.[7]

[6]Of course, it is possible that autocratic time horizons affect FDI spillover other than via property rights institutions. However, the empirical results support the causal mechanism we are mainly concerned with here. We will discuss this further in the empirical analysis section.

[7]Figure 1 does not fully show other causal arrows such as the impact of autocratic time horizon on FDI. Such a causal relation is out of the scope of this paper and has also been discussed in previous studies. For example, Moon (2015) demonstrates that autocratic time horizon affects FDI indirectly by developing domestic institutions.

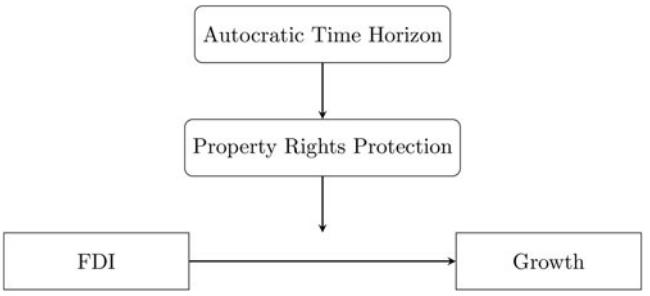

Figure 1. Moderating effect of ATH FDI-led growth.

3. Research design

We estimate the impact of FDI on economic growth, moderated by autocratic leadership time horizon, in a panel dataset of 64 countries for 36 years (1970–2005). The sample of autocratic countries is taken from the regime-type dataset created by Geddes *et al.* (2014).[8] In years of leadership turnover, we consider only a single leader who held the leadership position on the first day of each year (Goemans *et al.*, 2009). As Figure 1 shows, our theoretical mechanism is more than just showing the moderating effect of ATH. After demonstrating empirical evidence for our hypothesis, we further investigate whether the mechanism itself is empirically supported.

3.1 Estimator

Our methodological approach is incremental starting from a simple ordinary least squares (OLS) framework to more sophisticated models. First, we estimate a growth model using OLS controlling for country-specific fixed effects and serial autocorrelation.[9] However, in estimating these models for the dynamic panel dataset, we encounter multiple econometric problems that may not be solved using a simple OLS framework.

First, we run fixed-effects models because country-specific characteristics are likely to be correlated with the independent variables as well as with the error term that contains unobserved country-specific confounders. Yet, a fixed-effects model poses a problem (so-called Nickell bias) in our dynamic panel data with a small number of time periods compared with a larger number of countries; i.e., Nickell (1981) demonstrates that the standard fixed-effects estimator generates inconsistent estimates in dynamic panel data with small T and large N.[10]

Second, the explanatory variables are likely to be endogenous to economic growth. For example, FDI may well promote economic growth by invigorating and expanding a host country's market, in turn inviting further FDI.[11] In addition, ATHs may be endogenous to growth from a theoretical

[8]According to the GWF codebook (Geddes et al., 2014), 'an autocratic regime starts when an executive achieves power through undemocratic means and, with his inner circle establishes new rules for choosing leaders and policies.' 'Undemocratic' is defined by multiple specific coding rules in the codebook. For example, when an autocratic regime experiences a direct, fair and competitive election, the specific country years onward are dropped out of the sample. When the same country experiences events and rule changes that are nondemocratic (based on multiple coding rules such as banning most opposition parties in an election), those country years after the autocratic transition reenter our sample. A unique aspect of the GWF autocratic regime dataset is that the focus is not on a mere leadership change but changes in the ruling positions.

[9]We also check the robustness of the results controlling for the initial level of GDP per capita. The results are reported in the appendix.

[10]Although we do not ignore the existence of the bias, the size of bias may not be large enough to have significant impact on our main findings. For example, Beck and Katz (2011) that says that 'It is also well known that this bias is of order $1/T$, and almost all of the work on this problem has been in the context of small-T panels. When T is 2 or 3, the bias is indeed severe (50% or so). But when T is 20 or more, the bias becomes small.'

[11]See Li and Liu (2005) and Duttaray *et al.* (2008) for a more detailed literature review on the endogeneity issue.

standpoint; that is, an autocratic leader may be more likely to expect to survive in office when the country's economy is vibrant and growing, which makes the leader better equipped with fund government projects and provide patronage goods to elites in the winning coalition (Bak and Moon, 2016). Given multiple endogeneity problems, using a conventional two-stage least squares estimator also poses a daunting methodological challenge; that is, finding highly relevant and exogenous instruments for multiple endogenous variables is challenging.

Given these econometric concerns, we use the Arellano–Bond generalized method of moments (GMM) estimator (Arellano and Bond, 1991), originally proposed by Holtz-Eakin *et al.* (1988).[12] By taking first differences in the variables of interest, we eliminate country-specific effects. In addition, the estimator makes endogenous regressors pre-determined by using their lagged values, which also allows us to exploit the in-sample information as much as possible. In particular, Carkovic and Levine (2005), who examines the growth-accelerating effect of FDI, provide a useful starting point for the econometric framework.

Consider the following growth equation first:

$$\begin{aligned}\Delta \mathrm{GDP}_{i,t} &= \mathrm{GDP}_{i,t} - \mathrm{GDP}_{i,t-1} \\ &= (\alpha - 1)\mathrm{GDP}_{i,t-1} + \beta x_{i,t} + \gamma \mathrm{CONTROL}_{i,t-1} + \tau \mathrm{YEAR}_t + \eta\lambda_i + \epsilon_{i,t}\end{aligned} \tag{1}$$

where the dependent variable, GROWTH, is real GDP per capita growth. x refers to a set of endogenous variables that include FDI inflows (FDI), ATH, and the multiplicative interaction term (FDI × ATH). CONTROL is a set of control variables, YEAR refers to year-specific effects (year dummies), λ represents country-specific fixed effects, and ϵ shows the error term.

Rearranging the above equation gives

$$\mathrm{GDP}_{i,t} = \alpha \mathrm{GDP}_{i,t-1} + \beta x_{i,t} + \gamma \mathrm{CONTROL}_{i,t-1} + \tau \mathrm{YEAR}_t + \eta\lambda_i + \epsilon_{i,t} \tag{2}$$

To swipe away the country-specific effects, we take first differences of the above, and get the following dynamic panel equation:

$$\begin{aligned}\mathrm{GDP}_{i,t} - \mathrm{GDP}_{i,t-1} = \alpha(\mathrm{GDP}_{i,t-1} - \mathrm{GDP}_{i,t-2}) + \beta(x_{i,t} - x_{i,t-1}) \\ + \gamma(\mathrm{CONTROL}_{i,t} - \mathrm{CONTROL}_{i,t-1}) + \tau \mathrm{YEAR}_t + (\epsilon_{i,t} - \epsilon_{i,t-1})\end{aligned} \tag{3}$$

This differential equation is required to meet moment conditions to ensure the weak exogeneity of the instruments; e.g., $E[x_{i,t-m(m>1)}(\epsilon_{i,t} - \epsilon_{i,t-1})] = 0$, and $E[\mathrm{GDP}_{i,t-m(m>1)}(\epsilon_{i,t} - \epsilon_{i,t-1})] = 0$. Differencing may make the lagged levels of the endogenous regressors weak instruments for differences, thus making the model inefficient and biased (Blundell and Bond, 1998). This concern looms large 'when the explanatory variables are persistent over time' (Carkovic and Levine, 2005, 200), such as FDI and ATH in our models. Thus, as a robustness check, we also use the system GMM estimator that incorporates the level equations using lagged differences of explanatory variables as additional instruments (Blundell and Bond, 1998). To ensure the validity of the instruments, we check the Hansen-*J* overidentification test.[13] Roodman (2009) warns that too many instruments can weaken the Hansen test, which is signified by the *P*-values of 1.000. Roodman (2009) suggests that 'Researchers should also test for robustness to severely reducing the instrument count' (129). To address this issue, we report the number of instruments, and perform several robustness checks. First, we determine the optimal number of lags such that the root mean squared error is minimized (reported in the appendix). In addition, we reduce the number of instruments significantly using a single instrument for each variable and lag distance rather than using all lagged values as instruments, and replacing the GMM

[12]Specifically, we use the statistical package created by Roodman (2009).

[13]The null hypothesis is that the instruments are exogenous as a whole.

instruments with their principal components. We also check the potential second-order autocorrelation in first differences.[14] Finally, we use robust standard errors that are consistent against heteroskedasticity and autocorrelation within panels.

3.2 Variables and measurement

In this section, we discuss how we measure the variables included in the regression. The in-sample summary statistics for all variables is presented in the appendix.

3.2.1 FDI

FDI is foreign direct investment inflows as a share of GDP, taken from the UNCTAD FDI database (UNCTAD, 2010). This particular measure of FDI is not only common in recent cross-country FDI-growth studies (e.g., Jong Il, 2003; Alfaro *et al*., 2004; Carkovic and Levine, 2005; Li and Liu, 2005; Duttaray *et al*., 2008), but also well-suited for our theory for the following reasons. First, the absolute amount of FDI inflows may not be able to capture the relative importance of FDI for a country's economy. Since our theory posits that FDI is a significant determinant of a country's economic growth, the FDI measure should be able to capture how much the host country's economy is reliant upon FDI, as also demonstrated in Li (2009*b*). Second, Kerner (2014) shows that FDI stock is appropriate when a researcher is interested in the determinants of MNCs' commercial activities. While the MNC performance may contribute to the host country's economic growth, we are more interested in the stimulating effect of FDI flows than that of the underlying FDI stock.

3.2.2 Autocratic time horizon (ATH)

ATH refers to an autocratic leader's expectation of how long (s)he is going to stay in office, which is a latent concept neither directly observable nor measurable. To measure ATH, researchers may use individual proxies to capture the underlying level of leadership (in)stability, such as the number of past leadership turnovers or changes in the chief executive, the number of past coups, regime durability, or the age of the regime (Clague *et al*., 1996). However, an important shortcoming of this approach is that these indicators do not capture time-varying aspects of ATH within an autocratic country spell or an autocratic leadership spell. For example, the number of past government turnovers and regime age are unable to delineate annual levels of leadership (in)stability because these measures assume that 'every regime within a particular autocratic spell has the same amount of instability, which is unlikely' (Wright, 2008, 979).[15]

An alternative method is to estimate the probability of autocratic leadership failure for a given leader-year using multiple indicators of leadership (in)stability as explanatory variables (Wright, 2008; Blake, 2013; Moon, 2015). While utilizing more relevant information, this approach relies on a critical assumption that 'autocrats themselves are attuned to the same predictors of leadership survival as researchers' (Wright, 2008, 980). Researchers as outside observers may not be able to fully access private information held by autocratic regimes and leaders themselves. Furthermore, ATH estimates inherently contain fundamental uncertainties about leaders' self-assessment of their time horizons and estimation uncertainties around point estimates of ATH, both of which are not easily captured in the estimated measure of ATH (i.e., probability of leadership failure). Despite these theoretical and methodological challenges, we prefer this approach to using time-invariant individual proxies for several reasons. First, the predicted probability of leadership failure captures temporal variations in ATH over the course of multiple *regime* changes within an autocratic country. Second, it

[14]The null hypothesis is that there is no autocorrelation in the differenced residuals. The results in Table 2 show that we cannot reject this null hypothesis in all models. By construction, an AR(1) process is likely to be significant though because both $\Delta\epsilon_{i,t}$ and $\Delta\epsilon_{i,t-1}$ contain $\epsilon_{i,t-1}$. The second-order serial correlation in differences tells about the first-order correlation in levels.

[15]In addition, regime instability is not conceptually equivalent to leadership instability. For example, the theoretical and empirical differences between these two concepts are extensively discussed in Wright and Bak (2016).

utilizes more information in the data. Third, it reveals annual variations within an autocratic *leadership* spell.

To address the issue about estimated uncertainties around the point estimates of ATH, we also report the results of a bootstrapping model in the appendix. In this model, we run the system of equations, both the ATH and growth equations, using 1,000 bootstrapped samples.[16]

To estimate ATH, we run a probit regression of autocratic leadership failure as the dependent variable. We use the Archigos database (Goemans *et al.*, 2009) to identify leadership-failure years. The ATH equation also includes multiple predictors of leadership failure: interstate war and intrastate war using the UCDP armed conflict data (Gleditsch *et al.*, 2002), the number of coup attempts (Powell and Thyne, 2011), the amount of mass unrest from the Cross-National Time-Series Data Archive (CNTS) (Banks and Wilson, 2013),[17] unrest includes strikes, riots, and demonstrations, military regime (Geddes *et al.*, 2014),[18] the number of past leadership failures (Goemans *et al.*, 2009),[19] the natural logarithm of oil rents (Ross, 2012), the natural logarithm of official development assistance as a share of GDP (OECD, 2015),[20] and leadership tenure and its squared and cubed terms (Goemans *et al.*, 2009).[21] In addition, region-specific and country-specific effects are included.[22]

Table A3 in the appendix reports the results from the ATH equation. We find that interstate war, intrastate war, coup, mass unrest, and military regime have positive effects on leadership failure. However, the leadership-stabilizing effect of oil and aid appears to be minimal. The higher the estimated probability of leadership failure, the shorter time horizon a leader has in a given year: that is, the higher Pr(leadership failure), the shorter ATH.

3.2.3 Control variables

We include several control variables without which omitted variable bias is suspected. First, we control for the initial level of economic development (INITIAL GDP) measured by the natural logarithm of GDP per capita, and TRADE OPENNESS using the Penn World Tables v.7.1 (Heston *et al.*, 2011). We also include an index for the level of property rights protection using the contract-intensive money (CIM) indicator (Clague *et al.*, 1999). Recent experiences of war can severely damage the prospect of economic growth, so our control for WAR indicates whether a country has experienced interstate or intrastate war in a given year using the UCDP armed conflict data (Gleditsch *et al.*, 2002). In addition, the presence of ECONOMIC CRISIS is controlled for using the Reinhart–Rogoff financial crisis database (Reinhart and Rogoff, 2011).[23] Finally, two additional control variables (the quantity and quality of labor forces) are included[24]: (1) the logarithm of the number of active LABOR FORCES in millions, and (2) the HUMAN CAPITAL index.[25] All control variables are lagged by 1 year.[26]

[16]See Table A5 in the appendix. The model does not converge when we include year-fixed effects in the growth equation. Thus we only include country-specific fixed effects.

[17]Mass unrest includes strikes, riots, and demonstrations.

[18]We control for military regime because military regime, compared with other autocratic regimes, are known to be more susceptible to elite-level challenges (Belkin and Schofer 2003; Thyne 2010; Powell 2012).

[19]Beck *et al.* (1998) demonstrate that cross-section-time-series data with a binary dependent variable (BTSCS) are likely to violate the independence assumption of ordinary probit analysis. Thus we control for past leadership instability.

[20]Foreign aid and oil rents are included to take into account the regime-stabilizing effect of unearned income (e.g., Smith 2008; Morrison 2009; Bueno de Mesquita and Smith 2010; Ahmed 2012).

[21]Tenure polynomials are included to control for duration dependence in the binary outcome.

[22]Countries are classified by 10 regions: Eastern Europe and post Soviet-Union, Latin America, North Africa and the Middle East, Sub-Saharan Africa, Western Europe and North America, East Asia, South-East Asia, South Asia, and for Caribbean.

[23]Economic crisis is a dichotomous variable: 1 when a country experiences currency crisis, stock market crash, domestic/external sovereign debt crisis, or banking crisis in a given year.

[24]We take these variables from the Penn World Tables v.8.1 (Heston *et al.*, 2011).

[25]According to Penn World Tables, this measure is constructed using the interpolated average years of schooling from Barro and Lee (2013), and an assumed rate of return for primary, secondary, and tertiary education (Caselli, 2005).

[26]While we include conventional control variables found in the FDI-growth studies, we report the result of an additional model including bilateral investment treaties as a control variable. The result is reported in the appendix.

Table 1. Effect of FDI on economic growth: OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FDI	0.275***	0.374***	0.276***	0.317***	0.369***	0.382***	0.262**
	(0.103)	(0.115)	(0.105)	(0.118)	(0.117)	(0.115)	(0.103)
Pr(Fail)	1.747	−8.196**	−0.001	−10.111***	−8.255**	−8.481**	1.770
	(2.303)	(3.451)	(2.353)	(3.510)	(3.712)	(3.459)	(2.300)
FDI × Pr(Fail)	−3.435***	−4.026***	−3.447***	−3.792***	−4.135***	−4.065***	−3.379***
	(0.858)	(0.921)	(0.866)	(0.938)	(0.937)	(0.922)	(0.857)
Trade openness	0.030***	0.046***	0.029***	0.045***	0.049***	0.045***	0.030***
	(0.006)	(0.011)	(0.006)	(0.011)	(0.012)	(0.011)	(0.006)
War	0.220	0.531	0.804	1.000	1.017	0.513	0.249
	(0.838)	(1.024)	(0.846)	(1.054)	(1.062)	(1.024)	(0.837)
Economic crisis	−2.830***	−2.100***	−2.291***	−1.850**	−2.031***	−2.195***	−2.630***
	(0.729)	(0.754)	(0.755)	(0.785)	(0.772)	(0.759)	(0.734)
Labor force	0.864***	−1.344	0.838***	−0.731	−0.686	−1.347	0.831***
	(0.151)	(1.748)	(0.152)	(2.884)	(1.911)	(1.748)	(0.152)
Human capital	0.415	−1.322	0.913	−2.594	−1.526	−1.407	0.389
	(0.567)	(2.312)	(0.619)	(2.522)	(2.539)	(2.313)	(0.566)
Property rights	0.866	5.806*	1.516	7.452**	6.145*	6.039*	0.708
	(1.605)	(3.328)	(1.606)	(3.406)	(3.680)	(3.333)	(1.605)
Lagged growth						−0.034	0.058**
						(0.029)	(0.028)
Constant	−2.714**	−0.741	0.589	1.815	−1.823	−0.634	−2.574**
	(1.143)	(2.776)	(1.676)	(7.151)	(2.915)	(2.777)	(1.143)
Observations	1,305	1,305	1,305	1,305	1,241	1,305	1,305
Country-specific effect		✓		✓	✓	✓	
Year-specific effect			✓	✓			
AR(1)					✓		
Lagged DV						✓	✓

Note: Pr(Fail) indicates the probability of leadership failure. All variables are lagged by 1 year. The number of countries is 64. Standard errors are presented in parentheses. *$P < 0.10$; **$P < 0.05$; ***$P < 0.01$ (two-tailed tests).

4. Results

Table 1 shows the results from the OLS regressions. In a nutshell, FDI appears to have a significant and positive effect on growth when the expected probability of leadership failure is quite low. Conversely, FDI's positive effect on growth remains significant when ATH is substantially long, approximately less than 0.04. In spite of the short range of FDI's positive effect, the conditioning effect of ATH is not negligible because about 29% of the observations within the regression sample lie below 0.04 in ATH. This finding indicates that FDI is expected to improve economic growth only when autocratic host countries' leadership time horizons are sufficiently long. However, the validity of these results is suspected due to the econometric problems pertaining to OLS.

In Table 2, we present the results from the dynamic panel GMM models. The first five models feature the results from the difference-GMM models, and the last column shows the results from the system-GMM model. In all models, we find that FDI's positive effect on growth is significantly conditioned by ATH. Although this finding indicates robust empirical evidence in support of our hypothesis, we find a warning sign from some of these models. In four models, the *P*-value of the Hansen-*J* statistics is 1; this is a worrisome symptom of an excessive number of instruments (Roodman, 2009). However, model 4 shows that the number of instruments is very close to the number of countries, and the Hansen-*J* *P*-value is 0.608, which indicates that model 4 suffers least from the 'too many instruments' problem. Thus, we present our results graphically in Figure 2, based on model 4.

The graph shows that the lower bound of the marginal effect of FDI remains positive when the probability of leadership failure is below 0.09. Approximately 62% of observations within the regression sample have the probability of leadership failure lower than 0.09. Conversely, FDI appears to promote economic growth in autocratic host countries for more than half of the autocratic country-years

Table 2. Effect of FDI on economic growth: dynamic panel GMM

	(1)	(2)	(3)	(4)	(5)
Estimator		Difference GMM			System GMM
Instruments	Maximum lags	Optimal lags	Collapse	Collapse and PCA	Maximum lags
Initial GDPpc	−11.837***	−11.845***	−31.077***	−33.486**	−0.328
	(3.023)	(3.044)	(7.322)	(13.617)	(0.338)
FDI	0.392**	0.389**	0.663***	0.936***	0.275*
	(0.192)	(0.193)	(0.085)	(0.193)	(0.163)
Pr(Fail)	−8.902	−8.731	−9.594	7.959	0.414
	(5.477)	(5.470)	(8.056)	(14.380)	(3.349)
FDI × Pr(Fail)	−4.374*	−4.353*	−7.225***	−9.928***	−3.482*
	(2.192)	(2.198)	(0.963)	(1.892)	(2.072)
Trade openness	0.075***	0.076***	0.164**	0.237**	0.031***
	(0.022)	(0.022)	(0.069)	(0.096)	(0.008)
War	0.014	−0.031	2.467	0.762	0.788
	(1.430)	(1.424)	(2.269)	(2.394)	(0.980)
Economic crisis	−2.205***	−2.204***	−9.303***	−1.584	−2.361***
	(0.812)	(0.811)	(3.397)	(1.072)	(0.730)
Labor force	−5.009	−4.785	−2.890	1.005	0.823***
	(5.098)	(5.181)	(20.729)	(13.053)	(0.201)
Human capital	7.957*	7.806	20.890	13.013	1.334
	(4.763)	(4.790)	(17.186)	(13.098)	(1.157)
Property rights	21.118***	21.073***	15.773	8.932	2.051
	(6.292)	(6.329)	(13.051)	(8.064)	(2.520)
Constant					1.984
					(2.341)
Observations	1,218	1,218	1,218	1,218	1,305
Number of countries	64	64	64	64	64
Year-specific effect	Yes	Yes	Yes	Yes	Yes
Number of instruments	1218	1214	197	71	1305
AR(2) *P*-value	0.479	0.478	0.977	0.731	0.636
Hansen-*J* *P*-value	1.000	1.000	1.000	0.678	1.000

Note: Pr(Fail) indicates the probability of leadership failure. *Collapse* means that the model uses a single instrument for each variable and lag distance instead of using all lagged values as instruments. The model with *PCA* replaces the GMM instruments with their principal components. In model 2, the optimal lag structure (15) is determined by the minimum RMSE. All variables are lagged by 1 year. All columns include year dummies (not reported). Robust standard errors are presented in parentheses. *$P < 0.10$; **$P < 0.05$; ***$P < 0.01$ (two-tailed tests).

in our regression sample, in which leadership time horizons are sufficiently long. Another interesting finding is that FDI appears to have a negative effect on autocratic countries' economic growth when autocrats have short time horizons, which casts doubt on the widely-held belief in the growth-enhancing effect of FDI. The average probability of leadership failure is approximately 0.1 in our sample, which indicates that on average FDI does not appear to significantly accelerate economic growth in autocratic host countries.

Substantively, for example, when the in-sample probability of leadership failure is at the 25th percentile of ATH (0.04), we expect that 1% increase in FDI/GDP is on average associated with 0.54% increase in growth. On the other hand, when the probability of failure is at the 75th percentile (0.14), 1% increase in FDI/GDP is expected to decrease economic growth by 0.44%. Similarly, the result suggests that increase in Pr.(Failure) from the mean by one standard deviation (0.1) results in approximately 0.98% decrease in autocratic host countries' economic growth that is associated with 1% increases in FDI/GDP.

Regarding the performance of control variables, we find some consistent results across models. First, the higher is the level of property rights protection, the higher rate economic growth expected. ECONOMIC CRISIS appears to have a negative effect on economic growth in most of the models. TRADE OPENNESS affects economic growth positively in all models. In some models, we also find that LABOR FORCE has a positive effect on growth.

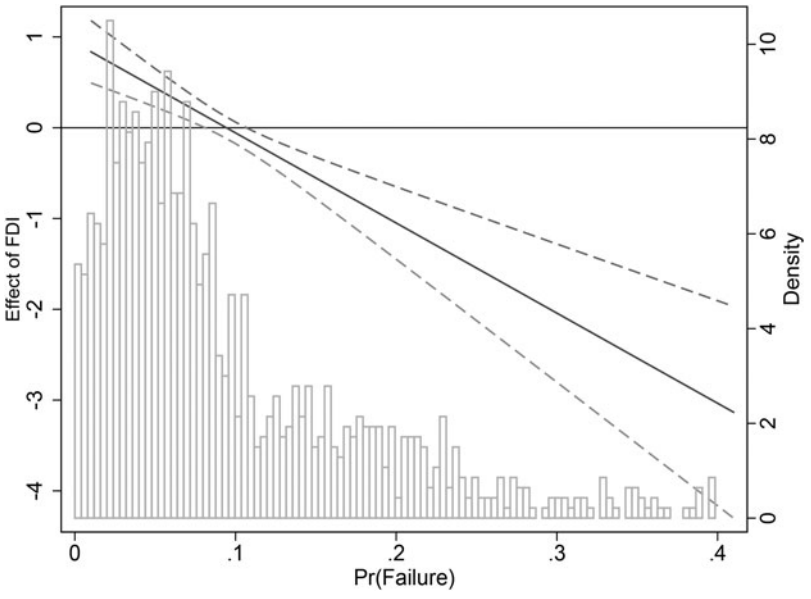

Figure 2. Effect of FDI on growth.
Note: The graph is based on the estimates in model 4 of Table 2. The dotted lines show the 95% confidence intervals. The upper bound of the *x*-axis marks the 99th percentile of the ATH distribution within the regression sample. The histogram shows the distribution of ATHs within the regression sample.

5. Tests of theoretical mechanism

The theoretical mechanism indicates that FDI induces economic growth when an autocratic country strongly protects property rights. We examine this mechanism empirically in two steps.

First, we replicate an empirical model in Clague *et al.* (1996) in which the authors examine the impact of leadership time horizons on the level of property rights protection. Using our measure of ATH and their model specifications, we find similar results. Using models 1 and 2 in Table 3, we examine how ATH affects the level of contract-intensive money (CIM). For a robustness check, although the temporal dimension is limited, we use the property rights index from the International Country Risk Guide (ICRG) (PRS, 2007) as the dependent variable in models 3 and 4. The estimator of models 1 and 3 is OLS with a lagged dependent variable and country fixed effects, while models 2 and 4 use Driscoll and Kraays' (1998) covariance matrix estimator (D–K) with fixed effects and AR(1) autocorrelation error structure. In all models, we find that as ATH decreases or Pr.(Leadership Failure) increases, the level of CIM significantly decreases, which is consistent with our theoretical argument as well as the finding of Clague *et al.* (1996).

Next, we examine whether FDI has positive effect on growth only when CIM is sufficiently high, using an interaction term between FDI and CIM. Using the same dynamic panel GMM, excluding information about ATH, the results in model 2 of Table 4 show that property rights is a significant factor that moderates the relationship between FDI and economic growth. Interestingly enough, such an empirical pattern does not hold in democracies. This finding implies that our theoretical mechanism is likely to be unique to autocratic countries. Additional evidence for our mechanism is found in model 3, in which we include ATH and FDI × ATH, in order to see how the conditioning effect of CIM changes when we include the political variable (ATH) that is expected to determine the level of property rights protection. The results show that the moderating effect of CIM is absorbed by ATH, while the moderating effect ATH remains significant.

Table 3. Effect of ATH on property rights protection

	(1)	(2)	(3)	(4)
Dependent variable	CIM	CIM	ICRG	ICRG
Estimator	OLS	D–K	OLS	D–K
Pr(Fail)	−0.030*	−0.063***	−4.150***	−8.168**
	(0.017)	(0.020)	(1.186)	(3.251)
Log(Income)	0.024***	0.130***	0.279	3.640***
	(0.005)	(0.010)	(0.324)	(0.914)
Lagged CIM	0.785***			
	(0.028)			
Lagged ICRG			0.834***	
			(0.023)	
Constant	−0.036	−0.262***	1.795	−8.174
	(0.045)	(0.076)	(2.976)	(7.060)
Observations	1,717	1,791	829	885
Number of countries	78	78	60	60
Country-specific effect	Yes	Yes	Yes	Yes

Note: D–K stands for Driscoll and Kraays (1998) covariance matrix estimator with fixed effects. All models include country-fixed effects. D–K models 2 and 4 use the first-order autocorrelation structure of error. Robust standard errors are presented in parentheses. *$P < 0.10$; **$P < 0.05$; ***$P < 0.01$ (two-tailed tests).

Table 4. Effect of FDI on growth conditioned by property rights protection

	(1)	(2)	(3)
	Democracy	Autocracy	Autocracy
Initial GDPpc	−18.928***	−28.997***	−17.732*
	(6.533)	(9.731)	(10.469)
FDI	3.253	−0.939***	2.263**
	(2.676)	(0.115)	(0.915)
CIM	−7.490	22.833*	65.829***
	(17.074)	(13.687)	(24.597)
FDI × CIM	−3.732	1.062***	−1.968
	(3.143)	(0.239)	(1.244)
Pr(Fail)			13.233
			(15.203)
FDI × Pr(Fail)			−9.401***
			(0.859)
Trade openness	0.029	0.192**	0.243**
	(0.033)	(0.088)	(0.111)
War	−2.316***	0.671	0.572
	(0.800)	(1.322)	(2.455)
Economic crisis	−2.454***	−1.426	−2.170
	(0.719)	(0.933)	(1.428)
Labor force	−15.940***	−20.471**	0.479
	(4.067)	(8.530)	(14.229)
Human capital	−4.079	5.051	5.956
	(6.400)	(8.731)	(10.946)
Observations	965	1,587	1,218
Number of countries	79	79	64
Year-specific effect	Yes	Yes	Yes
Number of instruments	57	75	64
AR(2) *P*-value	0.351	0.417	0.528
Hansen-*J* *P*-value	0.913	0.297	0.991

Note: Pr(Fail) indicates the probability of leadership failure. All models use a single instrument for each variable and lag distance instead of using all lagged values as instruments, replacing the GMM instruments with their principal components. All variables are lagged by 1 year. All columns include year dummies (not reported). Robust standard errors are presented in parentheses. *$P < 0.10$; **$P < 0.05$; ***$P < 0.01$ (two-tailed tests).

6. Conclusion

This paper provides partial answer to the puzzling question of why FDI induces significant economic growth in only some autocratic host countries. Our findings suggest that political determinants of FDI-led growth are heterogeneous depending on autocratic leadership time horizons. Autocrats with relatively long-time horizons, compared with more predatory and short-sighted autocrats, are found to utilize FDI inflows more productively and efficiently for economic development. An implication is that autocratic host countries that appear to have an aggressive policy of inviting FDI are not always committed to taking advantage of positive spillovers for economic development. Rather, myopic autocrats may be more interested in lucrative rent-seeking opportunities that FDI brings to the host government.

In particular, our finding that FDI has a negative effect on growth in host countries with short leadership time horizons indicates that foreign investors should not take it for granted that much-needed foreign capital is always a blessing for host countries' economic development. Only those countries with economic preconditions conducive to FDI-led growth may benefit. This paper emphasizes that these promotive economic conditions are likely to be observed in autocratic countries with relatively long leadership time horizons.

Given FDI's role as one of the most vibrant economic engines of growth over the past few decades, the mixed findings about its growth-accelerating effect have been puzzling. Our findings indicate that FDI is not a panacea for the problems faced by sluggish and depressed authoritarian economies. Particularly in autocracies, political leadership with significant discretion over economic policy is likely to exert influence on how FDI contracts are made and how potential positive spillovers are distributed to domestic economic actors. Thus, this paper highlights the importance of autocratic leaders' policy preferences shaped by their time horizons, demonstrating that self-interested autocrats with long-time horizons are more committed to promoting positive FDI spillovers and long-run economic productivity.

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Appendix

Table A1. Summary statistics

Variable	Observations	Mean	Standard deviation	Min	Max
Economic growth	1,225	1.492	6.987	−50.95	84.2
GDP per capita	1,225	7.62	0.981	5.203	10.72
FDI	1,225	1.866	4.638	−13.51	92.1
ATH	1,191	0.0983	0.0905	2.26×10^{-08}	0.557
Trade openness	1,225	64.4	42.75	6.69	322.8
War	1,225	0.0547	0.227	0	1
Economic crisis	1,225	0.0833	0.276	0	1
Labor force	1,225	1.33	1.418	−1.684	6.627
Human capital	1,225	1.744	0.405	1.053	3.019
Property rights	1,218	0.749	0.131	0.192	0.996

Note: Descriptive statistics are calculated for the sample used in model 4 of Table 2.

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Table A2. Effect of FDI on economic growth: OLS with initial GDPpc

	(1)	(2)	(3)	(4)	(5)	(6)
FDI	0.275***	0.344***	0.276***	0.300***	0.392***	0.346***
	(0.103)	(0.112)	(0.105)	(0.115)	(0.114)	(0.112)
Pr(Fail)	1.767	−7.178**	0.235	−9.024***	−6.727*	−7.230**
	(2.354)	(3.344)	(2.405)	(3.405)	(3.712)	(3.354)
FDI × Pr(Fail)	−3.435***	−3.612***	−3.493***	−3.481***	−4.088***	−3.620***
	(0.858)	(0.893)	(0.869)	(0.910)	(0.922)	(0.894)
Initial GDPpc	−0.011	−9.255***	−0.375	−9.064***	−9.589***	−9.232***
	(0.265)	(1.015)	(0.287)	(1.028)	(1.096)	(1.022)
Trade openness	0.030***	0.070***	0.031***	0.068***	0.078***	0.070***
	(0.006)	(0.011)	(0.006)	(0.011)	(0.012)	(0.011)
War	0.218	−0.353	0.760	0.213	1.080	−0.354
	(0.839)	(0.997)	(0.854)	(1.026)	(1.057)	(0.997)
Economic crisis	−2.833***	−2.443***	−2.336***	−2.135***	−2.292***	−2.459***
	(0.733)	(0.731)	(0.758)	(0.762)	(0.772)	(0.736)
Labor force	0.864***	−5.225***	0.824***	−2.979	−5.310***	−5.216***
	(0.152)	(1.745)	(0.157)	(2.807)	(1.997)	(1.747)
Human capital	0.426	5.151**	1.394*	4.737*	6.043**	5.120**
	(0.627)	(2.349)	(0.733)	(2.582)	(2.706)	(2.355)
Property rights	0.883	16.952***	2.136	18.321***	18.066***	16.964***
	(1.659)	(3.446)	(1.709)	(3.524)	(3.961)	(3.448)
Lagged growth						−0.006
						(0.028)
Constant	−2.666	53.562***	−1.145	50.700***	53.176***	53.446***
	(1.621)	(6.535)	(2.093)	(8.879)	(6.390)	(6.562)
Observations	1,305	1,305	1,305	1,305	1,241	1,305
Country-specific effect	No	Yes	No	Yes	Yes	Yes
Year-specific effect	No	No	Yes	Yes	No	No
AR(1)	No	No	No	No	Yes	No
Lagged DV	No	No	No	No	No	Yes

Note: Pr(Fail) indicates the probability of leadership failure. All variables are lagged by 1 year. The number of countries is 65. Standard errors are presented in parentheses. *$P < 0.10$; **$P < 0.05$; ***$P < 0.01$ (two-tailed tests).

Table A3. Autocratic time horizon

Autocratic leadership failure	
Interstate war	0.369*
	(0.224)
Intrastate war	0.576***
	(0.169)
Coup	0.242**
	(0.107)
Mass unrest	0.045***
	(0.015)
Military regime	0.521***
	(0.160)
Past leadership failures	−0.124***
	(0.027)
Oil rents	0.011
	(0.046)
Foreign aid	0.024
	(0.039)
Tenure	0.074**
	(0.036)
Tenure^2	−0.004
	(0.003)
Tenure^3	0.000**
	(0.000)
Constant	−1.412***
	(0.502)
Observations	2,416

Note: Country-specific and region-specific fixed effects (country dummies) are included (not reported). Standard errors are presented in parentheses. *$P < 0.10$; **$P < 0.05$; ***$P < 0.01$ (two-tailed tests).

Table A4. Root mean squared error depending on number of lags

Number of lags	RMSE
3	63.6
4	37.5
5	34.0
6	27.8
7	23.1
8	16.8
9	14.8
10	14.9
11	15.2
12	13.6
13	13.3
14	13.1
15	13.3
16	13.4
17	13.3
18	13.3
19	13.3
20	13.3

Table A5. Effect of FDI on economic growth: bootstrapping

FDI	0.374**
	(0.158)
Pr(Fail)	−8.196***
	(2.805)
FDI × Pr(Fail)	−4.026***
	(1.290)
Trade openness	0.046*
	(0.027)
War	0.531
	(1.022)
Economic crisis	−2.100***
	(0.777)
Labor force	−1.344
	(2.446)
Human capital	−1.322
	(3.471)
Property rights	5.806
	(5.071)
Constant	−0.741
	(5.002)
Observations	1,305

Note: Pr(Fail) indicates the probability of leadership failure. All variables are lagged by 1 year. Bootstrapped standard errors are presented in parentheses. *$P < 0.10$; **$P < 0.05$; ***$P < 0.01$ (two-tailed tests).

Table A6. Effect of FDI on economic growth: controlling for BITs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FDI	0.272***	0.383***	0.278***	0.319***	0.375***	0.391***	0.259**
	(0.103)	(0.116)	(0.105)	(0.118)	(0.117)	(0.116)	(0.103)
Pr(Fail)	1.880	−8.192**	0.047	−9.980***	−8.313**	−8.478**	1.890
	(2.311)	(3.451)	(2.354)	(3.507)	(3.712)	(3.459)	(2.308)
FDI × Pr(Fail)	−3.442***	−4.074***	−3.484***	−3.798***	−4.170***	−4.113***	−3.386***
	(0.858)	(0.922)	(0.867)	(0.937)	(0.937)	(0.923)	(0.858)
Trade openness	0.029***	0.048***	0.028***	0.050***	0.052***	0.048***	0.029***
	(0.006)	(0.011)	(0.006)	(0.011)	(0.012)	(0.011)	(0.006)
War	0.229	0.518	0.842	0.890	0.999	0.500	0.256
	(0.838)	(1.025)	(0.848)	(1.055)	(1.062)	(1.024)	(0.837)
Economic crisis	−2.842***	−2.099***	−2.323***	−1.759**	−2.037***	−2.195***	−2.643***
	(0.729)	(0.754)	(0.756)	(0.786)	(0.772)	(0.759)	(0.735)
Labor force	0.806***	−1.822	0.771***	−2.438	−1.339	−1.826	0.779***
	(0.173)	(1.810)	(0.173)	(3.014)	(1.981)	(1.810)	(0.173)
Human capital	0.285	−0.157	0.819	−0.686	0.079	−0.239	0.272
	(0.596)	(2.580)	(0.629)	(2.706)	(2.846)	(2.581)	(0.595)
Property rights	0.899	6.527*	1.537	8.786**	7.129*	6.763**	0.740
	(1.606)	(3.402)	(1.606)	(3.471)	(3.764)	(3.408)	(1.606)
BITs	0.018	−0.037	0.023	−0.076*	−0.049	−0.037	0.016
	(0.026)	(0.037)	(0.028)	(0.040)	(0.039)	(0.037)	(0.026)
Lagged growth						−0.034	0.057**
						(0.029)	(0.028)
Constant	−2.474**	−2.655	0.840	0.743	−4.450	−2.553	−2.360**
	(1.193)	(3.354)	(1.704)	(7.165)	(3.535)	(3.355)	(1.193)
Observations	1,305	1,305	1,305	1,305	1,241	1,305	1,305
Country-specific effect		✓		✓	✓	✓	
Year-specific effect			✓	✓			
AR(1)					✓		
Lagged DV						✓	✓

Note: Pr(Fail) indicates the probability of leadership failure. All variables are lagged by 1 year. The number of countries is 64. Standard errors are presented in parentheses. *$P < 0.10$; **$P < 0.05$; ***$P < 0.01$ (two-tailed tests).