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Is Democracy Good for Growth? — Development at Political Transition Time Matters*

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Abstract

Is democracy a better political regime for economic prosperity than autocracy? This paper shows that the answer depends on the initial economic development level during the democratic transition when the foundation of institutions was laid. Democracy facilitates growth only in countries that already have adequate development at transition time. These countries are more likely to create and sustain growth-enhancing institutions than others. Without appropriate development, democracy does not improve growth; this applies to about 40% of the third-wave democratized countries. These results are based on a sample of 153 countries in 1960-2010 and robust to various specifications and endogeneity issues.

Keywords: Democracy, Growth, Economic Development, Institutions, Critical Juncture, Democratization, Modernization, Human Capital.

JEL Codes: D73, E02, I25, O10, O43, P16, P48

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1 Introduction

While most people around the world believe that democracy improves living standards[1], experts in social sciences are not so sure. Theoretical debates on whether democracy enhances or hinders economic growth have been very extensive.[2] Substantial controversies also exist on the empirical side. For example, Doucouliagos and Ulubasoglu (2008) find that most estimated effects of democracy on economic growth are not significantly positive.[3] The recent literature, however, shows that democracy substantially promotes economic growth by constructing alternative democracy indicators, using advanced econometric techniques, or employing new instrumental variables.[4]

So is democracy good for growth or not? Rather than trying to reach a universal yes or no conclusion, this paper tackles the issue from a novel perspective. Our basic hypothesis is that countries whose democratization process starts while having adequate development are more likely to create and sustain institutions that enhance growth. Hence, the initial condition in terms of economic development is crucial for countries to embark on a path of faster economic growth after democratization. Countries can thus be divided into two groups: Democracy with Adequate Economic Development at Transition (labeled as *Strong Democracy*) grows faster than before, while the other group (namely, Democracy with Poor Economic Development at Transition, labeled as *Weak Democracy*) does not. Note that this "Strong vs Weak Democracy" label indicates the strength of initial development during the democratization period. In a nutshell, Strong Democracy is good for growth but Weak Democracy not.

The relevance of our idea can be illustrated by the comparison between Benin and Ghana. Both countries went through democratization in the 1990s, their Polity scores

[1] Evidence from World Value Survey (2014) shows that about 79% of the global population wishes to live in a democratic country.

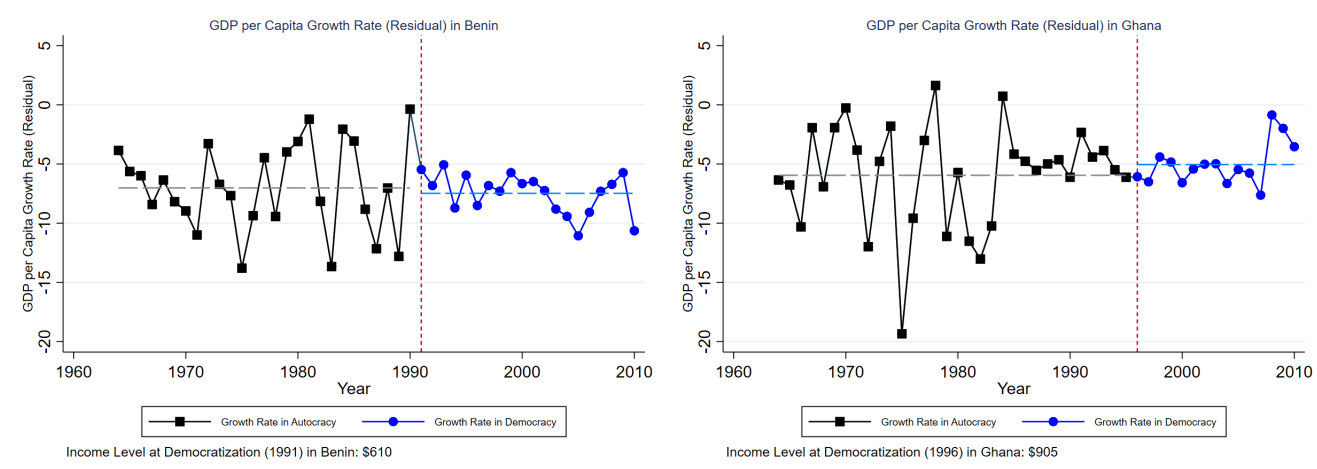
[2] For example, populism and other incentive distortions from the election system and interest groups may harm growth (March and Olsen, 1983; Olson, 1993; Persson and Tabellini, 1994; Besley and Coate, 1998; De Haan and Sturm, 2003; Huntington, 2006), while the growth-enhancing effects may come from more investment in public goods, better information and commitment, and more inclusive opportunities for the masses (Wittman, 1989; Olson, 1993; Saint-Paul and Verdier, 1993; Alesina et al., 1996; Benabou, 1996; Feng, 1997; Sen et al., 1999; Lizzeri and Persico, 2004; Acemoglu and Robinson, 2012).

[3] This echoes some earlier studies such as Sirowy and Inkeles (1990); Przeworski et al. (1995); Hall and Jones (1999).

[4] This is summarized by a recent meta-analysis of 2000 regressions (Colagrossi et al., 2020). Other related studies include, for example, Minier (1998); Gerring et al. (2005); Persson (2005); Persson and Tabellini (2007); Aghion et al. (2007); Persson and Tabellini (2009); Hellmanzik (2013); Madsen et al. (2015); Gründler and Krieger (2016); Kim and Kroeger (2017); Zuazu (2019); Acemoglu et al. (2019).

have been above 6 since 2005, and are considered as fully "free" democracies by Freedom House. However, economic growth in Benin didn't improve after democratization, while the opposite is true for Ghana. This can be seen in Figure 1, which plots GDP per capita growth rates in Benin and Ghana after controlling for growth dynamics, income level, and the time trend. Such discrepancy in growth, however, is not surprising given their development conditions during democratization. According to the criteria proposed in this paper, Benin is categorized as a Weak Democracy while Ghana a Strong Democracy. In addition to a sizable income gap at their transition times, Benin falls short in other developmental indicators as well as the overall institutional quality; for example, the percentage of adults with secondary schooling was only 8.65% in Benin but 43% in Ghana.[5]

Figure 1. GDP Growth in Benin and Ghana



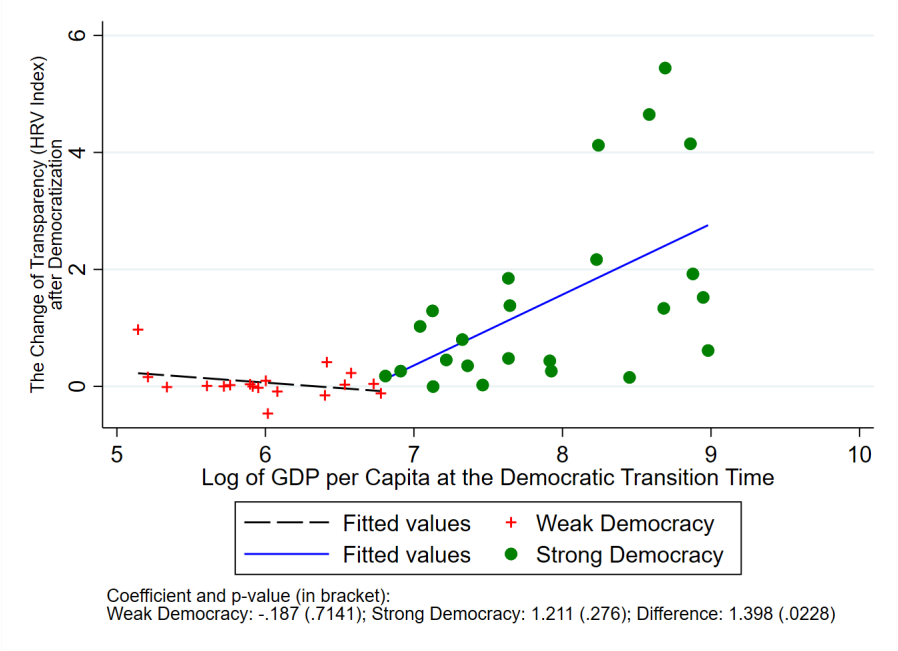
A formal test of the hypothesis is carried out on a sample of 153 countries during 1960-2010 using within estimators in a dynamic growth model. The estimated effect of Strong Democracy on economic growth is indeed positive and significant, while that of Weak

[5]More detailed comparisons between Benin and Ghana are in Appendix A. Recent studies (Lindberg, 2006; Bierschenk, 2009; Pinkston, 2016) suggest that the deep-rooted structure has not changed much after democratization in Benin, where the economy is almost entirely informal with low productivity, and politics are controlled by a closed group of elite as government insiders relying on foreign aid and donations. In contrast, Ghana has robust private sectors that are capable of supporting healthy political competition to facilitate broad economic growth. A notable observation is that other African democracies such as Kenya, Malawi, Senegal, and Zambia are more like Benin than Ghana.

Democracy is not statistically different from autocracies. Based on our preferred estimates, the long-run effect of a permanent transition to Strong Democracy would increase GDP by 35.56%, while it is only 1.22% for a Weak Democracy. This pattern is robust to various specifications and endogeneity concerns. In particular, when a composite indicator of development which combines information on education, natural resource share of GDP and income inequality during the political transition period is used, about 40% of the third-wave democratization (Huntington, 1993) are categorized as a Weak Democracy like Benin, and experienced no improvement in growth in comparison to autocracies.

The new insight emerging from our results is not simply that development matters, but that development at the critical juncture of the political transition time is more crucial for future growth. Thus, a natural question to ask is: Why does the initial development affect future growth? The potential channel is through the institutional quality, where adequate development is essential to create and sustain effective institutions in promoting growth.

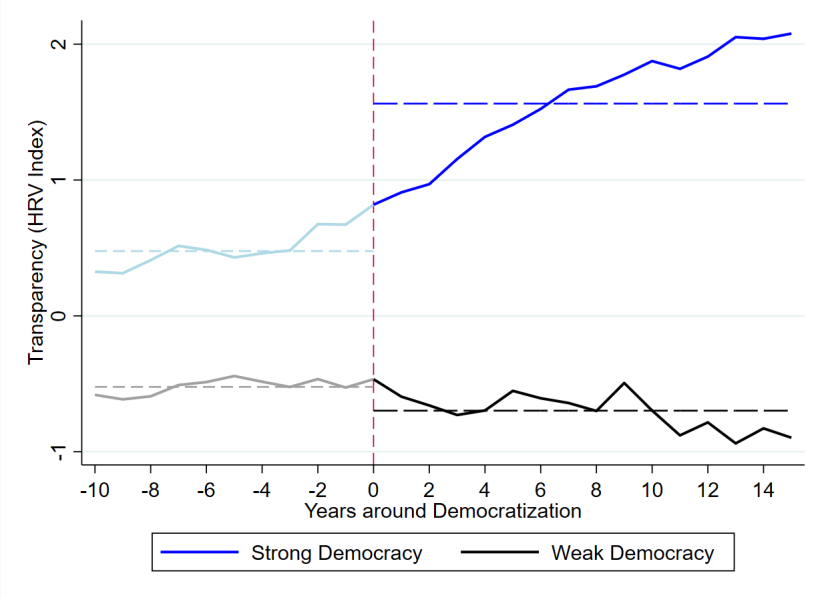
Figure 2. Initial Development and Government Transparency



A first glance of the data shows some preliminary evidence that institutional quality varies with the initial development level during democratization. In Figure 2, for example, countries with higher GDP per capita in the year of democratic transition have a larger

improvement in government transparency (measured by HRV index) after the transition.[6] This relationship is stronger when the initial GDP is higher, which can be seen from the distinct slopes of fitted lines for Strong and Weak Democracies. In addition, Figure 3 contrasts Strong and Weak Democracy groups in terms of transparency levels relative to contemporary autocratic countries. It visually shows that the trends are initially similar but start to diverge after democratization, where the transparency level increases much further in Strong Democracies than in autocracies, while it slightly decreases in Weak Democracies.

Figure 3. Transparency Diverging after Democratization



This pattern is confirmed by results of more sophisticated regressions for a broad range of institutions covering economic freedom, law and order, corruption, political and social stability.[7] Even though the quality of democratic institutions may improve over time

[6]The HRV index (Hollyer et al., 2014) is an objective measure of transparency using the quality of national data reported to international organizations, which predicts well a country's law and order as well as bureaucratic quality. The GDP data are from World Bank Development Indicators (WDI for short) and measured in 2010 US$. The 25^{th} percentile of GDP levels at transition times is used as the cutoff value to categorize Strong versus Weak Democracies.

[7]Salient differences between Strong and Weak Democracies also exist in other dimensions. For example, compared with autocracy, population growth is significantly lower in Strong Democracy but higher in Weak Democracy. Lower population growth is considered by Przeworski (2000) as a major channel for democracy to facilitate economic growth, which turns out to hold only in Strong Democracy.

through learning-by-doing (Gerring et al., 2005), such effects are dwarfed by the influence of initial birth conditions (i.e., economic development at the political transition period). Furthermore, specific political forms, such as presidential versus parliamentary or majoritarian versus proportional regimes (Persson, 2005), do not have significant effects on growth once the initial development is controlled.

Conceptually, the democratization period is critical because it is the birth time of a suite of new and long-lasting institutions. Given that these institutions are expected to affect future resource allocation in many important ways, they are subject to serious negotiations among major groups in society, where the political bargaining power of each group is often underpinned by its economic clout at that moment (Huang, 2012a). For example, if democratization occurs when development is still weak, rent-seeking activities are likely to be prevalent, giving rise to weak institutions that are vulnerable to large policy swings between the elite rule and populism.[8] In contrast, when the main growth engine has already evolved from natural resources to capital investment and innovation, the majority of population would have reached broad consensus on growth-enhancing institutions (Galor and Moav, 2006). Thus, the degree of economic development during the transition time leaves deep birthmarks on new-born institutions, through which it exerts long-lasting effects on future growth. Economic conditions in other periods, however, may only have transient influences, since institutions once established are not as malleable as in the nascent stage.

A useful policy implication of this paper is that key economic development conditions at the political transition year can be used as a better indicator for future institutional quality and growth, since they are more objective, widely available, and parsimonious than direct measures of specific institutions. This is demonstrated by our empirical results where the growth effect of Strong Democracy remains significant after controlling for many institutional variables. The rationale is that, it is not any specific institution *per se* that can miraculously deliver growth, but the rising tide of better economic development that lifts all boats of growth-enhancing institutions. It increases the overall capacity of society to design, fund, operate, and monitor the daily functioning of many intermingled institutions in a dynamic economy so that the wheel of growth keeps turning.

The result that only Strong Democracy is good for economic growth may give rise to an interesting question: Is it better for a country to hurry into a Weak Democracy *now* or to wait and transit *later* to a Strong Democracy after further development? Even though in

[8]Many scholars argue that democracy is difficult to sustain in an agrarian society (Dahl, 1973; Rueschemeyer et al., 1992; Moore et al., 1993; Acemoglu and Robinson, 2006; Acemoglu et al., 2008).

reality political transitions are often unexpected and thus difficult to be planned well ahead, they are still affected by some common beliefs. For example, if most people believe that transition to democracy is absolutely good for economic growth regardless of development conditions, then they are willing to incur great costs to facilitate such a transition as soon as possible. In contrast, if instead they believe democracy is good for long-term growth only when equipped with adequate development, then an option is to wait until the economic structure becomes ready to support a Strong Democracy.[9] Similar concerns about the optimal sequence between economic liberalization and political democratization are also discussed by Epstein et al. (2006), Persson and Tabellini (2006), and Rode and Gwartney (2012).

This paper connects two competing views on whether it is development or institution that is more crucial for growth (North, 1990; Acemoglu et al., 2001; Glaeser et al., 2004, 2007) by showing that they are fused together at critical junctures as two sides of the same coin: Good institutions do not flow automatically out of political democracy, but need the nutritious soil of adequate economic development to germinate and grow. On the other hand, developmental conditions matter less in normal years than in the political transition time, because they need to be embodied by institutional changes to exert long-term impacts. The effects of development in an arbitrarily fixed year are indeed negligible as in Acemoglu et al. (2019), but become substantially positive and significant once development at the *political transition time* is considered. These results also contribute to the extensive literature on the role of development in democracy.[10]

The critical role of political transition periods is also examined from other perspectives in the literature. Yashar (1997) stresses that a robust civil society during the political reform time constitutes a necessary condition to form cross-class coalitions. Cervellati et al. (2014, 2015) show that violence during democratization has a long-lasting effect on the quality of democratic institutions. Besley and Persson (2019) propose that critical junctures in national political history are crucially important to later development.

The paper contributes to the literature on the heterogeneous effects of democratization

[9]This is verified by simulation in the Online Appendix B. In actual political choices, however, a society has to consider complicated trade-offs other than pure economic concerns. Note that Weak Democracies on average didn't perform worse than autocracies; the potential loss is thus an opportunity cost: If they could afford to be more patient, they might have jumped onto a faster track of Strong Democracy instead of being stuck to a slow path for a long time.

[10]See for example, Lipset (1959); Martin (1960); Barro (1996, 2003); Glaeser et al. (2004); Galor and Moav (2006); Glaeser et al. (2007); Huang (2012a,b); Murtin and Wacziarg (2014); Madsen and Murtin (2017).

on economic growth. The typical democratic indices such as Polity or Freedom House scores capture the main characteristics of electoral democracies, but not performance in economic growth. Our results show that checking whether an adequate initial development is achieved at democratization is a simple and effective way to predict future growth. Indeed, this categorization of Strong versus Weak Democracy is more effective in capturing the heterogeneous effects of democracy on growth than a related concept of Partial Democracy, which is defined as any country with a Polity score between 1 and 7 and covers most democratization cases after 1960 (Epstein et al., 2006; Papaioannou and Siourounis, 2008b). Since Weak Democracy constitutes almost half of the Partial Democracy group, this means a sizable number of countries experience no improvement in growth in comparison to autocracies, and thus require further in-depth research on their specific situations.

The rest of the paper is organized as follows. The next three sections describe the data, the dynamic estimation model, and the benchmark results with a variety of robustness checks. Potential channels through which democracy affects growth are examined in Section 5. Further discussions are conducted in Section 6. The final section provides concluding remarks.

2 Data and Descriptive Statistics

We construct an annual panel data set from various sources. The dichotomous democracy index $Democracy_{it}$ (1 for democracy and 0 for autocracy) is from Acemoglu et al. (2019), which classifies a country as democratic if Freedom House codes it as "Free"or "Partially Free" and Polity IV assigns it a positive score. The political transition from autocracy to democracy occurs in the data when the annual democracy indicator of a country changes from 0 to 1, and this specific year is denoted as the transition year t_0.[11] We slightly modify it by using a 5-year smoothing condition to mitigate noise caused by temporary regime changes.[12]

[11] Alternative democracy indicators such as Polity IV, CGV (Cheibub et al., 2010), BMR (Boix et al., 2013), and PS (Papaioannou and Siourounis, 2008b) are used for robustness checks. Regarding whether a dichotomous indicator is an appropriate measure of democratic transitions, there are still ongoing debates (Huntington, 1993; Bollen and Paxton, 2000; Przeworski, 2000; Dahl, 2005; Papaioannou and Siourounis, 2008b; Cheibub et al., 2010). While our benchmark metric is dichotomous, in Appendix C.8 we also include the degree of *de jure* qualities of political institution (proxied by Polity or Freedom House score) as a control variable, and results still hold. For a comprehensive review on democratic indicators, see Gründler and Krieger (2021).

[12] Such smoothing is quite standard in the literature (Giavazzi and Tabellini, 2005; Persson and Tabellini, 2006, 2007; Papaioannou and Siourounis, 2008a). Since it affects only a few countries, results remain similar

Two subgroups of democracy, *Strong Democracy* and *Weak Democracy,* denoted by dummy variables $DStrong_{it}$ and $DWeak_{it}$ respectively, are categorized by whether their development condition at transition time t_0, $Development_{i,t_0}$, is adequate, where

$$DStrong_{it} = \begin{cases} 1 & \text{if } Democracy_{it} = 1 \text{ and } Development_{i,t_0} > Threshold, \\ 0 & \text{Otherwise;} \end{cases}$$

$$DWeak_{it} = \begin{cases} 1 & \text{if } Democracy_{it} = 1 \text{ and } Development_{i,t_0} \leq Threshold, \\ 0 & \text{Otherwise;} \end{cases}$$

The default political regime is thus Autocracy.

The usual indicators for $Development_{i,t_0}$ include GDP per capita, education, industry share, income inequality, and reliance on natural resources (Lipset, 1959; Huang, 2012a). Due to uneven data availability across countries and spanning several decades, the most widely available variable, GDP per capita from WDI, is used in the benchmark results, while other indicators are used in robustness checks. The *Threshold* is defined conceptually as the adequate level of economic development, below which democracy is not good for growth. To accommodate a healthy range of flexibility, we typically report estimation results for various cutoffs, where the cutoff yielding the most significant difference between the two types of democracy is used as the main *Threshold* to anchor discussion and interpretation of results. A more relevant threshold for practical or policy purpose is a composite indicator to be discussed later.

The main dependent variable *Growth* is the annual log difference of real per capita GDP from the 2015 edition of WDI, which covers 171 countries from 1960 to 2010. Democratic transitions during this era are often considered as the third-wave democratization (Huntington, 1993), which exhibits some common features that are distinct from earlier waves. A few countries in this wave made political transitions before 1960 and thus have no GDP data in the transition year from WDI; dropping them as missing observations reduces the main sample to 153 countries.[13] The so-called "old" democratic countries, which became democratic before World War II and had never changed political regime in the sample years of 1960 to 2010, are categorized as Strong Democracy directly by definition. Excluding

if the original data set is used.

[13]Results are similar if filling the missing data with GDP values in 1960 or from other data sources.

them does not affect the main results, since the within estimators used in this paper are mainly determined by countries that changed political regime during the sample period.

Significant differences between the two types of democracies are indeed evident in Table 1, which presents descriptive statistics of the main economic, demographic, and institutional variables separately for Strong and Weak Democracies as well as Autocracies.[14] Strong Democracies are on average more educated, have more market reforms, are more open to trade, and have higher income, higher investment, lower income inequality, and lower population growth than others. Not surprisingly, the institutions in Strong Democracies are of better quality as indicated by more economic freedom, better legal infrastructure, more transparency, higher political stability, less corruption, less social unrest and violence.

The differences between Weak Democracy and Autocracy, however, are not so clear-cut. It is interesting to note that Weak Democracies are poorer and have higher Gini coefficients, lower secondary enrollments, and higher child mortality rates than Autocracies, even though they have more economic freedom and market reforms. A related observation is that Weak Democracies also have worse legal infrastructure, higher corruption, and more political instability than Autocracies.

3 Estimation Methods and Baseline Results

The effects of Strong and Weak Democracies on GDP growth are estimated using the following dynamic growth model with fixed country and time effects:

$$g_{it} = \beta_S DStrong_{it} + \beta_W DWeak_{it} + \sum_{j=1}^{3} \alpha_j g_{it-j} + \varphi y_{it-4} + \lambda_i + \delta_t + \varepsilon_{it}. \tag{1}$$

The dependent variable g_{it} is the growth rate of per capita GDP in country i at time t defined by $g_{it} = 100 * (y_{it} - y_{it-1})$, where y is natural logarithmic form of GDP per capita. $DStrong_{it}$ and $DWeak_{it}$ are dummy variables defined earlier indicating Strong and Weak Democracies, respectively. To capture non-linear conditional marginal effects, discrete categories are better than multiplicative interaction terms such as $Democracy_{i,t} * Development_{i,t_0}$, which imposes linear interaction effects that change at a constant rate with the moderator (Hainmueller et al., 2019). Our arguments suggest that the effects of

[14] The threshold used is the 25^{th} percentile ($p25$) of GDP per capita among all democratization cases in the data during their transition times. The full list of detailed definitions of all variables and data source are in Appendix G.

democracy on institutions and growth vary with the initial development in qualitatively distinct ways, and thus should be categorized into different bins or groups[15]; such non-linear effects are evident in Figure 2. This specification shares similarity with Persson (2005) where multiple dummy variables of democratic forms are used.

The dynamic process of growth is captured by three lags of GDP growth rate as well as a four-period lag of GDP, y_{it-4}.[16] The impact of any time-invariant country-specific characteristics such as geographic location, history, or culture is absorbed by country dummies λ_i, while any global trends of GDP growth are captured by year dummies δ_t. The residual term ε_{it} includes all other time-varying unobservable shocks to GDP growth, which are assumed to be orthogonal to democratic types conditional on the full list of control variables. To deal with potential serial correlations, clustered standard errors at the country level are used in all regressions (Papaioannou and Siourounis, 2008a; Madsen et al., 2015). As shown by Acemoglu et al. (2019), the within estimators in this dynamic model have consistent results comparable with a range of alternative estimation methods.[17]

3.1 Benchmark Results: Initial GDP as Development Indicator

Estimation results based on Equation (1) are shown in Table 2, where per capita GDP in the political transition year is used as the economic development indicator to categorize

[15]Several theoretical models (Acemoglu and Robinson, 2006; Robinson, 2008; Besley and Persson, 2019) propose that countries with similar initial levels around some threshold may have radically different trajectories. Earlier empirical studies using interaction terms (Aghion et al., 2007) indeed fail to find any robust effects of democracy.

[16]Sufficiently many lags of growth rates need to be included to eliminate the residual serial correlation in the error term, especially to remove the influence of the dip in growth rate that precedes democratization (Papaioannou and Siourounis, 2008a; Acemoglu et al., 2019). Results are similar when more than three lags of growth rates are used.

[17]Both GDP per capita (Murtin and Wacziarg 2014; Madsen et al. 2015; Acemoglu et al. 2019) and its growth rate (Barro, 1996; Tavares and Wacziarg, 2001; Baum and Lake, 2003; Glaeser et al., 2004; Persson and Tabellini, 2006; Knutsen, 2013) lead to the same estimates of democracy coefficients in this model. Their equivalence is shown below. Equation (1) can be rewritten as

$$y_{it} - y_{it-1} = \beta_S DStrong_{it} + \beta_W DWeak_{it} + \sum_{j=1}^{3} \alpha_j (y_{it-j} - y_{it-j-1}) + \varphi y_{it-4} + \lambda_i + \delta_t + \varepsilon_{it},$$

which after re-arranging terms becomes

$$y_{it} = \beta_S DStrong_{it} + \beta_W DWeak_{it} + \sum_{j=1}^{4} \gamma_j y_{it-j} + \lambda_i + \delta_t + \varepsilon_{it},$$

where γ_j can be derived from α_j and φ.

Strong versus Weak Democracy.[18] In Column (3) where the threshold is the 25^{th} percentile ($p25$),[19] the estimated coefficient of Strong Democracy is 1.394 and statistically significant at the 1% level, while that of Weak Democracy, 0.048, is much smaller and insignificant. Thus, the long-run effect of a permanent transition to Strong Democracy would increase GDP by 35.56%, while it is only 1.22% to Weak Democracy.[20] This large discrepancy in growth effects among democratic countries suggests that a more careful categorization is warranted. Without appropriate developmental readiness, switching to democracy does not facilitate economic growth.

The estimation results are quite similar when the threshold is lower such as 20% or 15% in the first two columns. The differences between the two groups become smaller and less significant when the cutoffs become higher, and the coefficients are approaching the average level when using a single democracy dummy as in Acemoglu et al. (2019), which is replicated in the last column. Since the largest difference between Strong and Weak Democracy is achieved at 25% in Column (3), it will be used as the benchmark threshold for robustness checks. These results clearly show that if the initial GDP is too low, democratization *per se* is not good for growth.[21]

3.2 Placebo Tests: Transition Period Matters

To verify that the political transition year is indeed crucial, we conduct a placebo test using GDP in a random year (namely 1960, 1965, ..., 1995) to categorize democracies into two groups, Fake Strong and Fake Weak, each of which is further divided into two subgroups by the true threshold in the real transition year. Among these four subgroups, two of them (Fake Weak but True Strong group and Fake Strong but True Weak group) have internal conflicts because they are labeled differently by the placebo and the true criteria. This allows us to run the horse race between them. Results in Table 3 show that the fake criterion loses out completely because the coefficients are determined by the true category: The coefficient of Fake Weak but True Strong Democracy is positive and significant, while that of Fake Strong but True Weak Democracy remains small and insignificant. This placebo test suggests that development in the critical juncture of political transition period captures

[18] Results are quite similar when detrended GDP is used instead.

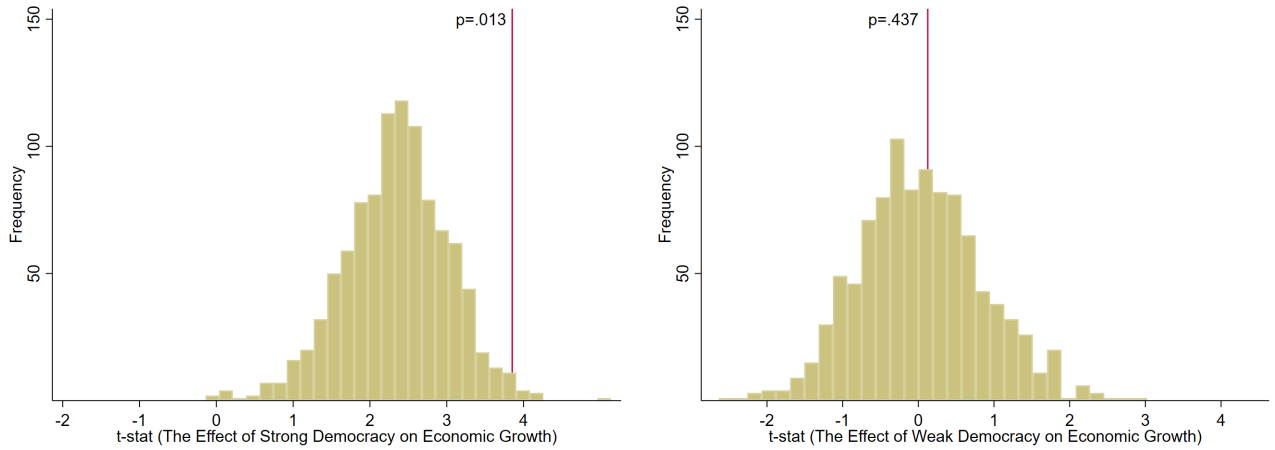
[19] It is about 900 US dollars measured in year 2010.

[20] The formula derivation is in Appendix D.

[21] The dynamic structure of economic growth with a trend of conditional convergence is also demonstrated in the results, where the coefficients of three lagged growth rates are significantly positive but well below 1, while those of y_{it-4} (4-year lagged GDP) are statistically negative.

something more long lasting than other years, which is the quality of newly established institutions.

Figure 4. Estimates from Randomly Assigned Transition Years versus Actual Data



In the data, the switch from autocracy to democracy occurs in a single year, while in reality the whole democratization process may take several years. To check whether this affects our results, we design another placebo test where any of the 10 years around the true democratization time is randomly picked as the fake transition year to categorize Strong and Weak Democracies. This exercise is repeated 1000 times to get 1000 estimated placebo effects on growth, and their corresponding t-statistics are plotted on the horizontal axis in Figure 4. The t-statistic of the true growth effect is marked by the red vertical line; the number beside it, analogous to a p-value, is the share of the placebo t-statistics that are larger than the true value. For example, in the left panel, $p = 0.013$ means that 98.7% of the placebo Strong Democracies yield lower growth effects than the true level, indicating that the formal transition year recorded in the data is indeed a critical juncture that plays a distinct role on future growth.[22] In contrast, most estimates of fake Weak Democracy are spread around the true effect in a random manner and remain insignificant, suggesting that the actual democratization period doesn't stand out from nearby years for

[22]Note that quite some placebo effects of Strong Democracy are significant too, suggesting substantial stability of development conditions around transitional years. When the range of randomization is extended to 30 years, however, the placebo effects become much less significant. So regardless of whether the democratization process is longer than one year or not, it has little impact on our results. Further results on this point are in Appendix C.8.

Weak Democracies.

3.3 Controlling Democratic Stock and Formats

Another reasonable conjecture is, even though development in the transitional time is crucial, the institutional quality may also improve over time after democratization through learning-by-doing. If so, is it possible for the birthmark impact of poor initial development in Weak Democracy to be mitigated over time? To answer this question, we use the Democratic Stock variable from Gerring et al. (2005) to indicate a country's democratic experience. It is measured by the sum of a country's Polity2 score from 1900 to the present year with a 1% annual depreciation rate, and updated to 2010 to match our sample period. In Column (1) of Table 4, the coefficients of Strong and Weak Democracies are respectively 1.204 and 0.07, very similar to the benchmark results, while that of Democratic Stock is 0.005 and marginally significant. So the accumulated democratic stock is indeed good for growth, but its effect is far less substantial than the initial development. For example, the growth effect is only 0.287 after a 10 year accumulation of democratic stock in a Weak Democracy.[23]

An alternative direction explored in the literature is whether the specific formats of democratic institutions, such as presidential versus parliamentary or majoritarian versus proportional regimes, matter more than the difference between democracy and autocracy in general (Persson, 2005). This issue is also examined in Table 4, where various combinations of democratic formats are controlled. The overall pattern for Strong and Weak Democracy remains similar to the benchmark results, while none of these specific institutional formats show any consistently significant effects. These results demonstrate that once the initial development is controlled, specific forms of democracy don't have much effect on growth.

4 Robustness Checks

4.1 Alternative Development Indicators

In Table 5, alternative indicators of economic development during the political transition period are used to categorize the two types of democracies. The overall results are

[23]The calculation is as follows. Assuming that the polity score increases from 0 to 6 (the median level in Weak Democracy) after democratization, the accumulation of democratic stock is 57.4 after 10 years. The corresponding growth effect is $57.4 * 0.005 = 0.287$.

consistent with the baseline estimation using GDP per capita, which reflects the economy's overall situation and has wider availability in data.[24]

The first panel uses Secondary Enrollment Ratio as the indicator; significantly different effects on growth between Strong and Weak Democracies exist for almost all cutoff levels from the 10^{th} to 50^{th} percentile, where the coefficients of Strong Democracy are always positive and significant (from 1.044 in Column (1) to 1.638 in Column (9)), while those of Weak Democracy are not statistically different from zero across the board, and become negative for cutoffs below the 20^{th} percentile. Similar results arise in the second panel with Tertiary Enrollment Ratio. These empirical estimates are in line with theoretical models emphasizing the crucial importance of human capital in the process of industrialization and democratization (Glaeser et al., 2004; Galor, 2007; Glaeser et al., 2007; Huang, 2012a; Murtin and Wacziarg, 2014; Madsen and Murtin, 2017), suggesting that democracies without adequate mass education are not likely to improve economic growth.

Another commonly used indicator for economic development is the income share of natural resources in the economy, where countries with heavy reliance on raw materials tend to gravitate towards rent-seeking institutions after democratization.[25] This is indeed supported by results in the third panel. A striking difference between Strong and Weak Democracies is observed in Column (2) where their coefficients are respectively 1.188 and -1.319, both statistically significant, suggesting that democracy substantially hurts economic growth in countries relying overwhelmingly on natural resources. This result is replicated in Column (1) of the next panel using the Industry Share of GDP.[26] A similar pattern is also observed in the last panel, where democracy is not good for growth in countries with high income inequality.[27]

[24] Only GDP is available during the whole time period and covers most countries. For example, the observations of GDP in the whole sample is 7114, while those of other developmental indicators such as secondary enrollment rate or Gini coefficient are less than 5000.

[25] This is widely recognized in the literature; see, for example, Sachs and Warner (1999, 2001); Arezki and Van der Ploeg (2011); Frankel (2012); and Hodler (2006); Bhattacharyya and Hodler (2010); Tsui (2011); Ross (2015); Farhadi et al. (2015).

[26] Results are similar if using Economic Complexity Index (ECI) instead, a measure of the relative knowledge intensity of an economy (Hausmann et al., 2014).

[27] High inequality is often associated with low institutional quality and political instability, leading to inferior economic performance. See, for example, De Tocqueville (2003); Huntington (2006); Gradstein (2007, 2008); Sunde et al. (2008); Cervellati et al. (2014); Jung and Sunde (2014); Krieger and Meierrieks (2016); Kotschy and Sunde (2017).

4.2 Alternative Democracy Indicators

One reason for the lack of consensus in literature regarding the effects of democracy on growth is because the empirical results are often sensitive to how democracy is measured (Gründler and Krieger, 2021, 2022). This is understandable given that democracy is a complex concept itself, implemented in reality by various institutions that are difficult to quantify and compare across countries. Table 6 shows the robustness of our results to alternative democracy indicators.[28]

The first panel in Table 6 shows results using Polity IV data, where we define $Democracy = 1$ if $polity2 > 0$ and 0 otherwise following Persson and Tabellini (2007) and Acemoglu et al. (2019).[29] Consistent with the literature, a small and insignificant effect of a single democracy dummy, 0.249, is reproduced in Column (7). In sharp contrast, for a range of cutoffs (from the 20^{th} to 40^{th} percentile), the coefficients of Strong Democracy are much larger and statistically significant, while those of Weak Democracy negative, and their differences are significant. At the 30^{th} percentile cutoff, for example, the estimated coefficient is 0.74 for Strong Democracy and -0.626 for Weak Democracy, and their gap 1.366 is similar in magnitude and significance to earlier estimates.

The overall patterns are similar in the following two panels using CGV (Cheibub et al., 2010) and BMR data (Boix et al., 2013). Both have dichotomous democracy variables. The coefficients of Strong Democracy are much higher and more significant than those of a single democracy dummy, while those of Weak Democracy are insignificant, much smaller, and sometimes negative. At the 25^{th} percentile cutoff, for example, the estimated coefficients of Strong Democracy are 1.278 and 1.217 for CGV and BMR respectively, while those of Weak Democracy are -0.184 and 0.057, which again yield similar magnitude and significant levels in group differences.

The PS data set (Papaioannou and Siourounis, 2008b) in the last panel considers only permanent transitions to democracy, which excludes many Weak Democracies because they on average have short lifespans and quick reversals to autocracies; this may be a reason for why the coefficient of the single democracy dummy is much larger and more significant compared with other data sets. In other words, the democracy variable in PS data already

[28] Estimations are also similar using other democracy indicators, such as Freedom House data (which does not contain political transition cases before 1972), Machine Learning Democracy Index (Gründler and Krieger, 2021) and Polyarchy index in V-dem project with longer time periods. They are in Appendix C.5.

[29] Results are similar when a higher cutoff $polity2 > 5$ is used instead, which are in Appendix C.7. The sample size is smaller partially because the polity data set does not include some small countries.

weeds out the most fragile Weak Democracies and thus is closer in spirit to our definition of Strong Democracy.[30] But even in this case, the coefficients of Weak Democracy are insignificant for cutoffs below the 35^{th} percentile, while those of Strong Democracy are always significant, suggesting that even for permanent transitions to democracy, development conditions matter for growth.

4.3 Further Robustness Checks

Our baseline results are also robust to many other tests reported in Appendix C. For example, to deal with concerns that the democracy-growth nexus may depend on the region and period studied (Colagrossi et al., 2020), we control region-specific time trends or exclude each region and a 10-year time period in turn. In addition, interactions between a dummy of Soviet-related countries and year dummies of 1989, 1990, 1991, and post-1992 when these countries experienced political transitions are included. To check whether results are affected by extreme cases, outliers in growth rates are dropped and countries with more than one democratization are removed. To test the influence of Nickell bias, countries with less than 20 observations are excluded. Results remain similar in all of these robustness checks.

4.4 Endogeneity Issues

The dynamic panel data model assumes that after controlling country and time fixed effects as well as past growth rates and GDP level, a country's political regime choice is exogenous to other unobserved variables that may affect growth. Although this is a reasonable assumption, it is always possible to think about some elements that make democratic transition endogenous to growth.[31] Since political and economic forces are typically entangled and clustered together, and the democratization process is often conducted through a broad

[30] Note that their sample size 124 is much lower than ours. The PS data used here is updated to 2010 as in Pozuelo et al. (2016), where political situations have changed in a few countries so that some permanent transitions labeled earlier have to be corrected. Our definition of Strong and Weak Democracies, in contrast, is based on transition time conditions and hence has no such problems.

[31] For example, the presence of certain extremely visionary and able leaders may help increase GDP growth and push democratization at the same time; in this case, democracy does not affect growth per se but the leadership quality does. That is, if in the past several decades, capable individuals in autocratic countries are more likely to receive advanced education in the western democratic countries and thus adopt their political regimes, then in countries where these individuals become influential leaders, growth and democracy become hand-in-hand results.

and far-reaching transformation of the whole society, it is not easy to find very clean instrumental variables to estimate a pure causal effect of democracy. The best we can do is to utilize some reasonably exogenous variations in democratic choices.

One possible exogenous factor is the genetic distance across countries, measured by the number of generations that separate them from a common ancestor population (Spolaore and Wacziarg, 2016). Populations with shorter genetic distances tend to have more similar cultural traits transmitted across generations, which are correlated with people's opinions on politics and society more strongly than those on work (Spolaore and Wacziarg, 2018).[32] For instance, Australia and New Zealand have more similar political, cultural and genetic connections with Western Europe than they do with their geographical neighbors such as Papua New Guinea.

This suggests that countries closely linked with each other through common ancestors are more likely to choose similar political regimes, independent of their economic performance. For example, the transition to democracy in Spain and Portugal occurred during the 1970s, which is decades after other European countries but similar to their counterparts in Latin America (Madsen et al., 2015). The recent democratic movement in the Arab Spring also clusters in countries with genetic proximity. So we use the weighted average of four lagged democratic indicators among foreign countries as the instrumental variables of a country's democratic status, where the weight is the inverse genetic distance as in Spolaore and Wacziarg (2016). In particular, we instrument in the first stage regressions $Democracy$ and the interaction term $Democracy * DWeak$, which indicates the gap in growth effects of Strong and Weak Democracies.[33]

The second stage results of 2SLS estimators are reported in Table 7. In Column (1), the estimated effect of Strong Democracy is 6.189, while that of Weak Democracy is 0.860. Their magnitudes are larger than the baseline results, which is quite a typical pattern in the relevant literature (Madsen et al., 2015; Acemoglu et al., 2019). This is consistent with the hypothesis that richer countries are more likely to become democratic but their growth rates are lower than others. The Hansen over-identification test suggests no misspecification, while the large F-statistics in the first stage show no concern of weak instruments. Although the main coefficients are estimated less precisely, the precision is much better than that of the single democracy variable in Column (2).

[32] In addition, there is more trust among people with common ancestors, and thus more willingness to share information and learn from each other (Guiso et al., 2009).

[33] The IV construction process and the first stage regression results are in Appendix E.

Another possible source of exogenous variation in democracy is the influence of regional waves of democratization and reversal to autocracy (Gründler and Krieger, 2016; Acemoglu et al., 2019; Dorsch and Maarek, 2019). We construct the average level of democratic indicators in foreign countries within the same region, and use their four lagged values as IVs for a specific country's democracy level. The coefficient of Strong Democracy in Column (3) is 4.472, significant at 5% level; that of Weak Democracy is 0.699 and insignificant, while their gap is significant. In comparison, the IV result for the single democracy dummy is again insignificant in Column (4).

In the last two columns, only countries that share similar political institutions at the beginning of the sample are used to construct the regional average values. The precision of regression results indeed improves a lot, where even the coefficient of the single democracy dummy becomes statistically significant as in Acemoglu et al. (2019). The coefficient of Strong Democracy is 2.387, again significant, while that of Weak Democracy is 0.558 and insignificant.

The overall pattern in these IV results is similar to the benchmark results, where the estimated effects of Strong Democracy are positive and significant, while those of Weak Democracy remain small and insignificant. Hence, the dynamic panel model seems not much affected by the endogeneity issue and thus provides a reliable framework to estimate the effects of democratic types on growth.[34]

5 Potential Mechanisms

Through what channels does development in the political transition year exert long-lasting effects on economic growth? Since development conditions matter most in the critical year of transition when the suite of democratic institutions were created, the quality of these new institutions seems to be one of the main channels. This conjecture is explored in the following dynamic panel model on whether the quality of key institutions, denoted by m_{it}, is affected differently by Strong and Weak Democracies.

$$m_{it} = \beta_S DStrong_{it} + \beta_W DWeak_{it} + \sum_{j=1}^{4} \alpha_j m_{it-j} + \sum_{j=1}^{4} \varphi_j y_{it-j} + \lambda_i + \delta_t + \varepsilon_{it}. \quad (2)$$

[34] Having said that, these results are better interpreted cautiously in terms of causality. We thank an anonymous referee for related suggestions.

To capture the dynamic process of each institutional variable, its four lagged levels and past GDP are controlled as well as country and time dummies. The model is estimated by the within estimator as in Acemoglu et al. (2019).

5.1 Institutional Quality Higher in Strong Democracy

The effects of Strong versus Weak Democracy on various institutional quality indicators, including economic freedom, legal institutions, political corruption, transparency, and instability are shown in Table 8, where all indicators are normalized between 0 and 1.

The Economic Freedom Index is a composite index encompassing freedom to trade, government size, regulatory efficiency, property rights, and access to sound money (Krieger and Meierrieks, 2016; Kotschy and Sunde, 2017). As shown in Column (1), it is indeed significantly better in Strong Democracy, while there is no difference between Weak Democracy and Autocracy. This pattern is replicated in the next two columns for political corruption and transparency (Hollyer et al., 2014),[35] and again in the last two columns measuring society-wide instability, where Social Unrest (Acemoglu et al., 2019) is a dummy variable where 1 means there is social unrest in that year and 0 otherwise, while the Violence Index measures the number of assassinations, revolutions, and wars.

Most indicators of the rule of law cover shorter periods or a smaller number of countries, which are not suitable for the above dynamic panel model.[36] The two legal indicators developed by the Cline Center are used instead. In Column (4), the legal infrastructure is indeed the highest in Strong Democracy, while its level in Weak Democracy is significantly lower than Autocracy. No differences are found for legal order in Column (5).

An important function of democracy is to solve conflicts among different groups in a peaceful manner. Too much instability would suggest a less effective political regime.[37] Several variables are used to measure instability following Aisen and Veiga (2013). The Regime Instability Index reflects frequencies of constitutional changes, coups, cabinet changes, executive changes, and regime crisis; as shown in Column (6), it is much lower in Strong Democracy than others. The Within-Regime Instability is measured by the number of legislative elections, fragmentation index, and government crises; as shown in Column (7),

[35] The same pattern holds true for each of the four sub-indexes covering corruption in judicial, public sector, legislature, and executive dimensions, where the difference is highest in executive corruption. Similar results are also obtained using other transparency indicators.

[36] In cross-sectional results shown in Appendix F, they are much higher in Strong Democracy.

[37] The effects of violence or turmoils during the political transition time on future growth are studied by Huntington (1993), Cervellati and Sunde (2014), and Pozuelo et al. (2016) among others.

it is again significantly lower in Strong Democracy than Weak Democracy, even though both are higher than autocracy.

The overall pattern emerging from these results is very clear: The quality of economic, political, legal, and conflict resolution institutions is much higher in Strong Democracy than Weak Democracy.[38] This confirms our hypothesis that the economic developmental condition during the transition period exerts significant impacts on the institutional quality in many years after democratization. In particular, weak development at the political transition time indicates that the masses have not mastered sufficient *de facto* power to effectively guard and exercise their *de jure* power promised by the new democracy, and as a consequence, the newly established institutions are not likely to facilitate their interests through robust economic growth.

5.2 Growth Enhancing Institutions

Which institutions matter more for growth? Can these institutional quality variables fully capture differences between Strong and Weak Democracies? To answer these questions, the baseline estimation model is adjusted to include current institutional quality m_{it}, where

$$g_{it} = \beta_S DStrong_{it} + \beta_W DWeak_{it} + \gamma m_{it} + \sum_{j=1}^{3} \alpha_j g_{it-j} + \varphi y_{it-4} + \lambda_i + \delta_t + \varepsilon_{it}.$$

The Economic Freedom indicator in Column (1) of Table 9 absorbs about half the size of the growth effect in Strong Democracy (from 1.394 in Table 2 to 0.626).[39] Though the Political Corruption index is insignificant, the estimated coefficient of Transparency index, an alternative variable on administrative quality, is large and significant; a similar pattern applies to the two legal indicators. Social instability variables exhibit sizable negative effects on growth. When all institutional variables are controlled simultaneously in the last column, the sample size is reduced by almost half (with only 76 countries left), and hence the results should be interpreted with caution, though they do suggest that economic freedom and social instability are possibly key institutional channels affecting growth. These results are consistent with the theories of elite persistence in Acemoglu and Robinson (2008) and political instability in Cervellati et al. (2008).

[38] Similar results are found using the split-sample regression method as in Dorsch and Maarek (2019), which are in Appendix F.

[39] The positive effect on growth is consistent with the relevant literature (De Haan and Sturm, 2000; Sturm and De Haan, 2001; De Haan and Sturm, 2003; Sturm and De Haan, 2005; De Haan et al., 2006).

Across these results, the coefficients of Strong Democracy remain large and significantly different from those of Weak Democracy, suggesting that there are other channels that matter for growth.[40] Further exploration (in Appendix F) shows that significant differences exist in demographic trends too, where in comparison to Autocracy, population growth is much lower in Strong Democracy but higher in Weak Democracies. Furthermore, hyper inflation rates are significantly more likely to occur in Weak Democracy, possibly due to heavy populism pressure for redistribution despite the lack of means to raise tax revenues (Persson and Tabellini, 1994; De Tocqueville, 2003; Huntington, 2006).

6 Discussions and Policy Implications

6.1 A Composite Developmental Indicator

In our empirical results so far, a single variable is used as the developmental indicator to categorize Weak Democracy; this is mainly to guarantee simplicity, transparency, and objectivity. The limitation is that each variable alone cannot capture the overall development that enables a country to establish growth-facilitating institutions after democratization. For example, even when a country is relatively rich, if the income is mainly from natural resources, or if its people are still poorly educated, or if the inequality is very high, one may suspect that it is not yet ready to run a solid democracy that needs robust and enlightened public participation. Thus, a more practical criterion should consider all the useful information together.

There are many possible ways to combine various developmental indicators. As a first attempt, we use the five developmental variables in Table 5 to categorize a country into Weak Democracy if any of them falls below a certain threshold. Baseline regression results are shown in Panel A of Table 10 using the $15th$ percentile cutoff. Honduras, for example, is categorized into Weak Democracy by its high inequality and heavy reliance on natural resources (Auty, 2001), despite adequate income and schooling levels at the transition period. South Africa is another example. Both countries experienced worse economic growth after democratization. The full suite of our main results on growth effects and mechanisms are replicated in Table 10, where differences between Strong and Weak Democracy become even more striking in most cases.

Similar results (in Appendix C.7) are also obtained from alternative composite indi-

[40] Results allowing for heterogeneous effects of institutions are in Appendix F.

cators, such as using variable-specific thresholds, the principle component analysis (PCA) method, standardizing relevant developmental variables, and using additive aggregation to construct a single variable. The estimated share of Weak Democracy in the third-wave democratization sample varies across these indices with a range of 38% - 45%, suggesting that democratization fails to improve growth in a sizable group of countries.

6.2 Weak Democracy in Comparison to Partial Democracy

Our categorization of Strong and Weak Democracy is based on a country's capability to improve economic growth after democratization. A related concept in the literature is Partial Democracy, defined mainly from the political perspective as any country with a Polity score between 1 and 7 (Epstein et al., 2006; Papaioannou and Siourounis, 2008b).[41] It is not surprising that a Weak Democracy is likely to be a Partial Democracy too. Indeed, based on the above composite indicator, the share of partial democracy is 87% in the group of Weak Democracy and 57% in Strong Democracy; the median Polity score of Weak Democracies is about 6, while that of Strong Democracies is 8.

The results in Table 11 suggest that the distinction between Strong and Weak Democracy is more robust in predicting economic growth than that of Full and Partial Democracy. For example, the estimated coefficients of Strong Democracy are always positive and significant even when dummy variables of Full and Partial Democracy are controlled, and countries categorized as Strong but Partial Democracy exhibit similar coefficients as those with Strong and Full Democracy. In contrast, Weak Democracy is not good for growth even when it is Full Democracy. Therefore, the distinction of Strong/Weak Democracy is a better predictor of future growth than Full/Partial Democracy.

Given that most democratization cases after 1960 are partial democracies (Epstein et al., 2006) with distinct economic and political features from traditional democratic societies, our categorization of Strong and Weak Democracy is a useful step in exploring how to improve their economic performance. For example, results in Section 5 suggest that increasing economic freedom and mitigating social unrest are likely to be effective in promoting growth in Weak Democracy.

[41] They categorize regimes as Autocracies (Polity value -10 to 0), Partial Democracies (1 to 7), or (Full) Democracies (8 to 10).

6.3 Development Matters

The main message of this paper is that adequate development during the transition time is important for democratization to facilitate future economic growth. Acemoglu et al. (2019) found that democracy is more conducive to growth in countries with more education, but their estimated effect of economic development is quantitatively small. The key difference is the time at which development is measured: they use a range of fixed years such as 1960 or 1970 for all countries, while we use the political transition year for each country.

In order to facilitate a direct comparison, we use the model setup of Acemoglu et al. (2019) and construct the interaction term of strong development and democracy:

$$Interaction_{it} = Democracy_{it} * DStrong_{it},$$

the coefficient of which is equivalent to the difference between Strong and Weak Democracy in our benchmark model. In this new specification, the coefficient of *Democracy* is equivalent to that of Weak Democracy in our set up, and the sum of coefficients of *Democracy* and *Interaction* is equal to that of Strong Democracy.

The results are presented in Table 12, where several variables are used to indicate development (with 25th percentile as the cutoff criterion for *DStrong*), including GDP, secondary and tertiary enrollment rates as well as the composite indicator. The estimated coefficients of Democracy are small and insignificant for all of these development indicators, while those of the interaction term with strong development are large and significant. The only reason why these results differ from Acemoglu et al. (2019) is that the economic development indicators are measured at the transition time, while theirs in an arbitrarily fixed year.[42]

Development indeed matters for democracy, especially at the critical juncture of the political transition time when different groups in society negotiate with each other intensively to establish institutions. When the development level is sufficiently high for broadly inclusive institutions to be established, growth is more likely to be faster than before. Otherwise, elite dominance with exclusive institutions oriented towards rent-seeking may still prevail in Weak Democracies.

[42] Without properly considering GDP growth dynamics may also lead to biased estimates of democracy on economic performance. For example, the growth effects in Benin and Madagascar (Rodrik and Wacziarg, 2005) become insignificant after controlling growth dynamics and past income levels.

7 Concluding Remarks

Is democracy better for economic prosperity than autocracy? This paper suggests that the answer depends on the economic development during the transition period of democratization when the foundation of democratic institutions is laid. Countries that already have an adequate economic structure for democracy (labeled Strong Democracy in the paper) grow faster after democratization compared with autocracies, while the others that are not so ready (labeled Weak Democracy) do not. Based on a composite developmental indicator containing information on income, education, natural resource reliance, and inequality, about 40% of democratization cases after 1960 are categorized as a Weak Democracy.

The analysis of potential mechanisms reveals that Weak Democracies are less transparent in their government operations, weaker in legal infrastructure, and higher in political corruption and social instabilities when compared with Strong Democracy. This lower institutional quality in Weak Democracy is shaped by poor economic development during the political transition period, making it a critical juncture to affect future growth well beyond the typically temporary effect of economic development in routine times.

These results are consistent with both the modernization theory and the new institutional theory in that economic development affects the institutional quality, which in turns exerts substantial effects on future economic growth. During the crucial transitional period where new institutions are established, the overall economic structure imprints a long-lasting birthmark on the institutional quality.

Some fruitful topics for future research include finding more accurate and practical criteria to help a country gauge the readiness for Strong Democracy, examination of the links between development and specific formats of democratization, and exploring ways to help a Weak Democracy improve its institutions and growth.

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Table 1. Summary Statistics

	Strong Democracy			Weak Democracy			Autocracy			Strong − Weak		
Variable	Obs.	Mean	(Std.)	Obs.	Mean	(Std.)	Obs.	Mean	(Std.)	Mean	(Std.)	p-value
Economic & Demographic Indicators												
GDP per capita Growth (%)	2,411	2.140	(4.459)	338	2.169	(4.762)	3,058	1.512	(8.054)	-0.029	(0.261)	0.456
GDP per Capita (2010 US$)	2,439	16942	(17712)	338	893	(1154)	3152	4610	(10465)	16049	(964)	0.000
Tax Revenue (%, GDP)	1,691	0.216	(0.093)	239	0.158	(0.087)	2,722	0.162	(0.096)	0.058	(0.006)	0.000
Government Spending (%, GDP)	2,322	16.536	(5.741)	325	15.860	(7.361)	2,906	15.707	(7.861)	0.675	(0.353)	0.028
Investment (%, GDP)	2,222	24.102	(7.136)	332	21.435	(11.162)	2,853	22.690	(13.830)	2.667	(0.458)	0.000
Trade (%, GDP)	2,401	76.968	(39.738)	325	70.983	(45.309)	3,001	75.706	(57.246)	5.986	(2.390)	0.006
TFP	1,854	0.931	(0.162)	160	0.974	(0.082)	1,697	1.076	(0.419)	-0.043	(0.013)	0.001
Gini	1,535	35.732	(10.175)	239	41.529	(6.963)	1,140	37.334	(9.426)	-5.797	(0.682)	0.000
Gross Enrollment Ratio, primary	2,002	102.989	(11.770)	262	90.362	(28.424)	2,612	88.774	(28.046)	12.627	(0.965)	0.000
Gross Enrollment Ratio, secondary	1,764	81.494	(26.862)	211	31.209	(19.623)	2,153	44.944	(31.585)	50.285	(1.908)	0.000
Child Mortality Rate	2,455	33.630	(37.129)	338	132.063	(62.650)	3,696	120.616	(87.680)	-98.433	(2.382)	0.000
Fertility Rate	2,402	2.743	(1.331)	338	5.394	(1.297)	4,256	5.069	(1.903)	-2.650	(0.077)	0.000
Population Growth	2,484	1.095	(1.022)	338	2.590	(0.820)	4,278	2.338	(1.716)	-1.495	(0.058)	0.000
Market Reforms Index	1,860	0.558	(0.225)	223	0.492	(0.238)	2,953	0.213	(0.229)	0.066	(0.016)	0.000
Institutional Quality Indicators												
Economic Freedom	1,785	0.675	(0.151)	239	0.537	(0.105)	1,307	0.503	(0.176)	0.138	(0.011)	0.000
Legal Infrastructure	2,019	0.340	(0.220)	322	0.113	(0.062)	3,367	0.136	(0.099)	0.228	(0.012)	0.000
Political Corruption	2,144	0.343	(0.302)	337	0.673	(0.213)	3,262	0.633	(0.236)	-0.330	(0.017)	0.000
Transparency (HRV Index)	1,346	0.556	(0.133)	291	0.380	(0.058)	1,633	0.378	(0.086)	0.175	(0.008)	0.000
Regime Instability Index	1,932	0.041	(0.068)	212	0.077	(0.123)	3,268	0.065	(0.123)	-0.036	(0.005)	0.000
Within Regime Instability Index	1,900	0.201	(0.108)	206	0.166	(0.107)	3,154	0.071	(0.098)	0.035	(0.008)	0.000
Violence Index	2,069	0.016	(0.055)	243	0.017	(0.036)	3,331	0.020	(0.050)	-0.001	(0.004)	0.413
Social Unrest	2,345	0.198	(0.398)	321	0.277	(0.448)	3,214	0.279	(0.449)	-0.079	(0.024)	0.001

Note: All institution quality indicators are normalized between 0 and 1. See the text and Appendix for the full description of the variables and their corresponding sources. T-tests are used to compare whether the differences between Strong and Weak Democracy groups are significantly different with zero.

Table 2. Effects of Democracy on Growth: Baseline Results

	GDP in Political Transition Period as Cutoffs						No Grouping
Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Growth Rate	p15	p20	p25	p30	p35	p40	
Strong Democracy	1.111***	1.279***	1.394***	1.258***	1.233***	0.906**	
	(0.339)	(0.346)	(0.362)	(0.371)	(0.398)	(0.356)	
Weak Democracy	0.219	0.079	0.048	0.496	0.615	0.930**	
	(0.484)	(0.420)	(0.382)	(0.412)	(0.401)	(0.427)	
Democracy							0.919***
							(0.303)
GDP Growth First Lag	0.165**	0.165**	0.165**	0.165**	0.165**	0.165**	0.165**
	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)
GDP Growth Second Lag	0.045**	0.045**	0.045**	0.045**	0.045**	0.045**	0.045**
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
GDP Growth Third Lag	0.042**	0.042**	0.042**	0.041**	0.041**	0.041**	0.041**
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
GDP Fourth Lag	-3.904***	-3.903***	-3.920***	-3.913***	-3.913***	-3.862***	-3.864***
	(0.783)	(0.777)	(0.779)	(0.786)	(0.793)	(0.793)	(0.778)
Coef. Test (p-value):							
$\beta_S = \beta_W$	0.0955	0.0128	0.0039	0.1209	0.2303	0.9625	
Countries	153	153	153	153	153	153	153
Observations	5419	5419	5419	5419	5419	5419	5419
Adjusted R^2	0.151	0.151	0.152	0.151	0.151	0.151	0.151

Note: A full set of country and year fixed effects are controlled in all specifications. Robust standard errors for heteroscedasticity and serial correlation at the country level are in the parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3. Effects of Democracy on Growth: A Placebo Test

Dependent Variable: Growth Rate	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Placebo Strategy: GDP in a Fixed Year to Group Democracy							
	1960	1965	1970	1975	1980	1985	1990	1995
Fake Weak but True Strong Democracy (β_S^*)	2.826***	2.217***	2.268***	2.292***	4.803***	1.405***	1.136***	-
	(0.895)	(0.602)	(0.619)	(0.607)	(0.662)	(0.308)	(0.297)	-
Fake Strong but True Weak Democracy (β_W^*)	0.093	0.063	0.036	0.614	0.366	0.092	0.202	-0.616**
	(0.776)	(0.737)	(0.752)	(0.875)	(0.679)	(0.599)	(0.757)	(0.281)
Fake Strong and True Strong Democracy (β_S)	0.840***	1.154***	1.200***	1.295***	1.436***	1.464***	1.404***	1.388***
	(0.292)	(0.327)	(0.366)	(0.360)	(0.377)	(0.385)	(0.374)	(0.360)
Fake Weak and True Weak Democracy (β_W)	0.495	0.480	0.215	0.205	0.290	0.128	0.030	0.073
	(0.372)	(0.364)	(0.440)	(0.417)	(0.408)	(0.419)	(0.401)	(0.391)
Countries	83	87	95	100	114	123	141	149
Observations	3756	3924	4226	4381	4758	4972	5300	5409
Adjusted R^2	0.137	0.154	0.112	0.112	0.123	0.132	0.151	0.153

Note: A full set of country and year fixed effects are controlled in all specifications as well as three lags of growth rates and the fourth lag of GDP per capita. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4. Effects of Democracy on Growth: Controlling Democratic Stock and Formats

	(1)	(2)	(3)	(4)	(5)
Strong Democracy	1.204***	1.492**	1.635***	1.717***	1.477**
	(0.358)	(0.609)	(0.461)	(0.655)	(0.645)
Weak Democracy	0.07	-0.46	-0.004	0.156	0.256
	(0.376)	(0.606)	(0.441)	(0.707)	(0.694)
Democratic Stock	0.005*				0.008**
	(0.002)				(0.004)
Majoritarian		0.172		0.258	0.484
		(0.640)		(0.647)	(0.635)
Proportional		1.192		1.341	1.299
		(1.161)		(1.190)	(1.053)
Mixed Election System		0.363		0.706	0.694
		(0.737)		(0.815)	(0.783)
Parliamentary			-1.046	-2.415**	-1.304
			(0.669)	(1.212)	(1.006)
Presidential			-1.263**	-1.533	-0.26
			(0.625)	(1.125)	(0.971)
Semi-Presidential			-0.605	-0.623	0.433
			(0.839)	(1.197)	(1.117)
Coef. Test (p-value): $\beta_S = \beta_W$	0.0128	0.0046	0.0055	0.0369	0.1009
Countries	150	149	153	149	149
Observations	5222	3830	5049	3830	3777
Adjusted R^2	0.159	0.105	0.133	0.106	0.112

Note: A full set of country and year fixed effects are controlled in all specifications as well as three lags of growth rates and the fourth lag of GDP per capita. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5. Effects of Democracy on Growth: Alternative Development Indicators

Dependent Variable: Growth Rate	(1) p10	(2) p15	(3) p20	(4) p25	(5) p30	(6) p35	(7) p40	(8) p45	(9) p50
	Panel A: Secondary Enrollment Ratio								
Strong Democracy	1.044***	1.139***	1.294***	1.370***	1.271***	1.371***	1.318***	1.502***	1.638***
	(0.381)	(0.379)	(0.389)	(0.412)	(0.425)	(0.437)	(0.462)	(0.527)	(0.547)
Weak Democracy	0.116	-0.15	-0.268	0.004	0.37	0.32	0.478	0.486	0.428
	(0.713)	(0.723)	(0.558)	(0.513)	(0.481)	(0.451)	(0.431)	(0.389)	(0.382)
Coef. Test (p-value): $\beta_S = \beta_W$	0.2166	0.0905	0.0101	0.0202	0.1103	0.055	0.1279	0.0805	0.0427
Countries	148	148	148	148	148	148	148	148	148
Observations	4992	4992	4992	4992	4992	4992	4992	4992	4992
	Panel B: Tertiary Enrollment Ratio								
Strong Democracy	0.917**	1.074***	1.070***	1.182***	1.240***	1.206***	1.387***	1.377***	1.404***
	(0.360)	(0.357)	(0.372)	(0.382)	(0.404)	(0.411)	(0.434)	(0.465)	(0.500)
Weak Democracy	0.356	-0.169	0.11	-0.066	0.103	0.281	0.192	0.354	0.423
	(0.654)	(0.583)	(0.557)	(0.521)	(0.434)	(0.445)	(0.403)	(0.382)	(0.373)
Coef. Test (p-value): $\beta_S = \beta_W$	0.4259	0.0472	0.1081	0.03	0.0266	0.0797	0.0198	0.0492	0.0729
Countries	140	140	140	140	140	140	140	140	140
Observations	4792	4792	4792	4792	4792	4792	4792	4792	4792
	Panel C: 1−Natural Resources Share of GDP								
Strong Democracy	1.053***	1.188***	1.086***	1.142***	1.153***	1.097***	1.209***	1.275***	1.500***
	(0.320)	(0.319)	(0.308)	(0.316)	(0.331)	(0.337)	(0.365)	(0.372)	(0.386)
Weak Democracy	-1.105	-1.319*	0.289	0.303	0.460	0.667	0.615	0.580	0.459
	(0.919)	(0.703)	(0.848)	(0.692)	(0.576)	(0.519)	(0.453)	(0.449)	(0.422)
Coef. Test (p-value): $\beta_S = \beta_W$	0.0237	0.0009	0.3588	0.2456	0.2661	0.4491	0.2677	0.2051	0.0568
Countries	145	145	145	145	145	145	145	145	145
Obs.	5005	5005	5005	5005	5005	5005	5005	5005	5005
	Panel D: Industry Share of GDP								
Strong Democracy	1.038***	1.065***	1.027***	1.038**	1.126***	1.169***	1.266***	1.069**	1.149***
	(0.377)	(0.385)	(0.379)	(0.400)	(0.402)	(0.412)	(0.440)	(0.411)	(0.437)
Weak Democracy	-1.533**	-0.855	-0.07	0.222	0.061	0.142	0.132	0.537	0.512
	(0.638)	(0.637)	(0.892)	(0.689)	(0.666)	(0.606)	(0.546)	(0.575)	(0.530)
Coef. Test (p-value): $\beta_S = \beta_W$	0.0002	0.0048	0.2284	0.2624	0.1359	0.1232	0.077	0.4069	0.3086
Countries	138	138	138	138	138	138	138	138	138
Observations	4801	4801	4801	4801	4801	4801	4801	4801	4801
	Panel E: Economic Equality (1-Gini)								
Strong Democracy	1.030***	1.076***	1.049***	1.120***	1.264***	1.324***	1.266***	1.325***	1.506***
	(0.376)	(0.391)	(0.397)	(0.418)	(0.415)	(0.430)	(0.457)	(0.464)	(0.514)
Weak Democracy	-0.184	-0.064	0.291	0.326	0.102	0.195	0.408	0.365	0.374
	(0.424)	(0.378)	(0.478)	(0.436)	(0.490)	(0.479)	(0.457)	(0.447)	(0.398)
Coef. Test (p-value): $\beta_S = \beta_W$	0.0121	0.0105	0.1541	0.1245	0.043	0.0553	0.1453	0.1037	0.0602
Countries	132	132	132	132	132	132	132	132	132
Observations	4514	4514	4514	4514	4514	4514	4514	4514	4514

Note: A full set of country and year fixed effects are controlled in all specifications as well as three lags of growth rates and the fourth lag of GDP per capita. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6. Effects of Democracy on Growth: Alternative Democracy Indicators

	GDP in Political Transition Period						No Grouping
Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Growth	p15	p20	p25	p30	p35	p40	
	Panel A: Democracy Indicator from Polity						
Strong Democracy	0.429	0.535*	0.626*	0.740**	0.659*	0.760**	
	(0.311)	(0.315)	(0.317)	(0.327)	(0.341)	(0.379)	
Weak Democracy	-0.632	-0.747	-0.679	-0.626	-0.358	-0.326	
	(0.685)	(0.622)	(0.537)	(0.475)	(0.456)	(0.512)	
Democracy							0.249
							(0.271)
Coef. Test (p-value): $\beta_S = \beta_W$	0.1413	0.0545	0.0277	0.0132	0.0614	0.1016	
Countries	128	128	128	128	128	128	128
Observations	4689	4689	4689	4689	4689	4689	4689
	Panel B: Democracy Indicator from CGV						
Strong Democracy	0.964**	1.095**	1.278**	1.025**	0.880*	0.794	
	(0.446)	(0.483)	(0.531)	(0.516)	(0.509)	(0.510)	
Weak Democracy	-0.120	-0.141	-0.184	0.249	0.440	0.551	
	(0.486)	(0.400)	(0.380)	(0.450)	(0.466)	(0.463)	
Democracy							0.709**
							(0.333)
Coef. Test (p-value): $\beta_S = \beta_W$	0.0829	0.0381	0.0210	0.234	0.503	0.709	
Countries	150	150	150	150	150	150	150
Observations	4799	4799	4799	4799	4799	4799	4799
	Panel C: Democracy Indicator from BMR						
Strong Democracy	0.889**	1.107**	1.217**	1.229**	0.974*	0.903*	
	(0.422)	(0.454)	(0.492)	(0.529)	(0.510)	(0.540)	
Weak Democracy	0.439	0.061	0.057	0.221	0.577	0.689	
	(0.572)	(0.502)	(0.432)	(0.416)	(0.463)	(0.438)	
Democracy							0.819**
							(0.326)
Coef. Test (p-value): $\beta_S = \beta_W$	0.513	0.111	0.0696	0.126	0.554	0.749	
Countries	153	153	153	153	153	153	153
Observations	5091	5091	5091	5091	5091	5091	5091
	Panel D: Democracy Indicator from PS						
Strong Democracy	1.310***	1.320***	1.105***	1.064**	1.053**	1.065**	
	(0.473)	(0.489)	(0.409)	(0.427)	(0.438)	(0.473)	
Weak Democracy	0.39	0.597	1.243	1.307	1.305*	1.246*	
	(0.651)	(0.603)	(0.903)	(0.801)	(0.747)	(0.637)	
Democracy							1.144***
							(0.427)
Coef. Test (p-value): $\beta_S = \beta_W$	0.2095	0.2994	0.8799	0.7683	0.748	0.7969	
Countries	124	124	124	124	124	124	124
Observations	4472	4472	4472	4472	4472	4472	4472

Note: A full set of country and year fixed effects are controlled in all specifications as well as three lags of growth rates and the fourth lag of GDP per capita. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7. Effects of Democracy on Growth: Instrumental Variables

Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)
Growth	Genetic Distance Weighted		Regional Democracy Average		Region+Initial Political Regime	
Strong Democracy	6.189	24.221	4.472**	2.010	2.387**	1.657**
	(4.160)	(47.144)	(1.869)	(1.390)	(0.940)	(0.788)
Weak Democracy	0.860		0.639		0.558	
p-value:	[0.350]		[0.251]		[0.301]	
Difference (Strong Democracy-Weak Democracy)	5.329		3.833**		1.830**	
	(3.399)		(1.608)		(0.931)	
Hansen Test (p-value)	0.227	0.356	0.243	0.1475	0.0572	0.0324
F-stat. in the First Stage:						
IV for Democracy	82.04	0.371	32.18	5.783	13.20	12.53
IV for Interaction	369.6		69.23		10.77	
Partial R^2 for Democracy (p-value)	0.232	0.0008	0.214	0.0426	0.216	0.1040
Partial R^2 for Interaction (p-value)	0.810		0.713		0.545	
Countries	146	146	149	149	149	149
Observations	5177	5177	5241	5241	5206	5206

Note: All columns present results using the 2SLS method. A full set of country and year fixed effects are controlled in all specifications as well as three lags of growth rates and the fourth lag of GDP per capita. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 8. Potential Mechanisms: Quality of Institutions

Dependent Variable:	(1) Economic Freedom	(2) Political Corruption	(3) Transparency (HRV Index)	(4) Legal Infra -structure	(5) Legal Order	(6) Regime Instability Index	(7) Within Regime Index	(8) Violence Index	(9) Social Unrest
Strong Democracy	0.010***	-0.007**	0.007***	0.002*	0.000	-0.031***	0.065***	-0.009*	-0.120***
	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.010)	(0.011)	(0.004)	(0.038)
Weak Democracy	0.001	0.005	-0.001	-0.003***	0.000	0.000	0.102***	-0.002	-0.006
	(0.002)	(0.005)	(0.002)	(0.001)	(0.001)	(0.017)	(0.016)	(0.003)	(0.043)
Coef. Test (p-value): $\beta_S = \beta_W$	0.0038	0.0466	0.0079	0.0028	0.4226	0.1051	0.0210	0.1650	0.0452
Countries	98	133	106	128	127	148	147	150	144
Observations	2878	4631	2728	4596	4549	4111	3963	4349	4722
Adjusted R^2	0.969	0.886	0.896	0.886	0.995	0.032	0.147	0.19	0.089

Note: Four lags of dependent variables and GDP per capita are controlled in each column. A full set of country and year fixed effects are controlled in all specifications. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 9. Effects of Democracy on GDP Growth: Controlling for Institutional Quality

	Dependent Variable: GDP Growth									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Strong Democracy	0.626**	1.624***	1.744***	1.710***	1.374**	1.239**	1.676***	1.267***	1.424***	-0.268
	(0.315)	(0.489)	(0.475)	(0.402)	(0.593)	(0.513)	(0.547)	(0.467)	(0.456)	(0.647)
Weak Democracy	0.364	0.173	-0.173	0.029	0.348	-0.015	0.583	-0.336	0.154	0.976
	(0.375)	(0.407)	(0.463)	(0.387)	(0.475)	(0.405)	(0.489)	(0.411)	(0.389)	(0.681)
Economic Freedom	8.070***									8.425***
	(1.437)									(1.617)
Legal Infrastructure		5.729								2.798
		(3.988)								(4.816)
Legal Order			6.083***							2.705
			(2.214)							(4.703)
Political Corruption				0.687						-2.439
				(1.353)						(1.957)
Transparency (HRV Index)					8.402**					2.748
					(3.208)					(3.057)
Regime Instability Index						-8.727***				-2.284
						(1.758)				(1.799)
Within Regime Instability Index							-4.357***			-2.620*
							(1.373)			(1.479)
Violence Index								-12.015***		1.541
								(3.485)		(1.622)
Social Unrest									-1.433***	-0.859***
									(0.283)	(0.302)
Coef. Test (p-value): $\beta_S = \beta_W$	0.5780	0.0207	0.0046	0.0018	0.1610	0.0412	0.0691	0.0062	0.0252	0.1310
Countries	97	128	127	133	106	148	148	150	145	76
Observations	2697	4693	4646	4770	3082	4258	4166	4521	4932	1424
Adjusted R^2	0.208	0.159	0.161	0.150	0.126	0.134	0.113	0.130	0.159	0.163

Note: A full set of country and year fixed effects are controlled in all specifications. Robust standard errors for heteroscedasticity and serial correlation at the country level are in the parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 10. Main Results with A Composite Development Indicator

Panel A: Baseline Regression and Robustness Checks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Various Cutoffs to Categorize Strong and Weak Democracy (Combining 5 Development Indicators in Transition Period)					Using P15 as Threshold			
Dependent Variable: Growth	P10	P15	P20	P25	P30	Baseline	Adding Democratic Stock	Adding All forms of Democracies	IV Regional+Initial Political Regime
Strong Democracy	1.177***	1.461***	1.465***	1.606***	1.414***	1.461***	1.309***	1.973**	3.271***
	(0.363)	(0.387)	(0.382)	(0.406)	(0.415)	(0.387)	(0.380)	(0.765)	(1.148)
Weak Democracy	0.315	0.142	0.471	0.548	0.713*	0.142	0.073	0.268	0.661
	(0.386)	(0.377)	(0.392)	(0.364)	(0.366)	(0.377)	(0.370)	(0.591)	(0.587)
Coef. Test (p-value): $\beta_S = \beta_W$	0.0607	0.00599	0.0423	0.0301	0.167	0.00599	0.00784	0.0315	0.0107
Countries	153	153	153	153	153	153	150	149	148
Observations	5,419	5,419	5,419	5,419	5,419	5,419	5,222	3,830	5,184

Panel B: Potential Institutional Channels (Using P15 as Threshold)

	(1) Economic Freedom	(2) Regime Instability	(3) Within Regime Instability	(4) Violence Index	(5) Social Unrest	(6) Legal Infrastructure	(7) Legal Order	(8) Political Corruption	(9) Transparency (HRV)
Strong Democracy	0.008***	-0.030***	0.067***	-0.011**	-0.096**	0.001	-0.000	-0.007**	0.005**
	(0.003)	(0.011)	(0.012)	(0.004)	(0.038)	(0.001)	(0.001)	(0.003)	(0.002)
Weak Democracy	0.005**	-0.008	0.089***	0.001	-0.051	-0.001	0.000	0.002	0.001
	(0.002)	(0.014)	(0.014)	(0.004)	(0.043)	(0.001)	(0.001)	(0.005)	(0.002)
Coef. Test (p-value): $\beta_S = \beta_W$	0.405	0.195	0.175	0.0311	0.414	0.244	0.613	0.0970	0.144
Countries	98	148	147	150	144	128	127	133	106
Observations	2,878	4,111	3,963	4,349	4,722	4,596	4,549	4,631	2,728

Note: For growth regressions in Panel A, three lags of growth rates and the fourth lag of GDP per capita are controlled. For mechanism regressions in Panel B, four lags of dependent variables and GDP per capita are controlled in each column. A full set of country and year fixed effects are controlled in all specifications. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 11. Four Types of Democracies on GDP Growth

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Complete/Partial Democracy			Complete/Partial Democracy		
Growth	(Epstein et al., 2006)			(Papaioannou and Siourounis, 2008b)		
Strong Democracy		1.576***			2.578***	
		(0.577)			(0.863)	
Weak Democracy		-0.244			0.892	
		(0.455)			(0.739)	
Complete Democracy	0.898**	-0.345		0.426	-1.306*	
	(0.400)	(0.581)		(0.346)	(0.759)	
Partial Democracy	1.740**	1.018		0.120	-1.091	
	(0.728)	(0.690)		(0.299)	(0.682)	
Strong and Complete Democracy			1.011**			1.419***
			(0.435)			(0.445)
Strong but Partial Democracy			2.028**			1.593***
			(0.899)			(0.489)
Weak but Complete Democracy			0.087			-0.056
			(0.483)			(0.437)
Weak and Partial Democracy			0.454			0.152
			(0.677)			(0.390)
Countries	145	145	145	134	134	134
Observations	5,195	5,195	5,195	4,878	4,878	4,878
Adjusted R^2	0.164	0.165	0.164	0.170	0.175	0.173

Note: A full set of country and year fixed effects are controlled in all specifications as well as three lags of growth rates and the fourth lag of GDP per capita. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 12. Development in Political Transition Time Matters

	(1)	(2)	(3)	(4)
Dependent Variable:	GDP	Secondary	Tertiary	Composite
Growth		Enrollment	Enrollment	Indicator
Democracy	0.048	0.004	-0.066	0.137
	(0.382)	(0.513)	(0.521)	(0.334)
Interaction with	1.346***	1.365**	1.249**	1.555***
Strong Dev	(0.459)	(0.582)	(0.570)	(0.469)
Countries	153	148	140	153
Observations	5,419	4,992	4,792	5,419
Adjusted R^2	0.160	0.151	0.161	0.160

Note: A full set of country and year fixed effects are controlled in all specifications as well as three lags of growth rates and the fourth lag of GDP per capita. Standard errors robust against heteroscedasticity and serial correlation at the country level are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.