

Contingent Democratization: When Does Economic Crisis Matter?

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Abstract

It has been argued that economic crisis is a trigger for democratic transition, but empirical evidence is limited and mixed. We argue that the political effect of economic crisis is contingent on economic structure, specifically, the share of economic assets of authoritarian elites in the national economy. A higher level of the state engagement in the economy makes social forces dependent on the ruling elites for their patrimonial interests and, therefore, the authoritarian regime liable for economic failure. Moreover, a higher share of the state-owned economic assets aggravates the economic loss of both the business class and the mass upon economic crisis. As a result, state economic engagement makes the business class more likely to defect from the coalition with political elites, the mass more likely to revolt for regime change, and the two social classes are more likely to form cross-class alliance against the regime. Cross-national analyses show that economic crisis triggers democratic transition in authoritarian countries only when the share of the state economy (i.e., public investment) is above certain level.

Keywords: Economic crisis, Democratization, The State, Coalition, Legitimacy

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Introduction

Economic crisis has been widely accepted as a key trigger of democratic transition.¹ This belief is based on two lines of arguments. The first argument, “coalition thesis,” is an elite-based approach and contends that economic crisis breaks down the ruling coalition of authoritarian regime by depleting the resources that the regime had relied on to pay allies of the business elites, the middle class, or the organized labor forces. The second line of argument, “legitimacy thesis,” contends from a mass-based approach that economic crisis undermines the legitimacy basis of authoritarian regimes.² This is primarily because authoritarian regimes rely heavily on economic performance for public support and claim to rule “generally based upon ... socioeconomic performance, or what has been called ‘social eudaemonic’ legitimation.”³

A brief scan of post-war history, however, shows that the actual political consequence of economic shock varies. Although the breakdown of authoritarian regimes and the transition to democracy have been preceded with economic turmoil in a number of countries, economic crisis in many cases did not lead to regime change, let alone democratic transition. For example, while Argentina, Bolivia, Brazil, and some other Latin American countries experienced democratic transition during economic crisis, many African authoritarian rulers like Zimbabwe’s Mugabe and Togo’s Eyadema managed to stay in power during the

¹ Gourevitch, 1986; Markoff and Duncan Baretta 1990; Richard 1986; Haggard and Kaufman 1995; Haggard and Kaufman 1997; Przeworski and Limongi 1997; Geddes, 1999; Acemoglu and Robinson 2001. Zak and Feng 2003.

² Gasiorowski 1995, 884. Also see Epstein 1984; Linz and Stepan 1996.

³ White 1986, 463. Also see Duch 1995; Remmer 1996; Chen 2004; Smith 2006, 57.

protracted economic crisis.⁴ In two neighboring Asian countries, Indonesia's Suharto's regime collapsed during Asian financial crisis of 1998, but Malaysia's Mahatir's rein stayed intact until 2003.⁵ As one of the few systematic studies on this particular issue, Gasirowski found that while economic crises help trigger democratic breakdown, they had no definite effect on democratic transition.⁶ In a word, scholars have not found a consistent pattern regarding the relationship between economic crisis and democratic transition.

Under what conditions is economic crisis more likely to cause democratic transition? This study answers this question by highlighting the importance of economic structure under authoritarian rule. We argue that whether or not economic crisis engenders democratic transition is conditioned by the economic engagement of the authoritarian state. The economic engagement of the state increases the probability of democratic transition upon economic crisis for two reasons. First, state economic engagement politicizes the economy and economic crisis by making the authoritarian regime liable for economic failure. It amplifies the effect of both coalition-driven and legitimacy-driven democratic transition. While the economic engagement of the state helps the regime during economic boom, various social forces find it more imperative to change political system when the economy turns bad. Second, state engagement in the economy aggravates the economic loss for both the business class and the mass upon economic crisis. This is because as the stakeholders of the state economy, the ruling elites have both the incentives and capacities to preserve the return from the state business at the expense of non-state classes. With a formal proof, we clarify that

⁴ Wright 2010.

⁵ Pepinsky 2009.

⁶ Gasirowski 1995.

given an economic shock, a higher share of the state economy entails a greater disparity in terms of economic loss between political elites and social forces (i.e., economic elites and the mass). As a consequence, when crisis happens, economic elites are more likely to defect from the coalition with the regime; the mass are more likely to withdraw support for the regime and engage in revolt for political change; and, finally, the economic/business elites and the mass are more likely to form cross-class alliance against the authoritarian regime.

We test the conditionality of the effect of economic crisis as determined by state economic engagement by analyzing panel data of 106 countries during 1970-2007. Our empirical analyses consistently show that economic crisis is significantly and positively associated with democratic transition only when the level of the state engagement (measured as the percentage of public investment) is relatively high. This finding is robust not only against different measurements of democracy and economic crisis, but also against different model specifications that include an analysis excluding oil export countries and analyses that control region patterns and time trends.

This research contributes to literature in two regards. First, it expands the pool of the theories and facts of the economic origins of democracy by highlighting how short-term economic shock intersects with long-term economic structure in triggering democratic transition. The structuralist tradition of comparative democratization literature has paid most scholarly attention to economic factors such as economic development and economic inequality.⁷ The effect of short-term economic shock on democratic transition has been relatively less studied. Second, it enriches the understanding of the economic role of the

⁷ Lipset, 1959; Przeworski and Limongi 1997; Barro 1999; Boix and Stokes 2003; Epstein et al. 2006; Acemoglu et al. 2008; Houle 2009; Ansell and Samuels 2010.

state. The economic implications of the variant roles of the state have been thoroughly discussed.⁸ Their political implications, however, have received much less attention. This study implies that state engagement in the economy does not only make a difference in economic output. It also shapes the incentives of different political actors, which in turn leads to variant political equilibriums when crisis hits.

The Relevance of the Economic Engagement of the State

Scholars have long noticed the impact of the economic role of the state on economic performance. The literature of varieties of capitalism has found that advanced industrialized democracies vary substantially with regard to the extent of the state engagement in their national economy.⁹ In regards to developing countries, the variation of the role of the state in the economy is even larger. A plethora of literature suggests that the states have been playing different role in economic development across developing countries during the post-war period.¹⁰ The states of developing countries get involved in economic production for various reasons. Most notably, elites in late developers believed that state engagement was necessary to jumpstart the economy and provide protection to infant national industries. Those countries faced a tough international environment of economic competition in which the production is already industrialized and differentiated, the global market is highly integrated, and the domestic market is subject to the invasion of global capital.¹¹ National private businesses cannot accumulate capital and strength independently. Secondly, many

⁸ Wade 1990; Evans 1995; Kohli 2004; Acemoglu 2005.

⁹ Hall and Soskice 2001; Streeck and Yamamura 2003.

¹⁰ North 1981; Migdal 1988; Wade 1990; Evans 1995; Kohli 2004.

¹¹ Gerschenkron 1962.

developing countries that are dependent on natural resources have often seen a high degree of state engagement in economic sectors. Nationalist sentiment and the push by domestic forces for national control over natural resource in the post-war period have caused the states in a number of countries to become the biggest stakeholders in their economies. Finally, the state was closely tied to economic production in communist countries. In those countries, the state directly owned a large portion of economic resources and enterprises.

Whatever the reasons behind state economic engagement, aside from its apparent impact on the economy, its very existence entails important political implications. This study in particular explores how the state share in the economy influences the relationship between economic crisis and democratization. The following two subsections explicate two reasons to argue that the economic engagement of the state makes economic crisis more likely to engender political transition in authoritarian countries.

State engagement and politicized crisis

State engagement increases the probability of democratic transition after economic crisis first because a higher economic stake of authoritarian elites amplifies the effect of both coalition mechanism and legitimacy mechanism of crisis-engendered democratization as presumed by extant theories. Coalition thesis contends that the most direct consequence of economic contraction is the depletion of the resources that the regime can use to maintain ruling coalition. Economic crisis thus reduces the bargaining power and the ability of political elites to provide supporters with accesses to opportunities and resources.¹² This line of

¹² Bratton and van de Walle 1997; Haggard and Kaufman 1997.

argument in fact presumes that there had been an effective coalition between economic elites and political elites before crisis and the state does rely on economic spoils for economic elites and their cooperation for authoritarian rule. Under the authoritarian rule, the most effective way for the state to build the ruling coalition with non-regime elites, especially economic elites, is to monopolize economic resources, run the economic production, or manage the economy. Through an active engagement, the state is able to secure the material basis that it can use to provide selective rents and benefits to supporters among the social forces, especially the business groups.¹³

A close relationship between authoritarian elites and economic elites serves to the benefit of the regime during economic boom. However, it is the same relationship that can put the fate of the authoritarian regime in danger during economic bust. Business elites would hold the regime accountable for the economic failure and thus seek to alter political arrangements. During the financial crisis of early 1980s, for example, “the business interests and foreign investors that had rallied to authoritarian military regimes in the 1960s (in Latin America) began to see these overly statist and apparently unaccountable governments as a source of danger rather than of protection, so they withdrew their support.”¹⁴ This reasoning for authoritarian collapse conforms to the history of African countries as well, where economic contraction in late 1980s has facilitated democratization in countries like Benin and Zambia.¹⁵ Only with a certain level of the engagement of the state, can the business elites find the state necessary for their economic benefit and politics relevant in their economic

¹³ Remmer 1999; Bueno de Mesquita and Downs 2005.

¹⁴ Whitehead 1993, 314.

¹⁵ Joseph 1997.

returns. For the same reason, when crisis happens can they find the need to change politics.

From a more mass-based approach, legitimacy thesis contends that economic crisis undermines the legitimacy basis of regimes, but especially that of authoritarian ones.¹⁶ A key conclusion emerged from studies of popular support suggests that the impact of economic performance on regime durability is strongly moderated by political institutions.¹⁷ The greater competitive opportunities tend to make economic performance less important. Democratic regimes are therefore inherently less vulnerable to economic performance setbacks than their authoritarian counterparts. Authoritarian regimes, lacking power sharing and government alteration, rely heavily on economic performance for public support. And citizens under authoritarian rule tend to associate economic performance with regime legitimacy and do not differentiate between exogenous shocks and good economic management (competence) when assessing the effect of economic growth on their incomes.¹⁸ The centrality of this instrumental rationale in political support thus makes authoritarian regimes vulnerable to economic downturns.

Authoritarian vulnerability to economic downturns is further reinforced by the very existence of the engagement of the state in the economy. Like China, Vietnam, and Singapore, in authoritarian countries where the state is considerably engaged in economic activities, the regime is more likely to attribute economic success to its governance and boast its effectiveness and legitimacy based on extraordinary economic performance. At the same time, due to the state economic engagement, the income of ordinary citizens is more likely to

¹⁶ Epstein 1984; Resler and Kanet, 1993 Gasiorowski 1995, 884; Linz and Stepan 1996; Zak and Feng 2003.

¹⁷ Remmer 1996; Anderson and Guillory 1997; Norris 1999.

¹⁸ Alesina, Roubini, and Cohen 1997.

be influenced by how well the state executes economic productions and they thus are more likely to associate their political attitudes with economic wellbeing. As various country studies have shown in such authoritarian countries when the economy does develop well, citizens extend relatively high levels of political support to regime. However, the other side of the strengthened tie between economic performance and legitimacy basis is that it reinforces the instrumental rationale of the citizens in their evaluation of the regime and makes the regime stability more sensitive to economic situation. When economic crisis happens and the government stops delivering economic benefits based on which the ordinary people extend their support, the regime becomes politically liable for their economic misfortune. For this reason, compared to regimes that has been less engaged in economic sectors, those that are more engaged cannot afford an economic crisis that is often not in their control.

In sum, for both the business elites and the mass, if the state plays a minimal role in the economy, the state is either irrelevant or too weak to be useful. The potential gains from political actions are therefore insignificant. In other words, if there is no state engagement, regime change is hardly a viable solution to economic problems. As the critics of economic liberalization have observed, the free-market in authoritarian countries or new democracies leads to the atomization of social interests by putting them in competition with each other and the depoliticization of social economic development by cutting the scope and hence the relevance of policy decisions.¹⁹ In essence, in a relatively state-free economy, political change is not necessary because politics is not perceived as the cause of economic failure.

¹⁹ Oxhom and Ducatenzeiler 1998; Kurtz 2004.

In such a condition, the political interest for democracy, even given an economic crisis, would be difficult to emerge, organize, and persist.

The State Economy, Business Defection, Mass Revolt, and Cross-Class Alliance

If a significant portion of the economy is run or operated by the authoritarian state, economic crisis not only will disrupt the dependence relationship between the state and various social forces, but also, more critically, causes a greater disparity between economic loss of state elites and that of social classes (i.e. economic elites or business class and the mass).

Compared to political elites, non-state classes take a disproportionately greater hit upon economic crisis because political elites have the incentives and advantageous status to preserve their economic interest or mitigate economic loss. We in this subsection prove that with a higher share of the economy of the state elites, this disadvantage is even greater because the stakeholders of the privileged economy are more motivated and more able to protect their economic returns and in fact shift their loss to the business class and the mass. Furthermore, higher levels of the state economy tend to reduce the relative income gap between the two social classes upon economic crisis and hence help remove barriers for cross-class alliance. We build a theoretical model to prove that economic crisis is a trigger that disrupts the existing equilibrium and facilitates democratization by making: (1) business class more likely to defect from the coalition with political elites, (2) the mass more likely to revolt for regime change, and, (3) the two forces more likely to form cross-class alliance against the regime.

Given the existence of the state assets, there are two kinds of people in the society, the

mass (m) and the privileged (p), as defined by their *access* to the revenues generated by the state-owned assets, G . Among the privileged there are two discernable groups, the political elite (e) and the economic elite or business class (b), defined by their *power* to distribute the revenues generated by the state-owned assets. By differentiating between economic elites and political elites, our model differs from the conventional elite-mass (or rich-poor) two-player models and thus highlights the critical role of the state in the economy.²⁰ Since political elites have a dual motivation to maximize their material interest and maintain a ruling coalition, they take a fixed amount (K) from the revenues generated by the state-owned assets and provide the business with an amount (R) of the revenues as rent. We assume $K > R$ since the wealth generated from the privileged assets is held more by political elites than by the business class.

We further denote α as the income share of the privileged among the total income, β as the population share of the privileged (p) among all population N , θ as the elite income share within the privileged, δ as the population share of the elite (e) among the privileged population N_p , \bar{y} as the average income for everyone in the economy based on a constant technology, and \bar{y}_p as the average income among the privileged. Given the social stratification as well as unequal access to decision power over state-owned assets, we further

assume $\alpha > \frac{1}{2}$, $\beta < \frac{1}{2}$, $\theta > \frac{1}{2}$, and $\delta < \frac{1}{2}$, capturing the key characteristics of an authoritarian

regime. Based upon these specifications, we have the per capita income for the mass

$$y^m = \frac{1-\alpha}{1-\beta} \bar{y}, \text{ the privileged } y^p = \frac{\alpha}{\beta} \bar{y} + g, \text{ the political elites } y^e = \frac{\theta}{\delta} \bar{y}_p + k, \text{ and business}$$

²⁰ Boix 2003; Acemoglu and Robinson 2005.

$$\text{class } y^b = \frac{1-\theta}{1-\delta} \bar{y}_p + r$$

A. Provision Pact and Coalition Defection

Few dictators can govern alone.²¹ During normal times, political elites maintain a ruling coalition with economic elites through providing the latter with a share of return from the state-owned assets. In this subsection, we find out the condition for economic elites to break away from the coalition with political elites after economic crisis. The following proof shows that a sudden economic shock disrupts the previous equilibrium, and with a higher share of state-owned assets, economic crisis is more likely to trigger coalition defection.

Suppose an economic crisis happens in a country, it affects the mass and business class alike by decreasing their respective income by λ . Due to the greater capability of political elites to protect returns from the state economy, political elites suffer a less degree of loss. For simplification, we set economic crisis does not affect the income of political elites. As for the business class, they have an option to engage in a coalition defection with a cost of defection μ . If successful, the business class will appropriate the income of the elites and distribute among themselves. The defection constraint for business class is that the per capita business income after successful defection and after discounting cost is higher than the per capita business income under authoritarian coalition and without defection cost.

$$(1-\mu)(y^{es} + y^{bs}) > y^{bs} \tag{1}$$

To satisfy this defection constraint, we find out that the following three conditions are

²¹ Boix and Svulik 2013.

required.²² First, $1 - \mu - \delta > 0$, that is, the destruction of defection is less than the population share of the business class within the privileged. Were it to happen, this can be regarded as a catastrophic defection. Second, $2\theta - 1 > 0$, that is, income share of political elites among the privileged is more than a half, which is true by assumption. Third, $k\delta > r(1 - \delta)$. That is, the distribution of total privileged income among the privileged is that the mean political elite dividend is more than the mean business rent. This is also true by assumption, $K > R$. In sum, the three conditions suggest that as long as the coalition defection is not self-destructive for the business class, they are motivated to break away from the existing coalition with political elites when there is an economic crisis.

We further find out how the share of the state-owned assets in the national economy is associated with the defection constraint for business class. Suppose there are two countries that are otherwise identical, but one has a larger privileged economy than another, $G_1 < G_2$. At the per capita level, we have for scenario G_1 , $k_1\delta > r_1(1 - \delta)$, and for scenario G_2 , $k_2\delta > r_2(1 - \delta)$. We find out whether $k_2\delta > r_2(1 - \delta)$ is more likely to hold than $k_1\delta > r_1(1 - \delta)$. This is true since the condition of $k\delta > r(1 - \delta)$ is equivalent to $K > R$. It suggests that when political elites take most of the returns generated by the state-owned economy, higher shares of state economy in the national economy make the business elites more likely to defect from coalition with the regime when economic crisis happens. This is so because compared to political elites, business elites suffer a greater degree of loss in such a situation than otherwise and they attribute this disproportional loss to the interference of political elites in the economy.

²² For a complete proof of the theoretical model of this research, see Appendix 1.

B. Social Pact and Mass Rebellion

In this part we show the revolt constraint for the mass upon economic crisis. Again, economic crisis affects the mass and business class alike, by decreasing their respective income by λ . But economic crisis will not affect the income of the elites. Revolt is participated by the mass, and if successful, the mass will appropriate the income that belongs to the privileged. However, revolt will destroy a μ_m ($0 < \mu_m < 1$) portion of all income that the poor will receive. The rebellion constraint for the mass obtains when the per capita income of mass after a successful revolt and after discounting the cost is higher than the per capita mass income under the current regime.

$$(1 - \mu_m)(y^{ms} + y^{ps}) > y^{ms} \quad (2)$$

After expansion and substitution, we get this relationship:

$$\begin{aligned} & \theta \bar{y}_p (1 - \mu_m)(1 - \delta)(1 - \beta) + \delta k (1 - \mu_m)(1 - \delta)(1 - \beta) + \delta \bar{y}_p (1 - \mu_m)(1 - \theta)(1 - \lambda) \\ & + \delta r (1 - \mu_m)(1 - \delta)(1 - \beta)(1 - \lambda) - \delta \bar{y}_p \mu_m (1 - \delta)(1 - \alpha)(1 - \lambda) > 0 \end{aligned} \quad (3)$$

We are able to prove that if given the no-catastrophe condition, $1 - \mu_m > \mu_m \Rightarrow \mu_m < \frac{1}{2}$, this

relationship holds. That is, similar to our conclusion about the coalition defection constraint for the business class, as long as the rebellion is not self-destructive, the mass is motivated by economic crisis to revolt against the privileged when crisis happens.

We further show how the extent of state economic engagement makes a difference in the motivation of the mass to revolt. That is, we would like to know whether a greater G makes (3) more likely to be true. This is so because a greater G means a greater k or r with a constant population composition, which makes the left side of the inequality (3) greater.

Therefore, this proof suggests that with a higher share of state economy and resultant greater advantage of the privileged classes, economic crisis is more likely to induce the mass to revolt for political change.

C. Cross-Class Alliance between the Mass and Business Class

Democracy does not naturally follow business defection or mass revolt. Economic elites might turn to an oligarch in which they dictate; the mass might establish a socialist system. Although we are not seeking for necessary *and* sufficient condition for democratic transition, we believe that democracy is more likely to happen when the social forces, i.e. business elites and the mass, are more willing to cooperate with each other in their power struggle against political elites. In this subsection, we want to show whether economic crisis increases the willingness of cooperation between two social classes and how the shares of the state economy further increases the probability of cross-class alliance upon crisis.

Once an economic crisis happens, first, the inequality level between mass and business class will change. The post-crisis inequality level will become:

$$\eta^s = \frac{Y^{bs}}{Y^{bs} + Y^{ms}} \quad (4)$$

As shown in Appendix 1,

$$\frac{d\eta^s}{d\lambda} < 0 \quad (5)$$

That is, given the participation of the state in the economy, as economic crisis increases in severity, inequality between business class and the mass declines. Various prominent studies have argued and found that as inequality between the rich (economic elites in this

model) and the poor (the mass) decreases, the probability of democratic transition increases.²³

We are further able to provide an alternative proof that economic crisis and ensuing decreased inequality between business class and the mass increase the willingness of the two social classes to ally with each other. The condition for alliance is that after a crisis when the combined (per capita) payoff for cross-class alliance is greater than the combined (per capita) payoff for business class and mass under the authoritarian regime given the cost of cross-class alliance, μ_c .

$$(1 - \mu_c) \frac{(1 - \lambda)Y}{N_m + N_b} > \frac{Y^{bs} + Y^{ms}}{N_m + N_b} \quad (6)$$

This inequality is assured if we assume, first, $g > \frac{(1 - \delta)}{(1 - \mu_c + \lambda\mu_c)} r$, which is almost always true considering the fact that r is a fraction of g , and second, $\mu_c < \frac{\theta\alpha}{1 - \lambda}$. This means that as long as the cross-class alliance cost is not prohibitively high, the cross-class alliance constraint is binding.

We finally examine whether a higher share of the state economy and a greater extent of economic exploitation of the political elites make the cross-class alliance constraint more binding upon crisis. Intuitively, this can be understood the following way. A larger share of state assets means more wealth to the political elites. And the larger the elites' privileged wealth, the larger the returns and greater incentive to form cross class alliance for the mass and the economic elites, with whatever arrangement to share the returns between the two classes.

Formally, from (6), we take the first order derivative w.r.t. k , and we have

²³

$$(1 - \mu_c)(1 - \lambda)N\beta\delta + \lambda\delta N\beta > 0 \quad (7)$$

This first order condition suggests that the higher the state economy (as represented by a bigger size of political elite's take from the privileged assets), the more binding is the cross-class alliance constraint.

Variables, measurement, and data

Political democracy

Since much of our theoretical argument pertains to political change from autocracy to democracy, we follow the standard practice in the field and use a dichotomous measurement of democracy. In most of our analyses, we use the measurement provided in the dataset “Democracy and Dictatorship” (known as DD). DD is updated from the “Political and Economic Database” originally produced by Przeworski et al.²⁴ DD categorizes a polity as democracy if the executive is elected via the legislature or the legislature is directly elected, there is more than one party, and the executive power alternates.

As a robustness check, we also use Polity IV measurement of democracy in a set of analyses. The original Polity score is a 21-point (from -10 to 10) scale that quantifies five institutional aspects of democracy: competitiveness of participation, regulation of participation, competitiveness of executive recruitment, openness of executive recruitment, and constraints on chief executive. We generate a dichotomous indicator by categorizing a country with a Polity score of 6 or higher as a democracy (1-democracy; 0-autocracy). The summary statistics of this variable and other variables are reported in Appendix 2.

²⁴ Alvarez et al. 2000.

Economic crisis

We measure economic crisis in various ways to ensure that our analyses are not driven by a particular measurement. We first follow a standard practice in the field measuring crisis as the two-year backward moving average of the growth rate of Gross Domestic Product (GDP) per capita (Gasiorowski, 1995), that is, the average of the growth rate of last two years. The lag value helps alleviate potential endogeneity problem in the relationship between economic crisis and political transition. We recode this variable such that greater value indicates greater extent of economic crisis. We use this measurement in our main analyses. Second, based on the first measurement, we create a dichotomous measurement of economic crisis with 1 indicating that the two-year moving average is negative and 0 indicating that that quantity is positive. This measurement simply tells whether or not a country is in economic crisis in a specific year. Third, we extend the time span of gauging crisis by using the three-year moving average of growth rate. This measurement further ensures that our analysis is not influenced by random or unsystematic economic shock of a given year that does not reflect the general trend of economic situation of a country. Lastly, we use the length of economic crisis as measured by the number of consecutive years of negative economic growth rate before the current year. Different from the first three measurements that gauge the extent of economic crisis, it captures the duration of economic contraction.

State economy

We measure the extent of the state economy explicated in our theory using the indicator “government enterprises and investment” drawn from the dataset “*Economic Freedom of the*

World” (EFW) compiled by the Fraser Institute. EFW dataset record the percentage of government investment (state owned enterprises and public investment) in the national economy. State enterprises and government investment are the most active aspects of a state’s role in the economy. Such a measurement of “state engagement” focuses on the participation of the states in actual economic production. It is not a comprehensive measurement that summarizes other relevant aspects of the state role such as strategic planning, operational support, absorbing foreign investment, and regulating business activities. We believe that, however, this indicator captures one essential aspect of the stake of the state in the economy. It is an objective dimension that is less problematic for measurement. And its relationship to the crisis-democracy nexus should correlate with the relevance of other aspects of the state role. Most importantly, this dimension of state role closely pertains to our theoretical argument. Our theory in previous sections directly models the share of state economy as the conditioning variable that moderates the effect of economic crisis on democratic transition. And the investment of the authoritarian governments serves a good proxy of the stake of authoritarian political elites in the economic system and thus captures a key feature of authoritarian economic structure. The missing values of this variable are imputed through linearly interpolating (averaging) between the two nearest neighboring date points within the same country. This treatment is based on the presumption and the data characteristics that the level of state engagement does not fluctuate drastically over adjacent years.

Control Variables

We first control the level of economic development. Real GDP per capita is used as the measurement. The data for GDP per capita are acquired from the *Penn World Table* compiled by the Center for International Comparisons at the University of Pennsylvania. Among different measures of GDP per capita, we choose the chain series in 2005 constant price. The distribution of GDP per capita is right skewed and thus is log-transformed into a normally distributed variable. Building on previous quantitative studies of comparative democratization, we also include a set of variables to control their confounding effects: ethnic fragmentation, percentage of Moslem population (%), British colonial history (0 vs. 1), importance of oil export (0 vs. 1), and economic openness measured as the percentage of the value of export and import in national GDP. The summary statistics of all variables is presented in Appendix 2. We also control for regional patterns by including five region dummies (six regions: Asia, Africa, Latin America, Middle East, East Europe, and OECD) and time factors by including dummies for time including either decade dummies or year dummies.

Mostly limited by the data availability of the state economy variable, the actual sample contains 106 countries. The time period expands from 1970 to 2007.

Analyses and results

Following a series of important studies on democratization, we employ a dynamic probit model, Markov transition model, to estimate the effect of economic crisis on democratic

transition.²⁵

$$\Pr(y_{it} = 1 | y_{it-1}, x_{it}) = \Phi(\beta' x_{it} + \alpha' x_{it} y_{it-1})$$

Transition model distinguishes between the probability of moving away from autocracy (democratic transition) and the probability of moving away from democracy (democratic stability) as decided by the value of y_{it-1} . Since our theoretical argument is about democratic transition, we focus on the change from $y_{t-1}=0$ to $y_t=1$, and only report the analytical results of the Beta coefficient.

[Insert Table 1 about here]

The results of first set of primary analyses are presented in Table 1. Model 1-4 are the baseline modes that only include primary explanatory variables. Model 1 shows that the coefficient of crisis is positive and statistically significant. It indicates that economic crisis on average is associated with a higher probability of democratic transition. However, this simple aggregate analysis conceals the fact that the positive association between economic crisis and democratic transition does not hold for all type of cases. Splitting the global sample based on the share of state economy yields results consistent with our theoretical expectation about the conditional effect of economic crisis. Model 2 analyzes cases where the share is above the mean value of the sample (35.7%) and Model 3 analyzes cases with

²⁵ Przeworski and Limongi 1997; Boix and Stokes 2003; Ansell and Samuels 2010; Ahlquist and Wibbels 2012.

state share below the mean value. Economic crisis is positively associated with regime transition only for cases with relatively higher levels of state engagement in the economy, but not for cases with low levels of state engagement. Model 4 includes an interaction term between state economy and economic crisis. The significant and positive coefficient of the interaction term indicates that greater extent of state engagement in the economy increases the contribution of economic crisis to democratic transition.

Model 5-8 conduct the same set of analyses but control for a full set of variables including region dummies and decade dummies. For brevity, the coefficients of dummies and the results of simpler models are not reported. These analyses yield the same pattern regarding the significance of the effect of state economy on the relationship between economic crisis and democratic transition. That is, the democratizing effect of economic crisis increases with higher levels of state engagement in the economy; economic crisis is positively associated with the probability of democratic transition for cases with relatively higher levels of state economy, but not significantly associated with that probability with relatively lower levels of state economy.

The interpretation of the significance and magnitude of the effect of economic crisis in Table 1 is difficult given the complication of variant scales of variables, the dynamic probit model, and the interaction terms. To make more accurate and informative interpretation, we plot in Figure 1 the marginal effect of economic crisis on the probability of regime transition for all levels of state economy. Figure 1 displays the marginal effect as the change in the probability of democratic transition, at each value of state economy, when the measurement of economic crisis moves 1 standard deviation from its mean value. From the plot, we can

tell that first, the democratizing effect of economic crisis increases with the level of the state economic engagement. Second, if the state holds a small share of the national economy, the effect of economic crisis is insignificant indicating that it does not lead to regime changes in this situation. For cases where the state holds a significant share of the national economy, the effect of economic crisis is positive and significant, indicating that it is more likely to engender democratic transition in such countries or such time.

[Insert Figure 1 about here]

Robustness check

We examine the robustness of our findings first by alternating the measurement of dependent variable (i.e., democracy) and independent variable (i.e., economic crisis). Model 9 and Model 10 use Polity IV and split the global sample at the mean value of state share of economy. A comparison of the two models shows that economic crisis is not significantly associated with democratic transition when the share of the state economy is low and it is positively associated with democratic transition when the share is high. Model 11 using Polity measurement includes an interaction term between state share and economic crisis. This analysis confirms the pattern that economic crisis is more likely to be positively associated with regime transition when the share of state economy is higher.

[Insert Table 2 about here]

We then vary the measurement of economic crisis in different ways. Model 12 uses a dichotomous measurement indicating whether or not there is an economic crisis. It is created by recoding the two-year moving of economic growth into 1 (if <0) and 0 (if >0). Model 13 measures the duration of economic crisis as the number of consecutive years of negative economic growth rate before the current year. Model 14 measures crisis as the three-year moving average of economic growth rate (lag). All three analyses yield similar pattern regarding the moderating effect of state economy. That is, economic crisis is positively associated with democratic transition only with a significant share of the state holding in the national economy.

Model 15 excludes OECD countries from the analysis. Model 16 excludes oil country-year cases. Some scholars have argued that oil-rich authoritarian regimes are less likely to collapse in economic crisis.²⁶ Both analyses also demonstrate the significant and positive moderating effect of the state economy on the relationship between economic crisis and democratic transition. All in all, the findings of these robustness analyses (and other ones not reported) confirm the theoretical relevance of the economic structure as defined by the extent of the state engagement to the political consequence of economic crisis.

Concluding remarks

For an authoritarian regime to have any significant political change, both triggering events that disrupt the original equilibrium under the authoritarian arrangement and certain structural factors that magnify the effect of these events are required.²⁷ In this study we argue that

²⁶ Smith 2006.

²⁷ Gasiorowski 1995, 883.

economic crisis constitutes a necessary condition for democratic transition because the elite's protection of their interest breaks both the provision pact between the regime and business interest and the social pact between the rich and the poor. It provides an opening for political change by disrupting the balance of power (Boix and Svolik 2013). Moreover, the effect of crisis on politics is moderated by economic structure. In an economic structure with a higher share of state economy, on the one hand, economic crisis becomes more politically relevant by making the authoritarian state liable for economic failures. On the other hand, economic crisis inflicts a greater economic loss for both the business group and the mass within an economy heavily engaged by the state which in turn makes the former more likely to defect from the coalition with the regime, the latter more likely to rebel for regime change, and the two social classes are more likely to form cross-class alliance.

This argument and analytical finding suggest that the engagement of the state in the economy is a double-edged sword for the authoritarian elites. Their share in the economy certainly helps buttress their political authority and gain the resource to buy support from social forces for the regime. However, their engagement with the economy is like a Faustian deal. While the authoritarian regime can get favor from this deal in good times, it has to pay back with the fate of regime collapse when the economy turns bad. To some extent, this is a doomed destiny for the authoritarian regime instead of an optional consequence the regime elites can avoid. Given the self-interest of regime elites and the pressure to buy off political support, the authoritarian states have intrinsic need to engage themselves in the economy. But it is the same economic involvement that puts their political rein in jeopardy.

For the broad literature of comparative democratization, this study implies the imperative to reconsider and bring back the role of the state into the analysis of economic origins of democracy by stressing the relevance of the economic engagement of the authoritarian states. The conventional approach represented by the modernization theory treats the state (or its representatives, political elites) as the passive player that is to be influenced and transformed by social economic changes in which the state has no say. More recent studies include the power interaction between elites and the mass in their theoretical analysis of democratization (Boix 2003; Acemoglu and Robinson 2006). These studies, however, did not differentiate between political elites and economic elites. “Elites” is often used interchangeably with “the rich.” By doing so, they have not yet examined how the state players as an active and independent force can predetermine the nature of economic changes which in turn shapes the political outcome of economic changes. In these theories, the preference for regime types of various groups is largely determined by broad social structural settings in which the state has no antecedent role. Our theories and empirics suggest the otherwise. The state or the political system by engaging itself in the economy sets a political economic context in which economic factors exert influence on political change. Therefore, in the relationship between the economy and the politics, the causal direction is inherently intertwined.

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Contingent Democratization

Online Appendix 1 - 5

Appendix 1: Formal Proof

The following proof shows that a sudden economic shock disrupts the existing equilibrium, and with the authoritarian elites' having a higher share of state-owned assets, economic crises are more likely to trigger coalition defection of the business class. Suppose that, when an economic crisis occurs in a country, it affects the masses and business class alike by decreasing their respective income by λ . Due to the greater capability of political elites to protect returns from the state economy, political elites suffer a lesser degree of loss. The political elites are motivated and, at the same time, monopolize the political means to protect the returns when crises occur. They can do so by either shrinking special benefits for the business groups and other social groups or raising the extent of economic extraction to continue to pay for political support. The choices include an increase in the tax rate (e.g., Bolivia), the physical seizure of land and private assets (e.g., Zimbabwe), or the reduction of subsidies for specific sections of the economy (e.g., Burma, Iran). Political elites also can provide selective help for the business in which they have vested economic interest, while ignoring most other business groups. Starting in 1979, for instance, the Korean economy, particularly the manufacturing sectors, was strongly hurt by crises. The government handpicked by military generals aided only the large *chaebols*, from which politicians received kickbacks. The results included large-scale bankruptcy of the owners of middle- and small-size businesses and subsequently widespread protests.

It should be noted that political elites' gains from state assets are, *by no means*, insulated from crises. Yet, as discussed above, they can use various tools to protect themselves or to pass on the loss to societal groups. During economic crises, political elites are hurt disproportionately less than are other groups. For the purpose of simplification of the presentation of our formal model, we set that economic crises do not affect the income of political elites. Mathematically, assuming that political elites suffer some but proportionally less loss from crises than do other groups (e.g., a ρ portion of the loss of the masses, $0 < \rho < 1$) will yield

the same result. In other words, the conclusion derived from the formal modeling does not require that state assets are insulated from crises or political elites do suffer from economic crises. In this appendix, we present the simplified model; the derivation of the more complicated model where political elites also lose a share of income is not presented and can be requested.

A. Provision Pact and Coalition Defection

Since an economic crisis decreases the income of the mass and business class by λ but does not affect that of the elites, we have the following expressions about per capita income for elites and business class.

Before crisis:

y^e (*per capita* income for the elites), $y^e = \frac{\theta}{\delta} \cdot \bar{y}_p + k$; and

y^b (*per capita* income for business groups), $y^b = \frac{1-\theta}{1-\delta} \cdot \bar{y}_p + r$.

After crisis:

y^{es} (*per capita* income for the elites), $y^{es} = \frac{\theta}{\delta} \cdot \bar{y}_p + k$; and

y^{bs} (*per capita* income for business groups),

$$y^{bs} = \left[(1 - \lambda) \frac{1-\theta}{1-\delta} \cdot \bar{y}_p - \lambda \frac{\theta}{1-\delta} \cdot \bar{y}_p \right] + \left[(1 - \lambda)r - \lambda \frac{\delta}{1-\delta} k \right]$$

$$y^{bs} = (1 - \lambda) \left(\frac{1-\theta}{1-\delta} \cdot \bar{y}_p + r \right) - \frac{\lambda}{1-\delta} (\theta \bar{y}_p + \delta k).$$

Based on a definition that democracy is where the median voter gets to decide the allocation of resources, so that a democratic transition supported by the business class is the one in which all members of the business class will confiscate all the previous state economy and have the same *per capita* income after a successful defection. The defection constraint for business class therefore is, the *per capita* business income after successful defection and after discounting the defection cost (μ), will be higher than the per capita business income under authoritarian coalition and without defection cost:

$$(1 - \mu)(y^{es} + y^{bs}) > y^{bs} \quad (1)$$

Inequality (9) is equivalent to:

$$(1 - \mu) \left[\left(\frac{\theta}{\delta} \cdot \bar{y}_p + k \right) + \left(\frac{1-\theta}{1-\delta} \cdot \bar{y}_p + r \right) (1 - \lambda) \right] > \left(\frac{1-\theta}{1-\delta} \cdot \bar{y}_p + r \right) (1 - \lambda)$$

$$(1 - \mu) \left(\frac{\theta}{\delta} \cdot \bar{y}_p + k \right) - \mu \left[\left(\frac{1-\theta}{1-\delta} \cdot \bar{y}_p + r \right) - \frac{\lambda}{1-\delta} \right] > 0$$

Multiply $\delta(1 - \delta)g$ on both sides and rearrange, in addition to a positive portion, we can show that,

$$(-\mu\delta\bar{y}_p + \mu\delta\theta\bar{y}_p - r\mu\delta + r\mu\delta^2 + \lambda\mu\delta\bar{y}_p - \lambda\mu\delta\theta\bar{y}_p + r\lambda\mu\delta - r\lambda\mu\delta^2) +$$

$$(\theta\bar{y} + \mu\delta\theta\bar{y}_p - \mu\theta\bar{y}_p - \delta\theta\bar{y}_p + k\delta + k\mu\delta^2 - k\mu\delta - k\delta^2) > 0$$

To satisfy this inequality, the following three conditions are required:

1. $1 - \mu - \delta > 0$;
2. $2\theta - 1 > 0$; and
3. $k\delta - r(1 - \delta)$.

In sum, the three conditions suggest that as long as the coalition defection is not self-destructive, the business class is motivated to break away from the existing coalition with political elites.

Alternatively, the necessary condition for business class to break away from the coalition with political elites can be derived by examining the aggregate income of the business class and elites. The aggregate income of political elites after crisis is, $Y^{es} = y^{es}\delta N_p = \theta N_p \bar{y}_p + k\delta N_p$. The aggregate income of business class is, $Y^{bs} = y^{bs}(1 - \delta)N_p$, which equals to $(1 - \lambda)(1 - \theta)N_p \bar{y}_p + (1 - \lambda)(1 - \delta)N_p r - \lambda\theta N_p \bar{y}_p - \lambda\delta N_p k$.

Similarly, the defection constraint for business class is, the *per capita* business income after successful defection, after discounting the defection cost, will be higher than the *per capita* business income under authoritarian coalition and without defection cost:

$$(1 - \mu) \left[\frac{Y^{es} + Y^{bs}}{(1 - \delta)N_p} \right] > \frac{Y^{bs}}{(1 - \delta)N_p}.$$

This is equivalent:

$$(1 - \mu) (\theta N_p \bar{y}_p + k\delta N_p) - \mu [(1 - \lambda)(1 - \theta)N_p \bar{y}_p + (1 - \lambda)(1 - \delta)N_p r - \lambda\theta N_p \bar{y}_p - \lambda\delta N_p k] > 0,$$

which can be transformed into,

$$(\theta - \mu)\bar{y}_p + (1 - \mu)k\delta + \mu(\lambda\bar{y}_p - r + \lambda r + \delta r) + \mu\lambda\delta(k - r) > 0$$

To satisfy this defection constraint for business class, the following two conditions are required:

1. $\mu < \theta$; and
2. $\lambda\bar{y}_p - r + \lambda r + \delta r > 0 \Leftrightarrow \lambda > \frac{(1 - \delta)r}{\bar{y}_p + r}$.

In sum, the two conditions suggest that as long as the coalition defection is not self-destructive, the business class is motivated to break away from the existing coalition with political elites.

To what extent is the share of the state-owned assets associated with the defection constraint for business class? Our model suggests that higher shares of the state-owned assets make the defection constraint for business class more binding. Suppose there are two countries that are otherwise identical. Yet one has a larger privileged economy than another, $G_1 < G_2$. It has been proved that the key condition for coalition defection is $k\delta - r(1 - \delta)$. For G_1 , the condition for coalition defection therefore is $k_1\delta - r_1(1 - \delta)$, and $k_2\delta - r_2(1 - \delta)$ for G_2 .

It can be proved that $k_2\delta - r_2(1 - \delta)$ is more likely to hold than $k_1\delta - r_1(1 - \delta)$. This is equivalent to prove,

$$(k_2\delta - k_1\delta) - [r_2(1 - \delta) - r_1(1 - \delta)] > 0$$

Multiply N_p on both sides, and we have,

$$(K_2 - K_1) - (R_2 - R_1) > 0$$

Since $K > R$, the above inequality holds. Therefore, when an economic crisis occurs, higher share of state economy within an authoritarian country makes the business class defect more likely.

B. Social Pact and Mass Rebellion

Similarly to the discussion of business defection, the rebellion constraint for the mass can be obtained when the *per capita* income of mass after a successful revolt, after discounting the

cost of revolt (i.e., μ_m), is higher than the per capita mass income under the authoritarian regime and without the cost of revolt:

$$(1 - \mu_m)(y^{ms} + y^{ps}) > y^{ms} \quad (2)$$

This is equivalent to,

$$(1 - \mu) \left[\left(\frac{\theta}{\delta} \cdot \bar{y}_p + k \right) + \left(\frac{1-\theta}{1-\delta} \cdot \bar{y}_p + r \right) (1 - \lambda) + \frac{1-\alpha}{1-\beta} \cdot \bar{y}(1 - \lambda) \right] > \frac{1-\alpha}{1-\beta} \cdot \bar{y}(1 - \lambda)$$

Multiply $(1 - \delta)(1 - \theta)\delta$ on both sides, we have,

$$\begin{aligned} & (1 - \mu_m)(1 - \delta)(1 - \beta)\theta\bar{y}_p + (1 - \mu_m)(1 - \delta)(1 - \beta)k\delta + (1 - \mu_m)(1 - \lambda)(1 - \theta)\delta\bar{y}_p \\ & + (1 - \mu_m)(1 - \delta)(1 - \lambda)(1 - \beta)\delta r - \mu_m(1 - \delta)(1 - \lambda)(1 - \alpha)\delta\bar{y}_p > 0 \end{aligned} \quad (3)$$

Compare the first term $(1 - \mu_m)(1 - \delta)(1 - \beta)\theta\bar{y}_p$ and the only negative term $-\mu_m(1 - \delta)(1 - \lambda)(1 - \alpha)\delta\bar{y}_p$ on the left hand side. Given the model setups as well as no-catastrophe condition for mass rebellion (i.e., $1 - \mu_m > \mu_m$), the following inequality holds,

$$(1 - \mu_m)(1 - \delta)(1 - \beta)\theta\bar{y}_p - \mu_m(1 - \delta)(1 - \lambda)(1 - \alpha)\delta\bar{y}_p > 0 \quad (4)$$

Moreover, Inequality (11) suggests that higher shares of the state-owned assets make revolt constraint for the mass more binding. This is so because with the increase of the size of privileged economy (i.e., with the rise k and r), the revolt constraint becomes more binding.

C. Cross-Class Alliance between the Mass and Business Class

C.1 Inequality and cross-class alliance

The economic crisis will affect the income inequality between the mass and business class.

The post-crisis inequality between the two is,

$$\eta^s = \frac{Y^{bs}}{Y^{bs} + Y^{ms}}, \quad (5)$$

where,

$$Y^{ms} = y^{ms}(1 - \beta)N = (1 - \alpha)(1 - \lambda)N\bar{y}; \text{ and}$$

$$Y^{bs} = y^{bs}(1 - \delta)N_p = \alpha(1 - \lambda)(1 - \theta)N\bar{y} - \beta(1 - \lambda)(1 - \delta)Nr - \alpha\lambda\theta N\bar{y} - \beta\delta Nkr.$$

Therefore,

$$\eta^s = \frac{(1-\lambda)(1-\theta)N\alpha\bar{y} + (1-\lambda)(1-\delta)N\beta r - \lambda\theta N\alpha\bar{y} - \lambda\delta k N\beta}{(1-\lambda)(1-\theta)N\alpha\bar{y} + (1-\lambda)(1-\delta)N\beta r - \lambda\theta N\alpha\bar{y} - \lambda\delta k N\beta + (1-\lambda)(1-\alpha)N\bar{y}}.$$

This is equivalent to,

$$\eta^s = \frac{N\alpha\bar{y} - \lambda N\alpha\bar{y} - \theta N\alpha\bar{y} + N\beta r - \lambda N\beta r - \delta N\beta r + \lambda\delta N\beta r - \lambda\delta k N\beta}{N\bar{y} - \lambda N\bar{y} - \theta N\alpha\bar{y} + N\beta r - \lambda N\beta r - \delta N\beta r - \lambda\delta k N\beta}.$$

The first-order derivative test of $\eta^s = f(\lambda)$ will reveal the relationship economic crisis to the inequality between the business class and the mass. It can be proved that,

$$\frac{d\eta^s}{d\lambda} < 0. \quad (6)$$

In other words, as economic crisis increases in severity, inequality between business class and the mass declines.

C.2 Cross-class alliance constraint

For cross-class alliance constraint, when after a crisis, the combined payoff for cross-class alliance is greater than the combined payoff for the business class and the mass under the authoritarian regime, given the cost of cross-class alliance (i.e., μ_c),

$$(1 - \mu_c)(1 - \lambda) \frac{Y}{N_m + N_b} > \frac{Y^{bs} + Y^{ms}}{N_m + N_b}. \quad (7)$$

It is known that,

$$Y^{ms} = (1 - \alpha)(1 - \lambda)N\bar{y}; \text{ and}$$

$$Y^{bs} = \alpha(1 - \lambda)(1 - \theta)N\bar{y} - \beta(1 - \lambda)(1 - \delta)Nr - \alpha\lambda\theta N\bar{y} - \beta\delta Nkr.$$

Inequality (15) therefore can be transformed into,

$$\beta(1 - \mu_c)(1 - \lambda)Ng + (1 - \mu_c)(1 - \lambda)N\bar{y} > \beta[(1 - \delta)r - \lambda g]N + \{\alpha(1 - \lambda)(1 - \theta)N\bar{y} + (1 - \alpha)(1 - \lambda)N\bar{y} - \alpha\lambda\theta N\bar{y}\}.$$

First, compare if $\beta(1 - \mu_c)(1 - \lambda)Ng > \beta[(1 - \delta)r - \lambda g]N$. This inequality is assured if $(1 - \mu_c + \lambda\mu_c)g > (1 - \delta)r \Leftrightarrow g > \frac{(1 - \delta)r}{1 - \mu_c + \lambda\mu_c}$. This is true given the fact that r is a fraction of g .

Second, compare the if,

$$(1 - \mu_c)(1 - \lambda)N\bar{y} > \alpha(1 - \lambda)(1 - \theta)N\bar{y} + (1 - \alpha)(1 - \lambda)N\bar{y} - \alpha\lambda\theta N\bar{y}.$$

This is equivalent to verify if,

$$1 - \mu_c - \lambda + \lambda\mu_c > \alpha - \alpha\lambda - \alpha\theta + \alpha\theta\lambda + 1 - \alpha - \lambda + \alpha\lambda - \alpha\theta\lambda.$$

Rearrange and we have, $\mu_c < \frac{\alpha\theta}{1-\lambda}$. This indicates that as long as the cross-class alliance cost is not prohibitively high, then the cross-class alliance constraint is binding, such that the two classes have an incentive to engage in coalition against the authoritarian rule by the political elites.

To what extent is the share of the state-owned assets associated with the cross-class alliance constraint for the mass and business class? This can be answered by examining the first order *w.r.t. k* of Inequality (15), which is equivalent to,

$$\begin{aligned} & \beta(1 - \mu_c)(1 - \lambda)Ng + (1 - \mu_c)(1 - \lambda)N\bar{y} > \\ & \beta[(1 - \delta)r - \lambda g]N + \{\alpha(1 - \lambda)(1 - \theta)N\bar{y} + (1 - \alpha)(1 - \lambda)N\bar{y} - \alpha\lambda\theta N\bar{y}\}. \end{aligned}$$

Take the first order *w.r.t. k*, then we have,

$$(1 - \mu_c)(1 - \lambda)N\beta\delta + \lambda\delta N\beta > 0.$$

This is greater than zero, which indicates that the higher the state economy the more binding is the cross-class alliance constraint.

Appendix 2: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
DD	3693	0.52	0.50	0.00	1.00
Polity IV	3496	2.05	7.45	-10.00	10.00
Crisis1 (Dichotomous)	3693	0.26	0.44	0.00	1.00
Crisis2 (2-year MA)	3603	-0.02	0.05	-0.31	0.30
Crisis3 (Dichotomous, 3-year MA)	3693	0.28	0.45	0	1
Govt. size	3643	4.35	1.51	1.20	9.90
Govt. investment	3693	35.45	17.55	1.90	100.00
GDP pc (log)	3693	8.61	1.12	5.74	11.26
Colonial history	3499	0.25	0.43	0.00	1.00
Oil export country	3499	0.11	0.31	0.00	1.00
Percent. Of Moslem	3499	18.23	33.05	0.00	99.40
Ethnic fragmentation	3499	69.19	25.64	18.00	100.00
Openness	3693	69.75	50.36	8.78	456.56
Legislature	3688	0.86	0.34	0.00	1.00
Military regime	3687	0.21	0.40	0.00	1.00

Appendix 3: A List of Democratic Transitions

Democratic transition in this list is defined as a change from $\text{democracy}_{t-1}=0$ to $\text{democracy}_t=1$. That is, a country changes from an autocracy in the previous year to a democracy in the next year. Democracy is measured by DD. The years after country names indicate $t - 1$ and t .

Argentina: 1972-1973; 1982-1983

Bangladesh: 1985-1986

Benin: 1990-1991

Bolivia: 1977-1978; 1981-1982

Brazil: 1984-1985

Burundi: 1992-1993; 2004-2005

Central African Republic: 1992-1993

Chile: 1989-1990

Congo Brazzaville: 1991-1992

Congo Kinshasa: 1991-1992

Cyprus: 1982-1983

Ecuador: 1978-1979; 2001-2002

El Salvador: 1983-1984

Fuji: 1991-1992

Ghana: 1978-1979; 1992-1993

Greece: 1973-1974

Guatemala: 1985-1986

Honduras: 1970-1971; 1981-1982

Hungary: 1989-1990

Indonesia: 1998-1999

Kenya: 1997-1998

South Korea: 1987-1988

Madagascar: 1992-1993

Malawi: 1993-1994

Mali: 1991-1992

Mexico: 1999-2000

Nepal: 1989-1990

Nicaragua: 1983-1984

Niger: 1992-1993; 1999-2000

Nigeria: 1978-1979; 1998-1999

Pakistan: 1987-1988

Panama: 1988-1989

Paraguay: 1988-1989

Peru: 1979-1980; 2000-2001

Philippines: 1985-1986

Poland: 1988-1989

Portugal: 1975-1976

Senegal: 1999-2000

Sierra Leone: 1995-1996; 1997-1998

Spain: 1976-1977

Sri Lanka: 1988-1989

Taiwan: 1995-1996

Thailand: 1974-1975; 1978-1979; 1991-1992

Turkey: 1982-1983

Uganda: 1979-1980

Uruguay: 1984-1985.

Appendix 4: On the dependent variable and interpretation of coefficients

The choice of dichotomous dependent variable

In theory, we hold a binary conception of democracy. We are interested in the change from autocracy to democracy (democratic transition), not the change from one level of democracy (autocracy) to another. Accordingly, in the empirical model, we used a probit model (Markov transition model) that has been widely used in the literature to estimate the probability of change from autocracy to democracy. Both theory and empirical analysis therefore require a dichotomous variable. We used DD as our primary measurement. In order to show the robustness of our findings, we supplemented it with Polity IV. When scholars use Polity IV but need a binary measurement, a common practice is to dichotomize it at the point 6. We followed that practice in this research.

The interpretation of regression coefficients

The model we used in this research, Markov transition model, is a dynamic probit model estimates the probability of a country in a given year will be a democratic country, given that this country was authoritarian in previous year.

From the primary analysis in Model 4, we can calculate the regression coefficients (not transformed) for each given value of government investment and obtain the following marginal effect graph.

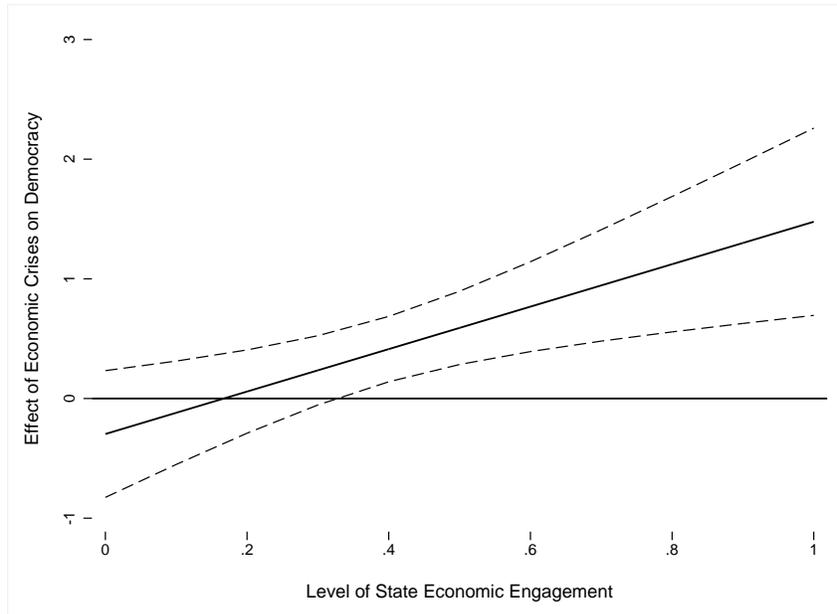


Figure 2. Marginal effect of economic crises on democratic transition (Dependent variable: the regression coefficients of Model 4)

Substantively, this plot graphically presents the regression coefficients at each value of government investment. For instance, when state engagement at 10%, the coefficient is insignificant, indicating that the effect of crises is not significant. When state engagement is at 40%, the coefficient is 0.41 and statistically significant. This indicates that one unit increase in crisis (i.e., change from “no crisis” to “crisis”) increases the Z-score of the predicted probability of democracy by 0.41. When state engagement is at 80%, the coefficient is 1.12 and significant. In this scenario, economic crises increase the Z-score of the predicated probability of democracy by 1.12

Although we can interpret the statistical significance and the sign of each coefficient directly, assessing the magnitude of the effect is trick in probit models. Moreover, as noted by various statisticians and political scientists, the estimation of coefficients in nonlinear models with an interaction effect cannot be directly interpreted as in linear models. We therefore calculated the predicted probability of democratic transition given a crisis (crisis changes from 0 to 1)

at each value of state engagement. That marginal effect plot is presented in Figure 1 and its substantive meaning is presented in text.

Appendix 5. Robustness Check

In addition to including dummies for countries, years, regions, and decades, we examine the robustness of our findings in various ways. First, we vary the measurement of the independent variable, economic crises. In Model 8 of Table 2, we use the negative values of the two-year moving average of economic growth as the measurement to ensure that the dichotomization does not cause distortion in results. In Model 9, we create a dichotomous measure of crisis by recoding the three-year moving average of economic growth rate. Both analyses yield a similar pattern in regard to the moderating effect of state economic engagement. We also alternate the measurement of the dependent variable, i.e., democracy. Polity IV is one of the most popular measurements in the field. Because our theory posits a binary state of democracy, and our model is a probit model, we recode Polity IV into a dichotomous measurement at 6. We will later conduct an analysis using the original continuous measurement of Polity IV. This analysis of Model 10 confirms the pattern that economic crises are more likely to be positively associated with regime transition when the share of the state economy is higher. As we argued in previous sections, we prefer to use the share of government investment as the measurement of the economic engagement of the state because it closely pertains to our theoretical argument. Nevertheless, we would like to show whether the economic role of the state in a broader sense entails the same political consequence in terms of its moderating effect on the relationship between economic crises and democratic transition. We thus change the measurement of state economic engagement and use a more comprehensive indicator, “the size of government,” provided in EFW. Model 11 is the analysis that uses this alternative measurement.

Table 2. Robustness Check: The Effect of Economic Crises on Democratic Transition

	Model 8 2-year MV	Model 9 3-year MV (1-0)	Model 10 Polity (1-0)	Model 11 Govt. size	Model 12 Non-oil	Model 13 Pre-1990	Model 14 FE, DD	Model 15 FE, Polity
Crisis	-1.95 (3.75)	-0.36 (0.28)	-0.31 (0.20)	1.75*** (0.54)	-0.61* (0.32)	-1.15** (0.49)	-0.069*** (0.023)	-0.43 (0.34)
State engagement	0.33 (0.38)	-0.44 (0.49)	-0.021 (0.31)	-0.055 (0.059)	-0.43 (0.43)	-2.36*** (0.70)	0.037 (0.045)	-2.07*** (0.64)
Crisis*state	16.7** (6.78)	1.59** (0.63)	0.88** (0.43)	0.25*** (0.091)	2.05*** (0.67)	3.17*** (1.02)	0.19*** (0.053)	1.57** (0.76)
GDP pc	-0.031 (0.11)	-0.015 (0.10)	0.22*** (0.070)	-0.036 (0.11)	0.082 (0.11)	-0.42** (0.17)	0.024 (0.018)	-0.74*** (0.27)
Military	-1.72*** (0.35)	-1.67*** (0.33)	-0.57*** (0.15)	-1.67*** (0.31)	-1.81*** (0.35)	-1.50*** (0.33)	-0.59*** (0.016)	-7.26*** (0.23)
Legislature	-0.56** (0.28)	-0.38 (0.27)	0.41*** (0.15)	-0.34 (0.26)	-0.36 (0.29)	-0.44 (0.39)	-0.12*** (0.016)	-1.55*** (0.24)
Colonial history	-0.69** (0.27)	-0.66** (0.27)	-0.22* (0.12)	-0.60** (0.27)	-0.95*** (0.29)	-0.54** (0.37)	.	.
Oil rich country	-0.40 (0.34)	-0.41 (0.34)	-0.54*** (0.17)	-0.38 (0.32)	.	0.024 (0.57)	.	.
Moslem pop.	0.0030 (0.0034)	0.0036 (0.0034)	0.0024 (0.0019)	0.0051 (0.0034)	0.00076 (0.0038)	0.0020 (0.0048)	.	.
Ethnic frag.	-0.00044 (0.0051)	-0.0022 (0.0051)	0.0020 (0.0026)	0.00042 (0.0052)	-0.0076 (0.0050)	0.0027 (0.0072)	.	.
Econ. open.	-0.0018 (0.0018)	-0.0021 (0.0018)	-0.0015 (0.00095)	-0.0031 (0.0020)	-0.0027 (0.0024)	-0.0025 (0.0032)	0.0011*** (0.00023)	0.0095*** (0.0034)
Democracy _{t-1}	1.77 (2.18)	1.52 (2.25)	0.073*** (0.0093)	3.00 (2.42)	3.37 (2.17)	48.06*** (8.31)	.	.
Cons	-0.85 (0.85)	-0.57 (0.88)	-2.56*** (0.66)	-1.06 (0.99)	-0.88 (0.89)	4.53*** (1.49)	0.29* (0.15)	10.0*** (2.23)
Pseudo R ² /R ²	0.91	0.91	0.75	0.91	0.91	0.92	0.56	0.60
N	3387	3390	3287	3348	3017	1599	2898	2755
BIC	691.4	703.1	1397.0	698.6	610.9	376.7	-434.1	14058.3

Model: First-order Markov transition (Models 8 – 14); Fixed effects (Models 15 & 16). * $p < .10$, ** $p < .05$, *** $p < .01$; Coefficients for region dummies and time dummies are not reported.

Another problem with the measurement of public investment is that, in some cases, a large share of income of political elites that shapes the calculation of political actors is not generated from investment in public sectors. To address this issue, in Model 12, we exclude countries whose economy is heavily reliant on oil export. Oil is one of the most important resources that generate revenues for the regime. Moreover, some scholars have argued that oil-rich authoritarian regimes are less likely to collapse in economic crises (Smith 2006). Exclusion of these countries helps to avoid bias. The analysis of both Model 11 and Model 12 confirm the positive moderating effect of the economic engagement of the state. In this study, we have addressed potential endogeneity issue in a variety of ways. First, the transition model we use conditions the analysis of the current value of democracy on its previous value and thus captures the dynamic process of the relationship between the dependent variable and its covariates over time. Second, all independent variables, including state engagement and its interaction with economic development, are lagged for one year. Nevertheless, there is a potential issue of endogeneity between state engagement and economic crises as economic crises often drive countries to intervene in the economy. To further address this issue, we conduct an analysis, in Model 13, for country-year cases before 1990. We do so because the value of state engagement does not change much for countries during the period 1970-1990. This corresponds to the historical fact that most countries started their market liberalization in late 1980s and early 1990s. While, theoretically, state engagement might be endogenous to both economic crises and political democracy, the change in either economic situations or political conditions has not yet caused significant changes in the level of state engagement during 1970 — 1990. The analysis, again, indicates the robustness of our findings revealed in other models. As argued above, we chose a dynamic probit model because it fits with our theory. To show the robustness of our findings, however, in Model 14 and Model 15, we conduct analysis using a regular panel method, a fixed-effects model. A Fixed-effects model also is useful to control for the country-specific effect without losing too many cases. The analysis of both models lends further support to the findings of the transition model. Again,

however, the findings revealed by the fixed-effects model are not directly relevant to our theory since it does not estimate the transition from an autocratic regime to a democratic one but, rather, the change from one level of democracy (or autocracy) to another level.