

# Research Note: Why and When do Leaders of Developing Countries Negotiate South-North Preferential Trade Agreements?

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Why and when will leaders in the developing countries negotiate South-North preferential trade agreements with provisions of economic reforms? This paper is interested in explaining what motivates a leader from the developing countries to negotiate this particular deep and demanding international treaty. Preferential trade agreements (hereafter PTAs) are binding international treaties that help states to foster trade and economic integration among member-states. Current literature on the preferential trade agreement mainly focuses on the effects of this institution. Questions centre around whether the PTAs increase trade volumes among member-states and their impacts on the overall trade flows in the multilateral trade system (Bagwell and Staiger 1998). Put simply, scholars examine to what extent the PTAs have achieved their desired economic purposes: lowering tariffs, facilitating trade and increasing the welfare of the states in the long term. In addition to studying the consequences of the PTAs, emerging political economy literature has offered explanations for why states form the PTAs. Earlier years, the focus is the macroeconomic and macro-political factors that explain the proliferation of the PTAs, including the lack of the progress in the multilateral trade regime and the spillover effect of regionalism (Baldwin 2012; Rodrik 1992; Mansfield and Reinhardt 2003).

One trend of the current literature on the PTA focuses on the effects, others on the cause, which is the theme that this paper speaks to. Recent studies zoom into the domestic factors within the states to explain this trend. While there is no shortage of explanations on why governments form PTAs, scholars also tend to treat the

PTAs as a unitary concept (Dür, Baccini, and Elsig 2014). They overlook the design differences of the PTAs, which imply different degrees of policy changes embedded in these international agreements. Few studies reach beyond trade liberalization to examine the role of the PTA in policy reform. Perhaps the most important exception is Baccini and Urpelainen (2014), who argue PTA can help developing countries to implement economic reforms, leaning more on examining the effect of the PTA. Picking up on this approach, this article argues the leaders' commitments to such costly agreement reflect their political purposes. Leaders have political objectives to commit to the deep PTAs with the expectation to conduct economic reforms after they face political challenge. The political motivation of PTA negotiation is currently understudied; yet, to understand when and why a leader of developing countries commits to the preferential trade agreement with the provision of economic reform is important because economic reforms will have immense consequences for the citizens of that country and beyond. The key question, the cause of economic reforms, yet, remains open.

The puzzle to explain in this paper is what motivates a leader in the developing country to negotiate one of the most costly and stringent trade agreements with the developed country. One of the most important features of these PTAs is the provision of economic reforms, whose implementation will ignite domestic opposition. My argument, in brief, is the following: a leader strategically negotiates a PTA when he is insecure. I argue after a leader is hit by a shock to security, he can choose economic reforms to punish the disloyal opposition responsible for the outbreak. Leaders are more likely to implement economic reform when the PTAs negotiation is in place. The PTAs with major economic powers send positive signals to mitigate commitment problem that a leader has, and offers material benefits to facilitate the reforms. This argument has a main empirical implication that can be used to test its validity in the next section. My prediction is: Negative shocks to a leader's security increase the probability of PTA negotiations.

## Research Design

My research design compares the likelihoods of leaders with shocks to security and those without shocks to negotiate the South-North PTAs. The hypothetical treatment in this study is *shock to security*.

I defined two types of shocks to security. Before getting into a shock, here I use two indices to measure the security of a leader:

- 1) a leader's security before he starts his tenure at time  $0$  depending on his relation to the past leader (or not); and,
- 2) the security of the regime when the leader holds office at time  $t$ .

At *time 0*, regime type matters. I use Archigo's data set on leaders to obtain information of state leaders' names, their tenures, the regime types when they hold power, manners of leader transfers (Gleditsch and Chiozza 2015). The regime types are divided in three categories: democracy, autocracy and no authority. They are identified based on whether political leaders enter and exit in political office based on explicit rules. V-Dem's Electoral Democracy Index (2018) is also used to cross validate the regime type measurement.

An authoritarian leader is coded as secure at *time 0* when he is politically affiliated and from the same ruling coalition with his previous leader. Otherwise, he is insecure at *time 0*. To measure leader's relation to his past leader, I use Svoboda (2012)'s Authoritarian Spells, 1946 - 2008 data set that contains authoritarian leaders' affiliation with their previous leaders. An authoritarian leader is secure at *time 0* when he is politically affiliated and from the same ruling coalition with his previous leader. An authoritarian leader is insecure at *time 0* when a leader is in the opposition party of the previous party, openly opposes the previous leader, or he is unaffiliated (defined as not openly oppose or support) with the preceding government (Svoboda 2012, 43). In other cases, if he is in a military regime or the regime with no authority, he is also defined as insecure when he starts his tenure. Note that in democracies, a leader's relation to his past is irrelevant; so there is no information of leader's relation to his past leader in democracies. All the democratic leaders are assumed as secure leaders before they serve in the office (at *time 0*).

The security of the regime over *time t* measures the vulnerability of the regime to collapse in any given year. I use political effectiveness score in the state fragility index to measure the political secureness of a regime to capture the dimensions of political opposition, citizen's confidence in the political process, political violence of a regime and related political risks (Marshall and Elzinga-Marshall 2017). The index ranges from 0 to 3, 0 means the most secure, and 3 means insecure. I recoded the

regime's security at *time 0* as a binary variable: those with score 0 in political security are coded secure, otherwise insecure. A worsening political effectiveness score over a leader's tenure captures a political upheaval that challenges the government authority. The worsening score measures a shock to leader's security that causes instability.

Here I develop two types of shocks to security. Type (1): a leader who is presumably secure at *time 0* becomes insecure immediately onward at *time 1*. Substantively, it means a democratic leader or an authoritarian leader who politically affiliated with his previous leaders starts his tenure in an unstable and contested environment. The leaders may be highly constrained by the opposition and deep internal political divisions. Type (2): a leader experiences a shock to security during his tenure at *time t*. The political crisis captured in such a shock to security can be a result of threats from the fractionalized ruling coalition, popular uprisings, or even the actual use of force.

Here, I have developed the *independent variable* as a hypothesized treatment of shock to leader's security in the regime. It is a binary variable. Once a leader experienced either or both types of shocks to security, he is considered in the treatment group.

The *dependent variable* is also a binary one. If a leader in the developing country has ever negotiated a South-North PTA with the provisions of economic reforms during his tenure, then this event happened, coded as 1, otherwise 0. Only the South-North preferential trade agreements that contain a competition chapter or a competition article is included. The information is collected on in DESTA data set (Dür, Baccini, and Elsig 2014). The provision includes but is not limited to the privatization of the state-owned firms and regulation on monopolies and cartels. A leader may negotiate a couple of PTAs, but only the first one will be only counted. In this data set, a majority of the PTAs have been put into force, while some of them were still in the negotiation process. Here I focus on the year leaders starts negotiation rather than the year of signatory because there may be leadership change between the years that a leader negotiates a PTA while another leader ratifies it. I collected the information on the state's initiation of PTA negotiations from 1995 to 2015.

The unit of observation in the data set is leader. The data set covers 286 leaders clustered in 62 developing countries in the period 1995 to 2015. Note that in this data set, at least one of the leaders in these developing countries negotiated one PTA with the provision of competition policy with a developed country at some point during this

period. The data set excludes leaders in the liberal democracies (V-Dem’s Electoral Democracy Index above 0.75) where the rule of law and constraints on the executives are respected most of the time. In a regime as such, leadership change is routine and institutionalized. Therefore, there are lower risks for leaders losing power and hence lower incentives for leaders to use binding trade agreements for political survival. Note that under mature democratic regimes, all but the most extreme form of opposition will be channeled into the formal institutions of government, in which dissents of opposition can hardly dampen the political stability or cause a shock to security. In stable democracies, not only shocks to security rarely happen but also leader turnovers are generally institutionalized and peaceful. Leaders’ reactions to such threats may also be institutionalized. Therefore, I limit the scope of this study in only autocratic and semi-democratic developing countries. Furthermore, it removes leaders whose tenure is less than one year, in such case they have no time to pursue any substantial policy changes given the short amount of time in office.

I am aware that the hypothetical treatment assignment is not random in an observational study, so I include potential *confounding variables* to reduce as much omitted variable biases as possible. The covariates in this study include the qualities of democratic or autocratic authority measured by V-Dem’s Electoral Democracy Index (Coppedge et al. 2018) because state leaders face different institutional constraints when they initiate the trade agreement negotiation. State leaders also face different risks of shock to security in different regime types. The second covariate is leader’s tenure and the length of uninterrupted regime duration up to a leader starts his tenure in Archigo data (Gleditsch and Chiozza 2015). A leader’s tenure is a confounder because the longer a leader holds office, the probability of engaging in the PTA negotiation may be higher, and the risks of being exposed to the shock to security is higher.

Two additional control variables are included to take into account the alternative hypotheses. GDP per capita measured by the World Bank (Bank 2018) is a binary variable to capture economic recession of the developing countries between 1995 to 2015. In a period when a country experiences poor economic performance, a leader in the developing country perceives the potential economic benefits of the PTA with the South can help the economy to recover. Also, this regime may be more likely to experience negative shock of security when the economy declines. Government is more likely to lose legitimacy in times of economic difficulties; hence, it is more vulnerable to political risks. Therefore, there is an alternative possibility that a leader may negotiate

Table 0.1: Percentages of Leaders being Treated and those Trated Having an Event

	All Regime Types	Democracies	Nondemocracies
Percentages of leaders being treated (%)	32.52	31.10	36.36
Percentages of those treated negotiated a PTA (%)	44.09	35.38	64.29

a PTA driven by the economic benefits of the preferential trade agreement.

Human rights conditions measured by Political Terror Scale (Gibney et al. 2017) indicate the human rights practices of the regimes. A worsening Political Terror Scale measures an increased level of violence by the state engaging in state-sanctioned killings, torture, disappearances and political imprisonment. As illustrated above, a dominant understanding of leader’s response after the opposition poses shock to security is to repress them. A worsening human rights conditions is a measurement of leader’s punishment tactic to the opposition after he is challenged. If this competitive hypothesis holds, leaders will engage in more human rights violations after they experience the shock to security, a hypothetical treatment in this study.

Table 0.1 presents there are 93 events out of 286 total observations. Across regime types, 32.52% of the leaders have experienced shocks to security. Among leaders across regimes, 44.09% of those who have experienced a shock to security have chosen to negotiate a PTA with a developed country at some point in their tenure. 26.42% of those who have not experienced a shock to security have negotiated a South-North PTA. Now, let us look at the relative frequency distribution divided by regime types. In non-democracies, 64.29% of leaders have experienced an insecure shock, while 31.1% in democracies have experienced one at some point during the time of their tenures. Among leaders in non-democracies regimes, 36.73% of those who have experienced a shock to security negotiated a South-North PTA. In contrast, only 31.1% of those who have experienced a shock to security in democracies negotiated one. Leaders in different regimes have different patterns of negotiating PTAs. The modeling approach adopted in this paper may allow us to account for such contextual factors.

# Model Analysis and Discussion

## Random Intercept Models

The data set in this paper exhibits a nested structure. The level-one units are state leaders, with a sample size of 286. The level-two units are 62 developing countries. Because of missing data, the sample size of level-one drops to 218, the sample size of level-two drops to 49. Table 0.2 summarizes the descriptive statistics. If the models I use ignore the fact that individual leaders are clustered within different countries, I may run the risks of getting downward biased standard errors, which to inflated Type I errors. We may often use clustered standard errors to correct for the clustering data structure. Although it may be a solution of solving statistical problems, we may miss the opportunities to explore the theoretical questions of multilevel data. This research note will adopt a hierarchical linear modeling technique to answer the following level-1 driven question: Do individual leaders' shocks to security lead to leaders' decision of PTA negotiations? Results are shown in Table 0.3.

Table 0.2: Descriptive Statistics

	N	Mean	SD	Min.	Max.
<b>Individual-Level</b>					
PTA Negotiation	218	0.32	0.47	0	1
Shock to security	218	0.33	0.47	0	1
Mean tenure of Leader	218	6.66	6.51	2	45
Mean human rights violation	218	2.87	0.98	1	5
<b>Group-Level</b>					
GDP per capita (log)	49	8.41	0.92	6.23	11.02
Level of democracy	49	0.39	0.19	0.04	0.74
Age of democracy	49	15.31	13.04	0	42
Age of autocracy	49	9.22	14.43	0	44
Economic recession	49	0.8	0.41	0	1

Table 0.3: Four Random Intercept Models of Explaining PTA Negotiation: Estimates, P-values and Variance Components

	PTA Negotiation Rate (%)						
	Model 0	Model 1.1		Model 1.2		Model 1.3	
		Estimates	Pr(> t )	Estimates	Pr(> t )	Estimates	Pr(> t )
<b>Individual-Level</b>							
Shock to security	-	-	-	-	-	0.12	0.047
Mean tenure of Leader	-	-	-	0.02	0.017	0.19	0.017
Mean human rights violation	-	-	-	-	-	-0.08	0.06
<b>Group-Level</b>							
Level of democracy	-	-0.43	0.09	-0.64	0.03	-0.58	0.004
Age of democracy	-	0.00	0.60	-	-	-	-
Age of autocracy	-	0.00	0.14	-	-	-	-
GDP per capita (log)	-	-	-	0.06	0.188	0.07	0.141
Economic recession	-	-	-	-0.09	0.395	-0.09	0.39
<b>Random Effects</b>							
Level-2 variance (between state)	0.012	0.011	-	0.016	-	0.014	-
Level-1 variance (within states)	0.208	0.2	-	0.191	-	0.191	-
Variation explained at level 1	94.71%	3.62%	-	7.03%	-	8.05%	-
Variation explained at level 2	5.3%	3.27%	-	-	-	-	-



The first step of building multilevel models is to decompose the variance in the dependent variable into two levels, the individual leader level and the state level. This is equivalent to running a random intercept model with no explanatory variables, where I do not specify any predictors of PTA negotiation. It is often called an empty model. In decomposing the variance of dependent variable in this way, I can find the proportion of variance in the dependent variable attributable to between-cluster differences and the proportion attributable to within-cluster variability. Model 0 in 0.3 shows that 5.3% of the variance in PTA negotiation explained at the country level, with the remaining 94.7% came from between-individual variation. Some variations at the state-level allow me to explore these contextual variations in the multilevel model setting.

To build the multilevel models, I start from estimating the simple ones to the full and complicated one. Only the level two variables are added in the random intercept model. The second step is to include state level covariates to see if countries with longer history of democracy or autocracy have positive association with the negotiate rate of preferential trade agreements. Three regime quality related state level variables are added to see the effects of these variables on PTA negotiation. These three variables are *age of democracy*, *age of autocracy*, and *level of democracy*. The reason of making this decision is that countries tend to form long-term relationship with trade partners and avoid transitioning and unstable countries. Also, when the developing countries' level of democracy increases, I expect there are more trade cooperations between these countries and developed countries that are most stable democracies. Regime similarities may reward more trade opportunities among partners. Table 0.3 Model 1.1 shows the results. The ages of regimes show no substantive effects of PTA negotiation. The level of democracy shows the opposite direction as I expected. All of these three variables have no statistical significance. This model has explained 3.27% of the level-2 variation captured in the empty model.

Model 1.2 keeps one of the level-2 variables used in Model 1.1, *level of democracy*, and adds in the variables that measure the economic conditions of states: *GDP per capita (logged)* and *economic recession*. A level-1 variable, the *mean tenure of leader* is also added in the model. This variable is centered within the groups. Note that the estimates of the two models for the three level-2 variables are the same, so I only show the result of the slightly complicated model with three level-2 variables and one level-1 variable. We can see level of democracy has statistical significance; yet, the estimate presents a negative relation between developing countries' level of democracy and PTA

negotiation rates. The range of the level of democracy is from 0 to 1; if a regime's level of democracy increases from 0 to 1, suggesting an extreme transition from the most autocratic to the most democratic regime, the PTA negotiation rate goes down by 64%. More realistically, if a regime's level of democracy improves by 0.1 point in V-Dem, the probability of the PTA negotiation goes down by 6.4%.

I then add more level-1 variables, the *mean human rights conditions* and the main independent variable in this paper, the *shock to security*. The estimates in the random intercept models with and without the *shock to security* variable are similar, so I show the full model in Model 1.3. The variables *mean tenure of leader*, *GDP per capita(logged)* and *shock to security* have statistical meanings, and the *mean human rights violation* is slightly above the threshold of rejecting the null hypothesis of no statistical significance (p-value 0.05). This full model only explains 8% of the level-1 variation identified in the empty model, which still leaves a large proportion of variation unexplained. Substantively, the full model shows holding other leader-related factors, political and economic conditions constant, when there is a political shock to security, the leader will increase the odds of PTA negotiation by 12%. When a leader holds office one year longer than the mean tenure years of leaders of that specific state, the leader will increase the probability of PTA negotiation by 2% when other factors are held constant.

## Brief Discussion on the Choice of Random Intercept and Slope Model

To explore whether the effects of some level-1 factors are conditioned by group-level factors, I continue to build random intercept and slope models. In Model 2.1, I allow the effect of *shock to security* and the effect of *human rights condition* vary across states with high and low levels of democracy. Recall the research question I want to ask is the effect of shock to security on PTA negotiation. My worry is the effects will be conditioning on the states' level of democracy where the leaders hold office. According to Table 0.5, the high p-value in random effect test shows that it is necessary to have shock to security vary across countries. Also, Table 0.4 shows that the effect of mean democracy is insignificant on the probability of leaders experiencing shocks to security. Although it has no significant effect, the negative estimate of mean democracy

in the model of shock slope suggests that countries with higher level of democracy that experience shock to security are less likely to negotiate PTA. This is an interesting result that I am not able to observe without using random intercept and slope model. Human rights condition turns out to vary across countries. Also, the mean democracy increases the effect of human rights condition on PTA negotiation significantly. That suggests if countries with same level of human rights condition, countries with higher level of democracy tends to negotiate PTA more.

Table 0.4 shows the results of the random intercept and slope model. The mixed model 2.1 is as follows:

$$\begin{aligned}
Y = & \gamma_{00} + \gamma_{01} * (\text{Log}(\text{GDPpercapita}))_j + \gamma_{02} * \text{Democracy}_j + \gamma_{03} * \text{Recession}_j + \beta_{3j} * (\text{Tenure}_{ij} - \overline{\text{Tenure}_{ij}}) \\
& + \gamma_{10} * \text{Shock}_{ij} + \gamma_{11} * (\text{Democracy}_{ij} - \overline{\text{Democracy}_{ij}}) * \text{Shock} + \gamma_{20} * \text{HumanRights}_{ij} \\
& + \gamma_{21} * \text{HumanRights}_{ij} * (\text{Democracy}_{ij} - \overline{\text{Democracy}_{ij}}) + u_{0j} + u_{1j} * \text{Shock}_{ij} + R_{0j} \\
& .
\end{aligned}$$

In Model 2.2, I removed random intercept of *shock to security* on *level of democracy*, and the estimates are similar to Model 2.1. I also perform a likelihood ratio test to determine which model, the full model (Model 2.1) or the reduced model (Model 2.2) improves the fit of the model. The p-value is greater than the threshold 0.05, hence, the full model does not improve the overall fit of the model. Also, there are much fewer interactions for Model 2.2 to converge, which suggests a better fit to the data. Hence, Model 2.2 is the final model I use to answer my research question.

## Preliminary Conclusion

Why and when will leaders in developing country negotiate South-North Preferential Trade Agreements? The answer is simple and intuitive: after leaders in developing country experience a political shock that creates political instability, they are more likely to negotiate a PTA with the provision of economic reforms with the expectation to cut off the power sources of the disloyal opposition. Economic reform, hence, is a tactic for leader to punish the opposition and a toolkit to consolidate power in the regime. I have used original data on measuring security of leaders in developing countries between 1995

Table 0.4: Random Intercept and Slope Model of Explaining PTA Negotiation: Estimates, and P-values

	Model 2.1		Model 2.2	
	Estimates	Pr(> t )	Estimates	Pr(> t )
<b>Model for PTA Negotiation Means</b>				
Intercept	-0.13	0.751	-0.13	0.746
GDP per capita (log)	0.08	0.054	0.09	0.051
Level of democracy	-1.93	0.001	-1.91	0.001
Economic recession	-0.14	0.167	-0.15	0.158
Mean Tenure of Leader	0.02	0.02	0.02	0.016
<b>Model for Human Rights Condition Slope</b>				
Intercept, gamma_10	-0.04	0.199	-0.05	0.195
Mean Deocracy, gamma_11	0.52	0.014	0.49	0.022
<b>Model for Shock to Security Slope</b>				
Intercept, gamma_20	0.11	0.089	0.114	0.068
Mean Deocracy, gamma_21	-0.16	0.734	-	-

Table 0.5: Random Intercept and Slope Model of Explaining PTA Negotiation: Variation Components

Random Effect	Model 2.1			Model 2.2		
	Variation	Pr(> t )	Variation explained	Variation	Pr(> t )	Variation explained
Variation between states	0.089	0.013	-	0.081	0.024	-
Shock slope	0.007	0.025	-	-	-	-
Human rights slope	0.007	0.428	-	0.007	0.094	-
Variation within states	0.186	-	10.287%	0.186	-	10.287%

and 2015 to examine whether developing country leaders are more likely to negotiate a PTA in their tenures when they experience a political shock. I argue leaders in developing country approach the major liberal trade powers to negotiate a PTA with the provision of economic reform, so they have chosen the deepest PTAs by design. This is a strategic choice that leader makes with an objective to punish the opposition who defect from the promised support and pose the threatening demands.

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