Dean&Francis
ISSN 2959-6130

Does economic growth really reduce domestic conflict? An empirical evidence from Latin America

Yunhao Liang[1], *,

Shangyu Gu[2],

Hanchen Ye[3]

[1]*Business school, Xian International Study University, Xi'an, 710128, China, 2089583961@qq.com*
[2]*Chengdu Cogdel School, Chengdu, 611331, China, Azaxalea@gmail.com*
[3]*Shinyway, Hangzhou, 310000, China, HANCHEN-YE@outlook.com*
All the authors contributed equally to this work and should considered as co-first author.

**Corresponding author email: 2089583961@qq.com*

Abstract:

The purpose of this paper is to empirically challenge the widespread belief that economic growth reduces social instability by analysing an unbalanced panel data from 25 Latin American and Caribbean countries during their transitional periods. We find that economic growth during these periods does not necessarily lead to social stability and may increase the domestic conflict's likelihood. Furthermore, the development of channels for spreading new ideas appears to amplify the impact of economic growth on domestic conflict. The study concludes that economic growth is not a panacea for social stability, especially in contexts where the development of idea spreading channels has increased societal expectations.

Keywords*:* Economic Growth; Domestic Conflict; Media Development

1. Introduction

Common intuition may tell us that economic growth will lead to internal stability and peace. Although this view has been reviewed under the scrutiny of many empirical analysis, there still exists exceptions to this rule.

"In fact, modernity breeds stability, but modernization breeds instability" (Huntington,1968). If the countries can be classified based on level of literacy rate, countries with highest and lowest literacy rate were stable, while countries with medium literacy rate faced the threat of instability. Understanding the complex relationship between economic growth, the spread of new ideas, and domestic conflicts is crucial for policymakers and scholars. Economic growth is often seen as a driver of stability and development, fostering environments where new ideas can flourish and contribute to societal progress. However, this relationship is not always straightforward.

ISSN 2959-6130

Political instability and civil conflict are dangerous and malicious to humanity. Since the 1990s, death count of insurgencies and armed conflicts throughout the world has already reached 3.3milllion. Policial instability is lethal to civilians and exists mainly in underdeveloped countries, with insurgencies in Africa reaching 1.7million of the total deaths, where the healthcare is insufficient for these people to recover.

The spread of new ideas and modernization plays a significant role in political instabilities. These factors can promote democratic notions and influence the level of social satisfaction and unrest. This phenomenon is hypothesized to be especially notable in transitional countries, where they are just beginning to modernize.

While endogeneity and omitted variables complicate the full interpretation of these phenomena, and existing studies are typically unable to resolve the key econometric identification issues. The current network of literature primarily focuses political instability's effects on economic growth or an inverse relationship between the two variables in a generally. Studies that investigate the positive relationship between the two or in the context of a specific circumstance only looks at certain aspects of political instability, for example the probability of coups or civil wars. Our research fills the current gap by investigating the latent correlation between political instability and economic growth while looking at instability in general, which would allow a better understanding of the other variables that make up instability. Furthermore, our study also looks at the impact of the spread of thoughts through literacy rate and accessibility to devices for communication.

This paper aims to empirically investigate the effects of economic growth, education levels, literacy rates, and the dissemination of new ideas on social instability, dissatisfaction, and the prevalence of violence. This paper will begin with a brief review of the present relevant literature, then a summary of our data and methodology, an analysis and lastly followed by a conclusion.

2. Literature Review

In the last decade, numerous studies have explored the intersection of political instability and economic development, particularly focusing on how political instability impacts economic growth. However, there is a notable gap in research examining the reverse relationship: how economic development influences political instability.

Current literature introduces the concept of a "middle-income trap" in developing countries, wherein the interaction between instability and bare economic growth restrict a country's growth. Alesina and Perotti (1994) describe this phenomenon succinctly: "They are unstable because they do not manage to become rich, and they do not manage to become rich because they are politically unstable." This highlights an inverse relationship between economic growth and sociopolitical instability, where instability hampers economic progress and vice versa. This cyclical problem often results from factors such as inadequate institutional development, pervasive corruption, and ineffective governance, all of which can perpetuate both economic and political instability.

While it is commonly proposed that economic growth inversely correlates with sociopolitical instability, recent studies offer a more nuanced view. For example, research on civil wars and coup probabilities suggests that slow economic growth can actually be associated with increased instability (Miguel et al., 2004; Brandt, 2011). In contexts of stagnation, economic frustration can exacerbate grievances, undermine the effectiveness of state institutions, and fuel dissatisfaction with the political regime, leading to heightened risks of unrest and conflict.

Additionally, countries that have not yet modernized demonstrate a positive correlation between economic growth and instability (Huntington, 1996). Contrary to the belief that increases in literacy rates and modernization will naturally lead to greater sociopolitical stability, Huntington (1996) argues that modernization often leads to increased instability. Transitional countries, in the process of modernization, face more issues such as insurgency, anti-government demonstrations, and domestic violence compared to their pre-modernized counterparts. Rapid modernization and urbanization can disrupt traditional social structures and foster extremist movements, thereby increasing instability. Evidence from the last century supports this, showing that rapid modernization in poorer countries has led to significant instability due to the overwhelming pace of change.

Interestingly, literacy rates can exacerbate social and political instability, particularly in countries that are still in transition. Transitional nations with literacy rates below 90% are more prone to instability, as increased political awareness can amplify discontent if not matched by effective governance. However, once literacy rates exceed 90%, these countries tend to achieve greater stability. This shift occurs because higher literacy rates eventually contribute to better governance and more robust political institutions, which can manage social changes more effectively (Huntington, 1996).

The speed of economic growth also plays a critical role in determining stability. Historically, periods of rapid growth between 1950-1960 in Asia, Africa, and Latin America were marked by heightened political instability (Huntington, 1996). Rapid growth can overwhelm existing politi-

cal institutions and social norms, leading to instability as societies struggle to keep pace with economic changes. In contrast, regions with slower modernization, such as Europe and North America, experienced different dynamics. Although studies specifically addressing the speed of economic growth and political instability are limited, some research suggests a link between slow growth and stability (Brandt, 2011). Londregan and Poole (1990) and Collier and Hoeffler (1998, 2001, 2002) argue that slow economic growth is associated with increased civil conflicts. Conversely, rapid economic growth can also elevate risks of civil violence and war, particularly in autocratic regimes or during structural transitions (Brandt, 2011). Brandt emphasizes the nonlinear and dynamic relationship between economic growth and political instability, noting that economic growth impacts transitions to and from democracy in complex ways.

The relationship between economic growth and political instability is further complicated by other findings. Londregan and Poole (1990) find a negative correlation between economic growth and the probability of a successful coup d'état, suggesting that economic growth suppresses coups. Similarly, Miguel, Satyanath, and Sergenti (2004) show a positive correlation between negative economic shocks and civil conflict. Their study indicates that a five-percentage-point negative growth shock can nearly double the likelihood of civil war in the following year, particularly in Africa. Frequent coups, which are associated with lower economic growth, also contribute to increased instability, demonstrating how economic downturns can exacerbate political volatility.

Finally, periods of economic recession and slow growth affect the risks associated with democratic consolidation. Svolik (2008) finds that low levels of economic development reduce the likelihood of democratic survival, and economic recessions are strongly linked with autocratic reversals. This underscores the significant role economic performance plays in the stability of political regimes, influencing both the likelihood of democratic survival and the potential for autocratic reversals.

3 Methodology

3.1 Data source

We utilize the Cross-National Time-Series (CNTS) data archive as our source of data. Our sample data were collected from the following 25 countries: Argentina, Venezuela, Chile, Brazil, Uruguay, Paraguay, Bolivia, Peru, Ecuador, Haiti, El Salvador, Honduras, Guatemala, Nicaragua, Mexico, Cuba, Costa Rica, Panama, Suriname, Guyana, Jamaica, Trinidad and Tobago, Colombia, Dominica, and Barbados. Due to some data limitations, a few countries were excluded. The CNTS database is the outcome of a data compilation and systematization project initiated by Arthur Banks. The data source involve data from "The Statesman's Yearbooks," which were published between 1864 and 2023, excluding the two major wartime periods (1914-1918 and 1940-1945). The database includes approximately 200 indicators across more than 200 countries. The economic variables in the archive provide insights into Gross Domestic Product (GDP), government revenue and expenditure, foreign aid, per capita imports and exports, countries' shares in global trade, defense and education spending, per capita production and consumption of energy, electricity, steel, cement and the percentage of the labor force in agriculture, industry and other activities. Political system and institutional variables include data on regime types, the effectiveness of executive and legislative branches, legislature size, multiple government indices of democratic performance, political and civil rights, the number of coups, great constitutional cabinet changes, and legislative elections. Population characteristic variables are population density, urbanization index, internal security forces, the proportion of the military to the adult population, and the ratio of mortality. Furthermore, population variables include data on religion, ethnicity, literacy rates, and languages.

3.2 Variable

GDP is usually considered as a measurement of economic growth, which shows the increase in a country's GDP and overall level of development including factors such as poverty reduction, improved literacy rates, healthcare advancements, and changes in economic output composition (Islam, 2019). In our paper, we use the GDP per capita (factor prices) as the dependent variable, which is measured by US dollar.

The key independent variable in this paper is domestic conflict index in our paper we conduct a thorough examination of the data describing internal conflicts (domestic). This index includes information starting from 1946 to which year based on the analysis of events in eight various subcategories as show as Equation 1(citation)

$$\text{Domestic Conflict Indes}=\frac{10*X_1+25*X_2+20*X_3+20*X_4+150*X_5+25*X_6+100*X_7+20*X_8}{8} \quad \text{(Eq. 1)}$$

Where X_1 is Anti-Government Demonstrations, X_2 is Assassinations, X_3 is General Strikes, X_4 is Major

ISSN 2959-6130

Government Crises, X_5 is Revolutions, X_6 is Riots, X_7 is Terrorism/Guerrilla Warfare and X_8 is Purges. this index is used to compile integral Index of Sociopolitical Destabilization. Every event has its own weight given by the database. The index is calculated by weighted conflict measures which is given by the manual book of the CNTS dataset.

While as the compilers of the CNTS database acknowledge, since some events' (like revolutions) weight are much larger than that of others (like Anti-Government Demonstrations), the value of Domestic conflict index may have largely variation (from 65321 to 0). Therefore, in order to reduce the variation and maintain the original distribution of the domestic conflict index, we standardized the index by Z-Score method.

We still control some characteristics of our sample in our model. Firstly, weak institutions provide fertile ground for domestic conflict, increasing the likelihood of political unrest and prompting citizens to resort to violence rather than focusing on economically and socially productive activities (Anthony-Orji et al., 2019). Zelao (2000), in the discussion of this issue, reveals that discontent and rebellions in Africa often stem from weaknesses in political institutions. To account for these factors, we first consider the variables on legislative effectiveness and parliamentary responsibility as control variables. Then we sort legislative effectiveness as a dummy variable, which equals to 0 as not or low effective, 1 as part and high effect (CNTS manual book, year). Since among these 25 countries, only Venezuela had experienced the transition of parliamentary responsibility and most of these countries did not have enough parliamentary responsibility (defined as 0), we therefore only consider legislative effectiveness as the control variable.

Jing (2023) establish a complete social stability index system. This index system selects 44 indicators, including military scale. The military scale is measured by the size of military. Esteban and Debraj (1999; 2008) found that highly fractionalized societies are prone to conflict. To test the impact of ethnic division on domestic conflict within our sample, we use the ethnic fractionalization index from the HIEF dataset. The Historical Index of Ethnic Fractionalization (HIEF) dataset contains an ethnic fractionalization index for 165 countries across all continents, covering the period from 1945 to 2013 annually. The ethnic fractionalization index measures the probability that two randomly drawn individuals within a country do not belong to the same ethnic group, with each HIEF index ranging from 0 to 1.

We hypothesize these control variables. Percentage of the workforce engaged in agriculture, industry, and other activities. In the Yelmo factory in Argentina, the distribution of workers across the primary, secondary, and tertiary sectors was a significant factor contributing to social conflict and unrest during the period under analysis. This case illustrates how sectoral employment distribution can act as a catalyst for social instability, particularly when economic conditions are strained. Stoler (2021) indicates that the distribution of workers across the primary, secondary, and tertiary sectors can significantly contribute to labor disputes, which in turn lead to various adverse outcomes such as wage losses, profit reductions, declines in productivity, job losses, and shortages in goods and services. These disruptions not only affect the economic framework but also give rise to broader societal issues, ultimately impacting the overall social structure. Such dynamics underscore the interconnectedness of labor distribution and social stability, revealing how shifts in employment patterns across different economic sectors can exacerbate social tensions and conflict (Amegee, 2010). Summary statistics is reported in Table 1.

3.3 Grouping of regression

The development of social media has significant impact on the spread of new ideas. Thus push the public to rethink social problems (Galuh, 2016). In the last century, newspapers were used as a main channel for spreading information, particularly in the context of educational inspection and broader societal communication during the 20th century.(Santi,2022) Moreover, newspapers were essential in spreading political information to voters, especially before the widespread use of television and other broadcast technologies (Brox and Shaw, 2006). They are crucial in the education sector, as evidenced by their use in investigating educational inspection in Paraná in the early 20th century (Santi et al., 2024). The development of newspaper was measured by the daily newspaper circulation per capita. Therefore, we introduce in our paper to investigate the moderating effect on the relationship between the GDP per capita and domestic conflict index.

Table 1 Summary statistics

Dependent variable: Domestic Conflict Index (Z-score)					
Variable	Obs	Mean	Std. dev.	Min	Max
Domestic Conflict Index	546	2181.652	4656.786	0	65312
GDP per capita	546	872.837	1324.385	51	7913
Daily Newspaper Circulation per capita	527	842.721	641.111	30	4000
Ethnic Fractionalization Index	503	0.466	0.177	0.091	0.668
Legislative Effectiveness	546	0.753	0.432	0	1
Percent Work Force in Agriculture	467	44.201	18.442	5.5	89
Percent Work Force in Industry	467	19.346	5.984	5.4	33.9
Percent Work Force in other activities	467	36.453	14.143	4.8	74.4
Military Scale (Scaling 1000)	429	33.650	46.248	1	200

4. Empirical results and discussions

Table 2 reports the estimated relationship between GDP per capita and Domestic Conflict Index. Column (1) shows a statistically significantly negative relationship between GDP per capita and domestic conflict index without controlling countries' characteristics. The estimated coefficient means that a 10% increase in GDP per capital is associated with a 15% increase in Domestic Conflict Index. We further consider more controls in column (2) and countries cluster in column (3) showing that the estimated coefficient means that a 40.8% increase in GDP per capital is associated with a 15% increase in Domestic Conflict Index with significance.

Given that output, we can have a strong support for our empirical test of the hypothesis. That is, within the transitional period of countries, there is some evidence that growth also marks the threat of social instability. Wealthier countries tend to be more stable than less wealthy countries, but the poorest of the poor countries at the lowest levels of international economic standards are less likely to experience violence and turmoil compared to those that are slightly better off (Huntington,1968).

The next step is demonstrating the moderator effect of development of channel of spreading of new ideas. As table 3 shows, the *Interaction impact of GDP and Newspaper* has a positive relationship with the marginal increase of domestic conflict index and the relationship is statistically significant. While the coefficient of the interaction term is quite small, we suppose that the effect of newspaper may vary in certain sample groups and the overall effect may be offset. We therefore test the heterogeneity in sub sample groups based on the various intensity of newspaper engaging.

Table 2 GDP per capita and Domestic Conflict Index (Baseline)

Dependent variable: Domestic Conflict Index (Z-score)			
	OLS	Fixed Effect	Fixed Effect Cluster
	(1)	(2)	(3)
GDP per capita	0.151	0.183	0.408**
	(0.162)	(0.190)	(0.190)
Ethnic Fractionalization	No	Yes	Yes
Legislative Effectiveness	No	Yes	Yes
Controls	No	Yes	Yes
Countries FE	No	No	Yes
Observations	546	407	407
R-squared	0.028	0.051	0.095

Notes: the first column is estimated using OLS, the second and third column are estimated by Fixed Effect model. Cluster robust standard errors are reported at the country level in parentheses. The significance levels are denoted: *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$.

ISSN 2959-6130

Table 3 GDP per capita and Domestic Conflict Index (moderator)

Dependent variable: Domestic Conflict Index (Z-score)	
	(1)
GDP per capita	-0.039
	(0.096)
Newspaper	-0.002**
	(0.001)
Newspaper ×GDP per capita	0.000*
	(0.000)
Control	YES
Countries FE	YES
Observations	388
R-squared	0.058

Notes: All columns are estimated using OLS. Cluster robust standard errors are reported in parentheses. The significance levels are denoted: *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$.

After assuring the positive moderator, the final step of the empirical results was to analyze the heterogeneity of channel of spread of new ideas. The results reported in Table 4 provide clear and firm conclusion. As *the daily newspaper circulation per capita* rate is low, the marginal domestic conflict will decrease when the GDP per capita grows. While as the preliminary development of channel of ideas has been achieved, the countries with medium circulation rate need to deal with the rising possibility of social instability. Probably this is because as people getting more channel of new ideas and being wealthier. They will not just focus on the economic improvement. When people getting more education and new ideas, they would have more expectations to the government and the society. If the reality may not fulfill the expectation, they probably choose other more vehement way to express the need and thoughts. The growth of these factors may provide a hotbed for conflicts.

Thus, we can draw a profile of these countries' dilemma "Modernity overwhelms; the traditional ways of life disintegrate; entire nations face pressures to reform their economic, social, and political institutions; new and 'better' methods of producing goods and providing services pour in relentlessly; change is general and disturbing; the government, unable to satisfy the rising expectations of the people, finds itself the object of popular discontent."(Huntington,1968)

Table 4 GDP per capita and Domestic Conflict Index (Heterogeneity)

Dependent variable: Domestic Conflict Index (Z-score)			
	Low Newspaper Circulation	Medium Newspaper Circulation	High Newspaper Circulation
	(1)	(2)	(3)
GDP per capita	-0.363**	0.220***	-0.448
	(0.127)	(0.0539)	(0.666)
Ethnic Fractionalization	YES	YES	YES
Legislative Effectiveness	YES	YES	YES
Percent Work Force (Agriculture)	YES	YES	YES
Percent Work Force (Industry)	YES	YES	YES
Percent Work Force (Other)	YES	YES	YES
Military Scale	YES	YES	YES
Countries FE	YES	YES	YES
Observations	117	200	92

R-squared	0.082	0.123	0.298
Notes: All columns are estimated using OLS. Cluster robust standard errors are reported at the country level in parentheses. The significance levels are denoted: *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.			

5. Conclusion

Economic growth is always seen as a sovereign remedy to reduce social instability. And innumerable qualitative and quantitative research seem to have proved this as a foregone conclusion. This paper wants to identify the flaw of this widespread concept, proving that economic growth is not a panacea to reassure the society, and tries to demonstrate that spread of new ideas and domestic conflict may have some connection hand in hand.

In this paper, we collected unbalanced panel data from 25 Latin American and Caribbean countries in their transitional period. Through fixed effect regression, we find that in the transitional period, economic growth increases domestic conflict. We also go beyond the current state of literature by using heterogeneity test to research this relationship during different period of development of channel for spreading new ideas. By quantitative test of the baseline and grouping regression, this paper contributes to a better understanding of how economic growth makes impact on society.

Countries seeking for ways to achieve modernization and get rid of poverty may encounter problems which cannot be easily tackled by economic growth. Especially when there may has been a consensus of policy makers and people: foster economy primarily, then political stability will be a foregone conclusion (Huntington,1968). By looking at the insight from Latin American countries, the findings in this paper suggest that economic growth may lead to domestic conflict and the level of channels for spreading ideas go hand in hand. And focusing on these points may be a feasible way for reducing instability, providing a more stable environment for obtaining the modernization.

Acknowledgement

Yunhao Liang, Hanchen Ye and Shangyu Gu contributed equally to this work and should be considered co-first authors.

References

Afshin, A., Sur, P. J., Fay, K. A., Cornaby, L., Ferrara, G., Salama, J. S., ... & Murray, C. J. (2019). Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. The lancet, 393(10184), 1958-1972.

Alesina, A. F., & Perotti, R. (1994). The welfare state and competitiveness.

AMEGEE, P. K. (2010). THE CAUSES AND IMPACT OF LABOUR UNREST ON SOME (Doctoral dissertation, UNIVERSITY OF GHANA, LEGON).

Anthony-Orji, O. I., Orji, A., Ogbuabor, J. E., & Nwosu, E. O. (2019). Do financial stability and institutional quality have impact on financial inclusion in developing economies? A new evidence from Nigeria. International Journal of Sustainable Economy, 11(1), 18-40.

Banks, Arthur S., Wilson, Kenneth A. (2024). Cross-National Time-Series Data (CNTS).

Brandt, D. (2011). Literacy as involvement: The acts of writers, readers, and texts. SIU Press.

Collier, P., & Hoeffler, A. (2002). On the incidence of civil war in Africa. Journal of conflict resolution, 46(1), 13-28.

Esteban, J., & Ray, D. (2008). Collective action and the group size paradox. In 40 Years of Research on Rent Seeking 1 (pp. 379-388). Springer, Berlin, Heidelberg.

Galuh, D. L. C., & Riharjo, H. P. (2016). Analysis layers method of strengthening reinforced concrete T-beams wire rope moment negative (attention reinforcement slab). In Engineering Challenges for Sustainable Future (pp. 447-450). CRC Press.

Huntington, S. P. (2006). Political order in changing societies. Yale university press. 39-53.

Jing, Z., Zhang, Z., & Zhao, S. (2023, September). Research on Social Stability Coefficient based on GWO-XGBoost-LSTM. In 2023 International Conference on Network, Multimedia and Information Technology (NMITCON) (pp. 1-7). IEEE.

Londregan, J. B., & Poole, K. T. (1990). Poverty, the coup trap, and the seizure of executive power. World politics, 42(2), 151-183.

Miguel, E., Satyanath, S., & Sergenti, E. (2004). Economic shocks and civil conflict: An instrumental variables approach. Journal of political Economy, 112(4), 725-753.

Poole, D. (1990). A methodology for using a default and abductive reasoning system. International Journal of Intelligent Systems, 5(5), 521-548.

Santi, T., Kamarga, L., De Samakto, B., & Jo, J. (2022). SARS-CoV-2 Breakthrough Infection after mRNA-1273 Booster among CoronaVac-Vaccinated Healthcare Workers. Infection & Chemotherapy, 54(4), 774.

Stoler, A. L. (2001). Matters of intimacy as matters of state: A response. The Journal of American History, 88(3), 893-897.

Svolik, M. (2008). Authoritarian reversals and democratic consolidation. American Political Science Review, 102(2), 153-168.