

The relationship between the rule of law and entrepreneurship: a comparative analysis

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Abstract: *This paper investigates the relationship between the rule of law and entrepreneurship in upper-middle-income and high-income countries. The panel data is used from a sample of countries from 2014-2020. The author estimates several econometric models, including pooled OLS, fixed effects, and random effects regressions. The results confirm that the rule of law positively and significantly affects entrepreneurship in upper-middle-income countries. However, it has little effect on entrepreneurship in high-income countries. This suggests that the relationship between the rule of law and entrepreneurship may differ across countries with different income levels and institutional contexts.*

Keywords: *Entrepreneurship; the rule of law; high-middle income; high income; entrepreneurial ecosystem.*

1. Introduction

Scholars and policymakers continue to be very interested in entrepreneurship, including antecedents of entrepreneurial activity and contextual conditions that optimize its trajectory and effect on the economy. The literature has primarily recognized the significance of entrepreneurship for economic development, job creation, innovation, and market competition (e.g., Saberi and Hamdan, 2019; Apostu et al., 2022; Gu and Wang, 2022). Furthermore, many authors have concentrated on the factors that encourage entrepreneurial activity and the

causes of variations in the tendency to start new businesses across time, countries, and regions.

The critical reason for this research stems from the need to understand better the relationship between the rule of law and business activities, which may vary depending on the national context and other organizational contexts. Each country has a distinct legal system and approach to business, and studying this diversity can provide greater insight into how this relationship shapes and is shaped by different factors such as culture, history, and politics (Saberi and Hamdan, 2019; Apostu et al., 2022;

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Gu and Wang, 2022).

In this study, the author will investigate if improvements in the rule of law affect entrepreneurial activity in two groups of countries based on income: upper-middle-income countries (UMI) and high-income countries (HI). The author studies these two groups to compare their results, as there might be differences between countries that are lower in the rule of law but are transitioning to higher levels and countries that already have a high threshold of the rule of law. Using a comprehensive dataset from the World Justice Project (WJP) Rule of Law Index, the paper provides empirical evidence on the impact of the rule of law on entrepreneurship.

2. Literature review

2.1. The rule of law

The rule of law is a concept that upholds that all citizens and institutions must abide by the law and that it should be applied justly, openly, and impartially. It ensures respect for human, property, contract, and procedural rights and access to timely and competent justice (World Justice Project, 2019). It is essential to a functioning democracy and promotes social order, economic stability, and individual rights.

The law should be accessible to all individuals. Access to the law is crucial in two ways. Firstly, the law should be easily understandable, with publicly available norms that people can study, internalize, and use as a framework for their plans, expectations, and dispute resolution. Secondly, legal institutions and their procedures should be accessible to the general public to uphold their rights, settle disputes, and protect them against public and private power abuses. This, in turn, necessitates an independent judiciary, accountable government officials, transparent public business, and the integrity of legal procedures.

Several articles have been written about the relationship between the rule of law and

entrepreneurship (Agostino et al., 2019). For example, Estrin and Mickiewicz (2011) and Goltz, Buche, and Pathak (2015) compared the impact of institutions on men's and women's decisions to start new businesses. Other studies focused only on one rule-of-law factor, such as corruption's negative impact on entrepreneurship (Ufere et al., 2012; Boudreaux, Nikolaev, and Holcombe, 2017). Djankov et al. (2002) found that tighter new business entry requirements are linked with inefficient institutions, including corruption. Meanwhile, Dutta and Sobel (2016) and Boudreaux, Nikolaev, and Holcombe (2017) focused on "Grease the Wheel" to explain whether corruption can compensate for a bad business climate. Property rights are another factor of the rule of law studied thoroughly (e.g., Acemoglu and Johnson, 2005).

A strong rule of law is characterized by an impartial judicial system independent of the executive branch of government (Epstein, 2011), guaranteeing that contracts are upheld and that property rights are protected, resulting in lower transaction costs (Aron, 2000). Furthermore, according to Kasper, Streit, and Boettke (2012), a strict rule of law implies that all people are treated equally and fairly by government officials, which limits the opportunity for political opportunism like corruption, clientelism, patronage, and cronyism (Fukuyama, 2015).

2.2. The rule of law and its effect on the economy

Scholars commonly claim that the rule of law is essential for economic growth and development. One aspect of the rule of law is protecting property rights and justice (World Justice Project, 2019). This aspect is vital for economic growth and development, as it provides individuals and businesses with the legal framework and security necessary to invest, innovate, and create wealth (Auerbach and Azariadis, 2015). It allows them to take

risks and invest in new projects, driving economic growth. Additionally, property rights facilitate the efficient allocation of resources by providing a clear framework for the ownership and transfer of property (He, Tong, and Xu, 2022). He, Tong, and Xu examined the relationship between property rights and firms' investment in building resources, using a property-law enactment in China as a case study. The authors find that strengthening property rights protection leads private firms to make greater intangible and tangible asset investments than state-owned firms. These effects are mediated by external equity and debt financing. Furthermore, protecting property rights promotes entrepreneurship, innovation, and competition, which are critical drivers of economic growth and development (Zhou, 2017).

Another aspect of the rule of law is the provision of fundamental rights to education and healthcare justice (World Justice Project, 2019). Educational attainment is widely acknowledged as a critical determinant of employment prospects, with those with higher levels of education tending to have greater access to job opportunities. In comparison, individuals with lower levels of educational attainment are often disproportionately represented among the unemployed population (Wang, 2012). Similarly, investment in healthcare can result in more excellent healthcare opportunities, increasing human capital and promoting productivity (Raghupathi and Raghupathi, 2020). Furthermore, improved educational attainment and access to healthcare can reduce poverty levels and improve economic stability. A study by de Soysa and Vadlamannat (2021) examines the relationship between free-market capitalism and income inequality in developing countries from 1990-2017. The authors argue that governments more dependent on free markets will likely focus on

increasing access to human capital, thereby narrowing the gap between the rich and the poor by growing opportunities, even if income inequality rises.

In summary, much evidence points to the rule of law as a critical economic growth and development factor. Research has demonstrated that the rule of law can positively affect aggregate investment, taxation systems, foreign direct investment and capital flows, the protection of property rights, the enforcement of contractual obligations, and the provision of fundamental rights to education and healthcare. The connection between the rule of law and economic progress is multifaceted and dynamic, suggesting that further research is necessary to understand the full impact.

2.3. The rule of law and entrepreneurship

Countries differ in their levels and types of entrepreneurial activities. Economists and other social scientists have debated this topic from various perspectives for decades. The legal environment is one of the underlying factors. Academics have investigated how the legal system affects investors. The business environment can significantly influence entrepreneurship's type, scope, and behavior. Through contract and bankruptcy regulations, the legal system controls both market entry and departure and business establishment and management (Welter and Smallbone, 2010). In places where institutions are "weak," entrepreneurs are less likely to start new initiatives or may choose to devote their efforts to unproductive ones (Hodler, 2009; Glaeser, Scheinkman, and Shleifer, 2003).

Positive institutional change can create entrepreneurial opportunities, such as eliminating or reducing market entry and exit barriers (Smallbone and Welter 2009). However, institutional change can also harm entrepreneurial behavior. For instance, in Belarus in 1996, new registration regulations

made 54% of all registered businesses illegal due to the government's aggressive approach and restricted rules to the private sector (Zhuk and Cherevach 2000). The effectiveness of governance has been evaluated using the rule of law. According to Bjørnskov (2012), higher investment rates correlate with higher levels of management, as determined by the rule of law, which substantially impacts economic growth. The rule of law is an essential factor that impacts entrepreneurship activities because the prevailing rule of law leads to obeying the regulations. Also, the possibility of expropriating entrepreneurs' property rights depends on the rule of law (Levie and Autio, 2011).

Stressing one of the main pillars of the rule of law, which is equal treatment and absence of discrimination, Goltz, Buche, and Pathak (2015) dug deeper. They found that a strict rule of law increases the number of women entrepreneurs. Women see policy enforcement as safeguarding their new businesses to obtain fair and just protection. Without the efficient rule of law, women will feel abandoned by the legal system. There would be doubt because it would be difficult to believe that women have legal rights. Substantial ambiguity may have a detrimental effect on women's desire to investigate business opportunities. They may avoid risky business ventures and choose more conventional job opportunities.

Some studies found that the rule of law impacts entrepreneurship on different levels; for example, Johnson, McMillan, and Woodruff (2002) found that the poor rule of law restricted the entry of new entrepreneurship businesses more than existing businesses. This statement is derived from the observation that established companies generate significantly higher after-tax profits in nations with weak property rights and poor rule of law than established businesses in countries with stable versions of formal institutions. A weak rule of law creates

a barrier to entry for new companies, allowing established businesses to make significantly higher profits than they otherwise could in an environment of greater competition. Also, the impact will vary depending on the type of entrepreneurship. Grilo and Thurik (2005) found that excessive rule of law decreases high-tech entrepreneurship while it will have less impact on high-job growth entrepreneurship. Troilo (2011) found that the rule-of-law matters more for high job growth than for high-tech entrepreneurship. Estrin, Korosteleva, and Mickiewicz (2013) pointed out that institutional deficiencies may impact young companies more, and they attributed the reasons to the fact that, unlike established companies, they are unable to overcome the issues with assistance from business-relevant social networks that established companies may have had time to develop.

Another pillar of the rule of law is criminal justice. Criminality is a pervasive and significant barrier to conducting business. For example, Ranasinghe and Restuccia (2018) found that, according to World Bank Enterprise Surveys (WBES) data, 34% of companies in South America cite crime as a critical barrier to conducting business there. Different economies have varying degrees of the rule of law, which affects the likelihood of crime and, in turn, the amount of capital an entrepreneur wishes to borrow. These inaccuracies have an impact on anticipated production profits and have the potential to change career choices.

2.4. Hypotheses of the study

In this study, two hypotheses are proposed. The first hypothesis is "the rule of law positively affects entrepreneurship in UMI countries," which indicates that a strict rule of law positively affects entrepreneurship in UMI countries. This hypothesis suggests that in countries where the legal system is well-established, developing, predictable, and

impartial, entrepreneurs are more likely to invest their resources and take risks, as they can have confidence that contracts will be enforced, property rights protected, and disputes resolved relatively. Moreover, the strong rule of law can facilitate access to credit, which is crucial for entrepreneurial ventures that require significant upfront investments. This hypothesis also implies that the positive effect of the rule of law on entrepreneurship may be particularly pronounced in UMI countries, where institutions and legal frameworks are still developing but are more advanced than in low-income countries.

The second hypothesis is “the rule of law does not affect entrepreneurship in HI countries,” which says that the rule of law does not significantly affect entrepreneurship in HI countries. This hypothesis suggests that in countries where institutions and legal frameworks are well-established and efficient, the effect of the rule of law on entrepreneurship may be less pronounced. Unlike middle-income countries, HI countries have made strides in the rule of law and passed certain thresholds affecting entrepreneurial behavior. HI countries may already have access to a wide range of financial and legal services and a more diversified economy less dependent on entrepreneurial activity. Therefore, it is suspected that advancements in the rule of law in HI countries may not affect entrepreneurial action as significantly as in UMI countries. In HI countries, other factors may be more critical for entrepreneurial success, such as access to advanced technology, skilled labor, and innovative ideas. Therefore, this hypothesis implies that the effect of the rule of law on entrepreneurship may be weaker or non-existent in HI countries, where other factors may be more critical.

3. Research methodology

The data used to examine the hypotheses of this article originates from the World Justice

Project (WJP) and the World Bank. The annual Rule of Law (RoL) index by the WJP is a globally recognized source for up-to-date and neutral information on the rule of law. The Index’s year-2022 edition polled surveys of more than 150,000 households and 3,600 legal professionals and experts to assess how people worldwide experience and perceive the rule of law (World Justice Project, 2019). The WJP defines the rule of law as a stable framework of laws, institutions, customs, and societal involvement that ensures effectiveness. The rule of law has four principles. 1) Accountability refers to the fact that governments and individuals are responsible for complying with the law. 2) Just law means that the law is straightforward, well-known, and consistent, with equal enforcement. Also, the law must protect human rights, properties, and contracts. 3) Open government refers to the procedures of adopting the law as being accessible, equitable, and practical and enforcing the law in a way that is approachable, impartial, and practical. 4) Accessible and Impartial Justice means that justice is dispensed promptly by capable, moral, and impartial officials and representatives who are easily reachable, equipped, and reflect the diversity of the societies they serve (World Justice Project, 2019).

The World Justice Project Rule of Law Index score and ranking system is based on eight fundamental variables. Once the data for those eight variables is collected, the WJP processes it and codifies the data to values between 1 (highest potential score) and 0 (lowest possible score), which is then aggregated at the country level using the simple or weighted average (World Justice Project, 2022). The eight variables of the Rule of Law Index are as follows: Constraints on Government Powers, Absence of Corruption, Open Government, Fundamental Rights; Order and Security, Regulatory Enforcement,

Civil Justice, and Criminal Justice.

The rest of the data was obtained from the World Bank Data. One of the most common measures used to represent entrepreneurial activity is the new business density indicator from the World Bank. The advantage of using this measure is that the World Bank collects it

for many countries worldwide. Furthermore, this measure is not static and does not only depend on the development level of a country. The author also used three common control variables to limit the influence of exogenous factors: GDP growth, GDP per capita, and unemployment. All the variables are shown in table 1 below.

Table 1. Description of the variables

Variable	Description and source	Symbol
New business density	Natural log of number of newly registered companies per 1,000 people ages 15–64 World Bank data (https://data.worldbank.org)	Log (NewBD)
Rule of Law overall Score	Index on the stable framework of laws, institutions, customs, and societal involvement that ensures effectiveness. World Justice project data (https://worldjusticeproject.org/)	RoL
GDP growth	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2015 prices, expressed in U.S. dollars. World Bank data (https://data.worldbank.org)	GDPg
GDP per capita	Annual percentage growth rate of GDP per capita in USD based on constant local currency. World Bank data (https://data.worldbank.org)	GDPpc
Unemployment	Share (%) of the labour force that is without work but available for and seeking employment. World Bank data (https://data.worldbank.org)	Unemp

** All data accessed Dec 2022

Table 2 presents the countries that were used in this article due to data availability. In total, there are 32 UMI countries and 24 HI countries, of which 7 countries are in East Asia & Pacific, 7 in Eastern Europe & Central Asia, 22 in EU & EFTA & North America, 15 in Latin America & Caribbean, and 5 in Sub-Saharan Africa and the Middle East. It should be noted

that most of the HI countries are in the EU & EFTA & North America regions, while most of the UMI countries are in the Latin America & Caribbean regions. The resulting data was an unbalanced panel of 56 countries across 5 regions, for the years 2014-2020. This period was selected due to data availability constraints in the World Bank and RoL data.

Table 2. List of countries per region

East Asia & Pacific	UMI countries	China, Malaysia, Thailand
	HI countries	Australia, Japan, New Zealand, Singapore
Eastern Europe & Central Asia	UMI countries	Albania, Belarus, Bosnia, Kazakhstan, North Macedonia, Serbia, Turkey
EU + EFTA + North America	UMI countries	Bulgaria, Hungary
	HI countries	Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, United Kingdom
Latin America & Caribbean	UMI countries	Argentina, Belize, Brazil, Colombia, Costa Rica, Dominican Republic, Jamaica, Mexico, Panama, Peru, Antigua and Barbuda, Barbados, Chile, Trinidad and Tobago, Uruguay
Sub-Saharan Africa and ME	UMI countries	Botswana, Jordan, South Africa, Tunisia
	HI countries	UAE

The models are based on standard panel analysis methods to test the hypotheses of this article. Pooled OLS (1) is a starting point for understanding the relationship between the rule of law and entrepreneurial activity. Pooled OLS regression is easy to interpret and can quickly estimate the overall relationship between the variables of interest. Pooled OLS is the most basic panel data regression model, which treats all observations in the data as if they come from a single population. This model assumes that no individual-specific effects vary across time or entities and that all variation in the dependent variable is due to changes in the independent variables.

The author used fixed (2) and random effects (3) regressions to address unobserved heterogeneity. The fixed effects model is a panel data regression model that controls for individual-specific effects that are constant over time. This model estimates the average effect of the independent variable on the

dependent variable by subtracting the individual-specific effects from each observation. The individual-specific effects are then calculated using dummy variables representing each individual in the data. The random effects model is a panel data regression model that controls individual-specific effects and random error terms uncorrelated with the independent variable. This model assumes that the individual-specific effects are randomly distributed across time or entities and have a common variance. The model also estimates the variance of the individual-specific effects and the variance of the random error terms, and it weights each observation based on the inverse of the sum of these two variances. The fixed effects model would be more suitable due to the unobserved heterogeneity and focus on within-unit effects. The author further uses several tests to identify the most appropriate model. The regressions are as follows:

$$\text{NewBD} = \beta_0 + \beta_1 \text{RoL}_{it} + \beta_2 \text{controls}_{it} + \epsilon_{it} \quad (1)$$

$$\text{NewBD}_{it} = \beta_1 \text{RoL}_{it} + \beta_2 \text{controls}_{it} + \alpha_i + \epsilon_{it} \quad (2)$$

$$\text{NewBD}_{it} = \beta_1 \text{RoL}_{it} + \beta_2 \text{controls}_{it} + \alpha_i + \mu_{it} + \epsilon_{it} \quad (3)$$

Where $\llbracket \text{NewBD} \rrbracket_{it}$ is a measure of entrepreneurship that reflects new business formation in an entity i at time t . $\llbracket \text{RoL} \rrbracket_{it}$ measures the state of the rule of law. α_i is the unobserved time-invariant individual effect; μ_{it} is the unobserved country-specific random effects; and ϵ_{it} is the idiosyncratic error term. The author used these three regression techniques using the R programming 'plm' package. The author further conducted a few tests to verify the most suitable model to detect heteroskedasticity, serial correlation, and cross-sectional dependence. Finally, the author accounted for the heteroskedasticity and serial correlation in the data by using a robust covariance matrix ('Arellano' method in R programming/ 'lmtest' package) estimator to obtain more accurate estimates of the parameters.

4. Findings and discussion

Table 3 presents a few descriptive statistics of the study. The first section of the table contains descriptives for UMI countries and the second section for HI countries. The maximum number of observations per variable is 189 for UMI countries and 210 for HI countries. Unemployment is the variable with the most missing observations in both country groups (177 in UMI countries, 196 in HI countries). NewBD and RoL also miss a few observations, which results in an unbalanced panel. However, there are not many missing variables, and those did not debilitate the analysis. The mean NewBD is higher in HI countries (6.8) than in UMI countries (3.4). The mean RoL score is also obviously higher in UMI countries (0.75) than in UMI countries (0.53). However, what surprised the author was

seeing a bigger range between minimum and maximum values in RoL in HI countries than in UMI countries. As several UMI countries are slowly transitioning to HI countries, the author expected to see a bigger range in their RoL score. The GDPg, as expected, is higher in UMI countries (1.64%) than in HI countries (1%). In addition, the largest difference between the two groups is in GDPpc, with HI countries averaging \$35695.2 as opposed to \$8098.9 in UMI countries.

Table 4 presents correlation matrices for both UMI and HI countries' variables and it presents no serious correlation issues between the explanatory variables.

Table 5 presents the results of our regression models for UMI countries and Table 6 for HI countries. This paper utilizes three joint panel approaches: pooled OLS, fixed effects, and random effects regressions to estimate whether RoL affects NewBD in each group. In addition, the author aims to compare the results of the analysis of the two groups of countries. The results in Table 5 show that RoL positively affects NewBD across our regression models. The R-squared values are relatively low in all models, which reveals that the independent variables do not explain a significant proportion of the variation in the dependent variable.

Moreover, it is much lower in the random effects model (0.09) than in the fixed effects model (0.23), which may indicate that the variation in the dependent variable is driven more by time-specific factors rather than individual-specific factors. In this case, the fixed effects model is better as it controls for these individual-specific factors. The fixed effects model also reveals a significant positive effect of GDPg on NewBD. In contrast, GDPpc and unemployment have a significant negative effect on the dependent variable.

Table 3. Summary statistics

UMI countries						
	<i>Observations</i>	<i>mean</i>	<i>sd</i>	<i>min</i>	<i>max</i>	<i>se</i>
<i>NewBD</i>	180	3.396	3.58	0.172	20.091	0.267
<i>RoL</i>	187	0.533	0.054	0.42	0.69	0.004
<i>GDPg</i>	189	1.644	4.123	-17.945	7.502	0.3
<i>GDPpc</i>	189	8098.935	3080.221	3477.884	16782.952	224.053
<i>Unemp</i>	177	9.82	6.662	0.5	28.38	0.501
HI countries						
	<i>Observations</i>	<i>mean</i>	<i>sd</i>	<i>min</i>	<i>max</i>	<i>se</i>
<i>NewBD</i>	203	6.772	6.49	0.255	31.148	0.455
<i>RoL</i>	204	0.746	0.09	0.54	0.9	0.006
<i>GDPg</i>	210	0.995	3.61	-20.192	6.884	0.249
<i>GDPpc</i>	210	35695.185	17089.873	11952.311	97019.183	1179.313
<i>Unemp</i>	196	7.204	4.544	1.64	26.71	0.325

Table 4. Correlation matrices

UMI countries					
	<i>NewBD</i>	<i>RoL</i>	<i>GDPg</i>	<i>GDPpc</i>	<i>Unemp</i>
<i>NewBD</i>	1				
<i>RoL</i>	0.369	1			
<i>GDPg</i>	0.054	-0.064	1		
<i>GDPpc</i>	0.122	0.112	0.148	1	
<i>Unemp</i>	0.149	0.222	-0.178	-0.451	1
HI countries					
	<i>NewBD</i>	<i>RoL</i>	<i>GDPg</i>	<i>GDPpc</i>	<i>Unemp</i>
<i>NewBD</i>	1				
<i>RoL</i>	0.312	1			
<i>GDPg</i>	0.104	0.155	1		
<i>GDPpc</i>	0.208	0.793	0.085	1	
<i>Unemp</i>	-0.265	-0.469	-0.08	-0.373	1

Table 5. Panel Regression Models (UMI countries)

	<i>pooled OLS</i>	<i>fixed effects</i>	<i>random effects</i>
<i>*Intercept</i>	-2.07 (-3.5) ***		0.172 (0.31)
<i>RoL</i>	3.563 (3.1) **	2.203 (2.449) *	2.028 (2.071) *
<i>GDPg</i>	0.018 (1.159)	0.024 (3.281) **	0.001 (0.298)
<i>GDPpc</i>	0 (3.831) ***	0 (-4.023) ***	0 (-1.558)
<i>Unemp</i>	0.024 (2.24) *	-0.025 (-3.718) ***	-0.025 (-3.248) **
<i>R²</i>	0.179	0.234	0.09
<i>F-statistic</i>	8.855 ***	9.911 ***	
<i>Chi-squared</i>			14.516 **
Specification tests			
<i>F-test for two-way effects</i>		100.71 ***	
<i>Hausman Test (chisq)</i>			158.17 ***
<i>Breusch-Pagan Lagrange Test (chisq)</i>			193.66 ***
Validity tests			
<i>Breusch-Godfrey for serial correlation</i>		23.432 ***	
<i>Studentized Breusch-Pagan for heteroskedasticity</i>		8.627	
<i>Breusch-Pagan for cross-sectional dependence</i>		701.34 ***	
<i>Pesaran for cross-sectional dependence</i>		-1.717	

*Estimated coefficients are reported with t-statistics in parentheses. Significance level codes are: '***' for 0.001, '**' for 0.01, '*' for 0.05 and '.' for 0.1*

The results for HI countries in Table 6 vary significantly from UMI countries. Across the three regression methods, RoL does not have a significant effect on NewBD. The specification tests reveal that the fixed effects model is the most suitable for the data. GDPg has a significant positive effect of RoL,

whereas unemployment has a significant negative effect. Again, in our regression models in Table 6, the R-squared values are relatively low indicating that for HI countries, RoL alongside our control variables do not explain a significant proportion of the variation in the dependent variable.

Table 6. Panel Regression Models (HI countries)

	<i>pooled OLS</i>	<i>fixed effects</i>	<i>random effects</i>
<i>*Intercept</i>	0.11 (0.109)		1.116 (1.551)
<i>RoL</i>	1.883 (1.235)	0.319 (0.31)	0.887 (1.016)
<i>GDPg</i>	0.042 (1.623)	0.031 (3.859) ***	0 (0.034)
<i>GDPpc</i>	0.000 (0.148)	0.000 (-0.795)	0 (-0.654)
<i>Unemp</i>	-0.022 (-1.191)	-0.024 (-3.141) **	-0.034 (-4.87) ***
<i>R²</i>	0.074	0.155	0.167
<i>F-statistic</i>	3.598 **	6.726 ***	
<i>Chi-squared</i>			35.687 ***
Specification tests			
<i>F-test for two-way effects</i>		332.04 ***	
<i>Hausman Test (chisq)</i>			28.216 ***
<i>Breusch-Pagan Lagrange Test (chisq)</i>			536.66 ***
Validity tests			
<i>Breusch-Godfrey for serial correlation</i>		52.49 ***	
<i>Studentized Breusch-Pagan for heteroskedasticity</i>		20.598 ***	
<i>Breusch-Pagan for cross-sectional dependence</i>		951.59 ***	
<i>Pesaran for cross-sectional dependence</i>		-0.957	

*Estimated coefficients are reported with t-statistics in parentheses. Significance level codes are: '***' for 0.001, '**' for 0.01, '*' for 0.05 and '.' for 0.1*

The author further ran validity tests and found evidence for serial correlation and heteroskedasticity in the data. To address both, robust covariance estimation is used on the fixed effects regressions for both country groups. The results are presented in Table 7. The strong results confirm that in UMI countries, RoL has a significant positive impact on NewBD and that they are uncorrelated in HI countries. The author suspects the difference could be attributed to a few things. Firstly, the models

have low R² values, meaning more variables need to be considered to explain a higher proportion of the variation in NewBD. Secondly, certain thresholds in RoL are suspected to be met when transitioning from middle-income to high-income. After meeting certain thresholds or fulfilling specific criteria regarding the rule of law, a high-income country may witness a diminishing positive effect of RoL on entrepreneurial activity.

Another possibility is related to Troilo's (2011) findings regarding the high rule of law that stifles innovation in Scandinavian countries. However, this may not necessarily be true. For example, as of 2021, most of the world's unicorns (privately held start-up companies with valuations of over \$1 billion) are based in high-income countries. According to a report by CB Insights, as of Q2 2021, the

United States accounted for the most significant number of unicorns, with 262 companies, followed by China with 164 unicorns. Other high-income countries with many unicorns include the United Kingdom, Germany, and Canada. In contrast, low- and middle-income countries have a much smaller number of unicorns.

Table 7. Robust covariance matrix/ fixed effects model

	<i>UMI countries</i>	<i>HI countries</i>
<i>RoL</i>	2.203 (2.048) *	0.319 (0.291)
<i>GDPg</i>	0.024 (2.484) *	0.031 (3.536) ***
<i>GDPpc</i>	0.000 (-2.3) *	0.000 (-0.704)
<i>Unemp</i>	-0.025 (-2.181) *	-0.024 (-1.169)

*Estimated coefficients are reported with t-statistics in parentheses. Significance level codes are: '***' for 0.001, '**' for 0.01, '*' for 0.05 and '.' for 0.1*

According to the analysis, the results are not the same when estimating the relationship between the rule of law and entrepreneurship under the two country groups. While the rule of law and entrepreneurship have the same direction for UMI countries, RoL is not significant for entrepreneurship in high-income countries.

5. Conclusion

The paper investigated the relationship between the rule of law and entrepreneurship in two country groups, including UMI and HI countries. It examines whether the rule of law affects entrepreneurial activities in these two groups of countries. The author utilized common panel models to analyze the data, such as pooled OLS, fixed effects, and random effects regressions. The findings of the study demonstrate that the rule of law has a significant positive effect on new business density for UMI countries, but it does not have significance in HI countries.

Entrepreneurship can be significantly impacted by the rule of law in UMI countries.

An effective rule of law system can make the business climate more stable and predictable, promoting entrepreneurship and launching new companies. Businesses are more likely to trust the legal system in nations where the rule of law is well-established to settle disputes fairly, boosting entrepreneurs' willingness to take chances and launch new ventures. By ensuring that contracts are upheld and property rights are protected, the rule of law can also assist in defending the rights of both individuals and corporations. New enterprises may find obtaining finance and other resources more straightforward, supporting their expansion and success. Businesses may encounter greater risk and uncertainty in nations with weak or inconsistent rules of law, which might deter entrepreneurship and lower the rate of new firm development. A less dynamic economy and lower new business density may arise from this. In conclusion, promoting entrepreneurship and establishing new businesses in UMI countries depends heavily on the rule of law. A well-run legal

system can aid in establishing a stable and predictable business climate, which can foster economic growth and success.

Nevertheless, there has been no correlation between the rule-of-law and entrepreneurship in HI countries. The author speculates that this difference between the results in the two country groups may be attributed to a few factors. Firstly, as mentioned in the discussion section, the models have low R-squared values, which may have more variables considered in the model to explain a higher proportion of the variation in NewBD. Secondly, the author suspects that specific criteria or thresholds in RoL are met in HI countries but not UMI countries. When transitioning from middle-income to high-middle income after meeting certain thresholds or fulfilling particular criteria regarding the rule of law, its effect on entrepreneurial activity diminishes.

The discrepancy may be related to Troilo's (2011) findings that a higher degree of rule of law may inhibit and stifle innovation. HI countries have well-established legal systems and institutions that function efficiently, and entrepreneurs may already have access to a wide range of legal and financial services. Therefore, the effect of the rule of law on entrepreneurship may be less pronounced in these countries. Additionally, HI countries may have a more diversified economy less dependent on entrepreneurial activity. Therefore, the impact of the rule of law on entrepreneurship may need to be more robust or more present in HI countries. The effect of the rule of law on entrepreneurship may also depend on a country's economic development and institutional quality. For example, in low-income countries, where institutions and legal frameworks may be weak and underdeveloped, the rule of law can significantly promote entrepreneurship. In these countries, entrepreneurs may face significant challenges

in accessing credit and legal protection, and a strong rule-of-law can help mitigate these challenges. Therefore, the relationship between the rule of law and entrepreneurship may be complex and context-dependent and may vary across different income levels and institutional contexts.

It is unavoidable that the study still has certain limitations. Therefore, the author plans to investigate the effects of the rule of law on entrepreneurship while considering other contextual variables in the following study. The model did not have a high R², suggesting that other factors in play alongside RoL affect the trajectory of entrepreneurial activity. Besides, it would be interesting to investigate the effects of RoL on the type of entrepreneurial activity (e.g., opportunity vs necessity entrepreneurship) on a large scale (e.g., UMI vs HI). Lastly, future studies may also analyze the effect of the rule of law on low- and lower-middle-income countries.

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