# Rule of Law and Economic Prosperity: An Empirical Investigation

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**Abstract**

*This paper examines the relationship between the Rule of Law and Economic Prosperity — per capita income as a marker of economic performance. Using Ordinary Least Squares (OLS) regression, along with control variables such as Trade Openness, Foreign Direct Investment (FDI), and Gross Capital Formation, the regression models finds that the Rule of Law consistently plays a significant role in determining per capita income. Overlapping and interval tests confirms these finding, however potential reverse causality remains a consideration. The paper concludes that while visible aspects of economic development contribute to growth, the Rule of Law is fundamental for long-term prosperity.*

Economic prosperity, which every state seeks, however decades of experiences. And failed projects, and inability of liberal, Marxist, Keynesian, post-colonial model, and dependency theories, create an interesting question. Why most of these attempts failed. There assumptions, seems accurate, for instance liberal approach give the path followed by advance world, and dependency and post-colonial approach gives need for more indigenous approach and maintain distance from advance world. However, all these approaches, a crucial factor is ignored — *Rule of Law*. Rule of Law provides institutional framework conducive for investment, entrepreneurship, and long-term capital development *(Zywicki, 2003, page. 22)*. Western states, although developing world tried to replicate industrialisation and urbanisation, success rate is low. Developing or post-colonial world, ignores a crucial aspect of development process, tried to replicate the visible aspects development.

It is reasonable to assume the higher rule of law, leads to higher economic prosperity. Rule of law, results in fair treatment from the state, and give individual or agents a predictable environment where economic prosperity is achieved. However, assumption does not mean that higher rule of law leads to higher economic prosperity. This paper tries to validate relationship between rule of law and economic prosperity.

## I. Definitions

### Rule of Law

The World Bank's Worldwide Governance Indicators "Rule of Law" score used as a measure for rule of law.

**Economic Prosperity**

Economic prosperity, includes a broad range of topics – income, access, and feasibility etc. However, for this paper, Per Capita Income is select as measure of economic prosperity. This is more feasible for computations compare to other measures.

## II. Literature Review

Institutions matter, directly linked with economic conditions of state. Various studies indicate that better institutions lead to better economic performance. *La Porta et* argued for colonial origin as determinate of current institutions *(Acemoglu et al., 2001, page. 1388)*. Suggesting that British colonies institutions are better. *Acemoglu, Johnson, and Robinson (2001)* use the colonial mortality rate and its effects on settlement, argued that where mortality rate is low, Europeans settle their and establish good institutions. Where mortality rate is high, established absolutist and extractive states, result in bad institutions. Good institutions result in higher economic performance in developed world; bad institutions result in lower economic performance.

So far, *Acemoglu, Johnson, and Robinson's* explanation is accepted and valid regarding current performance. This paper is inspired by their work. However, not much work here, I found, regarding 2-3 decades. *Acemoglu, Johnson, and Robinson's* work based on historical data, world drastically change then. Few post-colonials state performed well in past few decades. Many of them, do not have democratic regimes such as Peoples Republic of China, South Korea (in the developing stage), United Arab Emirates, Hong Kong etc. Additionally, less attention was paid to rule of law, which reasonably reflect in good institutions. This paper, attempted to measure the relationship between the *Rule of Law* and *Per Capita Income*, on latest data.

## III. Hypothesis

My theory is that increase in rule of law leads to increase in per capita income. In other words, changes in rule of law reflect in changes in per capita income in the direct of rule of law. The theory rest on these following premises:

1. Strong rule of law creates predicable, fair, secure environment, where property and individual rights are protected. Create incentives for individuals and organisation to initiate enterprise and commit resources. The Rule of law ensures individual rights and prevents exploitation. Additionally, the rule of law facilitates people participation in governance, which ensure stability and continuation of rule of law.
2. Weak rule of law does not guaranty property and individual rights. Leads to lack of resources committee by individuals and organisations. Additionally, people are not treated respectfully, individual liberty and rights are violated and exploited.

3. Strong rule of law by increasing economic activity increases per capita income. Whereas weak rule of law, denied agency and continuation of existing conditions and lower per capita income.

    => *Increase in Rule of Law* => *Increase in Per Capita Income*

**Null Hypothesis ($H_0$)**: No relationship exists between Rule of Law and GDP per capita.

**Alternative Hypothesis($H_1$)**: Increases (decreases) in Rule of Law are associated with increases (decreases) in GDP per capita:

$$\uparrow Rule\ of\ Law = \uparrow Per\ Capita\ Income \mid \mid \downarrow Rule\ of\ Law = \downarrow Per\ Capita\ Income$$

## IV. Methodology

This paper employs quantitative research approach to examine the relationship between *Rule of Law* and *Per Capita Income*. The study uses the *World Bank's The Worldwide Governance Indicators (2024),* for rule of law scores by states. *World Development Indicators (2025)* of the *World Bank*, use for per capita income and additional control variables. Log of per capita income is used as dependent variable; rule of law score is used independent variable. Additionally, trade openness, Gross Capital Formation, fixed country effects, and year used as control variable. This study employs *Ordinary Least Squares* (OLS) regression model to estimate the relationship between rule of law and per capita income. Test data range from 1996-2023 for first 3 tests, later tests data range from 2001-2023 on data availability. Details on tests and rational behind are explained in detail in next sections. While this study acknowledges limitations, there remains possibility that higher per capita income leads to better rule of law. Additionally, other variables may influence this relationship; however, the inclusion of country fixed effect and year variables in certain tests helps account for unexplained effects. For reverse, causality, certain findings suggest that it is unlikely. Though, there may be possibility.

## V. Rule of Law and Per Capita Income: An Evolutionary OLS Analysis

### A. First Test

First test is conducted to check whether a corelation exist between Rule of Law and Per Capita Income. This is very basic level model, only involves rule of law score as independent variable and per capita income as dependent variable.

$$\log \quad y_i = \beta_0 + \beta_1 x + \varepsilon_i \ldots\ldots \text{(i)}$$

In the model, $y$ is log of per capita income, $x$ is rule of law score and $\varepsilon$ is error term. Number of observations are *4,394*. Result in $R^2$ is *0.597* and $Adjusted\ R^2$ is *0.597*. $\beta_1$ score is *1.2415*. With a P-value near *0*. Although this is a very basic model,

results indicate clear a correlation between Rule of Law and Per Capita Income. A *1%* increase in rule of law associated with a *1.2%* increase in per capita income globally.

**B. Second Test**

Global events such as pandemics, economic crises, wars, and government expenditures impact the national economies. To ensure model estimations are accurate, these effects must be incorporated into the model (i). To account these global effects, I included dummy variable of years.

$$\log \quad y_{it} = \beta_0 + \beta_1 x_{it} + \Sigma_{t=2}^{T} \gamma_t D_{it} + \varepsilon_{it} \ldots\ldots \text{(ii)}$$

The results show an improvement in model performance, with the $Adjusted\ R^2$ increased from *0.597* to *0.664*. Rule of law effect is *1.2455*. P-value is near *0*. Indicating that rule of law significant in determining per capita income.

**C. Third Test**

In the contemporary times, international trade is widely assumed to contribute to economic development and increase in the standard of living. The economic growth of countries such as the People's Republic of China, South Korea, Japan, and other East Asian states is closely associated with international trade. In the model (ii), incorporate a new control variable trade openness to account effects of international trade.

$$Trade\ Openness_{it} = \frac{(\exp orts_{it} + imports_{it})}{No\min al\ GDP_{it}}$$

$$\log \quad y_{it} = \beta_0 + \beta_1 x_{it} + (Trade\ Openness)_{it} + \Sigma_{t=2}^{T} \gamma_t D_{it} + \varepsilon_{it} \ldots\ldots \text{(iii)}$$

The results show an improvement from model (ii). $Adjusted\ R^2$ increase to *0.721*, and effect on the rule of law decrease to *1.1490* with P-value near *0*. Trade openness effect on per capita income is *0.4136*. this suggests that the rule of law has stronger impact on per capita income compared to trade openness. However, the number of observations decreased to *2,946* model (iii) due to data availability constraints.

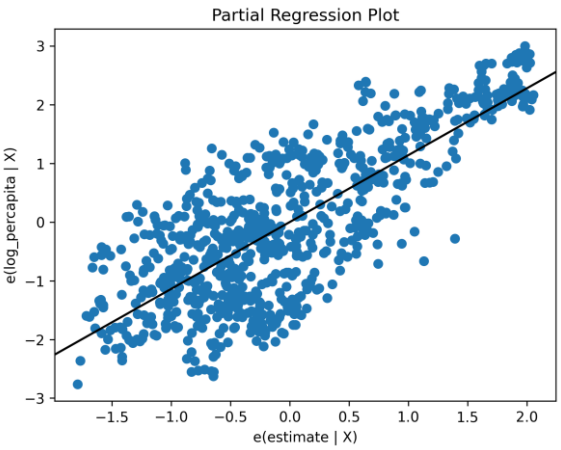
**D. Fourth Test**

The results of Model (iii) show improvement. To validate whether model (iii) findings hold significance across different time frames. A time grouping test was conducted. Five-year intervals of data were applied to model (iii) to check changes in the results.

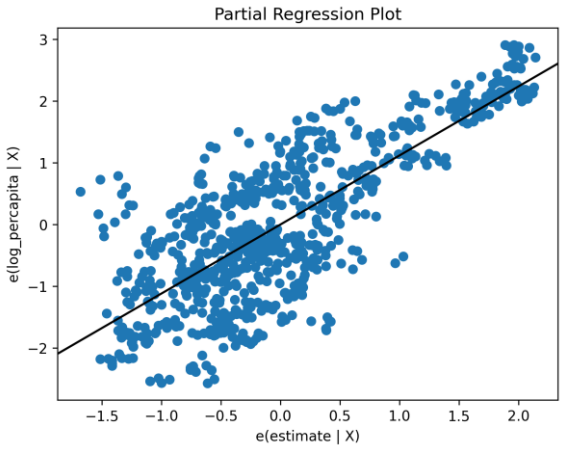
| $Time\ Frame$ | $Adjusted\ R^2$ | $\beta_1$ | $P-value$ |
|---|---|---|---|
| 2002-2006 | 0.72 | 1.2391 | 0 |
| 2007-2012 | 0.713 | 1.1386 | 0 |

| | | | |
|---|---|---|---|
| 2013-2018 | 0.706 | 1.1186 | 0 |
| 2018-2023 | 0.706 | 1.1002 | 0 |

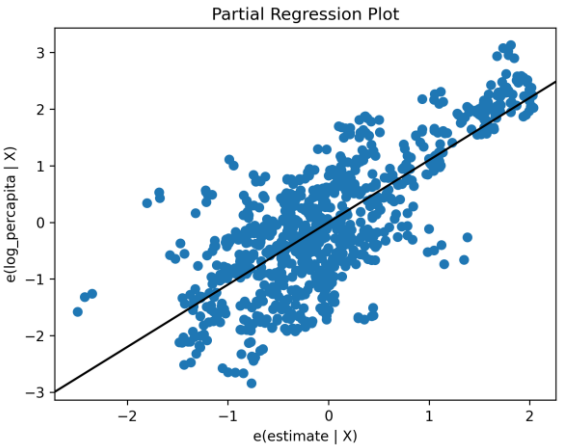

*2002-2006*




*2007-2012*




*2013-2018*




*2018-2023*

The results show that effect of the rule of law on per capita income is gradually decreasing over time. Indicating that other variables may be playing a more significant role in influencing per capita income. However, the rule of law significant in determining per capita income.

**E. Fifth Test**

Following the *third round of tests,* another series of overlapping test was conducted. Five-year group – increment the first year and removing the last year *(e.g. 2002-2006, 2003-2007, 2004-2008…2019-2023)*. This method provides a smoother "time-path" of coefficient evolution, through it introduces correlated error terms across overlapping windows.

| $Time\ Frame$ | $Adjusted\ R^2$ | $\beta_1$ | $P-value$ |
|---|---|---|---|
| 2002-2005 | 0.727 | 1.2605 | 0 |

| | | | |
|---|---|---|---|
| 2003-2006 | 0.720 | 1.2391 | 0 |
| 2004–2007 | 0.711 | 1.2181 | 0 |
| 2005–2008 | 0.705 | 1.1924 | 0 |
| 2006–2009 | 0.702 | 1.1659 | 0 |
| 2007–2010 | 0.705 | 1.1466 | 0 |
| 2008–2011 | 0.713 | 1.1441 | 0 |
| 2009–2012 | 0.718 | 1.1370 | 0 |
| 2010–2013 | 0.722 | 1.1315 | 0 |
| 2011–2014 | 0.715 | 1.1200 | 0 |
| 2012–2015 | 0.710 | 1.11 | 0 |
| 2013–2016 | 0.709 | 1.11 | 0 |
| 2014–2017 | 0.706 | 1.12 | 0 |
| 2015–2018 | 0.706 | 1.12 | 0 |
| 2016–2019 | 0.707 | 1.12 | 0 |
| 2017–2020 | 0.709 | 1.13 | 0 |
| 2018–2021 | 0.710 | 1.12 | 0 |
| 2019–2022 | 0.711 | 1.1078 | 0 |
| 2020–2023 | 0.707 | 1.0947 | 0 |

The results reaffirm that effect of the rule of law on per capita income is gradually declining. However, the overlapping tests confirm that this decline remains statistically insignificant. The rule of law still has significant effect on per capita income.

**F. Sixth Test**

Each country has unique time-invariant characteristics, such as access to the sea, natural resources, arable land, climate, demographic, and so on. Additionally, government decision, domestic events — such as drought, natural digester, and domestic human decisions — influence economic performance. To accurately account these effects, *Country Fixed Effect* variable is introduced in the model (iii). This dummy variable accounts country specific variations.

$$\log \quad y_{it} = \beta_0 + \beta_1 x_{it} + (Trade\ Openness)_{it} + \Sigma_{t=2}^{T} \gamma_t D_{it} + \Sigma_{j=2}^{N} \alpha_j C_{jt} + \varepsilon_{it} \ldots\ldots \quad \text{(iv)}$$

The improvements in model performance are substantial. $Adjusted\ R^2$ increase to *0.983*. P-value is near *0*. Effect of the Rule of Law is *0.3082*, on an average *0.3%* increment in per capita income year by year for a country is due to increment of *1%* the rule of law. The effect of the rule of law appears is lower, on the fact that model (iv) accounts for the increase of per capita income year by year across countries. Additionally, country specific effects are accounts by the *Country Fixed Effect* variable. However, the effect of *Trade Openness* is *-0.2445*. Indicating that on average for long terms, trade openness does not lead to increase in per capita income.

**F. Seventh Test**

In contemporary times, *Foreign Direct Investment (FDI)* and *Gross Capital Formation* (share of GDP) are widely regarded as crucial contributors to economic development. To assess their effects, both variables are introduced as control variable in the model (iv).

$$\log \quad y_{it} = \beta_0 + \beta_1 x_{it} + (Trade\ Openness)_{it} + (\log \quad FDI)_{it} + (Gross\ Capital\ Formation)_{it} + \Sigma_{t=2}^{T} \gamma_t D_{it} + \Sigma_{j=2}^{N} \alpha_j C_{jt} + \varepsilon_{it} \ldots\ldots \text{(v)}$$

Model (v) performance remains near model (iv). $Adjusted\ R^2$ is *0.983* with P-value is near 0. The effect *of the rule of law decrease to 0.2952*, decline in statistically insignificant and slight decline from model (iv). The effect of *Gross Capital Formation is* 0.0005*,* statistically insignificant. And the effect of log *FDI* is *0.0209*. this suggesting that FDI contributes to an increase in per capita income; however, effect of log *FDI* year over year is relatively small compared to the rule of law.

## VI. Empirical Findings and Limitations

Empirical findings indicate that the *Rule of Law* is a major determiner of per capita income. The P-values Calculated at *95%* significance level, provides sufficient evidence to reject the *Null* hypothesis *($H_0$)* and accepting the *Alternative* hypothesis *($H_1$)*. On average globally, 1% increase in the rule of law, increase per capita income by 1.2%, although effect is in slight decline — statistically insignificant. On country by country and year over year, 1% improvement in the rule of law lead to 0.3-0.29% increment in per capita income. However, still their possibilities remain. First, richer countries may be more capable of maintaining stronger *Rule of Law*. The effects of *Trade openness, log FDI, and Gross Capital Formation's* suggests that reverse causality less likely. If reverse causality were present, these control variables would be expected to show significant effects. However, the possibility of reverse causality cannot be entirely ruled out. There may be other variables that may effect the relationship, or the rule of law or per capita income, or both. Additionally, while the *Country Fixed Effect* and *Year* dummy variables could be correlated, statistical tests do not indicate significant multicollinearity.

## VII. Conclusion

The results indicate that the *Rule of Law* is a major factor influencing per capita income, which serves as a key marker of economic prosperity. Tests results suggest that focusing solely on visible aspects of economic prosperity is not lead to significant improvement in per capita income. The effects of *Trade Openness, log FDI,* and *Gross Capita Formation* indicate that prioritizing visible aspects of development, which most of the approach do and ignore the *Rule of Law*, not adequate. To ensure economic prosperity – increase in per capita income, improvements in the *Rule of Law* is crucial, without the

*Rule of Law* other visible aspect of development may fail to produce their intended effects.

## VIII. Appendix

All the code for tests and data pre-processing and original test results used in the research, are available in the *GitHub Repository* linked below:

**GitHub Repository:**

*https://github.com/abinashphulkonwar/rule-of-law-and-economic-prosperity*

The repository contains scripts for:

- Data Processing: Cleaning and structuring raw data for statistical analysis.
- Regression Models: Implementation of OLS models.
- Raw Results: Raw results of every tests.

## IX. References

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