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The relationship between inequality and growth



Shir Ali Alemi

Gradute student of economics

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Introduction:

Since the 1990s, the relationship between income distribution and economic growth has attracted considerable attention in the field of economics. Numerous economists have examined how income inequality influences economic performance and long-term development. Early research highlighted that income is distributed unevenly in most countries, with significant disparities that many governments have sought to reduce through various policy measures. However, whether income inequality promotes or hinders economic growth remains a subject of ongoing debate among economists. Existing studies have produced mixed findings, and many have been criticized for not incorporating all relevant factors that may influence this relationship. Therefore, this paper aims to examine the link between income inequality and economic growth by reviewing analytical and empirical evidence, providing a more comprehensive understanding of how this relationship operates in the real world?

Literature review:

One of the earliest studies to identify a negative relationship between income inequality and economic growth was conducted by **Perotti (1993)**. He developed a theoretical framework that combines political economy with imperfect financial markets to explain how income inequality influences economic performance. According to his model, unequal income distribution limits access to education for individuals from low-income households because they face financial constraints. As a result, these individuals are unable to accumulate sufficient human capital, which reduces productivity and slows long-term economic growth. Therefore, countries with higher levels of income inequality are more likely to experience lower rates of economic growth.

Similarly, **Alesina and Rodrik (1994)** argued that income inequality negatively affects economic growth through political and fiscal channels. Their political economy model suggests that greater inequality encourages the majority of voters to support higher taxes on wealthy individuals and capital owners in order to finance income redistribution. While these redistributive policies reduce inequality, they may also discourage investment and capital accumulation, leading to slower economic growth.

Another influential contribution was made by **Alesina and Perotti (1996)**, who examined the relationship between inequality, social instability, and economic growth. They argued that high levels of income inequality increase political and social unrest, which discourages investment and reduces economic performance. To measure social instability, they constructed an index based on three indicators: political assassinations, deaths caused by domestic political violence, and the number of successful and unsuccessful coups. Using data from 70 countries, they found strong empirical evidence supporting their hypothesis. Their results indicated that a one-percentage-point increase in the income share of the middle class reduced the social instability index by approximately 3.3 points and increased the investment-to-GDP ratio by about one percentage point. These findings suggest that a more equal distribution of income promotes political stability, encourages investment, and supports economic growth.

A different explanation of the relationship between inequality and growth was provided by **de la Croix and Doepke (2003)**. Their theoretical model focuses on differences in productivity across income groups as the main transmission mechanism. They argue that greater income inequality leads to unequal investments in education and skill development, creating persistent productivity gaps between high- and low-income households. Over time, these disparities reduce overall economic efficiency, weaken capital accumulation, and ultimately slow long-term economic growth.

Methodology

This study employs a **systematic review** to examine the relationship between income inequality and economic growth. A systematic review is an appropriate research method because it enables the identification, evaluation, and synthesis of findings from existing empirical and theoretical studies in a transparent and structured manner. Unlike a traditional literature review, this approach follows a systematic process for selecting and analyzing relevant research, thereby minimizing bias and improving the reliability of the conclusions.

The study begins by developing a theoretical framework based on established economic theories and previous empirical literature that explain the channels through which income inequality affects economic growth. This framework serves as the foundation for organizing and interpreting the evidence gathered from the reviewed studies.

To support the theoretical framework, quantitative evidence is collected from published academic articles, books, reports, and datasets. The study relies on and **secondary** sources of data. Secondary sources consist of statistical data, reports, and previously published research produced by international organizations, government agencies, and academic institutions. These sources provide reliable indicators, figures, and empirical findings that help evaluate the theoretical arguments.

Relevant literature is selected using predefined inclusion criteria, such as publication in peer-reviewed journals, relevance to the research topic, methodological quality, and publication within an appropriate time period. The collected studies are then systematically reviewed and compared to identify common findings, differences, and gaps in the existing literature. Finally, the evidence is synthesized to provide a comprehensive understanding of how income inequality influences economic growth and to determine whether the empirical findings support the theoretical framework developed in this study.

Theoretical Model

The theoretical framework of this study is based on the premise that **human capital accumulation** and **investment** are two of the most important determinants of long-term economic growth. A higher level of human capital enhances labor productivity and innovation, while increased investment expands productive capacity and promotes sustainable economic development. Consequently, any factor that weakens human capital formation or reduces investment is likely to hinder economic growth.

Income inequality is expected to influence economic growth through several transmission channels. First, greater inequality limits access to education and skill development for individuals from low-income households, resulting in significant productivity differences between skilled and unskilled workers. These disparities reduce the overall accumulation of human capital and lower the productive potential of the economy.

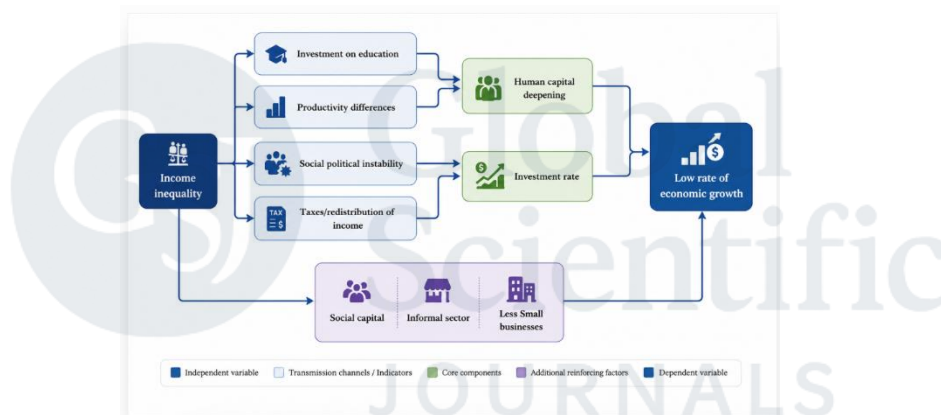
Second, high levels of income inequality may lead to greater political pressure for redistributive taxation. Higher tax rates on wealthy individuals and capital owners can discourage private investment and reduce incentives for capital accumulation, thereby weakening economic growth.

Third, unequal income distribution can contribute to social and political instability. Increased levels of political conflict, violence, and social unrest create uncertainty for investors, discourage domestic and

foreign investment, and reduce economic efficiency. As a result, investment rates decline, further slowing economic growth.

In addition to these channels, income inequality may also weaken **social capital**, expand **informal sector activities**, and reduce the creation and growth of **small businesses**. Lower levels of social trust and cooperation can decrease economic efficiency and increase transaction costs. Likewise, a larger informal sector often limits productivity, tax revenues, and access to finance, while fewer small businesses reduce entrepreneurship, innovation, employment opportunities, and competition within the economy.

Overall, the theoretical model proposes that income inequality affects economic growth indirectly through multiple interconnected mechanisms. By reducing human capital accumulation, discouraging investment, increasing socio-political instability, weakening social capital, expanding informal economic activities, and limiting the growth of small businesses, higher levels of inequality ultimately lead to lower rates of long-term economic growth.



Theoretical Framework

The theoretical framework of this study is based on the assumption that **human capital accumulation** and the **investment rate** are the two primary drivers of long-term economic growth. These variables are considered the core components of the framework because they directly influence a country's productive capacity, technological progress, and overall economic performance. The study uses statistical evidence and empirical findings from previous research to examine how changes in these two components affect economic growth.

Human capital accumulation refers to the development of knowledge, skills, education, and the overall quality of the labor force. Higher levels of investment in education and training improve workers' productivity and increase the economy's capacity for innovation and sustainable growth. Therefore, economies with greater human capital accumulation are expected to achieve higher rates of economic growth. Similarly, the investment rate reflects the level of capital formation within an economy. Increased

investment in physical capital, infrastructure, technology, and productive activities expands production capacity, creates employment opportunities, and stimulates long-term economic development. Consequently, higher investment rates are generally associated with stronger economic growth.

The framework also incorporates several intermediate factors through which income inequality influences human capital accumulation and investment. These factors include **investment in education, productivity differences, taxation and income redistribution, and socio-political instability**. Income inequality may reduce educational opportunities for lower-income households, leading to lower human capital accumulation. It may also create productivity gaps between skilled and unskilled workers, increase political pressure for redistributive taxation, and contribute to social and political instability, all of which can discourage private investment and slow economic growth.

In addition, the study considers **social capital, the size of the informal sector, and the development of small businesses** as complementary indicators that influence economic performance. Lower levels of social capital reduce trust and cooperation within society, while a larger informal sector decreases productivity and limits government revenue. Likewise, fewer small businesses reduce entrepreneurship, innovation, and job creation. These factors indirectly affect both investment and human capital, thereby contributing to lower economic growth.

Overall, the theoretical framework proposes that **income inequality affects economic growth primarily through its impact on human capital accumulation and investment**, while other variables—including productivity differences, taxation, socio-political instability, social capital, the informal sector, and small business development—serve as important transmission mechanisms that strengthen or weaken this relationship. By examining these interconnected channels, the study aims to provide a comprehensive understanding of how income inequality influences long-term economic growth.

Research Plan

This study adopts a **systematic review** research design to examine the relationship between income inequality and economic growth. A systematic review is an appropriate methodology because it addresses a clearly defined research question by systematically identifying, selecting, critically appraising, and synthesizing relevant empirical and theoretical studies. Unlike a traditional literature review, a systematic review follows a structured and transparent process, ensuring that the findings are comprehensive, objective, and based on the best available evidence. The primary objective of this research is to evaluate existing evidence and determine whether income inequality has a positive, negative, or mixed effect on economic growth.

The study relies entirely on **secondary data**, as substantial and reliable information is already available on the variables examined. The data will be collected from peer-reviewed journal articles, academic books, reports published by international organizations such as the World Bank, the Organization for Economic Co-operation and Development (OECD), and other reputable statistical databases. Using secondary data enables the study to analyze a wide range of countries and time periods while increasing the reliability and validity of the research findings.

The analysis will focus on the major transmission channels through which income inequality may influence economic growth. First, data on **investment in education** and the **returns to education** will be examined to determine how unequal access to education affects human capital accumulation, labor productivity, and

long-term economic performance. graphical illustrations will be used to demonstrate how educational investment contributes to economic growth.

Second, sample data on **productivity differences** will be analyzed to investigate whether inequality affects the productivity of workers and firms. The study will evaluate whether unequal access to education, technology, and financial resources creates productivity gaps that ultimately influence national economic growth.

Third, the relationship between **socio-political instability** and **private investment** will be examined using empirical evidence. Charts and statistical data will illustrate whether higher levels of inequality increase political uncertainty, social conflict, thereby reducing investor confidence and discouraging private investment.

The study will also analyze the relationship between **taxation, income redistribution, and investment rates**. Sample charts and comparative data will be used to assess whether redistributive fiscal policies encourage inclusive growth by improving equality of opportunity or reduce investment incentives through higher taxation.

Furthermore, the research will examine the relationship between **social capital**—including social trust, institutional quality, civic participation, and cooperation—and economic growth. Available data will be analyzed to determine whether stronger social capital mitigates the adverse effects of inequality and promotes sustainable economic development.

Another important component of the study is the examination of the relationship between the **informal sector and economic growth**. The research will review empirical studies and statistical evidence to determine whether higher income inequality contributes to the expansion of informal economic activities and how this affects employment, productivity, tax revenue, and overall economic performance.

Finally, the study will investigate the relationship between **income inequality, small firms, and economic growth**. Using tables, charts, and graphical illustrations, the research will examine whether higher inequality restricts access to finance for entrepreneurs and small businesses, reduces job creation, and limits innovation and economic expansion.

After analyzing each of these channels individually, the findings will be compared and synthesized to provide a comprehensive understanding of the relationship between income inequality and economic growth. The evidence from previous empirical studies, supported by statistical data, charts, and graphs, will be critically evaluated to determine whether it supports or rejects the hypothesis that income inequality has a **negative, positive, or conditional** effect on economic growth. The final conclusion will be based on the overall weight of the available evidence, providing a balanced and well-supported answer to the research question.

1. Investment in Education and Human Capital

Investment in education is one of the most important drivers of **human capital accumulation** and long-term economic growth. Education includes formal schooling at the primary, secondary, and tertiary levels, as well as vocational education, professional training, and skill-development programs that improve the

productivity and efficiency of the labor force. By investing in education, individuals acquire knowledge, technical skills, and competencies that increase their employability and earning potential, while governments strengthen the quality of the workforce needed for sustainable economic development.

According to the **Organization for Economic Co-operation and Development (OECD)**, human capital is defined as **"the knowledge, skills, competencies and other attributes embodied in individuals that are relevant to economic activity."** Human capital therefore represents the productive capabilities of a country's population and is considered one of the most valuable assets for economic growth. Countries with higher levels of human capital generally experience greater labor productivity, higher innovation, increased competitiveness, and faster economic development.

The **Human Capital Theory**, developed primarily by Theodore Schultz and Gary Becker, argues that education should be viewed as an investment rather than a consumption good. Individuals, households, firms, and governments invest time and financial resources in education and training with the expectation of receiving future benefits in the form of higher earnings, improved productivity, and better employment opportunities. Although education requires immediate costs, the long-term returns generally outweigh these expenses through increased income and stronger economic performance.

One of the most widely used empirical models for estimating the economic returns to education is the **Mincer Earnings Function**, developed by Jacob Mincer. The model explains the relationship between an individual's earnings, educational attainment, and work experience:

$$\ln(W) = \beta_0 + \beta_1 S + \beta_2 X + \beta_3 X^2 + \epsilon$$

where:

- **$\ln(W)$** = Natural logarithm of wages or earnings.
- **β_0** = Constant term representing the earnings of an individual with no education or work experience.
- **S** = Years of schooling completed.
- **X** = Years of potential work experience.
- **X^2** = Square of work experience, reflecting the fact that wage growth from experience tends to decline over time.
- **ϵ** = Error term capturing unobservable factors such as innate ability, family background, motivation, and measurement errors.

According to the Mincer model, each additional year of schooling generally increases an individual's earnings, while work experience also raises wages, although at a decreasing rate over time. Numerous empirical studies have confirmed that education generates substantial private and social returns by improving workers' productivity and increasing national income.

Over the past several decades, governments around the world have continuously increased their expenditure on education, reflecting the recognition that investment in human capital is essential for economic growth. As illustrated in **Table 1.1**, public spending on education has generally risen across both developed and developing countries. These investments have contributed to improvements in literacy rates, educational attainment, labor productivity, technological progress, and innovation.

Investment in education also contributes directly to **employment creation**. First, better education equips individuals with the knowledge and skills required by modern labor markets, making them more competitive and increasing their chances of securing productive employment. A more skilled workforce enables firms to adopt new technologies, improve efficiency, and expand production, all of which contribute to economic growth. Second, the education sector itself creates employment opportunities by increasing the demand for teachers, lecturers, trainers, researchers, administrators, and educational support staff. Therefore, spending on education stimulates employment both directly and indirectly.

Income inequality, however, can significantly influence educational investment and human capital formation. In societies with high levels of inequality, low-income households often face financial constraints that limit their ability to invest in education. As a result, many individuals are unable to complete higher levels of schooling or acquire specialized skills, reducing their future earning potential and limiting their competitiveness in the labor market. This creates a cycle in which lower educational attainment leads to lower incomes, reinforcing existing inequalities across generations.

Conversely, societies with relatively equal access to education provide greater opportunities for individuals from all income groups to develop their skills and talents. Equal educational opportunities improve labor market outcomes, increase productivity, encourage innovation, and contribute to more inclusive economic growth.

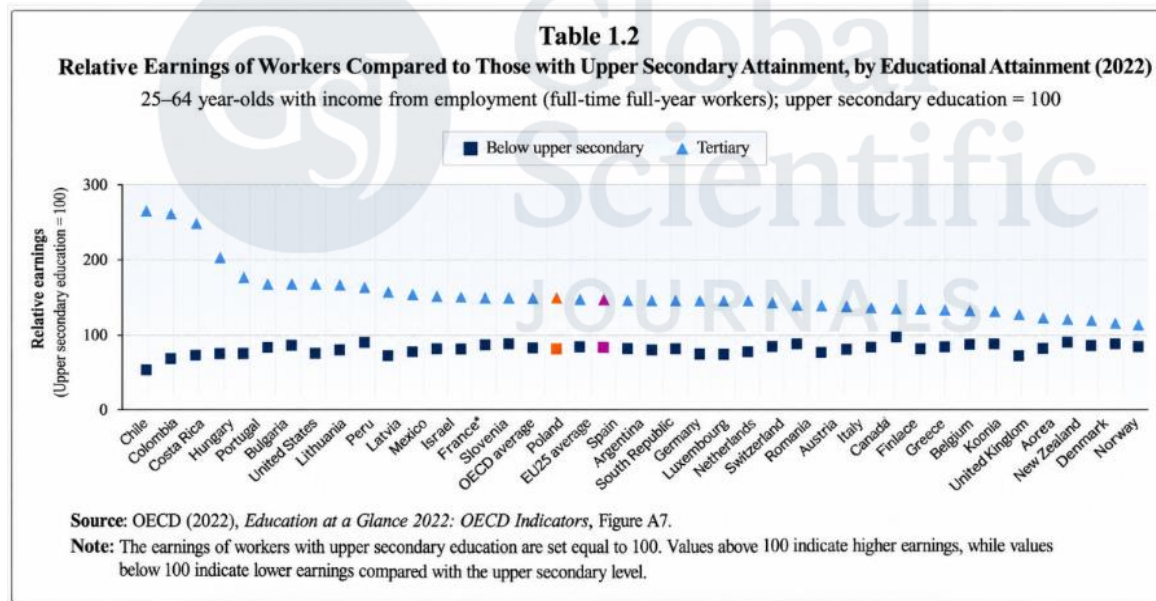
Overall, the accumulation of human capital through sustained investment in education is widely recognized as a fundamental determinant of long-term economic growth. Countries that consistently invest in education and skill development tend to achieve higher productivity, stronger employment growth, greater technological advancement, and higher standards of living. In contrast, persistent income inequality that restricts educational opportunities can slow human capital accumulation and reduce the economy's long-run growth potential.

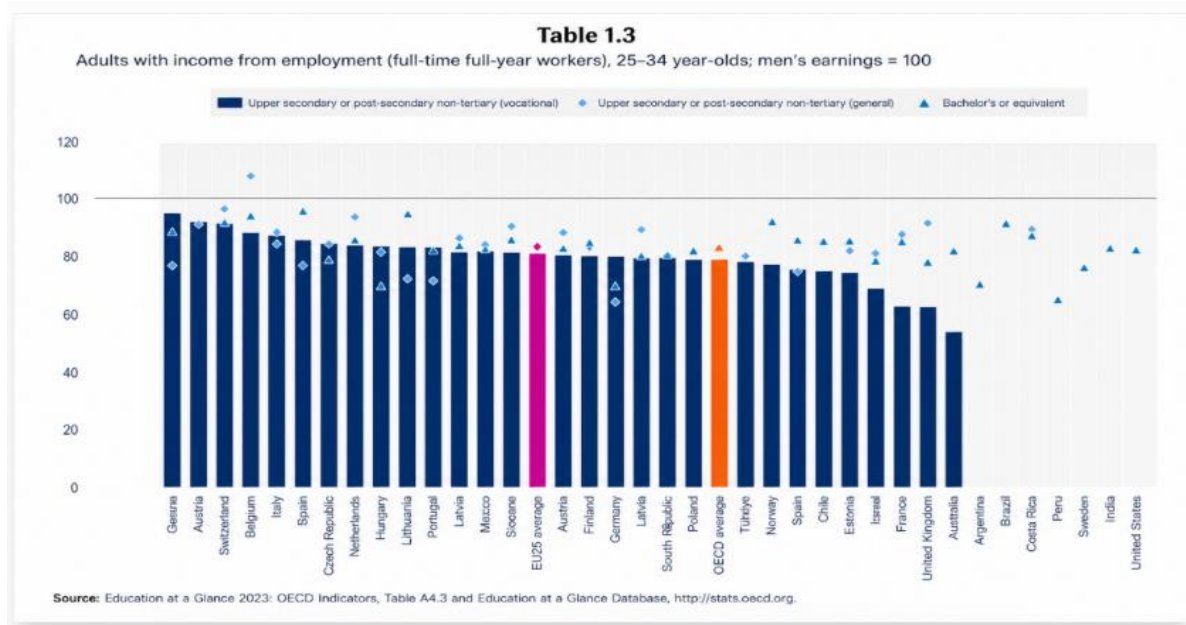
Table 1.1. Capital and Current Total Expenditure on Education from All Sources in Selected OECD Countries (Million Constant 2020 PPP US Dollars)

Country	2023 Expenditure	Capital 2023 Expenditure	Current 2022 Expenditure	Capital 2022 Expenditure	Current 2021 Expenditure	Capital 2021 Expenditure	Current
Australia	10,966	73,385	10,072	69,172	9,980	68,722	
Austria	1,746	25,110	1,858	25,099	1,702	25,118	
Belgium	1,788	39,114	1,568	38,508	1,580	37,247	
Canada	9,920	101,204	10,307	100,905	9,161	99,568	
Chile	1,447	32,925	1,507	31,695	1,584	30,611	
Colombia*	—	26,385	—	—	—	—	
Costa Rica*	—	—	—	—	—	—	
Czechia	1,529	19,843	1,802	19,681	2,124	19,943	
Denmark	1,302	19,226	1,211	18,147	1,265	19,242	
Estonia	278	2,383	298	2,286	315	2,306	
Finland	1,403	14,896	1,372	14,468	1,624	14,726	
France**	—	—	17,676	178,588	16,735	173,616	

Country	2023 Expenditure	Capital 2023 Expenditure	Current 2022 Expenditure	Capital 2022 Expenditure	Current 2021 Expenditure	Capital 2021 Expenditure	Current Expenditure
Germany	21,844	201,702	20,390	203,899	20,177	207,816	
Greece	2,126	12,025	1,955	12,071	1,885	12,351	
Hungary	1,624	11,616	1,781	11,337	1,957	12,957	

Research indicates that individuals with **upper secondary and tertiary educational qualifications** earn significantly more than those with education below the upper secondary level. Higher educational attainment increases human capital by improving cognitive abilities, technical skills, and professional competencies, which enhance labor productivity and employability. As a result, better-educated individuals are more likely to obtain high-paying jobs, experience faster wage growth throughout their careers, and contribute more effectively to economic growth. Conversely, individuals with lower levels of education often face limited employment opportunities, lower wages, and a greater risk of unemployment, reinforcing income inequality over time.





2. Productivity Differences and Human Capital

Human capital plays a crucial role in determining workers' productivity and, ultimately, economic growth. Individuals who possess higher levels of education, technical knowledge, and practical skills generally perform tasks more efficiently and produce higher-quality outputs than those with limited education or training. As a result, differences in human capital often lead to significant differences in labor productivity between skilled and unskilled workers.

A study conducted by a group of researchers from the **College of Engineering and Technology, Nagpur, India**, examined the productivity differences between skilled and unskilled workers in the construction industry. The objective of the study was to identify the factors influencing labor productivity and to determine the extent to which workers' skills affect project performance.

The researchers adopted a **survey research design** using a structured questionnaire to collect primary data. The respondents consisted of **engineers, contractors, and site supervisors** who were directly involved in construction projects in Nagpur, India. A total of **100 respondents** participated in the survey, providing information based on their professional experience and observations in the construction sector.

To analyze the collected data, the researchers employed several statistical techniques, including **mean score analysis, chi-square tests, t-tests, and correlation analysis**. These methods enabled them to compare productivity levels among different categories of workers and examine the statistical relationship between workers' skills and their performance.

The findings revealed a substantial productivity gap between **skilled** and **unskilled** workers. Skilled workers consistently demonstrated higher efficiency, better technical competence, greater accuracy, and the ability to complete tasks in less time while maintaining higher quality standards. In contrast, unskilled workers required more supervision, took longer to complete assigned tasks, and were more likely to make errors, resulting in lower overall productivity.

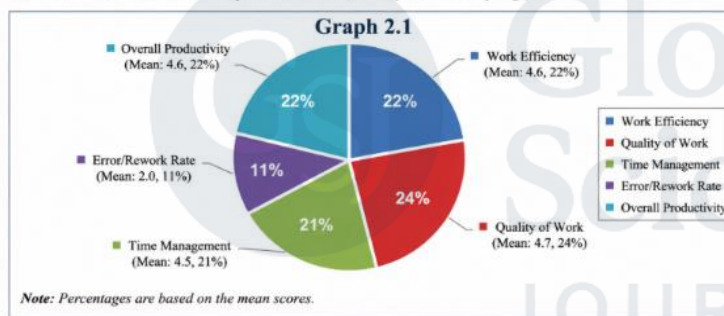
The study also found that investment in education, vocational training, and skill development significantly improves workers' productivity. By enhancing workers' technical knowledge and practical competencies, firms can reduce production costs, improve project quality, increase efficiency, and complete projects within scheduled timeframes. These improvements not only benefit individual firms but also contribute to higher national productivity and sustainable economic growth.

Overall, the study supports the central argument of **Human Capital Theory** that education and skill development are productive investments. It demonstrates that productivity differences are significantly greater between skilled and unskilled workers, highlighting the importance of investing in human capital to improve labor productivity, increase competitiveness, and promote long-term economic development.

Table 2.1

Factor	Skilled Labor (Mean)	Unskilled Labor (Mean)	Interpretation
Work Efficiency	4.6	3.3	Skilled higher
Quality of Work	4.7	3.1	Significant difference (Skilled better)
Time Management	4.5	3.2	Skilled better
Error/ Rework Rate	2.0	3.9	Unskilled higher
Overall Productivity	4.6	3.4	Skilled superior

Note: Mean scores are based on a 5-point Likert scale (1 = Very Low, 5 = Very High).



Learning by Doing and Worker Productivity

Another important study conducted by **Andrew Weiss** of the **University of Chicago** examined the relationship between worker productivity and on-the-job learning. The study was based on the "**learning by doing**" hypothesis, which suggests that workers can improve their productivity through practical work experience even without receiving formal education or vocational training. According to this theory, employees gradually acquire skills, become more familiar with their tasks, and increase their efficiency simply by performing their jobs over time.

However, Weiss's empirical findings indicate that the productivity gains from learning by doing are limited, particularly for unskilled workers. The study found that **unskilled workers experience a rapid increase in productivity during the first month of employment** as they become familiar with workplace procedures, equipment, and routine tasks. This initial improvement reflects the workers' ability to adapt quickly to their new working environment.

Despite these early gains, the study also found that **after approximately six months, the productivity growth of unskilled workers begins to decline significantly**. Although workers continue to accumulate experience, the absence of formal training and advanced skill development limits further improvements in productivity.

Eventually, their performance reaches a plateau and may even decrease as more complex tasks require knowledge and technical skills that cannot be acquired solely through experience.

These findings suggest that **learning by doing alone is insufficient to sustain long-term productivity growth**. While practical experience is valuable, it cannot fully substitute for formal education, vocational training, or continuous skill development. Workers who receive structured training are better equipped to adopt new technologies, solve complex problems, and maintain high productivity over time.

Overall, Weiss's study supports **Human Capital Theory**, which argues that investment in education and training is essential for enhancing workers' productivity and long-term earnings. The research demonstrates that although unskilled workers can improve their performance through experience during the early stages of employment, sustained productivity growth requires continuous investment in human capital through education, professional training, and lifelong learning.

Table 2.2
Median Percentage Change in Productivity

Time (months)	Plant A, 1977	Plant A, 1978	Plant B	Plant C
1-2	10.8	18.5	43.2	35.4
2-3	2.0	2.0	13.0	8.3
3-4	0.8	0.8	6.4	3.2
4-5	0.4	0.4	3.0	1.9
5-6	0.0	0.4	1.0	0.3
6-7	—	—	—	0.1

Interpretation of Table 2.2

Table 2.2 presents the median percentage change in worker productivity across different manufacturing plants over successive months of employment. In **Plant A (1977)**, the productivity of **585 workers** was examined, while in **Plant A (1978)**, the productivity of **308 workers** was analyzed. The findings indicate that in both years, workers experienced a substantial increase in productivity during the initial months of employment. However, the rate of productivity growth declined steadily over time, falling to nearly zero by the sixth month. A similar pattern is observed in **Plant B** and **Plant C**, where productivity improvements were strongest at the beginning of employment but diminished considerably in later months.

The results suggest that **learning by doing** generates significant productivity gains only during the early stages of employment. As workers become familiar with their tasks, their productivity increases rapidly; however, without additional education, formal training, or skill development, these gains are not sustained. After several months, productivity growth slows markedly and eventually reaches a plateau.

3-Social political instability and investment rate

1-Does income inequality increase political instability? 2. Does political instability reduce investment? Alesina and Perotti, 1996 concludes at their finding yes. They examine at their research 71 countries. Their findings indicate two key relationships first, societies with higher levels of inequality tend to experience greater political instability, while the existence of a strong and affluent middle class contributes to political stability. Second, political instability negatively affects investment, which in turns slows economic growth. Moreover, both the link between inequality and stability and the connection between instability and investment are significant not only from statistical perspective but also in terms of their economic impact. (Alesina and Perotti, 1996)

A large body of empirical research finds that **political instability generally reduces private investment**. The main channels are greater uncertainty, higher risk premiums, weaker property-rights protection, and delayed investment decisions by firms.

Empirical evidence

Study	Country/Sample	Finding
Alesina & Perotti (1996)	71 countries	Political instability significantly reduces investment and economic growth.
Alesina et al. (1996)	Cross-country	Frequent government changes reduce private investment.
Mauro (1995)	67 countries	Political instability and poor institutions reduce investment.
Jong-A-Pin (2009)	Meta-analysis	Most dimensions of political instability negatively affect investment and growth.

Why political instability reduces investment

Political instability creates uncertainty about:

- Future tax policy
- Government spending
- Property rights
- Exchange rates
- Inflation
- Contract enforcement

As uncertainty increases, firms often postpone or cancel investment projects.

Example data

The table below illustrates a typical pattern using commonly reported indicators.

Country	Political Stability Index*	Private Investment (% GDP)
Sweden	1.3	24.8
Germany	1.0	22.4
Canada	0.9	23.1
Brazil	-0.5	18.5
Pakistan	-2.2	15.3
Afghanistan	-2.8	11.2

*Political Stability Index ranges approximately from **-2.5 (least stable)** to **+2.5 (most stable)**, based on the World Bank's Worldwide Governance Indicators.

Illustrative relationship

Private Investment (% GDP)



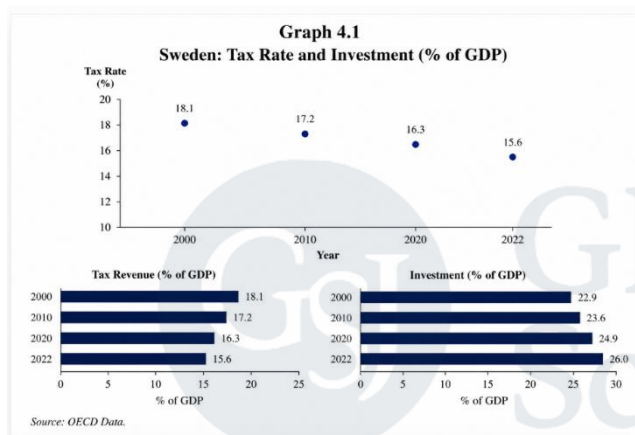
Political Stability Index

4- Taxes/Redistribution and Investment rate

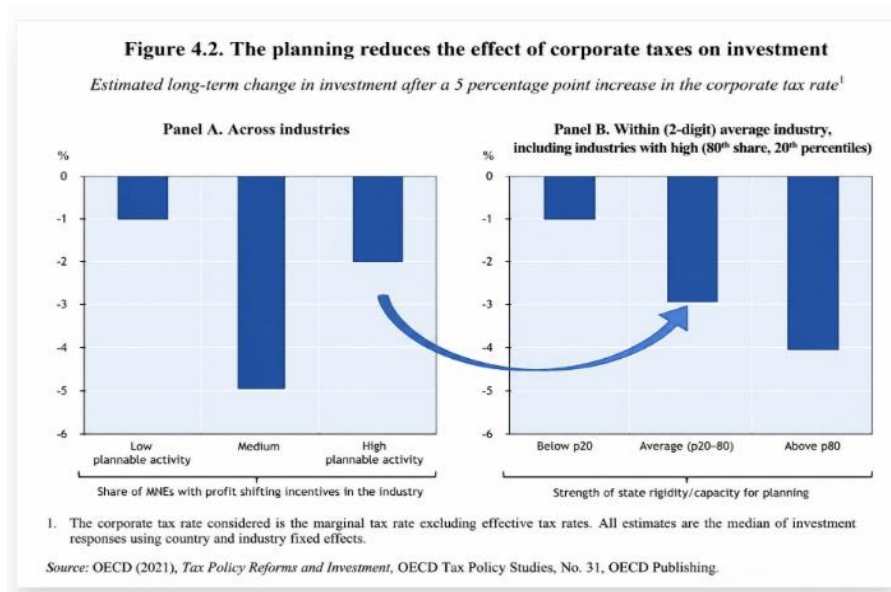
Higher tax rates generally have an **inverse relationship** with investment rates in an economy. As tax rates increase, the after-tax return on investment decreases, reducing the expected profits that investors and businesses can earn. Consequently, firms become less willing to undertake new investment projects because the potential returns may no longer justify the associated costs and risks. Higher corporate and capital taxes may also encourage investors to relocate their capital to countries or regions with more favorable tax policies, leading to capital outflows and lower domestic investment.

A decline in private investment can reduce business expansion, technological innovation, employment opportunities, and capital accumulation, ultimately slowing economic growth. Lower investment also limits productivity improvements and weakens the economy's long-term growth potential.

Conversely, when tax rates are reduced, investors retain a larger share of their profits, increasing the expected return on investment. This creates stronger incentives for businesses to invest in new factories, equipment, research and development, and workforce expansion. As investment increases, capital formation, job creation, and productivity improve, contributing to higher economic growth. Therefore, in general, there is a **negative (inverse) relationship between tax rates and investment rates**, although the magnitude of this relationship depends on factors such as government spending efficiency, tax structure, macroeconomic stability, and the overall business environment.



An OECD study finds that **reducing the corporate tax rate by 5 percentage points leads to approximately a 5% increase in business investment at the industry level, with a similar positive effect observed at the firm level**. The findings suggest that lower corporate taxes increase the after-tax return on investment, encouraging businesses to expand production, purchase new capital, and undertake additional investment projects. Conversely, higher corporate tax rates tend to reduce investment incentives by lowering expected profitability.



There is some critics in this discussion by Wendy Morrison:

A recent study by **Wendy Morrison (2023)** examines how **non-homothetic saving behavior** influences the economic effects of income redistribution within an **Overlapping Generations (OLG) model**. Non-homothetic saving behavior refers to the tendency of **high-income households to save a larger proportion of their permanent income than low-income households**. This difference in saving behavior plays an important role in determining how redistribution policies affect long-term economic performance.

The study finds that **redistributing income from wealthier households to lower-income households tends to reduce aggregate savings, investment, and capital accumulation**. Since higher-income households typically save more, transferring income to lower-income households—who consume a larger share of their income—reduces the total amount of savings available for investment. Lower investment slows capital formation, which can ultimately reduce long-run economic growth.

The author argues that this outcome creates an important **trade-off between equality and economic efficiency**. Although redistribution policies can reduce income inequality and improve social welfare by increasing the incomes of poorer households, they may simultaneously weaken economic growth by lowering the economy's investment and capital stock.

According to the study, this trade-off is most significant under two conditions. First, **high-income households must have a higher marginal propensity to save than lower-income households**, meaning that each additional dollar of income received by wealthy individuals is more likely to be saved rather than spent. Second, **the existing level of inequality must correspond to a capital stock that remains below the economy's golden-rule level**, where the optimal amount of capital maximizes long-term consumption and welfare. The study presents empirical evidence supporting the first condition and suggests that the second condition is likely applicable to the **United States**, particularly if current levels of inequality exceed the socially desirable level.

Using **labor income redistribution** as an illustration, Morrison demonstrates that incorporating non-homothetic saving behavior substantially changes the estimated welfare effects of redistribution policies. A sufficient-statistics analysis indicates that the reduction in aggregate savings can be large enough to **rival the economic costs associated with labor supply distortions**, highlighting the importance of considering saving behavior when evaluating redistribution policies.

Finally, the study recommends extending future research to examine the **short-run effects of redistribution**. If firms face **capital adjustment costs** and cannot immediately alter their investment decisions, the negative impact on capital accumulation may emerge only gradually. Consequently, the overall effectiveness of redistribution policies will depend not only on their immediate effects on income inequality but also on **how policymakers weigh the welfare of future generations against current social objectives**. Overall, the study concludes that redistribution policies should balance the goals of promoting income equality while maintaining adequate levels of savings, investment, and long-term economic growth.

In response to Morrison's argument, it can be argued that an economy cannot achieve sustainable growth without sufficient consumption. Morrison acknowledges that **low-income households have a higher marginal propensity to consume (MPC)** than high-income households, meaning they spend a larger proportion of any additional income they receive. Therefore, income redistribution from higher-income to lower-income households may stimulate aggregate demand because poorer households are more likely to spend the transferred income on goods and services. If this additional consumption is directed toward domestically produced goods and services, businesses may experience higher sales and profits, encouraging them to expand production and undertake new investments. Increased investment can, in turn, generate employment opportunities, raise output, and contribute to economic growth. Consequently, although redistribution may reduce aggregate savings to some extent, the resulting increase in consumption and demand can offset part of this effect by stimulating private investment and supporting economic activity. From a Keynesian perspective, redistribution policies can therefore promote economic growth, particularly during periods of weak demand or underutilized productive capacity.

5- inequality and social capital

There is a lot definition for social capital The most recognized definitions among scholars are “anything that facilitates individual or collective action, generated by networks of relationships, reciprocity, trust and social norms.” Coleman (1998, 2000). Putnam (1995) describes social capital as “those shared actions, trust and social organization that collectively derive mutual benefit”. The World Bank 1998, refers to social capital as “the institutions, relationships, and norms that shape the quality and quantity of a society’s social interactions”.

There is two type of social capital, governmental and civil social capital.

Governmental:

Civil Liberties and Political Freedom:

Kormendi and Meguire argue that **civil liberties and political freedom** create a stable and secure environment for economic activity by protecting individual rights, property rights, and democratic participation. These institutions encourage **investment, productivity, and long-term economic growth**.
Kormendi and Meguire (1985) – Civil Liberties and Political Freedom

Political Violence Frequencies:

Barro measured **political violence frequencies** as the average annual number of **coups, revolutions, and political assassinations** in a country. He used these indicators to represent **political instability** and weak protection of property rights. Countries with more frequent political violence tended to have **lower investment and slower economic growth**. **Barro (1991) – Political Violence Frequencies**

Subjective Political Risk Ratings:

Knack and Keefer used **subjective political risk ratings** to measure the quality and stability of a country's political and institutional environment. Higher ratings indicate **lower political risk, stronger institutions, and better protection of property rights**, which encourage investment and promote economic growth. **Knack and Keefer (1995) – Subjective Political Risk Rating**

Surveys of Entrepreneurs:

Brunetti and Weder (1995) used **surveys of entrepreneurs** to assess how business owners perceived political stability, government efficiency, corruption, and the protection of property rights. Better institutional quality and a more predictable business environment were associated with **higher private investment and stronger economic growth**.

Contract-Intensive Money:

Contract-intensive money (CIM) measures the share of money held in banks rather than as cash. A higher CIM indicates **greater trust in financial institutions, stronger enforcement of contracts, and more secure property rights**, which encourage investment and support economic growth.

Civil:

Civic Community and Governmental Performance:

Helliwell and Putnam argued that **strong civic communities**, characterized by trust, cooperation, and active civic participation, improve **government performance**. Effective and accountable governments create a better environment for **investment, economic efficiency, and long-term economic growth**. Helliwell and Putnam (1995).

Generalized Trust:

Generalized trust refers to the belief that **most people can be trusted**, including those outside one's family or close friends. Fukuyama argued that higher generalized trust reduces transaction costs, encourages cooperation and investment, and promotes long-term economic growth. **Fukuyama (1995) – Generalized Trust**.

Group Memberships:

Group membership refers to participation in voluntary organizations such as community groups, clubs, and associations. Putnam argued that active participation builds **social capital, trust, and cooperation**, leading to better governance and stronger economic development. **Putnam (1993) – Group Membership**.

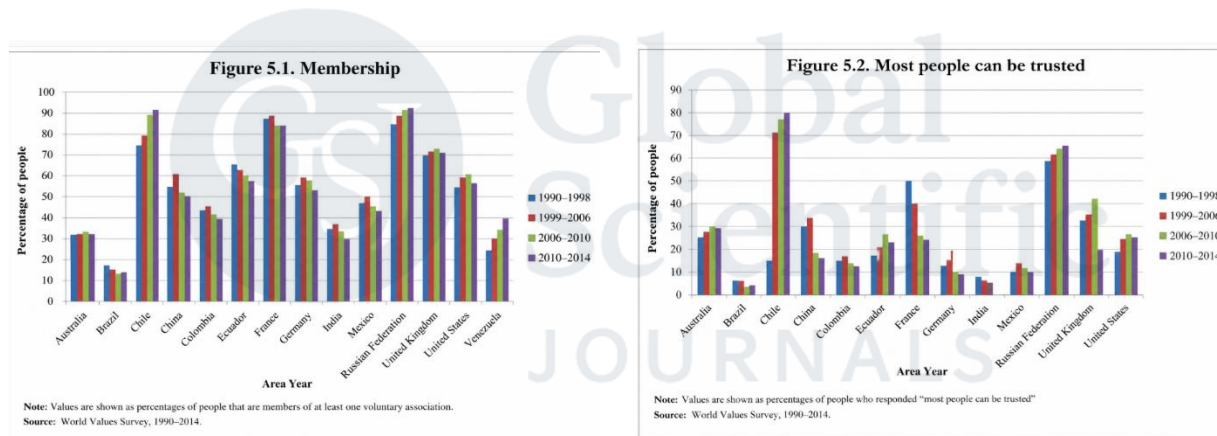
Social Polarization:

Social polarization refers to the division of society into distinct groups based on differences such as **income, ethnicity, religion, education, or political beliefs**. High social polarization weakens trust and cooperation, increases social conflict, discourages investment, and can slow economic growth.

In the context of inequality and growth: Greater social polarization often reduces **social capital** and political stability, making it more difficult to achieve sustainable economic development.

Cultural Explanations: "Achievement Motivation" and Communitarianism,

Granato, Inglehart, and Leblang argued that cultural values influence economic growth. **Achievement motivation** encourages hard work, innovation, and productivity, while **communitarianism** promotes cooperation, trust, and collective responsibility. These cultural traits can strengthen social capital and support long-term economic development. **Granato, Inglehart, and Leblang (1996)**.



Higher levels of income inequality can weaken social capital by reducing trust, cooperation, and social cohesion within society. As the gap between rich and poor widens, individuals with lower incomes may feel excluded from civic life and have fewer opportunities to participate in community organizations, public decision-making, and other forms of civil engagement. This decline in participation reduces interpersonal trust and weakens the networks that facilitate collective action.

Greater inequality can also increase social tensions and political instability. Individuals who perceive economic opportunities and public institutions as unfair may become more likely to engage in protests, political unrest, or other forms of political violence. Such instability creates uncertainty for households and businesses, discouraging private investment and slowing economic activity.

Furthermore, declining social capital reduces confidence in financial and public institutions. People may prefer to hold their savings as cash rather than deposit them in banks because they have less trust in the financial system and the enforcement of contracts and property rights. Lower bank deposits reduce the

availability of funds for lending, particularly to businesses, limiting investment, entrepreneurship, and job creation.

Overall, higher income inequality undermines social capital by weakening trust, cooperation, civic participation, and institutional confidence. These effects reduce investment, increase political instability, and lower economic productivity, ultimately leading to slower long-term economic growth.

6- income inequality and informal sector:

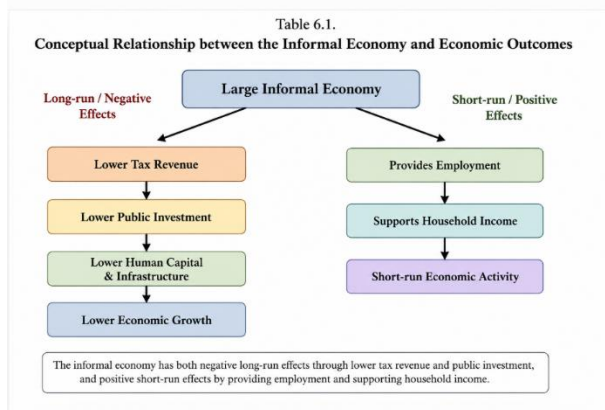
The Relationship between Informal Economy and Income Inequality: An Econometric Analysis for BRICS Countries by Hakan Kum: examines how the **informal economy** and **income inequality** are related in Brazil, Russia, India, China, and South Africa (BRICS). The study uses econometric methods and panel data to investigate whether changes in the size of the informal economy affect income inequality.

The paper suggests that income inequality can itself encourage the expansion of the informal economy. Individuals with low incomes and limited employment opportunities may enter the informal sector because they cannot find stable jobs in the formal economy. This creates a cycle in which inequality increases informality, and informality further widens inequality.

The study argues that a **large informal economy** is associated with **higher income inequality** because informal workers generally earn lower wages, have unstable employment, and lack access to social protection, pensions, health insurance, and labor rights. Since informal businesses often operate outside government regulation and taxation, governments collect less tax revenue, reducing their ability to finance education, healthcare, and income redistribution programs.

Using panel econometric techniques for the BRICS countries, the study finds evidence of a **positive relationship between the informal economy and income inequality**. Countries with larger informal sectors tend to experience higher levels of income inequality. The author concludes that reducing the size of the informal economy through stronger institutions, improved tax administration, better labor market policies, and expanded social protection can help reduce inequality and promote more inclusive economic growth.

The relationship between the **informal economy (shadow economy)** and **economic growth** is complex. In developing countries, the informal economy may provide jobs and income when formal employment is limited. However, a persistently large informal sector is generally associated with **lower long-term economic growth**, reduced tax revenues, lower productivity, and weaker institutions.



Empirical relationship

Illustrative relationship between the informal economy and economic growth

Example data showing that countries with larger informal economies often have lower GDP growth, although the relationship is not deterministic.

Example data

Table 6.2.
Informal Economy and GDP Growth: Cross-Country Comparison

Country	Informal Economy (% of GDP)	GDP Growth (%)
Sweden	12	2.5
Germany	10	2.0
United States	8	2.3
Brazil	36	1.6
India	45	5.8
Nigeria	53	2.8
Pakistan	38	1.5
Afghanistan	55	1.0

Source: Compiled from World Bank (2023) – World Development Indicators; Schneider, Buehn, and Montenegro (2023) – Size and Development of the Shadow Economies.

Main findings from the literature

Table 6.3.
Effect of a Larger Informal Economy on Economic Growth

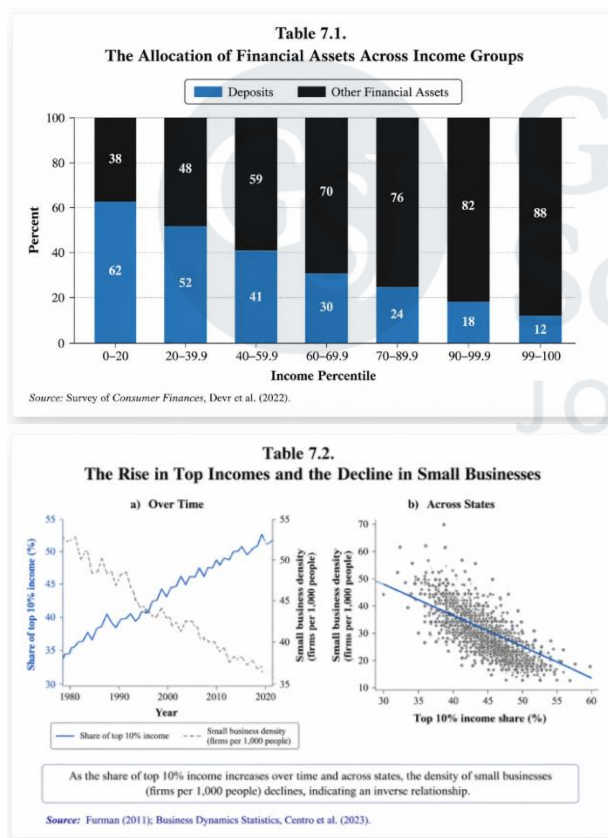
Effect of a Larger Informal Economy	Impact on Growth
Lower tax revenue	Negative
Reduced public investment	Negative
Lower productivity	Negative
Weaker institutions	Negative
Greater employment opportunities in low-income economies	Positive (short run)
Reduced access to finance and technology	Negative

where the expected sign of **Informal Economy** is generally **negative**.

These studies generally conclude that while the informal economy can cushion employment and income in the short run, a **large and persistent informal sector tends to hinder long-run economic growth** by lowering tax revenues, reducing investment in public goods, and limiting productivity gains.

7- Inequality Small firms/businesses:

A study by economists **Donggyu Lee, Thomas Drechsel, and Sebastian Doerr (2022)** argues that rising wealth inequality can affect economic growth through changes in household investment behavior. As wealthier households increasingly allocate their surplus income to stocks, bonds, and other high-yield financial assets rather than bank deposits, the amount of funds available in banks declines. Lower-income households often follow this investment pattern, further reducing bank deposits. With fewer deposits, banks have less capital to lend to small businesses, which rely heavily on bank financing. As a result, small firms face greater difficulty funding their operations and expansion, leading to lower employment and slower economic growth.



Over time, as the income share of the top 10 percent of Americans increases, job creation by small firms' declines, indicating an inverse relationship between income concentration and employment growth. The figure also demonstrates that this negative relationship is consistently observed across U.S. states.

Conclusions

Overall, the findings of this systematic review provide strong evidence that income inequality has a substantial relationship with economic growth through several interconnected economic and

social channels. The evidence collected from theoretical models, empirical studies, and secondary datasets suggests that inequality influences economic performance both directly and indirectly by affecting human capital accumulation, investment, social stability, taxation, social capital, financial intermediation, and the informal economy.

One of the most significant mechanisms identified in this review is the impact of inequality on human capital accumulation. Individuals and households with lower incomes often face financial constraints that limit their ability to invest in education, professional training, and skill development. As a result, the accumulation of human capital slows, reducing the overall quality and productivity of the labor force. Limited educational opportunities also widen the productivity gap between skilled and unskilled workers, leading to lower labor productivity and weaker long-term economic growth.

The review also demonstrates that income inequality contributes to greater productivity differences across the workforce. Workers with higher levels of education and training become increasingly productive, while individuals from disadvantaged backgrounds remain trapped in low-skilled and low-productivity employment. This growing productivity gap reduces the efficient allocation of labor and limits innovation and technological progress, both of which are essential drivers of sustainable economic growth.

Another important channel identified in the literature is socio-political instability. High levels of inequality often increase public dissatisfaction, political polarization, social unrest, and uncertainty regarding future government policies. Such instability discourages both domestic and foreign investors because investment decisions rely heavily on predictable political and economic environments. Lower investment rates reduce capital accumulation, business expansion, and job creation, ultimately slowing economic growth.

Taxation and redistribution also play an important role in explaining the relationship between inequality and growth. As inequality rises, governments may face greater pressure to increase taxes on higher-income individuals and businesses in order to finance redistribution programs. While redistribution can reduce inequality and improve social welfare, higher tax burdens may reduce incentives for private investment, entrepreneurship, and business expansion if tax policies are not carefully designed. Lower levels of private investment reduce capital formation, which in turn weakens long-run economic growth.

The findings further indicate that inequality weakens social capital. Greater disparities in income reduce interpersonal trust, civic participation, cooperation, and confidence in public institutions. Lower levels of social capital increase transaction costs, reduce cooperation among individuals and businesses, and weaken institutional effectiveness. These factors negatively affect productivity, innovation, and economic performance, leading to slower and less inclusive economic growth.

The relationship between income inequality and the informal economy also emerges as an important mechanism. Higher levels of inequality often encourage workers and small businesses to operate in the informal sector due to limited employment opportunities, inadequate social protection, and barriers to entering the formal economy. At the same time, a large informal

economy contributes to greater inequality through lower wages, limited access to finance, reduced worker protections, and lower tax revenues. This creates a reinforcing cycle in which inequality and informality strengthen one another, reducing productivity, limiting government revenues, and slowing economic growth.

Financial markets provide another explanation for the negative relationship between inequality and growth. As documented in several empirical studies, higher-income households tend to invest a larger share of their wealth in financial assets such as stocks, bonds, and other securities. Lower-income households may imitate these investment patterns despite having fewer financial resources. Consequently, a smaller share of household savings is deposited in commercial banks, reducing the availability of loanable funds. Banks therefore have fewer resources to lend to small and medium-sized enterprises, which are important sources of innovation, employment, and economic dynamism. Reduced access to credit limits business investment, lowers job creation, and contributes to slower economic growth.

Taken together, the evidence reviewed in this study suggests that the relationship between income inequality and economic growth is multidimensional and mutually reinforcing. Rising inequality weakens human capital accumulation, widens productivity differences, increases socio-political instability, discourages private investment, reduces social capital, expands informal economic activity, and limits financial support for small businesses. These mechanisms collectively reduce investment, productivity, employment, and innovation, leading to lower rates of long-term economic growth. Therefore, policies aimed at promoting equitable access to education, strengthening social cohesion, improving financial inclusion, encouraging productive investment, and supporting stable institutions are likely to contribute to both lower inequality and stronger, more sustainable economic growth.

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