YELAHANKA LOKESH
DR. MOUNICA VALLABHANENI

INTRODUCTION TO ECONOMICS OF DEVELOPMENT

ALEXIS PRESS
JERSEY CITY, USA

INTRODUCTION TO
ECONOMICS OF DEVELOPMENT

INTRODUCTION TO ECONOMICS OF DEVELOPMENT

Yelahanka Lokesh

Dr. Mounica Vallabhaneni

ALEXIS PRESS

ALEXIS PRESS

Published by: Alexis Press, LLC, Jersey City, USA
www.alexispress.us

First Published 2022

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication Data

Includes bibliographical references and index.

Introduction to Economics of Development by *Yelahanka Lokesh, Dr. Mounica Vallabhaneni*

ISBN 978-1-64532-980-0

CONTENTS

CHAPTER 1

DETERMINATION OF ECONOMIC DEVELOPMENT

Mr. Yelahanka Lokesh
Assistant Professor, Department of Commerce and Economics,
Presidency University, Bangalore, India.
Email Id: lokesh.yr@presidencyuniversity.in

ABSTRACT:

Understanding the variables and processes that contribute to the growth and development of economies is made possible by doing research on the determination of economic development. This essay will examine the major variables that affect economic growth and provide insights into the techniques used to gauge a nation's degree of economic development. It also looks at how institutional elements, human capital, technical developments, and government policies all affect economic progress. The report emphasises the significance of inclusive growth and sustainable development for long-term economic success.

KEYWORDS:

Economic Development, Factors, Measurement, Government Policies, Technological Advancements, Human Capital.

INTRODUCTION

The yearly rate of increase in a country's gross domestic product (GDP) is a standard way to quantify economic growth. The fact that economic development largely dictates the material well-being of billions of people is perhaps the most persuasive argument in favour of it. Since the industrial revolution, economic development in developed nations has enabled practically all of the populace to live in a standard of living that only a select few could have afforded a century ago, when per capita GDP was a tiny portion of what it is now. In fact, expansion in certain economic sectors, particularly the healthcare and pharmaceutical industries, has made it possible for practically everyone to live longer and in better condition than anybody could have imagined possible in the 19th century, regardless of one's standing on the economic ladder. Contrarily, the lack of economic growth in the world's poorest nations has resulted in hundreds of millions of people living in appalling conditions by the standards of wealthy nations; per capita income levels in many 21st-century nations are significantly lower than they were in 19th-century Europe. We must comprehend what spurs economic development if we are to comprehend why the human race has gotten so much richer and why our wealth is distributed so unfairly among the people of the globe [1], [2].

Many economists argue that growth is the most effective means of achieving a significant decrease in poverty. For instance, summarizes research by Deaton and Dreze (2002) that demonstrates a significant decline in the proportion of Indians living below the poverty line. Urban regions are more in need of the decrease (from 39.1% in 1987–1988 to 12% in 1999–2000). The GDP growth rate significantly accelerated during the 1970s and the 20 years that followed, according from

Rodrik and Subramanian (2004). In India, growth accelerated in the 1980s for what reason? Was the green revolution, a favourable external environment, a fiscal stimulus, trade liberalisation, domestic liberalisation, public investment, or, as Rodrik and Subramanian contend, a change in the national government's attitude towards a probusiness stance, the cause? Many other nations struggling to escape poverty would greatly benefit from a definitive response to this topic.

Convergence

The average growth rate of nations between 1960 and 2000 on the vertical axis changes depending on how far away from the global productivity frontier the nation is on the horizontal axis. Simple division of the nation's 1960 productivity by the 1960 productivity of the United States yields the proximity metric. We see that the growth of more developed nations is often slower. How can this "convergence" phenomena be explained? Is it because wealthy nations have high levels of physical capital and human capital per person and are thus experiencing decreasing returns from accumulating additional capital? Is it the ability of less developed nations to catch up to more developed ones in terms of technology by using global innovations.

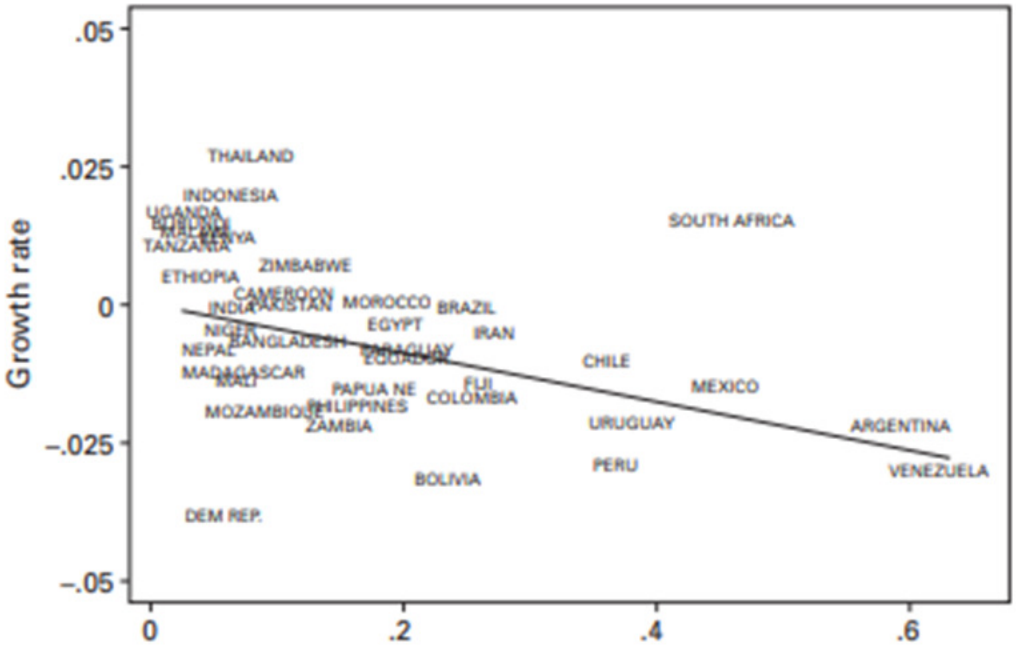

Figure 1: Represents the GDP (per worker) relative to the United States.

The extremely poorest nations tend to develop more slowly than the rest, despite the fact that there is a general trend for countries to grow faster when they are farther below the global productivity frontier. Therefore, it seems that these really poor nations are separating as a group rather than converging. In other words, it seems that "club convergence" is a feature of economic progress. While the poor nations that are not members just keep lagging behind, the affluent and middle-income countries in the "club" tend to develop quicker the more behind they are. According to Quah (1996, 1997), the world's per capita income distribution is becoming more and more "twin peaked," with the majority of nations falling between the top and worst income quartiles. What is the cause of this pattern.

The resumption of economic development in several previously underdeveloped Asian nations which seem to have joined the convergence club during the last decades of the century was one of the century's most significant transformations. Countries like South Korea, China, and India have expanded far more quickly than the rest of the globe since the 1960s, and they are now catching up to the wealthiest nations of the world in terms of per capita GDP. Why aren't more underdeveloped nations a part of the club of convergence? Are the geographical circumstances bad to blame for this? Or to the lack of organisations to safeguard business ventures and investments in the private sector? Or to the difficulty of developing nations to finance infrastructure, diversify their risk, or attract credit? Or due to inadequate human capital. In Figure 1 shown the GDP (per worker) relative to the United States.

Growth and Inequality

What connection exists between inequality and growth? Inequality at the national level is developing as growth occurs, as shown by the fact that per capita income in very affluent nations is rising more quickly than in very poor ones. However, Sala-i-Martin (2006) contends that since there are so many people in nations like India and China whose earnings are coming up to the global average, the later decades of the 20th century actually saw a decline in global income disparity at the individual level. Does this imply that inequality must be reduced for growth to occur? Or does growth slow down when inequality declines? Or does the renowned "Kuznets curve" indicate that the connection between inequality and growth changes over time? Kuznets maintained that although inequality tends to increase as nations start to industrialise, it tends to decrease during a later stage of development when the income distribution starts to contract.

In fact, up until the last decades of the 20th century, the Kuznets curve remained the accepted theory of growth and inequality. But once the earnings of competent employees increased far more quickly than those of less skilled workers in several modern nations, particularly the United States and the United Kingdom, the economic profession reversed its stance. More specifically, it demonstrates that since 1980, the college pay premium which is represented by the curve with fewer dots and equals the ratio of the average salary of college graduates to the average wage of high school graduates has been rapidly rising [3], [4].

Surprisingly, also demonstrates that the relative supply of skilled labour, shown by the curve linking the black dots and equal to the ratio between the number of college graduates and the entire labour force, was growing, and doing so more quickly since 1970. Surprisingly, a rise in the relative availability of skilled labour should, on the surface, result in a decrease in the wage premium as skilled labour becomes comparatively less scarce. How may these two facts be combined? How can we account for the rise in "residual" income inequality throughout that time, which is salary disparity between groups of persons that have the same quantifiable attributes (such as education, experience, gender, and occupation)? Was this a byproduct of globalisation, with low-skilled workers' pay undercut by competition from low-wage nations that started exporting to wealthy nations? Has the legislation and rules governing the labour market changed as a result? Or did it come about as a consequence of a skill-biased technological advancement that increases the output of highly trained employees while automating the labour of less skilled individuals? Where does the bias come from if the technical change was skill-biased?

DISCUSSION

The Transition from Stagnation to Growth

Growth is a relatively new phenomena; it began to pick up speed in the UK and France during the middle of the 1800s. For the most of human history, economic development advanced slowly. According to calculations by Maddison (2001), the global economy's per capita GDP was not greater in 1000 than it was in year 1, and it was only 53 percent higher in 1820 than it was in 1000, reflecting an average growth rate of only 1/19th percent during those 820 years. But from 1820 to 1870, growth grew up to 0.5 percent, and it continued to rise until it reached a high rate of over 3 percent from 1950 to 1973. Was the previous standstill caused by the Malthusian strain of population on finite natural resources, or was there another factor at play? And why did growth pick up steam so rapidly in the nineteenth century? How can we more broadly explain such transitions, such as the change from manufacturing to services after manufacturing, or from capital-accumulating industrial economies to those where innovation is the main driver of growth?

Finance and Growth

Rajan and Zingales (1998) use cross-country comparisons to demonstrate the positive relationship between industry growth and financial development. This relationship is demonstrated, for instance, by the ratio between the total flow of credit to the private sector in a nation during a given year and the nation's GDP during that year. Is finance the root of growth or only one of its symptoms? To put it another way, can financial development enable a country to expand quicker, or is it just the case that fast-growing nations also tend to utilise a lot of finance? Of course, the answer to this issue is crucial because, if finance drives development, a nation seeking to expand its economy more quickly may need to alter its financial institutions, but, if finance is only a symptom, financial reform may only bring about growth's externalities [5].

Growth Policies

The reader is provided with paradigms and empirical techniques to help them think about the design of growth policies, which is what we undertake in part III of this book. Recently, a number of nations and areas have attempted to develop proper "growth diagnostics," that is, evaluations of the most significant growth-restraining factors and recommendations for the right combination and order of growth-improving reforms.

Competition and Entry

Long-term growth depends on innovation, and the benefit of innovation is monopoly profit, which results from the ability to achieve something that your competitors haven't yet been able to duplicate. Since Schumpeter, economists have argued that this approach implies a trade-off between competitiveness and growth.

Tighter antitrust regulations would limit the opportunity for monopoly profits to be earned, which would decrease the incentive for invention. This would diminish the flow of innovation and, as a result, lower the long-term growth rate. Finding solid support for this Schumpeterian trade-off is challenging, however. Contrary to popular belief, historians and economists have shown evidence

that more competitive societies and enterprises expand more quickly than their less competitive counterparts. The link between growth and competition is inverted U-shaped, according to more recent studies. In Figure 2 shown the Innovation and product market competition.

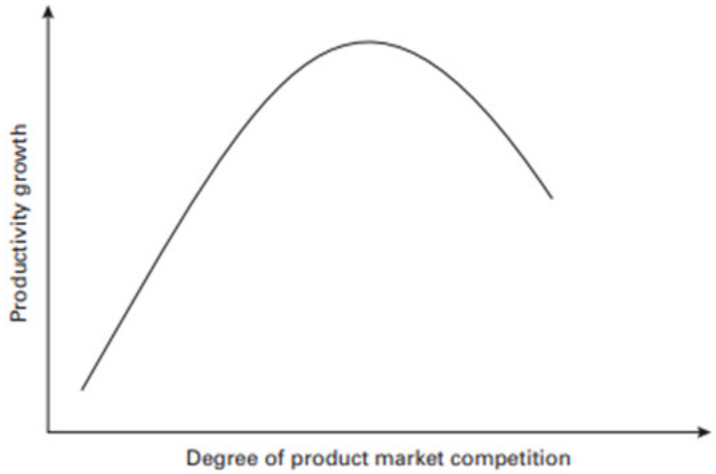

Figure 2: Represents the Innovation and product market competition.

Two-Sector Approach

solitary-sector models It seems sense to inquire about the need of a two-sector model in growth theory. Many economists, as was already noted, think that accounting for two sectors is crucial, particularly for comprehending the early phases of development. Lewis (1954) observed that emerging economies show dualistic behaviour, when two economies with essentially different structures coexist in a single nation. One economy runs a traditional sector with simple manufacturing processes that largely depend on unprocessed labour, raw materials, and land.

The other economy uses cutting-edge technology and a contemporary sector that places a high value on physical capital and trained labour. The specific application of the framework will determine the exact meaning of the two sectors, which is left up in the air. Some applications presume that the traditional sector is located in a rural area and that the products it produces are agricultural. The modern sector is located in an urban area and generates manufactured products. In other instances, the same products are manufactured across sectors, but with different manufacturing techniques and materials. Agriculture, for instance, might be produced using conventional or contemporary techniques. Traditional production methods vanish as the economy changes, yet the goods themselves endure.

Since the markets for labour and capital in the contemporary sector will typically be more established than the markets for labour and land in the traditional sector, the presence and efficacy of markets may also vary between the two sectors. According to this theory, the fall of the traditional sector corresponds to the expansion of the labour and real estate markets (as land is improved and developed, effectively constituting a component of the replicable capital stock). These various interpretations of the two-sector concept largely overlap in the majority of emerging nations. The traditional sector is mostly rural and agricultural and is run with little dependence on the official labour and land markets. The traditional sector is quite significant in the early phases

of growth, and this is the area where the dual economy method has the most potential to advance our knowledge of development [6], [7].

When the two sectors are explicitly interpreted geographically, the families who reside and produce in the two regions may behave differently due to variations in their baseline circumstances and economic contexts. Saving, job effort, human capital investment, and fertility are all examples of household behaviours that may vary across sectors and have significant implications for overall economic development. Lewis, for instance, believed that a dual strategy was required to explain how saving rates and capital accumulation grew during development. He predicted that as "surplus" labour from the traditional sector is drawn into the modern sector with no upward pressure on wages, capital owners' incomes in the modern sector would increase compared to employees' and landowners' incomes. Because capital owners were thought to save a bigger percentage of their income than landowners and labourers, Lewis thought that the relative increase of capital income was crucial for growth. Thus, as the modern sector grew and the old sector shrank, growth was sped up by a rise in the economy's saving rate.

According to Carter et al. (2003), saving rates rise with development for a separate, although connected, reason to the existence of a dual economy. The elderly's spending is financed by residual income from inherited farms, which also lessens the need for retirement saving during the working years.

The dependence on income from inherited family farms reduces as the economy transitions structurally away from traditional family farming, while the percentage of income saved for retirement increases.

Dual economies may have a variety of characteristics that might have an impact on aggregate growth, including differences in the saving rates between the two sectors. There is already a large body of research that suggests that in the early phases of growth there are significant differences in worker productivity across sectors (Gollin et al. 2002, 2004, 2014). These productivity gaps imply that labour may not be allocated effectively, and that TFP and overall economic growth rise when labour moves from the traditionally low-productivity sectors to the highly productive contemporary sectors.

In comparison to the contemporary sector, fertility is often found to be much greater in the traditional sector. This finding implies that the fertility rate of the economy is decreased when families transition from the traditional to the contemporary sectors of the economy. Another relationship between the dual economy's transition and economic development is created by a decline in the fertility of the economy. For a given saving rate, slower population growth enables larger accumulation of physical capital per worker [8].

Children from families in the modern sector often have more years of education than those from households in the traditional sector (Cordoba and Ripoll 2006; Vollrath 2009). Given that children in rural schools in developing nations are less well-equipped and attend classes for fewer days per week throughout the course of a school year, there is some evidence to imply that the "quality" of education is also varied between the two sectors. Thus, expansion of the modern sector might lead to a rise in human capital, which is still another crucial factor in economic development.

According to recent hypotheses, development is linked to a drop in reproduction and an increase in education. According to certain hypotheses, both behaviours are related to the dual structure of economies. The dual structure of a nation also has an impact on its budgetary policies. Tax collection and the provision of necessary public infrastructure to private producers are more challenging in nations with bigger traditional industries. The structural shift of an economy away from the traditional sector and towards the contemporary sector may speed up the creation of productive public capital per worker, much like private capital accumulation. Political economy issues also surround how policies are influenced by the relative power of capitalists who dominate the modern sector versus landowners who dominate the traditional sector or rural versus urban households, which may be given different levels of attention by policymakers.

The function of cities in the urban sector is the subject of a last link between the dual economy and overall economic development. The assumption that production in bigger cities might increase worker productivity via knowledge and information spillovers is supported by theories and empirical data. At least until different adverse consequences of crowding start to predominate, these externalities are thought to be positively correlated with the city's population density. The notion is that there will be a stronger flow of ideas and a better fit between employers and workers the more individuals there are working in a small space. The city's workforce is more productive when talents and jobs are better matched, and when knowledge is increased. Thus, independent of the other factors outlined above, the concentration of labour in bigger cities may spur economic expansion [9], [10].

CONCLUSION

Economic growth is a complex process that is impacted by a number of variables. The importance of government policies in promoting economic growth is emphasised by this research. An atmosphere that is favourable to economic development may be created through sensible policies that encourage investment, innovation, and entrepreneurship. Technological progress is essential for raising productivity and competitiveness, which promotes economic growth. A trained and educated workforce is essential for long-term economic progress, highlighting the need of making investments in the creation of human capital. Institutions offer the required framework for economic growth, such as the legal and regulatory system, protection of property rights, and effective governance.

REFERENCES

[1] T. Wijijayanti, Y. Agustina, A. Winarno, L. N. Istanti, and B. A. Dharma, “Rural tourism: A local economic development,” *Australas. Accounting, Bus. Financ. J.*, 2020, doi: 10.14453/aabfj.v14i1.2.

[2] T. B. Kavya and S. Shijin, “Economic development, financial development, and income inequality nexus,” *Borsa Istanbul Rev.*, 2020, doi: 10.1016/j.bir.2019.12.002.

[3] Z. J. Acs, S. Desai, and J. Hessels, “Entrepreneurship, economic development and institutions,” *Small Bus. Econ.*, 2008, doi: 10.1007/s11187-008-9135-9.

[4] A. Schilpzand and E. de Jong, “Work ethic and economic development: An investigation into Weber’s thesis,” *Eur. J. Polit. Econ.*, 2021, doi: 10.1016/j.ejpoleco.2020.101958.

[5] Y. Gruzina, I. Firsova, and W. Strielkowski, "Dynamics of human capital development in economic development cycles," *Economies*, 2021, doi: 10.3390/economies9020067.

[6] I. Chugunov, M. Pasichnyi, V. Koroviy, T. Kaneva, and A. Nikitishin, "Fiscal and monetary policy of economic development," *Eur. J. Sustain. Dev.*, 2021, doi: 10.14207/ejsd.2021.v10n1p42.

[7] L. Nakabashi, "Poverty and economic development: Evidence for the Brazilian states," *EconomiA*, 2018, doi: 10.1016/j.econ.2018.11.002.

[8] W. Hatcher and A. Hammond, "Nonprofit economic development organizations and the institutional arrangement of local economic development," *J. Public Nonprofit Aff.*, 2018, doi: 10.20899/jpna.4.1.21-40.

[9] C. Diebolt and R. Hippe, "The long-run impact of human capital on innovation and economic development in the regions of Europe," *Appl. Econ.*, 2019, doi: 10.1080/00036846.2018.1495820.

[10] M. V. L. Badgett, K. Waaldijk, and Y. van der M. Rodgers, "The relationship between LGBT inclusion and economic development: Macro-level evidence," *World Dev.*, 2019, doi: 10.1016/j.worlddev.2019.03.011.

CHAPTER 2

THEORY OF TWO SECTOR MODELS AND DETERMINATION

Dr. Dasinis Nathan Annette Christinal
Assistant Professor, Masters in Business Administration (E-Commerce),
Presidency University, Bangalore, India.
Email Id: annette.c@presidencyuniversity.in

ABSTRACT:

Two-sector models look at how the industrial and agricultural sectors of an economy interact to provide light on the dynamics of economic growth. The main ideas and factors that determine two-sector models will be examined in this essay along with their effects on economic growth. It looks at how capital accumulation, structural change, technical advancement, and factor endowments all affect how quickly the agricultural and industrial sectors flourish. The research emphasises the need of efficient resource management and legislative measures that support sectoral convergence and productivity growth. This study provides a thorough introduction of the theory of two-sector models and its implications for economic growth by analysing numerous case studies and economic indicators.

KEYWORDS:

Agricultural Sector, Economic Development, Factor Endowments, Industrial Sector, Technological Progress, Two-Sector Models.

INTRODUCTION

Although there are significant variations between the more traditional and more contemporary methods, new research on two-sector models and structural transformation connects to previous work on dual economies. The structural transformation and the analytical approach of dual economies were first introduced by Lewis (1954) and Ranis and Fei (1961). Their analysis made several key assumptions, including the following: an exogenous institutional wage in the agricultural sector; the institutional wage is paid out of the average product of labour which includes land rents and a "surplus" of labour in the agricultural sector, with the marginal product of labour in agriculture being lower than the marginal product of labour in industry which equals the institutional wage and average product of labour in agriculture. Since the institutional wage likewise influences the pay given to labour in industry, there are no wage gaps in their models. Since traditional agriculture accounted for the majority of labour in the early stages of development, it was believed that the marginal product of labour in agriculture was truly zero rather than merely low. Lewis used an extreme definition of "surplus" labour in this way [1], [2].

Schultz (1964) questioned the empirical validity of surplus labour even in the most underdeveloped emerging nations. He put the theory to the test using the real-world scenario of an influenza outbreak in India. The agricultural labour supply declined precipitously as a result of the outbreak, and overall agricultural productivity also decreased. This is a direct denial of the surplus labour hypothesis. The assumption of a surplus of labour is undoubtedly irrelevant in nations with a

shortage of labour, as the USA in the nineteenth century, when migrant labourers from other economic sectors were often employed during the harvest season.

Problematic is the presumption that an exogenous institutional wage sets wages for the whole economy. As previously indicated, there are sizable compensation differences each year in addition to the widening productivity inequalities across industries. The primary goal of current dual economy scholarship has been to explain why these significant pay discrepancies exist. Naturally, early dual theories were not united in the same way that modern models are. They took no account of human capital. Although these factors were addressed exogenously, the theories did acknowledge the significance of population expansion and the production of physical capital for the economic change. The first to emphasise the significance of human capital in effecting the shift away from conventional agriculture was Schultz (1964). Dual structural and physical capital development were modelled by Eaton (1987) and Drazen and Eckstein (1988). Fertility and population increase must be given a key place in models of long-run development, according to Galor and Weil (1996, 2000). This book adopts a dual economy approach and combines all these elements from contemporary work. Consider the handling of implicit claims on land to illustrate how a unified approach to modelling the dual economy is able to provide links between important elements of development. The earlier models made implicit assumptions about land rents that allowed "wages" to exceed the marginal product of labour in the conventional sector, leading to an ineffective distribution of labour. Older theories believed that the whole production would be distributed evenly among the workers and were static models without markets for land [3].

In the more recent ideas, land rents are also connected to inefficiencies in labour allocation. If the next generation is eager and able to carry on the family agricultural legacy, the present generation of landowners wants to leave them a piece of land. This preference is more likely to be implemented when land markets are insufficient. Workers in the traditional sector accept lesser pay which does equal their marginal output because, if they leave the farm, they forfeit their right to future land claims that is, they will not inherit the land from their parents or tribe elders. Thus, wage and production differences across sectors are caused by the anticipation of future rents from an intergenerational transfer of land. A further effect of future land rent expectations is a decrease in saving and an increase in fecundity. The observed variations in production, saving, and fertility among sectors are all explained by the same factors.

Neoclassical Growth Theory

the one-sector neoclassical growth model the foundation for all the growth theory in the book. The primary focus of the chapter is growth via capital accumulation. We think of capital as man-made durable inputs to the production process. The first type of capital we include is physical capital. For our purposes, physical capital can be primarily thought of as plant and equipment that is produced in one period and then used in production in the following period.1 To model production, we introduce firms, economic institutions that combine physical capital and labor to produce goods and services. Physical capital introduces two fundamental features to the economy. First, the presence of physical capital allows the economy to expand its productive capacity over time that is to experience economic growth through investment and capital accumulation. Second, the production of output generates endogenous income flows to households that own and rent physical

capital to firms. In addition, physical capital will raise the productivity of the labor input and thereby raise the wage received by workers. The accumulation of capital must be financed or funded by household saving. We use the life-cycle theory of household consumption as the basis for explaining saving behavior. In the pure life-cycle theory, households save to finance retirement consumption. Later in this chapter, we extend the life-cycle theory of the household to include transfers of assets across generationsincluding investments in children's human capital by their parents. Human capital, a second type of man-made durable input, is defined to be the embodied knowledge, skills, and health that affect a worker's productivity. Investments in human capital, just as with physical capital, allow an economy to experience economic grow [4].

Firms, Production, and the Demand for Capital

Production technology is the first stage in creating a general equilibrium model of output and income. We suppose that production occurs in "firms"companies that employ labour and lease capital to generate output. A Cobb-Douglas production function, where Y signifies output, K denotes the capital stock leased, M means the hours of labour hired, and where A and an are technical parameters, represents the production knowledge or "technology" of each business. A technical "recipe" known as the production function connects the inputs that the company hires and uses to the output that the company is able to produce. The term total factor productivity (TFP) is sometimes used to refer to parameter A. It takes into account a broad range of unmeasured factors that influence the productivity of labour and capital, from climate and geography that impact the availability of natural resources and the living conditions of families to rules and regulations that limit how production is carried out. The physical capital's proportionate contribution to the manufacturing process is measured by the parameter. As the firm theory is elaborated below, this interpretation of will become more obvious.

The output of businesses is a single "all-purpose" item that can either be used immediately or kept and invested as a physical asset to plant and create more maize in the future. This is similar to maize, which can be used immediately or stored and invested as a physical asset. The complexity of having two separate sectors of production, one generating consumer products and the other capital goods, is avoided by this abstraction. This more complex two-sector model may be necessary for certain reasons, but this is not the way to start a study of an expanding economy. 6A "neoclassical" production function is what is known as a particular instance of the Cobb-Douglas production function. The three main characteristics of all neoclassical production functions are (i) positive marginal productivity, (ii) declining marginal productivity, and (iii) constant returns to scale. According to economists, the majority of manufacturing processes have these characteristics. The increase in output brought on by a rise in the input's consumption is known as the marginal product of an input. Formally, it is the production function's derivative with respect to a specific input while maintaining all other inputs constant. The marginal products of labour and capital for a Cobb-Douglas production function. When a business adds more capital or more labour, it produces greater output since the marginal productivity of doing so is always positive [5], [6].

Diminished marginal productivity refers to the fact that when an input is utilised more often, the extra output that would result from adding one more unit of that input declines. when a result,

while output grows when a business uses more of an input, the increase's magnitude decreases as the input's utilisation in production increases. This presumption is based on the common-sense concept of "input crowding." The production that occurs from adding more of the other input is constrained by the decreasing availability of the input maintained constant. For instance, if there is a fixed quantity of capital, the amount of capital that each worker may utilise drops as more employees are recruited, hence preventing an increase in production. For a given value of Kt, observe that the marginal product of labour expression above is falling in Mt. The marginal product of capital follows the same logic. Constant returns to scale states that the capacity to create output would expand by the same percentage as both inputs if they were increased in the same manner. This feature makes sense as the company should be able to double or triple its production if it can simply replicate its present plant, equipment, and employees.

Last but not least, keep in mind that the characteristics we just established suggest that the marginal product expressions may be streamlined by merging Mt and Kt into the capital-labor ratio, also known as capital intensity, or kt Kt=Mt. The marginal products are denoted by the abbreviations. The capital intensity of the labour marginal product is rising. An extra worker is more productive the more capital there is per worker. Capital intensity is causing a decrease in the marginal product of capital. Less employees are available to work with any new capital added to the workplace because of higher capital intensity.

The constant returns to scale hypothesis has the effect that the marginal products of capital and labour are both functions of the capital-labor ratio, k, and not the levels of K and M. This characteristic suggests that a business's scale is uncertain, meaning that the theory cannot pinpoint the ideal size for a firm. Businesses don't care how much is produced, but they do want to employ capital and labour in a certain ratio that is based on the market values of the inputs.

The ambiguity of business size might be considered as a drawback from a microeconomics perspective. The perfect competition assumption that is addressed below and utilised throughout the book must be justified by the simple premise that enterprises are a certain size and that there are sufficient numbers of them to compete. The indefinite size of enterprises might be seen as a practical simplification from a macroeconomic perspective. Both the individual enterprise and the group of companies as a whole fall within the main phrases that define the production side of the economy. Because of this, the contrast between output at individual enterprises and in the economy as a whole is often not stressed in macroeconomic models [7]. The Cobb-Douglas functional form suggests that the shares of national output paid to capital owners and labour are the constant output elasticity values and 1, which distinguishes from other neoclassical production functions. Data indicate that income shares have in reality remained stable over the last century. Productivity of raising the amount of either input is always positive; more output is produced when the business employs either more capital or labour.

Diminished marginal productivity refers to the fact that when an input is utilised more often, the extra output that would result from adding one more unit of that input declines. when a result, while output grows when a business uses more of an input, the increase's magnitude decreases as the input's utilisation in production increases. This presumption is based on the common sense concept of "input crowding." The production that occurs from adding more of the other input is

constrained by the decreasing availability of the input maintained constant. For instance, if there is a fixed quantity of capital, the amount of capital that each worker may utilise drops as more employees are recruited, hence preventing an increase in production. For a given value of Kt, observe that the marginal product of labour expression above is falling in Mt. The marginal product of capital follows the same logic.

Constant returns to scale states that the capacity to create output would expand by the same percentage as both inputs if they were increased in the same manner. This feature makes sense as the company should be able to double or triple its production if it can simply replicate its present plant, equipment, and employees [8], [9]. The Cobb-Douglas functional form suggests that the shares of national output paid to capital owners and labour are the constant output elasticity values and 1, which distinguishes (2.1) from other neoclassical production functions. Data demonstrate that income shares have remained constant over the last century.

The Supply of Labor and Capital

Old retired families possess the capital that is leased to businesses. They lease the capital to businesses in order to create revenue that pays for their retirement lifestyle. The retired families sell the capital to the youthful working households that are wanting to save assets to pay for their future retirement consumption after the enterprises have finished producing utilising it. The capital sale offers additional resources for the present elderly families' retirement spending.

Formally, the capital was bought by the now elderly families as an asset throughout their working life in the preceding era. Each youthful family in period provided one unit of labour to businesses and received the pay, wt1. There is currently no change in the labour supply for households. In Chapter 5, we simulate the decision of how much labour to do. Since each home contributes one unit of labour, the total amount of labour available during each time is just the number of young families. The entire number of young families from that generation, Ms t1 14 Nt1, represents the total labour supply to all businesses in period. The household's saving habits, or st1, are what determines the amount of capital given per unit of labour. By acquiring output and treating it as a physical asset that creates income before retirement by renting or selling it to businesses for use in production during period t, young families save in period t 1. These physical assets are used by the businesses in period t to create output and earn money. The enterprises then pay the households the rental rate rt and refund the capital that has been depreciated by usage in production.

An important prediction regarding economic development through capital accumulation may be seen in the transition graphic. Period-to-period fluctuations in kt are generally substantial in the early phases of development, and the economy expands quickly. The economy's growth rate gradually slows down as time goes on, and in the steady state, growth completely stops. We may infer that growth happens as a result of the impact of capital accumulation on wages and saving from the static demand and supply figures. The transition picture clearly illustrates how the impact of capital accumulation on wages dwindles over time. Because kt is smaller than 1, its impact on wt is lessening. The addition of additional physical capital greatly increases worker productivity and pay in underdeveloped economies with little capital. However, the effect of additional capital accumulation decreases as the economy becomes more industrialised.4

Take note of two aspects of the steady state. First, we may infer from (2.2a, b) that wages will increase and interest rates will decrease as kt approaches the steady state. Once the steady state has been reached, interest rates and salaries must likewise be constant since kt is constant. As a result, the steady state is characterised by stable interest rates and no increase in real wages, consumption, or labour productivity.

It is possible to think of the average position of the economy as being in a steady state, with some annual business cycle fluctuations around the typical or average position. In many developed countries, the average values of interest rates and returns to capital have been relatively stable over long periods of time. However, it has been shown that on average, these same countries are seeing positive growth rates in both labour productivity and real wages.

Steady-State Growth Technical Progress

The persistence of economic development may be attributed, in part, to technological progress that is, the accumulation of knowledge that increases productivity. Technical advancements might be compared to better factories and machinery or better manufacturing designs. We must become more intelligent in our capital usage and design if we want to expand in the steady state with the same amount of capital per worker. There have been some efforts to explicitly describe the technological process that results from research and development, but economists often consider technological advancement as an exogenous variable, as we do here [10], [11].

Consider technology as the existing collection of abstracted blueprints for manufacturing processes and machine designs. The productivity of the workforce is impacted by the status of technology in time t. We assume that the degree to which the status of technology affects the productive workforce is quantified by an index number, Dt. The Cobb-Douglas production function substitutes Mt as an input with Ht 14 DtMt, which represents the effective workforce in period t. The effective workforce rises proportionally as Dt rises. The impact on output will be the same as doubling the number of employees, for instance, if Dt doubles but the workforce stays constant. We also suppose that technological advancement will cause Dt to grow consistently over time at a pace of d. The effective workforce so rises as a result of both population expansion and technological advancement, according to the formula Ht=Ht14n1d.

CONCLUSION

The theory of two-sector models offers important insights into the economic development's dynamics. The industrial and agricultural sectors are very important in determining how economies flourish. The original distribution of resources across various sectors is based on the availability of factor endowments like land, labour, and capital. Productivity gains in both industries are driven by technological advancement and innovation, which boost production and encourage economic development.

REFERENCES

[1] G. A. Calvo and C. A. Rodriguez, “A Model of Exchange Rate Determination under Currency Substitution and Rational Expectations,” *J. Polit. Econ.*, 1977, doi: 10.1086/260586.

[2] F. Sayinzoga and L. Bijlmakers, "Drivers of improved health sector performance in Rwanda: A qualitative view from within," *BMC Health Serv. Res.*, 2016, doi: 10.1186/s12913-016-1351-4.

[3] C. Moser and N. Stahler, "Spillover Effects of Minimum Wages in a Two-Sector Search Model," *SSRN Electron. J.*, 2021, doi: 10.2139/ssrn.2785330.

[4] E. Gökalp, O. Demirörs, and P. E. Eren, "Public Personnel Management Process Capability Assessment," *Public Pers. Manage.*, 2020, doi: 10.1177/0091026019833412.

[5] E. N. K. Nkrumah, S. Liu, D. Doe Fiergbor, and L. S. Akoto, "Improving the safety–performance nexus: A study on the moderating and mediating influence of work motivation in the causal link between occupational health and safety management (ohsm) practices and work performance in the oil and gas sector," *Int. J. Environ. Res. Public Health*, 2021, doi: 10.3390/ijerph18105064.

[6] M. A. Demircioglu, "Sources of Innovation, Autonomy, and Employee Job Satisfaction in Public Organizations," *Public Perform. Manag. Rev.*, 2021, doi: 10.1080/15309576.2020.1820350.

[7] G. A. Lopes, T. S. Mozer, and A. A. de Carli, "Comparative analysis of biogas generation for the solid waste sector using unmanned aerial vehicle with the brazilian model of greenhouse gas emissions in areas with no operational history," *Bol. Ciencias Geod.*, 2018, doi: 10.1590/S1982-21702018000100008.

[8] D. K. Christopoulos, K. Gente, and M. A. León-Ledesma, "Net foreign assets, productivity and real exchange rates in constrained economies," *European Economic Review*. 2012. doi: 10.1016/j.euroecorev.2011.10.001.

[9] S. T. Ali, Z. Yang, Z. Sarwar, and F. Ali, "The impact of corporate governance on the cost of equity: Evidence from cement sector of Pakistan," *Asian J. Account. Res.*, 2019, doi: 10.1108/AJAR-08-2019-0062.

[10] S. T. Ali, Z. Yang, Z. Sarwar, and F. Ali, "The impact of corporate governance on the cost of equity," *Asian J. Account. Res.*, 2019, doi: 10.1108/ajar-08-2019-0062.

[11] D. Rapcevi, "Modeling a value chain in public sector," *Soc. Transform. Contemp. Soc.*, 2014.

CHAPTER 3

DETERMINATION OF INTERGENERATIONAL TRANSFERS

Dr. Mounica Vallabhaneni
Assistant Professor, Department of Commerce and Economics,
Presidency University, Bangalore, India.
Email Id: mounicav@presidencyuniversity.in

ABSTRACT:

Understanding the dynamics of wealth and resource distribution between generations requires understanding intergenerational transfers, which is a critical component. The primary drivers and processes that affect intergenerational transfers will be examined in this essay along with how they affect social and economic consequences. It investigates how intergenerational transfer patterns are shaped by population changes, family structures, cultural norms, governmental policies, and economic situations. The research emphasizes the significance of social protection, intergenerational justice, and the longevity of transfer systems. This study provides a thorough review of how intergenerational transfers are determined by analysing several theoretical frameworks and empirical investigations.

KEYWORDS:

Cultural Norms, Demographic Changes, Family Structures, Government Policies Intergenerational Transfers, Wealth Distribution.

INTRODUCTION

Becker (1988), who was elected president of the American Economic Association, urged economists to consider the family's role more carefully while pondering macroeconomic concerns. Becker made note of the likelihood that family transfers between generations would affect economic expansion and change the consequences of crucial fiscal measures like social security and borrowing by the government. One of the most crucial reasons to adopt an overlapping generations strategy that acknowledges the generational structure of the economy is to comprehend the causes and effects of intergenerational transfers.

We refer to private transfers of resources from one generation to another as intergenerational transfers. Investments in human capital (x) and transfers of material or financial assets (b) are the two main types of transfers. The financial assets are the same as the ones used for life-cycle saving; however, they are utilised to boost the household's children's future earnings rather than the household's own [1], [2].

Investments in human capital are in-kind transfers of products and services intended to increase the productivity of the receiver by improving knowledge, skills, or health. A human capital production function Hxt1 describes how these in-kind transfers affect the child's market productivity. In this case, we are considering parental investments as an endogenous function of the effective labour supply. We temporarily disregard the exogenous component of effective labour supply, Dt, in order to concentrate on the human capital component of effective labour supply.

The sole presumption we will make about the human capital production function in this section is that H is strictly concave in x and that its derivative with respect to x is positive but declining, or H0 [0; H000. According to this supposition, although investing more in children's education today will always improve their knowledge and productivity in the future, when they reach the workforce, the marginal benefit of further educational investment declines as expenditures rise. In other words, a child's ability to acquire information and abilities has inherent upper and lower bounds.

The difference between the two forms of transfers is crucial because there are instances when investments made with money and with people, even ones with the same dollar amount, have different effects on the behaviour and wealth of the receiver. For instance, a dollar invested in a financial asset that is eventually left to the kid would not typically have the same economic impact as a dollar spent on the primary and secondary education of a dependent child. The difference may not be as evident in other situations. Is a parent's payment of a child's college expenses comparable to a monetary gift to the child? The child's and parent's choices and limitations will determine the solution, which is not evident. It can also be true that parents place different values on the two transfers. For instance, parents may value education for its own sake, independent of its impact on the child's potential market labour output [3].

Altruism

Assuming that parents are altruistic, or that they are concerned about their children's wellbeing as adults, is a logical approach to explain why intergenerational transfers take place. The idea that parents are concerned about their adult children's lifetime usefulness is a significant approach to demonstrate generosity. Barro-Becker altruism is the term given to this kind of altruism in honour of the two economists who first proposed it. We'll see that this specific approach to modelling altruism has some extremely intriguing ramifications that have significantly influenced the development of macroeconomic theory.

Barro-Becker altruism suggests a utility function for the generation t parent of the form Ut bVt1Wt1, where Ut is utility from the consumption of the generation t household, which we presume to be of CES form throughout, and V is the highest utility that the following generation is capable of achieving. Because it is the utility obtained when adult children maximise their utility while taking into account their beginning wealth and market prices, the function Vt1 relies on Wt1.6 We postulate that while parents may have a large impact on their children's starting wealth and thus on V, they cannot directly influence the decisions made by their adult offspring. Parents discount the value function because they have a positive rate of time preference and believe that their children's adult utility will be created in the future. It's also likely that parents are less concerned with their older children's wellbeing than they are with their own. The qualitative findings would be the same even if the generational discount factor in this situation would be different from the pure time discount factor [4], [5].

Quantitative Theory

Macroeconomists have a growing propensity to quantify their theoretical models during the last 30 years. When a model is quantified, its parameters are given numerical values, allowing it to

provide numerical predictions that can be compared to empirical data. This healthy propensity to build quantifiable hypotheses has significantly increased our knowledge of a wide range of events and established a forward-thinking scientific framework for macroeconomic study. In fact, it served as one of the primary inspirations for this book.

In this part, we quantify our straightforward growth model and evaluate its predictions in light of significant qualitative trends that emerge often as economies develop. We are essentially doing the same experiment that was done in the well-known paper by King and Rebelo from 1993. They demonstrated that the typical neoclassical concept of the accumulation of physical capital is incompatible with the pattern of growth rates and interest rates that the USA experienced as it evolved. The classic econometric method of parameter estimation is often not an option due to the need to keep the number of variables in the study to a minimum, the nonlinear nature of the model, or a lack of suitable data. The model is calibrated instead. In other words, the model's parameters are tuned to enable it to match certain objectives, such as observations or previously predicted behavioral reactions. The model may make predictions regarding the values of variables that weren't utilised in the calibration after it has been calibrated. The model's ability to represent the real world may then be evaluated by comparing the anticipated values to the actual values [6].

When crucial real-world data are not successfully reproduced, the model is adjusted or a new model is created that offers a better approximation. When doing policy analysis, where the consequences of existing and prospective government policies are assessed, the model presently offering the best approximation should be preferred. The greatest chance we have of developing our knowledge of economies and policy is to consistently strive for the best quantitative approximation.

these concepts into practice by calibrating a straightforward neoclassical model of physical capital accumulation and then putting its forecasts for economic growth to the test. The fundamental model is given by the transition exogenous parameters in the equation are and. We will need to start the economy at a position that is below its steady state in order to enable endogenous growth by raising the physical capital intensity. Therefore, k1, the beginning value, must likewise be established. The duration of each time period in the model must also be determined. In actuality, the choice of time period will affect the values of other parameters.

The model projects high interest rates (14%) and growth rates (3%), which will drop over the course of the twentieth century. These predictions are made for the late nineteenth century. There are many reasons why these forecasts are inaccurate. The late nineteenth century undoubtedly saw larger returns on capital than the twentieth century did. Although we do not have Standard & Poor's 500 return data going back to 1870, returns on other assets were 2-6% points greater in 1870 than they were in the 20th century. Real interest rates on national government debt averaged over 5% in the first half of the nineteenth century and around 2.5% in the twentieth, according to Wallis.

Real interest rates on commercial paper were 9% from 1840 to 1880, according to Barro (1997), but they averaged about 3% throughout the 20th century. Out of this range, the model forecasts beginning interest rates that are 7% percentage points higher than those of the twentieth century. Interest rates also exhibited no trend by 1900, although the model forecasts a decline in interest

rates throughout the course of the twentieth century, particularly in the first third of the century. Predictions of the growth rate are much less reliable. Estimates of US labour productivity growth rates over a 200-year period are From 1840 to 2000, there was minimal pattern in growth rates. The model, however, forecasts rapid growth rates in the nineteenth century followed by a slow fall. The capital-labor ratio must be set far below its steady-state value from 1870 in order to meet the capital returns are comparatively high due to the relatively low capital-labor ratio. The transition equation qualitatively indicates that high and falling growth rates result from the capital-labor ratio being much below its steady-state value.

DISCUSSION

The main pattern is not significantly altered by sensitivity analysis that takes into account small modifications on the theme, such as lowering population growth rates or setting 1. We still find a definite diminishing trend in growth rates and interest rates, but these fluctuations do assist to enhance the capital-labor ratio at later phases of development and smooth out growth rates somewhat. The key finding is that growth resulting from higher physical capital intensity was not a significant driver of growth in the USA during the course of the 20th century; otherwise, the statistics would show a pronounced downward trend in growth rates and interest rates [7], [8]. Adding human capital to growth models has been one response to this finding. In the USA, investments in human capital expanded significantly over the course of the 20th century, and many economists see human capital as a significant source of economic development that is overlooked by the conventional model. Two indicators of the amount spent on human capital in children the percentage of the year that children aged 0 to 19 spend in school (et) and the actual expenditure per child on primary and secondary education (xt). Since 1870, time spent in school has increased more than thrice while per-pupil expenditure on education has increased more than 25-fold.

By generalising the human capital production we used in our discussion on intergenerational transfers, we may evaluate the growth implications of increasing human capital investment. Human capital was either considered as an exogenous variable in our earlier models or as an endogenous variable that was purely dependent on per-pupil education expenditure. Student time is included as an extra input in the human capital creation function in the more general specification that is provided below. Its definition takes into account the prior approaches to human capital as special circumstances. Given by is the more generic human capital production function.

technology advancements as a possible explanation for part of the increase in education expenditure and its impact on economic expansion. This method of determining the causal relationship between education expenditure and growth is considered to be rather conservative since only school spending increases that outpace technological advancement are credited with spurring economic development. Second, human capital is now assisting physical capital intensity in explaining 50% of the economy's development at this time. In contrast to our previous experiment, k1 won't need to be as far below k5 to fulfil (2.39). The counterfactual predictions ought to be eliminated thanks to this feature. Last but not least, keep in mind that even while investments in human capital increased greatly throughout the time period, both forms of investments are susceptible to decreasing returns since h1 and h2 are both much less than one. As

a result, the economy's growth rates will be influenced by two competing forces: increasing rates of human capital investment and declining returns on those investments [9].

The model's historical projections for interest rates and growth rates are shown in Comparing both time series to the series reveals a significant flattening. Both growth rates and interest rates now exhibit no trend across the entire time period, improving the consistency of the data for both series. Before 1900, human capital development was sluggish due to the slow increase of its inputs. As a consequence, before 1900, a large portion of the model economy's development was caused by an increase in the physical capital intensity. This is evident from the about 2% age point fall in interest rates that occurred between 1870 and 1900, which is within the bounds of the decline shown in the historical interest rate data. Physical capital intensity and interest rates revealed no trend during the course of the 20th century, both in the model and the data. This period's explained growth was brought on by increasing investments in human capital. Because of the declining returns to human capital expenditures, which nearly balance the impact of the increasing human capital investments on growth rates, growth rates in the model did not exhibit a trend over the twentieth century, which is also consistent with the facts.

Many-Period Models

It is simpler to go forward in models with more than two periods when the equilibrium or market clearing condition is thought of in terms of products rather than capital. The two methods of thinking about things are comparable, but it is simpler to explain if we talk about commodities instead. This is particularly evident when contrasting the overlapping generations method with the indefinitely lived agent approach. To simplify notation, the discussion will be restricted to the straightforward model of physical capital formation in the absence of human capital or technological advancement. The main arguments may also be stated for the scenario when n = 1 and = 1 are both true. This solution easily simplifies to a first-order difference equation in the overlapping generations model with two-period lives (Problem 14). This is due to the fact that the right-hand side may be reduced to the spending habits of a single generation, whose consumption is only dependent on period t earnings and, hence, only on kt. The elderly generation spends the whole money. Their income and consumption are equal as a consequence, cancelling each other out on the right side of the transition equation.

With more life cycles, there will be more generations on the right, who save by investing in capital since their income is less than their consumption. These generations' spending patterns will be influenced by the earnings they received prior to period t. Consider a model that has five stages of life: four working phases and one retirement phase. Five separate generations make up the total consumption pattern on the right.

Generally speaking, only the retired generation will "cancel out." All factors that have an impact on future generations' spending patterns will be included in the transition equation since future generations' saving will often not be zero. Think about the subsequent oldest generation, which is nearing the end of its working years. The working years of this generation started three periods ago. The amount of money they made in each of those periods will determine their spending choices in period t [10], [11].

Wages from period t-3 and earlier will thus be included in the transition equation. The capital-labor ratio from each time determines the salaries for that period. This suggests that the fifth-order difference equation, which includes the variables kt1, kt2, kt1, and kt3, will be the transition equation. The crucial point is that as the number of life-cycle phases increases, so do the state variables in this case, the capital-labor ratios that define the economy. When the number of life cycle phases is high, this dimensionality curse makes the model's computations more difficult.

Contrarily, regardless of how many life cycle periods are included, the economy's transition equation is a second-order difference equation if it is assumed that the generations are connected by intergenerational financial transfers. To understand this, keep in mind that jNtc1t as long as there are intergenerational financial transfers that connect the generations. Only the value of changes when new life cycles are added. For instance, if there are two periods of life, then = 2, and if there are five periods of life.

CONCLUSION

the choice of intergenerational transfers has a significant impact on the distribution of wealth and social consequences. The type and scope of intergenerational transfers are influenced by demographic changes, including population ageing and changes in family arrangements. The availability of informal intergenerational transfers, such as financial assistance and caregiving, may be impacted by smaller family sizes and rising life expectancies.

REFERENCES

[1] R. Lee, "Population aging and the historical development of intergenerational transfer systems," *Genus*, 2020, doi: 10.1186/s41118-020-00100-8.

[2] W. J. Deng, J. S. C. M. Hoekstra, and M. G. Elsinga, "Why women own less housing assets in China? The role of intergenerational transfers," *J. Hous. Built Environ.*, 2019, doi: 10.1007/s10901-018-9619-0.

[3] P. Eibich and T. Siedler, "Retirement, intergenerational time transfers, and fertility," *Eur. Econ. Rev.*, 2020, doi: 10.1016/j.euroecorev.2020.103392.

[4] M. Cigdem and S. Whelan, "Intergenerational transfers and housing tenure – Australian evidence," *Int. J. Hous. Policy*, 2017, doi: 10.1080/19491247.2017.1278580.

[5] G. Zhang, Q. Ren, S. Ma, J. Wu, X. Yang, and Y. Yu, "Intergenerational transfer of Dechlorane Plus and the associated long-term effects on the structure and function of gut microbiota in offspring," *Environ. Int.*, 2020, doi: 10.1016/j.envint.2020.105770.

[6] D. Varvarigos, "Upstream intergenerational transfers in economic development: The role of family ties and their cultural transmission," *J. Math. Econ.*, 2021, doi: 10.1016/j.jmateco.2021.102514.

[7] E. Del Rey and M. A. Lopez-Garcia, "Public education, intergenerational transfers, and fertility," *Econ. Lett.*, 2019, doi: 10.1016/j.econlet.2019.03.031.

[8] H. Brown and M. Van Der Pol, "The role of time preferences in the intergenerational transfer of smoking," *Heal. Econ. (United Kingdom)*, 2014, doi: 10.1002/hec.2987.

[9] P. L. Hooper, M. Gurven, J. Winking, and H. S. Kaplan, "Inclusive fitness and differential productivity across the life course determine intergenerational transfers in a small-scale human society," *Proc. R. Soc. B Biol. Sci.*, 2015, doi: 10.1098/rspb.2014.2808.

[10] N. Z. Riani, W. D. Taifur, Elfindri, and F. Muharja, "Gender Bias in Intergenerational Transfer Patterns: Focusing on a Patrilineal and a Matrilineal Ethnic Group in Indonesia," *Webology*, 2021, doi: 10.14704/WEB/V18SI03/WEB18032.

[11] G. Barrett, M. Cigdem, S. Whelan, and G. Wood, "The relationship between intergenerational transfers, housing and economic outcomes," *AHURI Final Rep.*, 2015.

CHAPTER 4

EXTENSIONS TO NEOCLASSICAL GROWTH THEORY

Mr. Yelahanka Lokesh
Assistant Professor, Department of Commerce and Economics,
Presidency University, Bangalore, India.
Email Id: lokesh.yr@presidencyuniversity.in

ABSTRACT:

A crucial foundation for comprehending long-term economic development as well as the building up of capital and knowledge is provided by neoclassical growth theory. To address additional aspects and complexity that influence economic growth, a number of extensions to this theory have come into existence. The main neoclassical growth theory extensions will be examined in this essay along with how they affect our understanding of economic growth. It investigates extensions pertaining to institutions, endogenous development, human capital, technological advancement, and environmental sustainability. The research emphasizes the significance of including these extra variables to provide a more thorough picture of economic development patterns.

KEYWORDS:

Extensions, Human Capital, Technological Progress, Endogenous Growth, Institutions, Environmental Sustainability, Economic Growth Dynamics.

INTRODUCTION

in numerous aspects, the fundamental neoclassical growth model. that human capital is a significant driver of economic expansion. Here, we provide a straightforward theory of human capital development that is based on parents' motivation to support their children's "quality" or economic output. Additionally, parents will decide the "quantity" of their offspring, providing us with a theory of fertility that makes population increase another crucial factor in determining economic development that. Keep in mind that rapid population expansion makes it harder for workers to amass capital, which slows the increase in per capita income.

Taxation and public capital creation are used to introduce the government's involvement in economic development. Without public infrastructure investments in ports, roads, utilities, and the legal framework that safeguards property rights, modern economic development is not conceivable. As with any other economic actor, we model the government by identifying its preferences, limitations, and goals. There is no comprehensive model of politics that explains how the government is elected or how voters and interest groups affect its policies. In its place, we assume that a nation's politics establish the "reduced-form" preference criteria for the elected leaders. The government's concern for both the wellbeing of the general populace and the welfare of the homes that make up or are in close proximity to the government itself is determined by the boundaries [1], [2].

Development economics, the study of significant income disparities between wealthy and poor nations, makes use of the model's additional characteristics. The disparities in per capita income

across nations at the start of the industrial revolution were quite small. Only 2-4 times as much money was spent per person in the wealthiest nations as in the poorest nations. The per capita income of the wealthy nations has begun to differ from that of the developing nations during the last two centuries. Rich nations were 20–40 times wealthier than developing countries by the end of the 20th century.

by simulating a typical wealthy and poor nation. The poverty trap that keeps education low and fertility high is one of the causes of the impoverished country's low income. The country's fiscal policy is the second factor contributing to low income. Many developing nations have relatively high tax rates, high government consumption rates, and low public infrastructure investment levels. Based on the fiscal policy results we see in both wealthy and poor nations, we calibrate the government's preferences. Our calibration tests show that these expansions contribute significantly to the explanation of wide income differences [3].

Large income disparities that emerged in the latter part of the 20th century prompted wealthy nations to provide different forms of help to developing nations in the hopes that their development would be accelerated, enabling a convergence of living standards. How the government's policies of the receiving nation could react is one of the challenges in delivering help. This is one of the reasons we expand the model to include endogenous fiscal policy. It enables us to investigate the elements that could influence the government of the developing nation to support or reject progrowth policy initiatives. We might also inquire about the "aid cost" to persuade the government to approve a change when it is evident that they are opposed to it.

A Theory of Income Differences

The poverty trap has a few extra aspects that are important to consider. The rate of return to education may be fairly high at e, to start. However, parents feel they cannot afford to give up the lost family income if older children earn less and spend more time in school. This situation is inefficient if the rate of return on education is higher than the market interest rate because, in theory, the family could borrow to make up for the lost income and then receive more than enough from the increased adult earnings of their children to repay the loan with interest. However, this necessitates the existence of well-functioning intergenerational loan markets, where parents take on debt on behalf of their dependent children and the lender is able to collect the loan repayment from those same children when they become adults, Intergenerational loan markets are nonexistent in wealthy nations, much alone in emerging ones, due to the many complex incentive and legal concerns involved with this sort of transaction. Therefore, some kind of governmental action that increases schooling is warranted when the rates of returns to education are high in order to increase productive efficiency [4], [5].

Second, there can be physical capital-specific poverty traps. Borrowing in credit markets is crucial for the accumulation of physical capital as well if starting a business has a substantial fixed cost. Since there is no need for an intergenerational loan market and since physical capital may be seized if the loan is not returned, it is usually considered that borrowing to finance physical capital is a simpler financial transaction than borrowing to fund human capital. However, these loans may be rather expensive in the early phases of growth. Separately, it's possible that the economic climate

makes it impossible for physical capital to rival land as a productive asset. we look at a scenario in which the level of technology must be high enough for production based on physical capital to be viable (even when there is a credit market for loans for physical capital). In such a situation, nations with governments and interest groups that obstruct technological innovation risk becoming impoverished, with all output reliant on labour and land.

DISCUSSION

Poverty Traps

It's fairly typical to use poverty traps to explain income disparities. There are many different types of poverty trap theories, and some people are sceptical about their ability to provide a solid factual basis for economic disparities. because of For this reason, it makes sense to focus on the details of the specific poverty trap we utilise in this chapter [6]. First off, this poverty cycle is not one of "multiple equilibria". When two or more outcomes are feasible in a particular time given the beginning circumstances, multiple equilibria emerge. In these kinds of poverty trap models, a nation just by coincidence finds itself in a poor equilibrium with little human capital. There is no specific reason why the nation couldn't reach an equilibrium with high human capital more rapidly.

Families need to understand that they would all benefit from a different result. This is referred to as a coordination issue. In our poverty trap, parents who only acquire a basic education choose for that for their kids since it benefits them more than any other option. There is no reason to alter because it is a novel solution. Second, our poverty trap results in income level inequalities between two expanding economies. The majority of developing nations enjoy growth. There are nevertheless absolute advances in productivity and living standards even if the rise may be too slow to enable convergence to wealthy nations' living standards. Why growth does not pick up speed to enable convergence is the question. Economic progress may break certain poverty traps.

These kinds of traps are unable to account for the ongoing disparities in income levels across nations. The absolute rental rate on human capital, which may be increasing as a result of technical advancement or the buildup of physical capital, is absolutely unrelated to the decision to not educate older children in our model. Instead, the relative productivity of children is what fuels the poverty trap. The poverty trap will continue in areas where children are relatively productive. This raises the issue of why certain nations manage to break out of the poverty cycle while others fail to do so. Culture is one factor. For our purposes, culture is a group of non-economic aspects of society that conventional economic models do not properly account for. Education may undoubtedly be impacted by culture. Long before the start of sustained modern development, basic literacy improved in some nations but not in others.

In addition to economic factors, social cohesiveness, enlightenment, religious, or military objectives may also be driving forces behind broad population education. Before contemporary economic development started, the time and scope of education varied between nations due to cultural and political disparities in the pursuit of these larger aims. In certain nations, like Germany and Sweden, literacy levels were high at the start of economic development, whereas in others, like England, they were low. Germany and Sweden may be seen beginning to the right of the poverty trap in our model, which aided in accelerating their progress. On the other hand,

throughout its formative years, England was mired in a human capital poverty trap. Early nineteenth-century regulation against child labour and mandatory education was necessary to get older children started in school [7], [8]. The "initial" level of education and human capital is influenced by cultural variations in addition to technical and geographic disparities, which also affect the size of c. The chance of a trap increases when c is large due to technological or geographic factors. production (especially hay, wheat, and dairy production) is more physically taxing in the colder northern areas. Because of this, kids' relative productivity in agriculture is poor. In England, when the industrial revolution got underway, intensive agriculture declined and the "cottage industry," or domestic textile production, grew. The relative productivity of children increased dramatically as a result of this change in output. Early development in England was mostly characterised by the cottage industry, which may have contributed to the education of older children, whose output was relatively high but trailed in other nations where it was absent.

Rice, cotton, and sugar production are less intensive in southern climates, and children are more productive overall. This may be one reason why education in the south of the country lags behind that in the north. The more general econometric results are similarly compatible with geographic disparities that result in educational inequalities. They do a regression of economic results on regional traits and discover evidence of various stable states: a low-income range where income varies with geography and a high-income range where it does not. In the low-income spectrum of nations, warmer temperatures are linked to lower income. There are various reasons for this discovery, but one is that children in warmer climates have better relative output in farming and hence attend less schools. High levels of education and the ensuing economic growth enable nations to become less reliant on their geographic location. However, geography may lead to poverty traps for developing nations, particularly in those with warmer climates where there is a significant opportunity cost to schooling older children [9].

International Financial Institutions and Foreign Aid

Since the 1950s, international economic aid has played a significant role in the global system. Loans and grants are given to developing countries and other countries in need as a result of poor management, war, natural catastrophes, and other unlucky circumstances by national governments in developed countries and international organisations jointly controlled by governments. The International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (IBRD), sometimes referred to as the World Bank, are the two most well-known international financial organisations (IFIs). These two financial companies, both situated in the US, were founded in the 1940s. They have 188 member nations, almost all of which are members. The overarching goal of the IFIs and of what ultimately evolved into the World Trade Organisation is to support a stable, market-based global economic order and steer clear of, as the IMF's mandate states, "policies that are destructive of national and international prosperity." From a limited national viewpoint, inefficient policies are sometimes ideal, but from an international perspective, they are zero- or negative-sum games. For instance, governments striving to protect their jobs from foreign competition in the 1930s naturally reacted with tariff wars, competitive devaluations, and other policy blunders. However, these measures taken as a whole led to chronically high levels of

unemployment throughout the world and economic stagnation. This had a tremendous impact on political unrest in important nations like Germany and led to the start of World War II.

The World Bank promotes long-term development via programme and project loans and grants, while the IMF concentrates on macroeconomics and macro-critical structural changes in its member nations. This is the general division of labour between the two main IFIs. These initiatives are supplemented by bilateral assistance offered to underdeveloped nations by national governments and programmes run by regional development banks (such as the African Development, Asian Development, and so on).

The US Agency for International Development, for instance, is in charge of managing food assistance in the USA. International development aid is the focus of ministries or organisations in Canada and all other significant advanced nations. International aid includes more than just the delivery of money and material goods; it also includes a range of specialised technical skills. It is understood that more than money and resources are needed to combat poverty and underdevelopment. For instance, nations may not be able to raise enough money to pay for crucial government services such essential health, sanitation, and education. International technical aid strives to assist nations in developing their institutions, including their central banks, tax systems, and other economic institutions that may help them function more smoothly.

Conditionality and Ownership

International help, with the exception of humanitarian relief, often carries conditions. Conditions are designed to assist recipient nations in making better policy decisions and conserving the resources of donors or creditors so that the funds may be distributed to more deserving projects and needy nations. Sometimes collateral is used as security for international loans, however this is seldom the case with IMF or World Bank loans. Conditions assist ensure that these loans will be repaid since collateral is not required. Conditions also assist in providing borrowing nations with some assurance. If they fulfil the requirements, they are guaranteed to continue receiving foreign aid this is known as consistency of treatment.

In the 1980s, the IMF became interested in structural conditionality for excellent reasons. Supply-side changes increase the economy's efficiency, increase exports, and promote growth. They also stop governments from implementing other ineffective policies or cutting the incorrect areas of budget. Although well-intentioned, the Fund conditionality's breadth and complexity growth had unforeseen repercussions. The Fund was overstretched. Its programming went well beyond its typical areas of competence in macroeconomic and financial stabilisation. The IMF lost focus and strayed from its core areas where it has a clear competitive advantage due to its involvement in difficult, multi-stage structural reforms [10].

Domestic ownership was compromised for structural improvements. Governments in need of funding sometimes consented to IMF conditions primarily to acquire IMF finance and receive its endorsement. Lack of ownership hampered the execution of policies and damaged the IMF's reputation and capacity to spark changes. Some politicians figured out how to use the Fund as an excuse for the difficult decisions they had to make. Conditionality was no longer seen as a tool of international collaboration, but rather as an unavoidable but bitterly regretted compromise of

national sovereignty. Such language encouraged resistance to necessary changes, particularly when it was seen that they were being imposed from outside to safeguard the limited interests of contributors. It became evident that there was little hope of success unless the nation "owned" the policy changes, that is, believed in and supported their execution.

Frictions between the Fund and the World Bank also resulted from the Fund's expanding structural engagement. In the 1980s, the two Bretton Woods organisations' functions merged. Following the debt crisis, the Bank expanded its activities to include structural adjustment loans, which increased its interest in macroeconomic trends. The overlap between the two organisations' work grew as the Fund began to concern about structural difficulties more in the late 1980s and 1990s. It became more important to coordinate the two institutions' efforts.

The Fund and the Bank revised their strategy in low-income countries as they realised the value of strong ownership for the execution of structural reforms and for market confidence. A tripartite partnership between the government, the Fund, and the Bank was launched in 1999 as part of a transparent, country-driven approach. A Poverty Reduction Strategy Paper (PRSP) is created by the nation, outlining its programmes. The local populace, international organisations, and bilateral funders should all be consulted on this. Although there is a collaboration between the several parties, the nation itself is required to develop and implement the programme.

In recent years, the IFIs have significantly altered their conditionality. The IMF now seeks to have conditions that adhere to five principles: (i) national ownership of programmes; (ii) parsimony in conditionality; (iii) tailoring of programmes to borrowing country circumstances; (iv) coordination with other multilateral institutions; and (v) clarity in conditionality. This is in response to input from policymakers, civil society, and academia. It's important to note that IFI inclusive methods of openness, engagement, and persuasion seek to enable members to create and execute programmes and ensure the authenticity of their dialogue with the fund. Staff members of the IMF are urged to be adaptable when designing programmes and to seek early recommendations from national authorities. Programme schedule will be adjusted to accommodate circumstances when there is a lack of time or capability on the part of the authorities [11].

Through public debate and the implementation of participatory methods, the Fund intends to assist nations in garnering widespread support for solid policies (see also Drazen and Isard 2004). Seminars, meetings with legislative committees, labour unions, business organisations, and the media are all opportunities for IMF officials to provide a hand. The involvement of IMF resident representatives in this is crucial.

CONCLUSION

The underlying paradigm for comprehending long-term economic development has been neoclassical growth theory. However, a number of additions to this theory have come to light, illuminating new variables and complexity that affect economic growth m Recognising the importance of education, skills, and knowledge in fostering economic progress, growth models increasingly include human capital. Accumulation of human capital increases the ability for innovation and technical advancement as well as productivity gains.

REFERENCES

[1] W.-B. Zhang, "An Integration of Neoclassical Growth Theory and Economic Structural Change with Monopolistic Competition Theory," *Bus. Econ. Res.*, 2021, doi: 10.5296/ber.v11i2.18380.

[2] F. Popa, "Elements Of The Neoclassical Growth Theory," *Stud. Sci. Res. Econ. Ed.*, 2014, doi: 10.29358/sceco.v0i20.296.

[3] W. Bin Zhang, "Social status and inequality in an integrated walrasian-general equilibrium and neoclassical-growth theory," *J. Econ. Dev.*, 2017, doi: 10.35866/caujed.2017.42.4.004.

[4] P. I. Rumanzi, D. Turyareeba, W. Kaberuka, R. N. Mbabazize, and P. Ainomugisha, "Uganda's growth Determinants: A Test of the Relevance of the Neoclassical Growth Theory," *Mod. Econ.*, 2021, doi: 10.4236/me.2021.121006.

[5] W.-B. Zhang, "Economic Growth and Inequality with Tourism in an Integrated Walrasian-General Equilibrium and Neoclassical-Growth Theory," *Zagreb Int. Rev. Econ. Bus.*, 2018, doi: 10.2478/zireb-2018-0002.

[6] R. M. Solow, "Chapter 9 Neoclassical growth theory," *Handbook of Macroeconomics*. 1999. doi: 10.1016/S1574-0048(99)01012-5.

[7] R. Mehra, F. Piguillem, and E. C. Prescott, "Costly financial intermediation in neoclassical growth theory," *Quant. Econom.*, 2011, doi: 10.3982/qe40.

[8] J. R. Neill, "Fueling the engine of growth with investment in infrastructure: A lesson from neoclassical growth theory," *J. Macroecon.*, 1996, doi: 10.1016/S0164-0704(96)80035-8.

[9] Y. C. Chou, H. H. C. Chuang, and B. B. M. Shao, "The impacts of information technology on total factor productivity: A look at externalities and innovations," *Int. J. Prod. Econ.*, 2014, doi: 10.1016/j.ijpe.2014.08.003.

[10] D. Sredojević, S. Cvetanović, and G. Bošković, "Technological Changes in Economic Growth Theory: Neoclassical, Endogenous, and Evolutionary-Institutional Approach," *Econ. Themes*, 2016, doi: 10.1515/ethemes-2016-0009.

[11] R. J. Barro and X. Sala-I-Martin, "Economic growth and convergence across the United States," *National Bureau of Economic Research*. 1990.

CHAPTER 5

A BRIEF INTRODUCTION ON FISCAL POLICY REFORM

Dr. Dasinis Nathan Annette Christinal
Assistant Professor, Masters in Business Administration (E-Commerce),
Presidency University, Bangalore, India.
Email Id: annette.c@presidencyuniversity.in

ABSTRACT:

Fiscal policy reform plays a crucial role in shaping economic stability, sustainability, and growth. This paper aims to explore the key principles and implications of fiscal policy reform and its impact on macroeconomic outcomes. It examines the various aspects of fiscal policy, including taxation, government spending, budgetary discipline, and debt management. The study highlights the importance of fiscal responsibility, efficiency, and equity in designing and implementing effective fiscal policy reforms. By analyzing theoretical frameworks, case studies, and empirical evidence, this paper presents a comprehensive overview of fiscal policy reform and its implications for economic performance.

KEYWORDS:

Budgetary Discipline, Economic Performance, Fiscal Policy, Fiscal Policy Reform, Government Spending, Fiscal Responsibility.

INTRODUCTION

A typical goal of assistance policy is to attempt to modify developing nations' traditional fiscal policies. We now examine the results of imposing a fiscal policy on the developing nation that would align it with the developed nation's fiscal policy. With regard to the wealthy nation, where the ideal values are 0.15 and 0.67, and the poor country, where the corresponding optimal values in the open economy are 0.26 and 0.31, we specifically quantify the impacts of imposing the s and B. The fiscal policy has affected the growth rates of worker productivity. The effects on growth are minimal and transient. This is in part because we start the policy experiment with an entirely open economy.

The fiscal policy of the poor government becomes more similar to that of the wealthy government as the economy is opened up. Since capital intensities in impoverished countries are greater in the open market than in the closed sector, this has the effect of making the disparities in tax policy less pronounced and the rewards to accumulating private and public capital less. The transition to the new steady state is swift when the poor economy's initial capital intensities are reasonably near to those of the wealthy nation [1], [2].

However, the fiscal reform has resulted in a significant increase in utility for all generations. This is as a result of the growth impacts as well as the immediate advantages of reduced taxation. Of course, by departing from their ideal fiscal strategy, the welfare of the impoverished country's government suffers greatly. In Figure 1 shown the effects of fiscal reform.

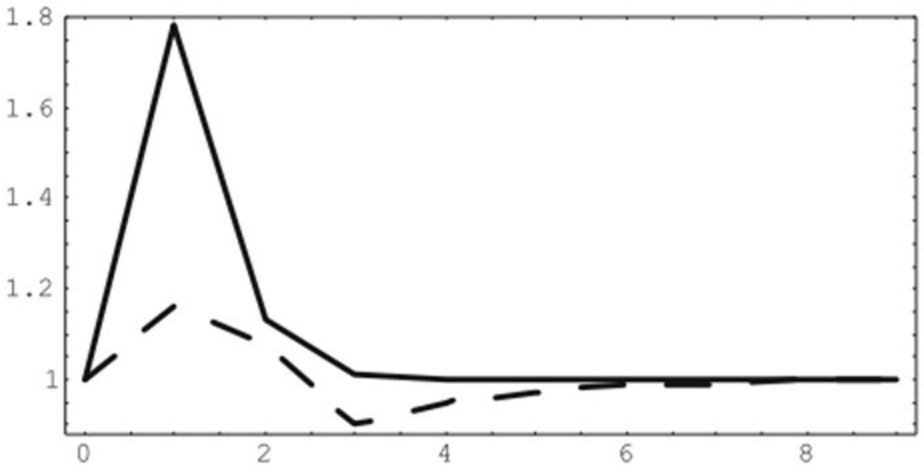

Figure 1: Represents the effects of fiscal reform.

The Aid Cost of Reform

Five possible approaches to encourage economic development in emerging nations. The cost of the policies' helps as well as how they affected development varied greatly. The unconditional assistance approach is costly and offers no long-term advantages. Openness and the Progresa-style education subsidies result in significant and long-lasting income improvements. They also improve the government's welfare in the underdeveloped nation, thus they need to be welcomed. Openness damages the first generation of private families, nevertheless, and may not always improve the welfare of the state. The government should, at the very least, utilise the fact that the present generation is suffering as a "bargaining chip" to get some help in exchange for opening up the economy. In the case of the Progresa programme, strategic factors also come into play. The government favours mandatory education, and they may use this as a threat to persuade donors to provide assistance compensation if the Progresa programme is continued [3].

Unlike the other initiatives, the government of the impoverished nation would undoubtedly reject the internal budgetary changes. Aid funds would need to be used to "purchase" the fiscal changes from the government of the underdeveloped nation in order to make up for its losses. By calculating the minimal amount of help required to maintain the poor country's government's lack of interest in the change, we may determine the aid cost of fiscal reform. We estimate the cost of aid as a continuous flow of assistance, represented as a percentage of the budget of the underdeveloped nation. The administration will want to backtrack and resume its ideal fiscal strategy as long as it is in power, thus the assistance flow must be ongoing. Naturally, the aid flow will also alter how much the government invests while the government consumes the majority of the aid flow, some is invested, and as a result, the growth effects of the fiscal reforms will be greater than those without aid a further advantage of the aid that goes beyond simply purchasing the reforms. Because the government decides to invest part of the help, the growth impacts are greater than in terms of help. Over 87% of the budget of the underdeveloped nation is required in aid. The absolute flow of help must rise over time long after the growth rate impacts of the reforms have been exhausted because the budget of the impoverished nation grows as the country expands**.**

DISCUSSION

Aid Failures

The fact that no reliable association between assistance and growth has been found in the economic literature is a depressing stylised truth about development. For example, endogeneity of aid flows aid is targeted to slow-growing economies, specification error the relationship between aid and growth is highly nonlinear, and measurement error all aid, including aid not intended to generate growth, is lumped together in a single measure are some possible econometric explanations for the lack of a clear positive relationship. The mainstream result that there is no association between assistance and growth has not been challenged by attempts to take these econometric concerns into account see, for example, Rajan and Subramanian. Our study supports three hypotheses regarding the absence of correlation.

Unconditional Aid is Not Growth-Promoting

Our findings imply that unconditional help, even aid with inadequately implemented limitations, won't result in long-term income increases. Since the economic boost from unconditional help is transient and so small, it may be quickly eclipsed by other events, such as the long-term consequences of the damaging shocks to the economy that originally led to the scaling up of unconditional aid [4], [5].

Domestic Conflict Over Growth Policies

There are policies that may lead to quick development and long-term income gains, but choosing which one to implement is likely to cause internal strife. The government supports compulsory education and economic openness, but the present generation of private homes will be against both measures.

The government considers Progresa to be manifestly inferior to obligatory education, yet the current generation of private homes prefers it. Conflicts like this might jeopardise efforts to reach a national agreement on the best growth- and poverty-reduction measures. The negotiation and execution of conditional assistance agreements with donors may be hindered or delayed as a result of this lack of agreement.

Prohibitive Aid Cost

Reforming the budget is often one of the requirements for obtaining help. According to our study, domestic fiscal policy changes are likely to be the least effective of the measures we looked at. First, fiscal change has very small and transient benefits on GDP. Second, "buying" the changes from the impoverished country's government with help would be very expensive. The home government will do all in its power to return back to a high-tax, low-investment system if the assistance to the impoverished countries does not continue to flow there in adequate amounts. In actuality, as the government's budget and the possibility for rising government consumption expand, the cost of sustaining successful reforms will rise over time. Fiscal reforms may be doomed from the start since, in reality, assistance is probably going to be far less than what is required to keep the government indifferent.

Even if adequate help is provided eternally, the statistics will show no association between aid and economic development. Early on, there are growth effects; later on, when the growth benefits have long since disappeared, there are aid phases. Instead of being expanded, assistance should be decreased or kept at the same level to prevent a reversal in fiscal policy and growth. As a result, assistance may be going to a nation with poor economic development.

Humanitarian Aid

Reforming the budget is often one of the requirements for obtaining help. According to our study, domestic fiscal policy changes are likely to be the least effective of the measures we looked at. First, fiscal change has very small and transient benefits on GDP. Second, "buying" the changes from the impoverished country's government with help would be very expensive. The home government will do all in its power to return back to a high-tax, low-investment system if the assistance to the impoverished countries does not continue to flow there in adequate amounts. In actuality, as the government's budget and the possibility for rising government consumption expand, the cost of sustaining successful reforms will rise over time. Fiscal reforms may be doomed from the start since, in reality, assistance is probably going to be far less than what is required to keep the government indifferent.

Even if adequate help is provided eternally, the statistics will show no association between aid and economic development. Early on, there are growth effects; later on, when the growth benefits have long since disappeared, there are aid phases. Instead of being expanded, assistance should be decreased or kept at the same level to prevent a reversal in fiscal policy and growth. As a result, assistance may be going to a nation with poor economic development [6], [7].

Two-sector Growth Models

In the traditional sector, families produce goods utilising labour and land (natural resources). There are no businesses or manufacturing facilities that make items using sophisticated machinery and heavy-duty gear. This environment may be utilised to pinpoint the prerequisites for the emergence of a contemporary sector that would kick off a "industrial revolution," as in Hansen and Prescott (2002). Next, we look at a two-sector model where industrial and agricultural items are produced separately. First, the model is examined under the assumption that the economy is completely blocked to the flow of products across international borders. Then, an open-economy variant is taken into account.

Finding the conditions under which opening the economy to global commerce in products fosters long-term development and welfare is a crucial challenge. The result may vary significantly from what is normally found via a static examination of international commerce, which often demonstrates that trade increases wellbeing across the board.

Finally, we broaden the model to include the advantages of eating well. A number of facts regarding emerging economies are explained by the extended model, including the roughly constant calorie consumption, the increase in body mass and health, and the decreasing budgetary allotment for food. This information relates to the "subsistence constraint," which refers to the minimum amount of consumption necessary for survival and is a common element in development

models. The literature explains a broad range of development facts, including growing saving rates, initially rising fertility rates, and declining employment shares in agriculture, by the subsistence constraint.

From Stagnation to Growth

The typical person's level of living hardly ever increased during the course of human history ,M Living standards and production or income per person, commonly referred to as per capita income, are strongly correlated. Before 1700, the global per capita income was constant. During the seventeenth century, England started to see some steady improvements in per capita income, although the rates of development were low, most likely less than one percent annually. Prior to 1800, Western Europe as a whole had a hardly noticeable increase in per capita income. Before 1800, the growth rates of per capita income in the USA were almost negligible. Living standards did not significantly vary among areas due to the absence of considerable sustained increase in any one area. According to Galor (2005), Sect. 2.1.1, in 1820, Western Europe had a per capita income that was 1.7 times greater than that of Latin America, 2.1 times higher than that of Asia, and 2.9 times higher than that of Africa [8], [9]. The character of economic development shifted after 1800. The Western European region saw an acceleration of England's sluggish development. Western Europe's income per capita increased between 1820 and 1929 by 1.5 and 2.0%. By the middle of the nineteenth century, the increase in income per capita and production per worker in the USA was over 1.5%, and it stayed there throughout the twentieth century

Not every nation started its modern expansion in the eighteenth century. As a consequence, the Great Divergence, also known as the Income Gap, started to widen across nations. Parente and Prescott (2000) analyse the per capita income of significant Eastern and Western nations over a span of two centuries. As previously indicated, wealth disparities were not significant at the start of the nineteenth century. At this point, the West's per capita income was only 2.1 times more than the East's. By 1950, the income disparity had significantly increased, with the West's per capita income being 7.5 times greater than the East's. When comparing the world's wealthiest and poorest nations, larger disparities are seen. By the middle of the 20th century, a smaller group of Western offshoots the USA, Canada, Australia, and New Zealand formed the wealthiest group of nations in the world. This group was identified by Maddison (1995).

These nations' per capita incomes were fifteen times greater in 1950 than those of Africa. Rich nation per capita income increased by 18 times by 2000. For the purpose of understanding the current disparities in wealth among nations, it is crucial to model the causes and timing of industrialisation and the start of modern development. This section's main goal is to get you to start thinking about this problem. In order to achieve this, we first assume that production is strongly reliant on land and other natural resources, then we consider the circumstances that would need to exist for the traditional economy to change into a contemporary economy where production is mainly reliant on manufactured physical capital.

Human Capital and Fertility

At first, a child's relative productivity, c, can be so great that the best option for their education is e. However, the implementation of legislation banning child labour or mandating attendance at

public schools may limit children's work choices and diminish their relative productivity. There will be a takeoff in the accumulation of human capital over time if c lowers significantly. Therefore, measures that reduce children's relative productivity may spur growth or at the very least accelerate it, which will support the development of technology in the contemporary sector.

Also take note that the traditional and contemporary sectors might be interpreted geographically as being urban and rural, respectively. Let's say a family is required to reside in a certain sector in order to work in that area. Consider first dividing the population between the two sections. Due to historical limitations in the ability to enforce child labour laws in the traditional sector or the lack of public schools in rural areas, households born in the traditional sector may begin their lives with less education than those born in the modern sector. According to the research, a variation in fertility, ntnt, would result from the different levels of education across sectors [10], [11]. According to the underlying idea from, household-specific variations in fertility and education will last for generations. Accordingly, the households' prior familial history will determine how much they spend in their children's education and fertility, independent of where they choose to work and reside.

CONCLUSION

Fiscal policy reform is an essential tool for fostering macroeconomic sustainability, stability, and growth. Effective fiscal policy improvements must take a number of issues into account before being implemented. Fiscal policy heavily relies on taxes, and reform initiatives often centre on improving tax systems to promote equity, effectiveness, and revenue production. A more equal and efficient tax system may be achieved through streamlining tax laws, enlarging the revenue base, and combating tax evasion. Another important part of fiscal policy change is government expenditure. To achieve fiscal sustainability and the best possible resource allocation, expenditures must be rationalised, profitable investments must be given top priority, and public spending must be efficient. Economic development may benefit from public investment in vital sectors like infrastructure, education, and healthcare.

REFERENCES

[1] J. Mawejje and N. M. Odhiambo, “Uganda’s fiscal policy reforms: What have we learned?,” *Public Budg. Financ.*, 2021, doi: 10.1111/pbaf.12283.

[2] G. Kissinger, A. Gupta, I. Mulder, and N. Unterstell, “Climate financing needs in the land sector under the Paris Agreement: An assessment of developing country perspectives,” *Land use policy*, 2019, doi: 10.1016/j.landusepol.2019.02.007.

[3] S. Lee and H. S. Esfahani, “The effect of fiscal system reform on fiscal policy outcomes,” *Scott. J. Polit. Econ.*, 2020, doi: 10.1111/sjpe.12230.

[4] M. Hsu and T. Yamada, “Population Aging, Health Care, and Fiscal Policy Reform: The Challenges for Japan,” *Scand. J. Econ.*, 2019, doi: 10.1111/sjoe.12280.

[5] P. A. Eshun, “Fiscal Policy Reforms and Their Effects on the Economic Viability of Mineral Projects in Ghana,” *Int. J. Econ. Financ.*, 2018, doi: 10.5539/ijef.v10n8p64.

[6] N. Yoshino and F. Taghizadeh-Hesary, "Alternatives to private finance: Role of fiscal policy reforms and energy taxation in development of renewable energy projects," in *Financing for Low-carbon Energy Transition: Unlocking the Potential of Private Capital*, 2018. doi: 10.1007/978-981-10-8582-6_13.

[7] P. van Oudheusden, "Fiscal policy reforms and dynamic Laffer effects," *Int. Tax Public Financ.*, 2016, doi: 10.1007/s10797-015-9369-9.

[8] J. Mawejje and N. M. Odhiambo, "Fiscal Reforms and Deficits in Tanzania: An Exploratory Review," *Stud. Univ. „Vasile Goldis" Arad – Econ. Ser.*, 2020, doi: 10.2478/sues-2020-0004.

[9] P. Douglass, "Income Inequality and Fiscal Policy Reform in China," *SAIS Rev. Int. Aff.*, 2009, doi: 10.1353/sais.0.0038.

[10] N. Gemmell and J. Au, "Government size, fiscal policy and the level and growth of output: A review of recent evidence," *J. Asia Pacific Econ.*, 2013, doi: 10.1080/13547860.2013.777535.

[11] M. Aoki, "The Effect of Money-Financed Policy for Fiscal Reform," *SSRN Electron. J.*, 2016, doi: 10.2139/ssrn.2820597.

CHAPTER 6

WAGE AND FERTILITY GAPS IN DUAL ECONOMIES

Dr. Mounica Vallabhaneni
Assistant Professor, Department of Commerce and Economics,
Presidency University, Bangalore, India.
Email Id: mounicav@presidencyuniversity.in

ABSTRACT:

In dual economies, there are considerable problems that impact social and economic dynamics, such as salary and fertility inequalities. The purpose of this essay is to investigate the pay and fertility differences in dual economies by looking at their sources, effects, and potential policy ramifications. It emphasises the effects on income inequality, labour market dynamics, and population expansion by focusing on the differences in earnings and fertility rates between the formal and informal sectors. The research looks at the elements that contribute to these disparities, such as gender inequality, informality, labour market segmentation, and societal norms. This study gives a thorough analysis of the wage and fertility inequalities in dual economies and their consequences for social and economic growth by examining empirical data and theoretical frameworks.

KEYWORDS:

Dual Economies, Fertility Gap, Formal Sector, Informal Sector, Income Inequality, Labor Market Dynamics, Population Growth.

INTRODUCTION

In the early phases of development, there is strong evidence to support the existence of significant inequalities in worker productivity between the agricultural and non-agricultural sectors These productivity gaps, to the extent that they correspond to differences in the marginal product of labour, suggest that labour is not distributed effectively across sectors, and that total factor productivity (TFP) and overall economic growth rise as labour moves from the traditionally low-productivity agricultural sector to the high-productivity manufacturing sector. Indeed, it has been shown that variations in labour allocation between sectors account for a significant proportion, and in some instances the majority, of TFP disparities across nations [1], [2].

There is further evidence to support the idea that institutional ownership structures and disparities in production methods are more directly related to productivity inequalities than the actual types of things produced. Workers engaged in contemporary firm-based production in developing nations make much more money than those engaged in conventional family-based production, even in metropolitan settings (La Porta and Shleifer 2014; Rosenweig 1988, pp. 756-757). Because of this, speaking about disparities between traditional and contemporary sectors rather than between agricultural and non-agricultural sectors may be more realistic. Most of the attention is on productivity inequalities between farm/rural employees and non-farm/urban workers, which is partly due to data restrictions.

Two twin economies is one from the historical United States and the other from modern-day sub-Saharan Africa. Traditional agriculture dominates both economies, and there are significant productivity differences between farm and nonfarm employees. Although it is probably an exaggeration since national income accounting ignores unmeasured production on family and community farms, the sixfold productivity gap in Africa today is very enormous. According to survey data on wages and consumption there are fewer pay and consumption differences between nonfarm and farm employees as well as between urban and rural workers in Africa. While still higher, the actual income and consumption differences in today's emerging nations are far closer to the two- to three-fold range seen in American history.

This finding implies that the transition of families from the traditional to the contemporary sectors may reduce the fertility rate of the economy. By increasing the accumulation of physical capital per worker and by lowering the proportion of the workforce made up of relatively low-productive children and young adults, reductions in fertility and population growth brought about by labour migration to urban areas have the potential to increase labour productivity growth. Due to the disparity in labour productivity, labour migration from traditional to contemporary sectors may thus both directly and indirectly improve economic development [3]. These findings raise the issue of why significant salary and productivity discrepancies continue to exist. A significant portion of the workforce is engaged in the traditional sector, which has a low level of productivity. Why doesn't labour move swiftly into the contemporary sector, which is more productive and pays more, to bridge the wage gaps?

In this chapter, we analyse several possibilities for how huge production differences might endure in equilibrium for extended periods of time using a dual economy method.

To provide a comprehensive account of both gaps and their impact on economic growth, we tie theories of productivity gaps to theories of fertility gaps. In we start with a review of the literature that tries to explain productivity and pay differences in models while assuming full markets for land and labour. Emphasising additional drivers of pay inequalities, such as migration costs and educational disparities, is a beneficial application of the whole markets approach. We contend, however, that these factors alone are insufficient to account for the continued existence of wide pay inequalities.

We examine reasons for productivity and fertility differences that presumptively hold true in the absence of factor markets in the conventional sector in the main section. We examine models in which (i) output in the traditional sector is family/village owned and run and (ii) there are no formal markets for at least some of the inputs utilised in production. As was emphasised in earlier work, the lack of comprehensive markets is a major cause of dualism. As a result of the fact that the markets for inputs utilised in the modern sector would often be more established and backed to a larger extent by formal legal institutions, we conceive of the presence and efficacy of markets as varied between the two sectors. The distribution of land and labour takes place under the informal family and tribe structures in the traditional sector. According to this understanding of the dual economy, the expansion of formal markets for productive inputs is connected to the decline of the traditional sector.

Urban Unemployment

The assumption that labour markets exist and are competitive in the traditional sector but that noncompetitive wage setting occurs in contemporary urban labour markets, say as a result of potent unions, leading to unemployment, is one way to explain a relatively low wage in rural areas of developing countries. Those opting to live and work in metropolitan areas must consider their likelihood of becoming jobless. A worker would only think about looking for job in the urban sector if the pay there was good enough to make up for the likelihood of experiencing a period of unemployment. In order to achieve equilibrium when employees are located in both sectors, there must be a pay disparity between the contemporary and traditional industries [4]. This idea runs into a number of problems. Most impoverished nations do not have exceptionally high urban unemployment rates certainly not high enough to account for significant pay inequalities. In rural sectors, there is also concealed or unmeasured unemployment, indicating that urban unemployment is less of an issue than unemployment in rural regions.

Assuming there is an informal or traditional sector present in urban regions is one technique to get around the lack of high unemployment rates in urban areas, or more specifically the absence of big unemployment rate differentials between urban and rural sectors. Workers are engaged in the unregulated urban sector, although they are paid less than they would in conventional agriculture. They are prepared to put up with this scenario for the time being while they wait for high-paying government or union positions to appear in the formal sector. So long as there aren't particularly high unemployment rates in the urban sector, noncompetitive pay setting in the formal labour market of urban regions might nevertheless create a wage gap between urban and rural locations [5], [6].

Evidence, however, suggests that the informal urban sector is more than just a "waiting station" for work in the official sector. In many instances, working in the unofficial sector offers a lifelong career option that coexists with the potential for employment in the unofficial sector. The informal urban sector pays less than the official urban sector, similar to the rural sector. In exchange for their poor pay, informal employees anticipate that, as owners or managers of informal firms later in life, they would be able to reap bigger returns from the informal sector (Mazumdar 1989; Rosenweig 1988). This position is quite similar to that of a farm worker who is preparing to someday take over the family farm or who is planning to buy and run his own small farm. Another justification for focusing on the formal-informal pay difference rather than just the urban-rural wage gap is the striking similarity between an informal worker's situation in the urban and rural settings.

DISCUSSION

Human Capital Gaps

According to Herrendorf and Schoellman (2014) and Vollrath (2014), the formal sector, which by definition employs highly cutting-edge organisational structures and technology, has comparatively high returns on education. Caselli and Coleman (2001) hypothesise that schooling only improves productivity "off the farm" in order to explain why pay differences have decreased in the USA over the course of the 20th century. They contend that early in the twentieth century,

people were discouraged from moving from agriculture to the industrial sector by the high expense of schooling. Due to the poor availability of skilled employees in the business, there is a significant pay premium for education, which in their model also functions as a substantial nonfarm wage premium. A large portion of the pay gap was removed as the cost of schooling declined over the course of the century and the relative supply of employees in industry increased [7], [8].

There is strong evidence that education has benefits in agriculture as well, even in traditional agricultural contexts even if the benefits of education may be greater in industry. Additionally, part of the empirical research on the pay gap still finds an existence of a salary disparity after accounting for disparities in education and experience. For certain levels of education and experience, Mazumdar finds that salaries rise with business size an indirect indicator of formal output). For employees with the same number of education years, Jenkins and Knight discover significant salary differences between Zimbabwe's rural and urban sectors. The salary disparities per hour worked in Europe and the USA throughout the nineteenth century were very minimal, indicating that the skill levels of employees in agriculture and nonagriculture were comparable and that the rewards for competence were not significantly varied across sectors. However, salaries per worker may still be high due to variations in the number of hours each individual works annually across industries.

Children from homes in the modern sector often have more years of education than those from households in the traditional sector. Given that rural schools in poor nations are less well-equipped and have fewer days of attendance during a school year, there is some evidence to imply that the "quality" of education is also varied between the two sectors. Some of the disparities in the rate of return to years of education might be explained by the quality variations.

We demonstrate how differences in human capital might affect labour force participation and hours worked across industries to produce yearly pay inequalities. Because of the potential link between hours worked and education, focusing only on the direct impact of educational variations on productivity per hour worked may understate the importance of human capital in explaining yearly productivity discrepancies. On the other hand, the lack of markets and the dual economy of developing nations may be to blame for the human capital disparities itself.

Unmeasured Home Production

Measurement inaccuracy and nontraded items account for at least a part of the pay differential between nonagricultural and agricultural industries. Rural workers spend more of their working hours creating unmeasured items that are used at home. According to Mueller (1984), Botswanan farm labourers spend less than an hour each day on wage work, trading, selling, and processing commodities.

These employees' assessed productivity will be substantially lower than their real productivity if they are counted as a complete unit of labour and their output is exclusively evaluated in terms of market transactions. Although it is probable that the measured production of agricultural labourers is lower than the real output, it is unknown how much the measurement error affects the productivity difference. As previously indicated, survey information on disparities in consumption, which would include nonmarket production.

Missing Land Markets in the Traditional Sector

a dual economy setting with traditional and contemporary sectors, as opposed to the one-sector, neoclassical growth model. The primary presumption behind the dual structure is that as there are no official markets for land in the traditional sector, children of traditional producers inherit their parents' right to run a family farm. For example, and Hayashi and Prescott (2008) all make the assumption that farmland, or the right to farm the land under a tribe or tenancy arrangement, is simply transmitted from one generation of farmers to the next.

We take it a step further and suppose that the children will only get ownership of the farm if they choose to run it themselves; this connects the management of conventional assets to career choice. Family-based or traditional farming alone cannot explain why wage inequalities exist in equilibrium without an inheritance that is conditional on the recipient working and subsequently managing the farm. Consider not inheriting the rights to assets owned by your family or your community to see this final point. Assume, instead, that older families sell their land to younger households in land markets and vice versa. In this instance, there is no justification for the conventional sector's low salaries and no justification for employees to put up with a wage discrepancy across sectors [9].

Migration of labour across sectors would totally close any pay disparity if there were no moving expenses and no limits on mobility. In the alternative, assume there are no land markets and the beneficiary of the land bequest might own the farm in his or her absence without really working on it or managing it. Again, there is nothing to stop migration to the high-pay sector in this case, therefore wage disparities cannot exist. The longstanding heritage of family farming in the USA is compatible with a strategy based on a bequest that is subject to the receiver working and maintaining the property. Surprisingly, in the United States, the connection between the farm and the family persisted far into the 20th century. The farm in the United States was still primarily run independently and centred on the family at the turn of the century, and the majority of agricultural labour was supplied by family members. Only 42% of all farms reported using labour from outside the family as early as 1930. Traditional family farms still made up 63% of all farms and accounted for 88% of all farms as of 1978.

Intergenerational ties to agriculture seem to be a prevalent trait of emerging nations in general. According to Hayashi and Prescott (2008), the societal custom of handing the farm down through the family's generations hindered Japan's progress. Their work has a paragraph (pp. 605–606) claiming that social convention may be powerful enough to function even in the presence of a land market, as argued by Andrew Foster. "First, the inheritor may sell the farms and move to the city to benefit from the increased income that comes with living there. However, the father might insist that the son stay on the farm until he inherits the property in order to avoid this. It could be too late for his kid to begin a career in the city by the time he receives the inheritance. The persons who relocate permanently away from Tanzanian farms tend to lose their land entitlement, which is in line with Foster's theory. Explicit immigration regulations in China force migrants to give up ownership rights to small farms and rural companies. The challenges of establishing property rights over land and the dearth of land transactions in rural India are discussed by Basu.

The idea of family inheritance might also be expanded to include skills necessary to run a family farm or, more broadly, a small family company. For instance, while not having economies that were significantly focused on agriculture, Hong Kong and Singapore had the same concomitant economic and demographic changes as other emerging nations. There was an economic transition from informal home-based output to formal firm-based production notwithstanding the lack of an agricultural sector. As recently as 1971, 69% of all industrial enterprises in Hong Kong were housed domestically. As part of their "Growth Miracle," that percentage decreased to 44% by 1978.

CONCLUSION

Dual economies provide considerable problems for social and economic growth due to income and fertility inequalities. In order to create successful strategies to close these gaps, it is essential to understand their sources and effects. Due to labour market fragmentation, employees in the informal sector often earn less money, have less social security, and have unstable working circumstances than their counterparts in the official sector. As a consequence, there is a pay gap between the formal and informal sectors. As a result, there is a perpetuation of social injustice and wealth disparity.

REFERENCES

[1] P. Rangazas and A. Mourmouras, "Wage and Fertility Gaps in Dual Economies," *Eurasian Econ. Rev.*, 2013, doi: 10.14208/BF03353841.

[2] S. Das, A. Mourmouras, and P. Rangazas, "Correction to: Economic Growth and Development: A Dynamic Dual Economy Approach Sibabrata," 2019. doi: 10.1007/978-3-319-89755-4_12.

[3] S. Das, A. Mourmouras, and P. Rangazas, "Wage and Fertility Gaps in Dual Economies," 2018. doi: 10.1007/978-3-319-89755-4_7.

[4] A. Bris *et al.*, "Knights, Raiders, And Targets - The Impact Of The Hostile Takeover - Coffee,Jc, Lowenstein,L, Roseackerman," *J. Bank. Financ.*, 2021.

[5] L. C. Landivar, "First-Birth Timing and the Motherhood Wage Gap in 140 Occupations," *Socius*, 2020, doi: 10.1177/2378023120939424.

[6] C. Day, "Economic Growth, Gender Wage Gap and Fertility Rebound," *Econ. Rec.*, 2012, doi: 10.1111/j.1475-4932.2012.00799.x.

[7] M. Costa Dias, R. Joyce, and F. Parodi, "The gender pay gap in the UK: children and experience in work," *Oxford Rev. Econ. Policy*, 2020, doi: 10.1093/oxrep/graa053.

[8] G. Casey, S. Shayegh, J. Moreno-Cruz, M. Bunzl, O. Galor, and K. Caldeira, "The impact of climate change on fertility," *Environ. Res. Lett.*, 2019, doi: 10.1088/1748-9326/ab0843.

[9] A. Erosa, L. Fuster, and D. Restuccia, "A quantitative theory of the gender gap in wages," *Eur. Econ. Rev.*, 2016, doi: 10.1016/j.euroecorev.2015.12.014.

CHAPTER 7

A BRIEF DISCUSSION ON TRADITIONAL SECTOR IN ECONOMICS

Mr. Yelahanka Lokesh
Assistant Professor, Department of Commerce and Economics,
Presidency University, Bangalore, India.
Email Id: lokesh.yr@presidencyuniversity.in

ABSTRACT:

In economics, the term "traditional sector" designates a component of the economy characterised by low productivity, subsistence farming, and unofficial trade. This essay intends to examine the notion of the traditional sector, as well as its characteristics, difficulties, and contribution to economic growth. It addresses the main causes of the continued existence of the traditional sector, such as the restricted availability of resources, the slow pace of technical development, and structural limitations. The research emphasises how the conventional sector affects policy concerns, employment, income distribution, and poverty. This study gives a thorough review of classical economics and its relevance in modern economies by analysing theoretical frameworks and actual data.

KEYWORDS:

Economic Development, Informal Sector, Low Productivity, Resource Constraints, Subsistence Agriculture, Traditional Sector, Technological Advancements.

INTRODUCTION

The traditional sector varies from the contemporary sector due to variances in production technology and the fact that the land and equipment utilised in production are passed down through families, generating residual income or lifelong business opportunities to supplement salaries. We presumptively create the same commodities in each industry for the sake of simplicity. When the particular emphasis is not on the relative prices of the various items produced in the two sectors, this is a widely accepted premise in the dual economy method. Although the framework may be used to understand traditional production as any unofficial company, we refer to traditional businesses as "family farms."

The following Cobb-Douglas technology is used to create traditional output: O output, l = land per farm, f = effective agricultural labour per household in the traditional sector, and 0q = technology parameter.

Due to the fact that land is an input rather than tangible capital, the technology is different from that employed in industry. The purpose of this supposition is to convey the notion that production in the traditional sector does not substantially depend on the machinery and other infrastructure found in the "factories" of the modern sector. Generally speaking, the labor-share metric might vary amongst industries [1], [2].

The land has no buyer or tenant market, either. For the time being, we'll suppose that there is a market for agricultural labour, which would allow households to hire labour in addition to that given by their own families (although in equilibrium, as every household is the same, this won't happen). In Section 5.4, we examine what would happen if the conventional sector's labour market disappeared. We suppose that the young family receives from their parents the knowledge and property required to run a farm.

The existence of residual income from the inherited family farm and the distinction between the rental rate on effective labour earned working on family farms and that earned working for businesses There are two key distinctions between farming and working in the contemporary economy (w). We may also take into account a third distinction, but it is not our primary concern. It's possible that conventional education falls behind industrial education. This could be due to the fact that education became more accessible in urban regions of the modern sector before it did in rural ones, or because it was more difficult to enforce rules against child labour and required education in the traditional sector. Through the dynamics of (5.4b), if starting education is lower in the traditional sector, schooling in the traditional sector will lag behind for every succeeding generation. All farm choice factors will, in general, vary from those selected in the contemporary sector due to these three probable discrepancies [3].

Production on the family farm adds a new term, qft=1 qht, to the fertility demand function that increases fertility (other things being equal). This term's numerator represents residual farm revenue, which can be shown to be proportionate to the farm's labour force. The opportunity cost of having children is determined by the denominator, which is the maximum "full" pay that might be received via employment. The desire for children increases as the importance of family production increases in comparison to the opportunity cost of having kids. This is not a pure wealth effect, but an effect that develops when one type of wealth, residual income from family production ownership, rises relative to another type of wealth, adult earnings from work effort, which affects the net cost of children. For a given level of total family wealth, the net cost of children increases while the desire for children declines as family wealth composition shifts away from family production and towards adult salaries.

Even if families in the traditional sector could start out under different circumstances, the need for education follows the same shape as in (5.4b). Due to two cancelling effects, family output has little impact on education.

To understand these consequences, it is important to first recognise that fertility increases the cost of educating children (having more children results in higher parental sacrifice as the cost of education rises and child labour income declines). Second, keep in mind that the level of parental consumption affects the marginal value of the consumption that is forgone in exchange for higher levels of education (parents who consume more can more easily "afford" the consumption that is sacrificed in exchange for higher levels of education). Parental consumption and fertility rise as a result of family production, while other factors remain constant. As was previously indicated, increasing fertility reduces the motivation for children to attend school, but higher consumption levels increase that incentive. These two impacts always perfectly balance one another using our functional forms for preferences and human capital generation [4], [5].

The demand for labour in (5.7c) arises from the farm owner employing labour to convert the agricultural rental rate on human capital to the marginal product of effective labour, which is eerily similar to the demand for labour by neoclassical businesses in competitive factor markets. Please take note that we permit the amount of labour required at a certain farm to be equal to or more than the amount of labour supplied by the household that owns the farm. From the standpoint of individual farms, it could be necessary to provide part of the home labour to neighbouring farms or, alternatively, to employ farm "hands" to augment the supply of family labour.

Equilibrium

The interest rate and rate of return on physical capital in a small open economy must be equal to the exogenous international interest rate, r. In, one may solve for the equilibrium value k by equating rt+1 to r. The equilibrium weight may then be determined using equation. A family raised in the traditional sector has the choice to either remain there get land and farm it or to work for an organisation in the modern sector.

People born into families that are employed in the contemporary sector are required to remain there since they have little chance of acquiring land. Fertility is higher in the traditional sector, as was mentioned, so there must be some migration of people from the traditional to the modern sectors; otherwise, the proportion of workers in the modern sectors would decrease over time, contradicting the development-related economic transformation. The human capital rental rate differential between the two sectors must be such that a worker born into the traditional sector is unconcerned about remaining there in order for there to be some migration, but not a full shift, of the population to the contemporary sector.

DISCUSSION

Missing Land Markets in Cities of Currently Developing Countries

The traditional sector goes beyond rural regions, according to the introduction to this chapter. Cities in emerging nations often have sizable informal economies that resemble traditional rural economies in many ways. The lack of official land markets is one of the most significant shared traits. Field (2007) investigates the impact of absent land markets on urban household labour supply [6], [7]. Due to the absence of official property rights on landholdings, urban residents in the informal economy are forced to invest resources on property security. Time spent guarding their landholdings is time not spent on the market or on production. Using information from a national programme in Peru that provided formal property titles to more than 1.2 million urban families between 1995 and 2003 the first sizable titling effort in the developing world Field calculates the impact's size on the labour supply. Her goal was to determine if security enhancements brought forth by titling led to more hours being employed in the official labour market. According to Field, families without a legal title to the property spend 13 hours each week on security. Additionally, they are 40% more likely to work from home than in an office. In general, families with titled property had a 16-hour weekly increase in labour supply. A decrease in child labour was another result of titling. Evidently, the missed market effort of adults who spend time safeguarding their untitled property is made up for by the utilisation of kid labour.

Missing Credit and Insurance Markets in Current Development

India's labour mobility greatly behind other emerging nations of comparable size and economic level. Adult populations in China, Indonesia, India, and Nigeria were all between 17 and 24% urbanised in 1975. China, Indonesia, and Nigeria all had urbanisation rates between 35 and 45% in 2000, but only India had a rate of roughly 27%. Compared to other emerging nations with equivalent per capita income, India's urbanisation rate is typically 15% points lower. Less than 10% of Indian males move permanently away from their home village.

Because of the services offered by rural jati-based communities, Munshi and Rosenzweig present evidence that employees in India have minimal mobility. Since ancient times, Jatis (tribes or clans) have played a significant role in regulating family spending in the absence of official credit and insurance markets. The Jati social network's capacity to track and maybe punish the behaviour of nearby villagers makes it successful at offering loans and insurance. Although employers and moneylenders might provide informal loans to homes instead, the cost is often substantially greater [8]–[10].

Lack of finance and insurance markets may thus limit the mobility of labour out from the conventional industry, much as a lack of land markets. The village's relatively cheap banking services lead to residents ignoring better employment prospects in the contemporary economy. Young (1995) conducted a meticulous growth accounting for the four Asian Tigers' "Growth Miracles" in a well-known work.

For more than 25 years, labour productivity increased annually in Hong Kong, Singapore, South Korea, and Taiwan between 4 and 6%. Hong Kong and Singapore are city-states without agricultural industries, thus they did not go through the typical structural changes. Significant shifts in labour were seen in South Korea and Taiwan, moving workers from agricultural to industry. According to Young, the reallocation of labour increased Taiwan's and South Korea's yearly growth rates in worker productivity by 0.6% and 0.7% points, respectively.

Even while an increase in growth rates of between 1% and 2% per year is a significant effect, the structural transformation's true impact is greater. His measuring strategy omits the relationship between the structural change and the accumulating of human and physical capital as a result of fertility impacts. For instance, he carefully takes into consideration the age of a worker as one of several human capital variables. The structural transformation's concomitant decrease in fertility lowers the percentage of the workforce that is underage and increases human capital per worker.

As we shall describe in more depth in Chap. 8, China has internal barriers that prevent the mobility of labour from rural to urban regions to a larger extent than in South Korea and Taiwan. The wage differences between the industrial and agricultural sectors that are produced by the family farming mechanism discussed in this chapter are widened by these limits on labour mobility. As China has developed, more workers have been permitted to enter the manufacturing industry to help with labour shortages. The wide disparities in labour productivity across industries suggest a sizable potential increase in production via labour reallocation. According to estimates by Bosworth and Collins (2008), China's reallocation of labour increased growth rates in worker productivity by 1.2% points from 1993 to 2004 and 1.7% points from 1978 to 1993.

Asia and Africa

Why haven't more African nations experienced Growth Miracles if some Asian nations have? This is made even more perplexing by the fact that one of the most stunning Growth Miracles is attributed to Botswana, where the per capita income increased by 7.7% year from 1965 to 1998.12 Botswana's growth miracle emerged from a set of initially highly unfavourable circumstances: The nation is landlocked, which hinders trade, has a tropical climate that is unhealthy, is rich in diamonds, which is a natural resource curse in other African nations, and only had two secondary schools in the entire nation when it gained independence from Britain in 1966 (Acemoglu et al. 2003). Why can't other African nations enjoy a growth miracle if Botswana can?

A hint is given by McMillan and Rodrik (2011). They show that traditional and contemporary industries in emerging nations have significant production differences, ranging between two and four times. Because of these productivity inequalities, they see the movement of labour across industries as a key factor in a nation's economic development. They discover, in particular, that the labour movements connected to the structural change might account for a large portion of the disparity in economic development between Asian and African nations between 1990 and 2005. Due to the labour productivity gap, Asian nations have usually seen a migration of labour away from conventional agricultural towards informal urban production, boosting their economic development. In contrast, labour flows in Africa have largely gone the other way, slowing their economic growth. Asian nations' per capita income increased by 3% more than African nations' between 1990 and 2005. According to McMillan and Rodrik's estimates, throughout this time, labour flows enhanced Asian development by 0.54% year while reducing African growth by 1.3% annually. As a result, variations in labour flows account for 1.84% of the 3% point difference in growth.

Based on divergent reactions to their economies' greater openness, McMillan and Rodrik explain why Asian and African people have had quite different experiences. International commerce contributed to an increase in the low-skilled manufacturing sector in labor-rich Asia. Africa, which is rich in resources, saw rapid boom in the commodities and agricultural sectors as a result of openness. Africa has essentially "deindustrialized" as a result of opening its economies to commerce, which has forced labour to move from high- to low-productivity industries.

Average Product of Labor

It is necessary to measure production and the number of employees in each sector in order to determine the average product of labour. Both are difficult to quantify in underdeveloped nations since the majority of economic activity occurs outside of official markets. The great bulk of output in the most underdeveloped emerging nations is eaten domestically rather than being traded. In addition, rather than being technically employed, the majority of workers are family members and solo owners.

Because accounting procedures have been created to address this issue by concentrating on agricultural production data rather than market transactions, the situation is not hopeless. In addition, household surveys are used to gather data on the number of employees, their occupations, and even the amount of hours they put in at work.

Human Capital Gap

Production and labour hours are more concrete concepts than human capital. It must be assessed deceptively using techniques that have drawbacks and may be questioned. Estimates of human capital begin by counting the number of years spent in education. By converting the number of years spent in education into a measure of human capital, regression estimations that link years of schooling to salaries are used. The "quality" of a particular school year varies on factors including student and teacher attendance throughout the year, teacher credentials, class size and composition, and other inputs like books and computers, therefore this typical method to assessment should be seen as a beginning point. Additionally, it disregards the money spent on one's health and the skills acquired via work experience.

Gollin et al. (2014) show that there is a human capital gap of 1.4 across sectors among the lowest 25% of their sample using the most basic method of evaluating human capital, which is based only on years of education. The combined hours and human capital gaps account for a worker productivity disparity of 1.82 using their human capital metric, leaving an estimated gap in the average product of human capital for these nations of 3 and a median gap of 2.4.

By trying to assess the various forms of human capital inputs outlined above, which probably vary across industries as well, we may further close the residual worker productivity gap. Allowing for sector-specific returns to years of education is one method to start offsetting the missed investments. There is proof that the return on a particular year of education is lower in the agricultural sector than it is in the non-agricultural sector. In a limited sample of developing nations, Vollrath (2014) shows minimal residual disparity after accounting for the various rates of return to education across industries. The United States in the present is reached at the same conclusion by Herrendorf and Schoellman (2014).

In conclusion, the residual productivity gap, which Gollin, Lagakos, and Waugh estimate at 2-3, is sizable. By accounting for the various rates of return on education across industries and other variations in human capital investments that might not be reflected in rates of return on years of schooling (i.e., some human capital investments may have a constant or "intercept-effect" that does not change the estimated return to a marginal year of schooling), at least some of this gap can be explained. The implied residual estimate of APH=APH from is frequently interpreted as the difference in the marginal product of a unit of human capital across sectors, a measure of labour market efficiency, so it is crucial to settle any debate over how to measure human capital across sectors. We will now discuss the presumptions required to support this view.

The Structural Transformation, Growth, and Economic Efficiency

By increasing average hours worked, the average age and experience of the workforce, and, if the marginal product of human capital is higher in the modern sector, by increasing the productivity of an experience-adjusted hour of work, the structural transformation can boost growth in worker productivity. Another possibility is that the structural change will lead to an increase in human capital and education. A shackling poverty trap that does not exist in the contemporary sector may be the cause of the traditional sector's fewer years of education. This may be the case because children's relative productivity is lower in the modern sector, either as a result of laws prohibiting

child labour and requiring compulsory education being more effectively enforced, or because the relative productivity parameter of children () is fundamentally lower in the modern sector as a result of different technologies or the types of goods produced. The cost of schooling may also be lower in the contemporary sector since the price of bought educational inputs, such as quality-adjusted teacher time and instructional materials, is lower.

Even if structural change results in increased worker productivity, economic efficiency may not significantly improve. As suggested by the estimations of Vollrath (2014) and Herrendorf and Schoellman (2014), let's say that the marginal product of a unit of provided human capital is generally similar across sectors. In this situation, labour markets are seen as effectively distributing human resources between industry and agriculture. It is crucial to remember that efficiency factors in dual economies should not be limited to the distribution of human capital alone.

A lack of effectively functioning insurance and land markets may force employees into the conventional sector. As a result, employees may provide fewer hours of work each year than they would desire. Additionally, if intergenerational loan markets are insufficient, children's education is reliant on their parents' salaries and may be less efficient from a productivity standpoint the marginal return on investment in human capital may be higher than the market interest rate. The underinvestment in years of education may be more severe in the traditional sector than in the contemporary sector if parental incomes are lower, rules requiring children to attend school are less successful, children are more productive overall, or bought school supplies are more costly [11].

In addition, it's possible that the traditional sector underinvested in the health of mothers and young children, which resulted in traditional sector students' lower "ability" compared to students in the modern sector, explaining why the marginal returns to education, for a given number of years attended, are higher in the modern sector. Since public health indicators and health outcomes are often lower in rural regions than in cities, this is a genuine issue.

For all of these reasons, even if the economy is allocating a certain stock of human capital quite efficiently, the structural change may minimise inefficiencies in hours worked and human capital investments. Fewer employees are reliant on land inheritance as growing earnings entice people into the contemporary sector, allowing them to freely provide the ideal level of job effort. The difference between the returns on these investments and the market rate of return on physical goods will be less when children are raised by parents with higher wage earnings in circumstances that encourage more investment in their health and education.

CONCLUSION

A portion of the economy known for its poor productivity, subsistence farming, and unofficial trade is represented by the traditional sector. In order to solve issues with economic growth, it is essential to comprehend the traditional sector and its repercussions. Due to a number of constraints, such as restricted access to resources like land, finance, and technology, the traditional industry often endures. The move from the conventional sector to more productive activities may also be hampered by inadequate infrastructure, limited institutional support, and structural limitations.

REFERENCES

[1] J. Wesseler and J. Von Braun, "Measuring the Bioeconomy: Economics and Policies," *Annual Review of Resource Economics*. 2017. doi: 10.1146/annurev-resource-100516-053701.

[2] L. Carminati, "Behavioural Economics and Human Decision Making: Instances from the Health Care System," *Health Policy (New. York).*, 2020, doi: 10.1016/j.healthpol.2020.03.012.

[3] P. Bertoldi, M. Economidou, V. Palermo, B. Boza-Kiss, and V. Todeschi, "How to finance energy renovation of residential buildings: Review of current and emerging financing instruments in the EU," *Wiley Interdisciplinary Reviews: Energy and Environment*. 2021. doi: 10.1002/wene.384.

[4] L. Kimsey, A. Hoburg, S. Olaiya, K. D. Jones, and P. Richard, "A systems approach to person-centric health economics," *Mil. Med.*, 2018, doi: 10.1093/milmed/usy209.

[5] T. Adrian and T. Mancini-Griffoli, "The Rise of Digital Money," *Annual Review of Financial Economics*. 2021. doi: 10.1146/annurev-financial-101620-063859.

[6] M. Zeleny, "The roots of evolutionary economics: Crisis, transformation and metamorphosis," *Hum. Syst. Manag.*, 2021, doi: 10.3233/HSM-219003.

[7] E. Van Goethem and M. Easton, "Public-Private Partnerships for Information Sharing in the Security Sector: What's in It for Me?," *Inf. Secur. An Int. J.*, 2021, doi: 10.11610/isij.4809.

[8] G. Dalton *et al.*, "Economic and socio-economic assessment methods for ocean renewable energy: Public and private perspectives," *Renewable and Sustainable Energy Reviews*. 2015. doi: 10.1016/j.rser.2015.01.068.

[9] M. Gaumond, P. E. Réthoré, S. Ott, A. Peña, A. Bechmann, and K. S. Hansen, "Evaluation of the wind direction uncertainty and its impact on wake modeling at the Horns Rev offshore wind farm," *Wind Energy*, 2014, doi: 10.1002/we.1625.

[10] S. A. Felknor, J. M. K. Streit, M. McDaniel, P. A. Schulte, L. C. Chosewood, and G. L. Delclos, "How will the future of work shape osh research and practice? A workshop summary," *International Journal of Environmental Research and Public Health*. 2021. doi: 10.3390/ijerph18115696.

[11] R. Abzug and N. J. Webb, "Relationships between nonprofit and for-profit organizations: A stakeholder perspective," *Nonprofit Volunt. Sect. Q.*, 1999, doi: 10.1177/0899764099284003.

CHAPTER 8

A BRIEF STUDY ON PHYSICAL CAPITAL IN DUAL ECONOMIES

Dr. Dasinis Nathan Annette Christinal
Assistant Professor, Masters in Business Administration (E-Commerce),
Presidency University, Bangalore, India.
Email Id: annette.c@presidencyuniversity.in

ABSTRACT:

In dual economies, where the formal and unofficial sectors coexist, physical capital is vital. This essay tries to investigate the value of physical capital in dual economies by looking at its utilisation, distribution, and consequences for economic growth. With a focus on the effects on productivity, income inequality, and growth prospects, it examines the differences in physical capital between the formal and informal sectors. The research looks at how government policies, infrastructure, technology, and access to financing all affect the buildup of physical capital. This study gives a thorough review of the function of physical capital in dual economies and its consequences for economic results by analysing theoretical frameworks and actual data.

KEYWORDS:

Dual Economies, Formal Sector, Informal Sector, Productivity, Physical Capital, Income Inequality.

INTRODUCTION

Pay close attention to the development of industry and the economy in dual economies. The impact of missing land markets, a prevalent trait of emerging economies that was described in the previous chapter, is the subject of our attention once again. Here, we look at the relationships between saving, owning land, and the creation of physical wealth. We take into account two typical scenarios that are related to nonexistent or small land markets. In the first scenario, the farming families either own the land outright or have unofficial property rights over the proceeds from the land. According to Libecap (2007), land policy in the USA was specifically created to distribute ownership of public land holdings across the whole rural population. In other instances, the ownership of the land remained common, but it was essentially split among the local community farmers who had clear rights to the money from agricultural output and were granted autonomy in making choices regarding the use of the property. This happened in African communities and in the early phases of development in the Netherlands a nation without a significant feudal tradition [1].

The second condition involves a large concentration of land ownership in the hands of a small number of landlords. Instead of farming themselves, the landowners employ landless people to work as farm labourers. This circumstance was typical of Latin America's historical evolution. Assuming that there are narrow land markets in each of these cases, intergenerational bequests intended to retain the land in the family or community are the predominant method of land transfer. Savings are replaced by the inheritance of land throughout an individual's later years as a means

of funding consumption during old age. This typical aspect of traditional agriculture reduces the motivation to start saving early. Workers who leave family farming to work in factories sometimes lose their rights to ancestral or tribal lands. The absence of a property bequest suggests that employees will need to save a larger portion of their income to cover retirement expenses. As a result, the aggregate saving rate rises as a result of the economy's structural shift away from traditional agriculture and towards contemporary industry. Landowners are often able to use political pressure to modify legislation in a manner that raises land rents when land ownership is concentrated, as in our second scenario [2]–[4].

Policies that raise land rents hinder capital accumulation, limit employment options for employees in the contemporary economy, and maintain low wages. Despite anti-growth policies, underlying causes that lead to a structural transition, such as technology advancement, aid in the exodus of people from the conventional industry. As a result, landowners have less clout, and pro-growth policies become more prevalent. This boosts capital accumulation and quickens the structural shift.

There are more justifications for the increase in capital accumulation during development. Remember that Lewis (1954) believed that a dual economy approach was required to explain He predicted that as "surplus" labour from the traditional sector is drawn into the modern sector with no upward pressure on wages, capital owners' incomes in the modern sector would rise compared to workers' and landowners' incomes. Lewis thought that since capital owners preserve a bigger percentage of their income than landowners and labourers, the proportionate increase of capital income was crucial for growth. Unlike Lewis, our argument makes sense in the context of increasing wages, a stable percentage of capital income, and an endogenous saving rate independent of the source of income. For a discussion and criticism of the traditional Lewis model.

Another hypothesis of capital accumulation is based on allowing tiny, unauthorised enterprises in the conventional sector to engage in entrepreneurial activities. The claim is that while these entrepreneurs have access to potentially lucrative technology, their investment is constrained by flaws in the credit market, expensive regulations, and high capital gains taxes. The research implies that capital accumulation resulting from tiny informal firms is modest, even if this is probably true in certain situations. The great majority of tiny, unofficial enterprises just disappear throughout growth as the bigger, more established businesses functioning in the contemporary sector grow. In our model, advancements in technology and the accumulation of human capital increase worker productivity in the modern sector, which raises salaries compared to the value of rents from traditional or unorganised output. In the way previously explained, the exodus of employees from the traditional sector kills off informal production while simultaneously increasing the savings rate, which aids in financing the growth of capital in the modern sector.

In the early phases of development, labour markets seem to work more consistently than land markets. Labour markets soon developed after the collapse of the European feudal system in the fourteenth century offers evidence of market pay for agricultural and construction labourers dating all the way back to the thirteenth century. Labour markets in the USA and Europe were at least functioning well enough by the eighteenth century to almost completely remove hourly pay differences across industries. According to Vollrath (2014), labour markets in nations that are presently in development function effectively. In terms of pay per supplied unit of human capital,

he only finds minor sector differences. They discover that even after accounting for hours worked and educational background, significant salary inequalities persist. Their results show that one cannot completely rule out labour market flaws during the early stages of development, even though Chap. 5 provides a number of hypotheses for these pay discrepancies that are compatible with healthy labour markets. It is preferable to think of the strategy we use in this chapter as a simplification that enables us to concentrate simply on the absence of land markets.

Two of the petitions included land that was mostly held by small farmers. In Section 6.1, we utilise land inheritance to explain why substantial wage differences persisted throughout US history. The US pay discrepancies were produced by variations in the yearly hours worked by each worker, not by differences in hourly earnings, as was previously stated. The non-farm sector had much more yearly work hours, which increased annual production per worker.We concentrate on the Ottoman Empire in the nineteenth century because as its commerce with Europe increased, the relative price of its agricultural commodities increased by an especially considerable amount. We investigate how trade affects population income distribution and economic development [5]–[7].

the assumption that the majority of the property is owned by a small number of very big landowners. As was already said, one of the reasons why concentrated property ownership is intriguing is that it often coexists with political power. the motivations of significant landowners to affect fiscal policy in a manner that slows the structural transition. The two-sector model that we use in this section also illustrates a potential link between the structural change and the expansion of government.

DISCUSSION

Deindustrialization in the Ottoman Empire

One theory explaining the start of the great divergence centres on commerce between a "periphery" of slowly industrialising nations and the fast-industrialising nations of Western Europe, especially Great Britain (see, for instance, Williamson 2011). Peripheral nations had a competitive edge in producing fundamental goods. In the nineteenth century, growing international commerce led to a rise in the relative price of basic goods on the periphery and a fall in Western Europe. The shift in relative pricing brought to deindustrialization on the periphery and spurred industrialization in Western Europe as trade increased. The argument holds that deindustrialization sped up economic development in Western Europe while slowing it on the periphery, resulting to the large difference.

We investigate the deindustrialization theory as it relates to the Ottoman Empire in the nineteenth century. The relative price of the Empire increased by an unusually big amount. In the middle of the century, the relative cost of basic goods increased by a factor of two to 2.5 (Pamuck and Williamson 2011). What effects did the sharp increase in relative prices have on development and industrialization? Had the Ottoman Empire's authorities not opened commerce with Western Europe at the start of the nineteenth century, preventing this increase in the relative price of fundamental goods, would the quality of living have been greater in the early Turkish Republic of the century?

By creating a dynamic version of the particular components model that incorporates some of the salient characteristics and stylized facts of the Ottoman Empire, we provide an answer to these concerns.6 The exercise's goal is to speculate on how the Ottoman Empire may have appeared if there hadn't been a sharp increase in the price of basic goods on the world market in the middle of the century. To put it another way, we look at the quantitative impact of the deindustrialization theory on the Empire.

Agriculture and manufacturing are the two production-related industries. Since the economy is open, agricultural products' relative prices are decided on global marketplaces. Land and labour are employed in the agricultural industry to generate food and basic goods. Farmers from earlier generations have unofficial claims to ownership of the land. Farm labour is provided by migrant labourers and the farmers' grown children. The market for land is dormant. The elder generation of farmers bequests their right to farm the land to the younger generation. Skilled artisans labour in unofficial businesses in the manufacturing industry. To help them with manufacturing, they rent physical capital and employ migrant labourers who lack skills [8]–[10].

Where the migrant labourers are employed affects how big the rural and urban populations are. In conclusion, the model may be thought of as a dynamic adaptation of the particular factors model, which is used to research international commerce in emerging nations. Here, land for agriculture and capital and trained workers for industry are the important variables. We adjust the model's parameters to match the following stylized facts about the Ottoman economy between 1820 and 1920.

1. A marginally positive increase in real per capita income (less than 1%).
2. There has been positive population increase (about 1%).
3. During the middle of the 20th century, real earnings in industrial units rose while they decreased in agricultural units.
4. Slight urbanisation (up to 22%)
5. A two- to 2.5-fold spike in the relative price of basic goods in the middle of the 20th century.
6. Century-long high interest rates (between 10% and 30% yearly)

It is a known fact that "periphery" of slowly industrialising nations and the fast-industrialising nations of Western Europe, especially Great Britain. Peripheral nations had a competitive edge in producing fundamental goods. In the nineteenth century, growing international commerce led to a rise in the relative price of basic goods on the periphery and a fall in Western Europe. The shift in relative pricing brought to deindustrialization on the periphery and spurred industrialization in Western Europe as trade increased. The argument holds that deindustrialization sped up economic development in Western Europe while slowing it on the periphery, resulting to the large difference.

We investigate the deindustrialization theory as it relates to the Ottoman Empire in the nineteenth century. The relative price of the Empire increased by an unusually big amount. In the middle of the century, the relative cost of basic goods increased by a factor of two to 2.5. What effects did the sharp increase in relative prices have on development and industrialization? Had the Ottoman Empire's authorities not opened commerce with Western Europe at the start of the nineteenth

century, preventing this increase in the relative price of fundamental goods, would the quality of living have been greater in the early Turkish Republic of the century?

By creating a dynamic version of the particular components model that incorporates some of the salient characteristics and stylized facts of the Ottoman Empire, we provide an answer to these concerns. The exercise's goal is to speculate on how the Ottoman Empire may have appeared if there hadn't been a sharp increase in the price of basic goods on the world market in the middle of the century. To put it another way, we look at the quantitative impact of the deindustrialization theory on the Empire.

Agriculture and manufacturing are the two production-related industries. Since the economy is open, agricultural products' relative prices are decided on global marketplaces. Land and labour are employed in the agricultural industry to generate food and basic goods. Farmers from earlier generations have unofficial claims to ownership of the land. Farm labour is provided by migrant labourers and the farmers' grown children. The market for land is dormant. The elder generation of farmers bequests their right to farm the land to the younger generation. Skilled artisans labour in unofficial businesses in the manufacturing industry. To help them with manufacturing, they rent physical capital and employ migrant labourers who lack skills [11], [12]. Where the migrant labourers are employed affects how big the rural and urban populations are. In conclusion, the model may be thought of as a dynamic adaptation of the particular factors model, which is used to research international commerce in emerging nations. Here, land for agriculture and capital and trained workers for industry are the important variables. We adjust the model's parameters to match the following stylized facts about the Ottoman economy between 1820 and 1920.

1. A marginally positive increase in real per capita income (less than 1%).
2. There has been positive population increase (about 1%).
3. During the middle of the 20th century, real earnings in industrial units rose while they decreased in agricultural units.
4. Slight urbanisation (up to 22%)
5. A two- to 2.5-fold spike in the relative price of basic goods in the middle of the 20th century.
6. Century-long high interest rates (between 10% and 30% yearly).

Calibration

The model has 20-year periods, and we consider the first period to begin in 1820. The capital portion is established at the customary amount of one-third. Based on an estimate from Issawi (1980), we put the exogenous population growth rate at 1% per year. We aim for urban population proportions from Issawi that were 17% in 1820 and 22% in 1920. We presum that the proportion of craftspeople in the population is always 10%. Accordingly, the percentage of migrant workers who live and work in the city for the artisans starts off at 7% and rises to 12% by 1920. To depict the lack of progress in financial intermediation and the very high interest rates in the Empire during the century, we set the starting interest rate at 20% at the beginning of the century. We rather arbitrary aim an initial artisan skill premium of 1.5 due to the lack of evidence. The four targets beginning and end-of-century urbanisation, initial interest rate, and initial skill premium determine

the starting values for the detrended stocks of land and physical capital as well as b 14 0:065 and a 14 0:21. According to projections from Pamuk (2006), the exogenous pace of technological advancement will maintain the annual rise in per capita income between 0.5 and 1% throughout the course of the century. A 0.3% yearly exogenous rate of technological development was chosen. The starting number for the relative cost of agricultural products on the world market is 1. The price increases to 1.5 in 1840 and to 2.0 in 1860, after which it remains constant.8 The Ottoman Empire's calibrated progress throughout the nineteenth century. Income per capita increased at an annual growth rate of 0.78%. The stated pay rate is w, which stands for the wage de-trended for advancements in technology.

CONCLUSION

In dual economies, physical capital is crucial for productivity, income distribution, and economic growth. In order to create effective policies to eliminate gaps and encourage inclusive development, it is essential to comprehend the dynamics of physical capital in dual economies Income inequality is a result of differences in physical capital between the official and informal economies.

The formal sector often has greater access to infrastructure, capital, and technology, which boosts productivity and competitiveness. The potential for expansion of the informal sector is constrained by access issues to finance and contemporary technologies.

REFERENCES

[1] S. Das, A. Mourmouras, and P. Rangazas, "Correction to: Economic Growth and Development: A Dynamic Dual Economy Approach Sibabrata," 2019. doi: 10.1007/978-3-319-89755-4_12.

[2] A. Rastić, T. Stevanović, and L. Antić, "Intangible Assets Impact On Sustainable Growth Rate Of Enterprises In The Republic Of Serbia," *Facta Univ. Ser. Econ. Organ.*, 2021, doi: 10.22190/fueo210617027r.

[3] D. Vollrath, "How important are dual economy effects for aggregate productivity?," *J. Dev. Econ.*, 2009, doi: 10.1016/j.jdeveco.2008.03.004.

[4] D. Brown, "An economy of gendered practices? Learning to teach physical education from the perspective of Pierre Bourdieu's embodied sociology," *Sport, Education and Society*. 2005. doi: 10.1080/135733205298785.

[5] S. D. Ngoran and X. Z. Xue, "Addressing urban sprawl in Douala, Cameroon: Lessons from Xiamen integrated coastal management," *J. Urban Manag.*, 2015, doi: 10.1016/j.jum.2015.05.001.

[6] V. Pipitone and F. Colloca, "Recent trends in the productivity of the Italian trawl fishery: The importance of the socio-economic context and overexploitation," *Mar. Policy*, 2018, doi: 10.1016/j.marpol.2017.10.017.

[7] D. Echevin and F. Murtin, "What determines productivity in Senegal? Sectoral disparities and the dual labour market," *J. Dev. Stud.*, 2009, doi: 10.1080/00220380902935881.

[8] J. Sackey and M. A. Sanda, "Sustenance of human capital: Social support as a managerial stress reliever for women in developing economies," *Res. Pract. Hum. Resour. Manag.*, 2011.

[9] L. M. Tigges, "Age, Earnings, and Change within the Dual Economy," *Soc. Forces*, 1988, doi: 10.2307/2579571.

[10] A. Cieślik, "Multinational firms, international knowledge flows, and dual labor markets in developing economies," *Rev. Dev. Econ.*, 2008, doi: 10.1111/j.1467-9361.2008.00433.x.

[11] B. Tafesse, "the Impact of Currency Devaluation on Economic Growth: Its Benefits and Costs on Ethiopian Economy," *Sustain.*, 2019.

[12] M. Zayadi and Herawati, "Pengaruh Due Professional Care, Independensi, Time Budget Pressure, Dan Audit Fee Terhadap Kualitas Audit Pada Kantor Akuntan Publik Di Kota Medan," *J. AKSARA PUBLIC*, 2019.

CHAPTER 9

REDUCED INCENTIVES FOR HUMAN CAPITAL INVESTMENT

Dr. Mounica Vallabhaneni
Assistant Professor, Department of Commerce and Economics,
Presidency University, Bangalore, India.
Email Id: mounicav@presidencyuniversity.in

ABSTRACT:

Significant obstacles to economic growth and human capital production are posed by diminished incentives for investing in human capital. In order to investigate the causes and effects of diminished incentives for human capital investment, this article will look at how they affect economic growth, skill development, education, and employment outcomes. It examines the numerous aspects of diminished incentives, such as poor access to high-quality education, few career opportunities, economic inequality, and ineffective policymaking. The report draws attention to the negative effects of decreased human capital investment, including sluggish productivity, economic disparity, and hurdles to social mobility. This study offers a thorough review of the problem and its consequences for socioeconomic advancement by analysing theoretical frameworks and actual data.

KEYWORDS:

Education, Economic Growth, Human Capital, Investment, Incentives, Labor Market Outcomes.

INTRODUCTION

Galor and Mountford's (2006, 2008) argument regarding how trade may slow development in poor nations is a similarly related one. They contend that lesser demand for skilled labour and less human capital accumulation will result from higher relative pricing in the conventional industry. Our formal models separate the development of human capital from the structural change, principally for reasons of simplicity. This is due to the fact that we have only focused on how families' desire to educate children is impacted by their dependence on child labour. The salary differential between skilled and unskilled labour is a second factor to be taken into account when deciding whether to educate children. Both skilled and unskilled labour must be considered as separate production inputs in order to analyse this scenario. In our concept, units of human capital, or "efficiency units," are ideal replacements; it only takes more units of unskilled labour to do what one talented worker can [1], [2].

As an alternative, unskilled labour would be sufficient for old sector output while skilled labour would be a crucial contribution in the contemporary sector. If this is the case, then a rise in the relative cost of items produced by the traditional sector will result in a decline in the relative demand for skilled labour and a reduction in the motivation to go to school. This claim is overstated since there is evidence that education boosts agricultural output even in conventional settings. The argument will be accepted more widely since the relative return to education may be larger in the contemporary industry.

Efficiency Advantages and External Effects from Urbanization

It is often believed that creating manufactured items in urban areas is more productive than generating basic necessities in rural areas. (For instance, Williamson 2011, p. It is possible that (1) technical progress happens more quickly in manufacturing than in agriculture, (2) increased industrial output leads to economies of scale, and (3) urbanisation has economic externalities and spillovers. These concepts provide the basis for this assertion.

Directly identifying a productivity advantage by just examining data from other industries is fairly challenging. The productivity advantage of urban manufacturing did not, in the USA or Europe, throughout the nineteenth century, manifest itself as significant variations in the hourly labour productivity of rural and nonagricultural employees. Even without accounting for variations in education per worker, measures of productivity and salary discrepancies per hour worked were fairly tiny, less than 25%. As mentioned in Chapter 5, some studies also discover minor hourly productivity inequalities in contemporary emerging nations after accounting for variations in human capital. Undoubtedly, sector-wage disparities will influence labour flows to keep pay discrepancies in check. Small differences in productivity and pay may be acceptable given the significant benefits of urban manufacturing, which drive a steady movement of labour to urban areas. Therefore, the productivity benefits of manufacturing products in a city may not manifest as widening or growing pay differences but rather as rising labour shares [3].

As economies expand, the percentage of the workers employed in urban manufacturing generally rises steadily. This discovery does not, however, by itself prove the existence of the previously claimed benefits in urban industrial productivity. As the labor-land ratio rises and rural labour productivity declines, there must be a labour migration to the cities if the rural population is growing. Simply said, the fact that man-made physical capital can be extended more quickly to accommodate a greater workforce than can land is what drives urbanisation. Others highlight the time series relationship between average worker productivity and urbanisation as a nation develops, although once again, the link between the two is not entirely evident.

Little evidence exists, according to Henderson (2003), "to support the idea that urbanisation per se drives growth." In contrast, he contends that "urbanisation is a "by-product" of the abandonment of agriculture and the successful emergence of a modern manufacturing sector, as economic development proceeds, rather than a growth stimulus." To put it another way, there are fundamental shifts that lead to a rise in manufacturing and growth without implying any causal loop between urbanisation and overall development. Examples include balanced technical advancement across all sectors or an increase in capital creation.

Power of Anti-growth Landowners

Political economists have made the case that urbanisation and growth are related. The premise is that wealthy landowners often have political sway during the early phases of growth. Maximising land rents from conventional agricultural output is their goal. In times of cheap and abundant labour, land rentals are high. Landowners are opposed to initiatives that raise salaries across the board and the need for labour in other industries. Because of this, landowners will be against policies that support the development of physical and human capital, which have a greater

influence on worker productivity in manufacturing than in conventional agriculture. The proportional size of the urban population determines how interested people are in encouraging capital creation and how probable it is that their interests will be overridden, paving the way for stronger pro-growth policies [4], [5].

DISCUSSION

Large Landowners Growth and Endogenous Fiscal Policy

Large landowners and labourers are two very distinct sorts of private sector households. Although the labourers may cultivate the land, they do not own it. The fundamental driving force for this arrangement is because, big landowners are seen to have a significant influence on the political economy of many emerging nations. Because land rents are the source of their income, landowners work to create and preserve environments where land rents are high. Due of the clash between this incentive and economic progress's increase in salaries and labour costs, big landowners frequently favour laws that restrict the expansion of the economy. This section focuses on the support of fiscal measures that benefit landowners.

We may study the relationship between development and the scope of government using the dual economy method. When all other factors are held constant, some studies have demonstrated a substantial negative link between the relative sizes of the agricultural and governmental sectors. In fact, the research discover that the relationship between the relative size of the agricultural sector and the relative size of government is stronger than the relationship between other development measures, including GDP per capita. The fact that the traditional sector produces unrecorded sales and revenue that is often difficult to tax is one factor contributing to this negative association.

Large landowners' political clout is one of the factors that keeps the contemporary economy and the growth of government in check. A increasing body of research indicates that land disparity may impede progress. In their study from 2004, Erickson and Vollrath identify a number of broad reasons for the harmful impacts of land inequality, including institutional influences on agricultural policy, growth of the credit market, and support for public education. The endeavour by politically influential landowners to preserve a low-cost workforce in agriculture by restricting the alternatives available to employees outside of agriculture is a frequent aspect of the strategies [6]–[8].

Open Economy

We assume that the economy is open to foreign capital flows for the sake of simplicity. According to this presumption, the local rate of return on capital must match the exogenous global interest rate.

Therefore, the before-tax salary in the modern sector is set at w and the capital-labor ratio in the modern sector is fixed at a number we call k. This implies that the wage tax entirely determines the wellbeing of every family. Additionally, since Kt 14 kptNt, the size of the contemporary sector as defined by pt will affect the nation's overall capital stock. Policies that restrict employment in the modern sector will result in a loss of physical capital or a deindustrialization of the economy.

Government Policy

the government by outlining its preferences, restrictions, and goals, just like any other economic actor. There is no comprehensive model of politics that explains how voters choose the government and how interest groups and voters influence its policies. Instead, we assume that a nation's politics will establish the "reduced-form" preference parameters that will regulate how concerned the government is with the wellbeing of all households, including those that make up the government itself, as well as the welfare of other household kinds. Based on their political power, government employees have preferences between their own wellbeing and the welfare of the two categories of private sector households.

In the second era, government employees retire at the same time as private agents. Taxes on the salaries of employees in the private sector are used to pay for their first-period salaries. The single-period government budget restriction is given by the expression wg t Ng t 14 stwtptNt, where all government consumption takes the form of official salaries as well as wages. Government employees make up an exogenous portion of the population [9], [10].

The marginal cost of taxes on working families as a result of a decrease in their after-tax income is captured by the second term on the right-hand side. Because it indicates the benefit to landowners from the decline in conventional sector earnings when the tax rate is raised, the third term lowers the marginal cost of taxes. Due to the net welfare loss that taxes cause the private sector, the optimum tax will be lower than the tax rate that maximises tax revenue if the total of these final two factors is positive. However, the net welfare impact of taxing on the private sector might be favourable with sufficiently strong landowners. In this situation, the tax rate would be higher than what would maximise income.

A Complete Dual Economy

Combining the key elements from earlier chapters into a full dual economy model. The model takes into account fertility, salary disparities, physical and human resources, and technological progress. The model's capacity to mimic important aspects of the economic development seen in real-world countries is next tested. We provide a simplification to allow all the characteristics to be combined into a single model. We understood the traditional sector as specialising in agricultural production and the contemporary sector as specialising in industrial production in various applications of the two-sector model from Chapters 4 and 6. For certain purposes, this interpretation of the dual economy seems fairly natural and practical, but in this chapter, we make the case for using the one-good interpretation instead.

Because the traditional sector's production is reliant on land and the contemporary sector's production is capital heavy, we continue to believe that the two sectors are separate. In addition, whereas contemporary sector production is carried out in factories using standard procedures, traditional sector production is carried out by families in a localised and specialised way. In the USA throughout the nineteenth century, the family, rather than the company, served as the primary centre of production. The family was an intergenerational producer, with older generations providing the assets and administration and younger generations providing the labour. In addition to being created for domestic use, products were also sold and traded outside of the house.

Family production also included services retail sales and manufactured commodities leather goods, wheat, furniture, and tools, in addition to agricultural items.1 The multigenerational family producer's extraordinary quantitative relevance was evident. According to statistics from the middle of the nineteenth century provided by Ruggles (2001), 80% of old people lived with their adult children. He also shows that the land was owned by an old couple and that the children stayed behind to work on the farm for the family. Due to the prevalence of family-based production, only around 45% of white men in their prime were working in wage and pay positions.

Land inheritance was undoubtedly a significant factor tying young employees to family agriculture, but it was not the sole one. Additionally, young employees acquired specialised talents, local expertise in productive variables, and commercial connections built on mutual trust and familiarity. In other words, in addition to receiving land from their parents, children also received the whole family's production technique through working alongside their parents. This quotation from Ruggles which once again refers to the USA in the nineteenth century, demonstrates the historical applicability of this process even outside of agriculture.

With the dual economy's wider meaning, the assumption that there are no land markets is no longer as crucial to the study since specialised skills, together with local expertise and professional connections, are enough to keep kids tied to old technologies. This makes it simpler to see why, even in the existence of land markets, informal arrangements are created to incorporate intergenerational transfers of land and other assets. Because its productivity is linked to other elements of the particular traditional technology that children acquire while working for their parents, land is more valuable if preserved within the family.

Politics and Growth

The timing and characteristics of contemporary expansion led to the Great Divergence. It is difficult for trailing nations to catch up to leading countries once development gets going since there is no powerful factor that can stop growth once it has started. Growth rates are prevented from declining during a protracted transition characterised by generally trendless growth rates by the gradual speed of the structural transformation and the growing investment rates in physical and human capital per worker. In order for a trailing nation to catch up, the government must adopt exceptional measures that accelerate structural change and increase investment rates above what is typical historically for the leaders. Only a small number of nations have been successful in doing this to the point where it enables a quick convergence to the leaders' quality of life [11].

All of this suggests that the period of the start of sustained modern development is often the key to elucidating the disparities in current living standards across nations. Since the modern sector has taken off, conditions favour production over traditional methods that rely heavily on land, labour, and the unique human capital that is passed down over many generations of family-based production. This begs the issue of what prevents the environment from developing that would allow the modern sector to start to outpace traditional output (see Chap. 4).

Acemoglu and Robinson (2012) provide an explanation for why contemporary development is taking its time to take off in many nations. They promote a particular kind of poverty trap that permeates the nation's political structures. Even in underdeveloped nations, a tiny percentage of

the populace may nevertheless become wealthy by taking advantage of the labour and resource availability. Naturally, those who have taken political power are the wealthy elite. The elite's access to political power enables them to enact laws and policies that preserve the status quo and shield them from economic competition from those outside the tiny minority that controls the nation. Monopolies, restrictions on innovation, arbitrary land seizures, and income taxes are some ways that monarchies, dictatorships, one-party systems, and powerful landowners and traditional craftspeople keep their grip on power. For our purposes, consider that the traditional sector of the economy is being shielded from competition since the majority of the revenue made there is going to the ruling elite and their allies.

Political institutions must be drastically altered in order to escape this particular poverty trap. Under an authoritarian government, altering political institutions necessitates struggle. For instance, it is widely accepted that the Industrial Revolution in England marked the beginning of sustained contemporary development. According to Acemoglu and Robinson, the Industrial Revolution would not have happened without a protracted political conflict that resulted in considerable discontent and even civil war and culminated in the Glorious Revolution.

Power was transferred from the authoritarian king to the more democratic Parliament as a result of the political conflict. The development of monopolies, the selective awarding of patents, the arbitrary taxing, and the seizure of property without justification were all put an end by the Parliament, which stood in for a wide coalition of interests throughout the nation. Additionally, the general economic infrastructure roads, banks, and public education became the focus of the government. The nation was no longer governed by a wealthy and powerful ruling class, but by more impartial laws and policies. An inclusive governmental regime abruptly replaced an exclusive and extractive one, levelling the playing field and paving the way for the Industrial Revolution.

CONCLUSION

Economic growth and social advancement are severely hampered by decreased incentives for human capital investment. In order to create effective strategies to address this problem, it is important to understand the causes and effects of decreased human capital investment.m Reduced incentives for human capital investment are mostly due to inadequate access to high-quality education. Lack of educational possibilities, particularly for underprivileged groups, makes it difficult for people to get the information and skills needed for progress and involvement in the economy. Improving access to high-quality education is crucial for raising human capital investment, especially in disadvantaged regions.

REFERENCES

[1] L. C. Chou, W. H. Zhang, and Z. Hu, “Influences of the Cultural Revolution on the education and wages of today’s Chinese laborers,” *Econ. Res. Istraz.* , 2020, doi: 10.1080/1331677X.2020.1718522.

[2] H. Wang and S. S. Lim, “Real options and real value: The role of employee incentives to make specific knowledge investments,” *Strateg. Manag. J.*, 2008, doi: 10.1002/smj.681.

[3] H. Bohn, "Low Altruism, Austerity, and Aversion to Default: Are Countries Converging to the Natural Debt Limit?," *SSRN Electron. J.*, 2021, doi: 10.2139/ssrn.2280296.

[4] C. L. Currier, "Investing in the future: The one child policy and reform," *J. Women, Polit. Policy*, 2008, doi: 10.1080/15544770802206077.

[5] T. M. Andersen, "Migration, taxation and educational incentives," *Econ. Lett.*, 2005, doi: 10.1016/j.econlet.2005.01.008.

[6] F. Andersson and K. A. Konrad, "Globalization and Human Capital Formation," *SSRN Electron. J.*, 2021, doi: 10.2139/ssrn.265622.

[7] M. Henrekson and N. Rosenberg, "Designing efficient institutions for science-based entrepreneurship: Lesson from the US and Sweden," *Journal of Technology Transfer*. 2001. doi: 10.1023/A:1011153922906.

[8] G. D. Leeves, "Increasing returns to education and the impact on social capital," *Educ. Econ.*, 2014, doi: 10.1080/09645292.2012.660133.

[9] Jayachandran Seema, "Barriers to Growth and Development - Corruption… | tutor2u Economics," 2018.

[10] G. Bianchino, "Afterwork and Overtime: The Social Reproduction of Human Capital," *M/C J.*, 2019, doi: 10.5204/mcj.1611.

[11] D. Contreras, J. Rodr, I. D. Bank, and S. Urz, "The origins of inequality in chile," in *Inequality —Measurement, trends, impacts, and policies*, 2012.

CHAPTER 10

DETERMINATION OF URBANIZATION IN MODERN WORLD

Mr. Yelahanka Lokesh
Assistant Professor, Department of Commerce and Economics,
Presidency University, Bangalore, India.
Email Id: lokesh.yr@presidencyuniversity.in

ABSTRACT:

Significant obstacles to economic growth and human capital production are posed by diminished incentives for investing in human capital. In order to investigate the causes and effects of diminished incentives for human capital investment, this article will look at how they affect economic growth, skill development, education, and employment outcomes. It examines the numerous aspects of diminished incentives, such as poor access to high-quality education, few career opportunities, economic inequality, and ineffective policymaking. The report draws attention to the negative effects of decreased human capital investment, including sluggish productivity, economic disparity, and hurdles to social mobility. This study offers a thorough review of the problem and its consequences for socioeconomic advancement by analysing theoretical frameworks and actual data.

KEYWORDS:

Economic Growth, Human Capital, Investment, Incentives, Labor Market Outcomes, Skills Development.

INTRODUCTION

Migration to urban areas and how it affects urbanisation. We looked at how structural change impacts economic development in earlier chapters, focusing on how migration to the contemporary sector could change private sector behaviour. In this article, we concentrate on the issue of the optimal rate of urbanisation in relation to the distribution of rural and urban government services. We are motivated by the fact that, according to Bloom and Khanna the great majority of governments in the developing world are worried about the inadequacy of public goods supply and the congestion brought on by rising urbanisation. In this regard, the structural change that often boosts economic development may happen too soon. We also talk about how politics contributes to the worsening of rural-urban disparities.

The political clout of urban interests the "urban elite" in certain developing nations' economic policies, as originally emphasised by Lipton (1977), has the potential to skew the distribution of government services, worsen rural-urban disparities, and increase migration beyond what is necessary [1], [2]. By understanding the traditional sector as rural and the contemporary sector as urban, we utilise our dual economy framework to look at the problems related to regional migration and the distribution of government services. Rural technology is conventional in that it relies on labour and land as inputs. Urban technology is contemporary in that it relies on labour and physical capital as inputs.

As a result, the primary contribution of this chapter is the inclusion of fiscal policy within the framework of a dual economy. We examine a government that runs in a small open economy in order to detach from the consequences of the structural change on private capital intensity, which is a main emphasis of Chapters 6 and 7. In order to focus on endogenous fiscal policy, we further simplify the research by abstracting from explicitly modelling human capital and endogenous fertility. How to distribute a given budget for productive services across the rural and urban sectors is the challenge facing policymakers. The term "government inputs" refers to any service that improves productivity through the development of human capital (such as training, education, or public health programmes), the construction of physical infrastructure (such as roads, bridges, or public utilities), or the protection of property (such as policing or fire protection services). We assume that the policy maker "favours" urban families over rural households, as is often claimed. In our situation, the first-best, productively efficient result would not need any urban bias in the distribution of productive government services provided the government also had the capacity to directly distribute labour across sectors. First-best allocation of productive services, which equalises the marginal productivity of both labour and government services across the two sectors, is only possible if both sectors are operating.

Because the government cannot directly distribute labour across sectors to maximise overall production, an urban bias is thus necessary. Households weigh the relative salary prospects in the rural and urban sectors when deciding where to live. This chapter has a salary gap since it is expensive to transition from the traditional to the contemporary industry. Some families in the low-income rural sector pay the expense of relocating to the high-wage urban sector if the wage differential between sectors is sufficiently wide. We concentrate on the historical trend that is often seen in emerging nations, when low-wage rural families move over an extended period of time to the high-wage urban sector [3]–[5].

We find that the second-best distribution of government services between rural and urban sectors in the context of endogenous rural-urban migration based on household choice is unaffected by how much importance the policy maker accords to rural families; politics have no impact on the distribution. However, we discover that the urban sector is "biassed" in favour of receiving the second-most efficient distribution of government services. The efficient urban bias more government services are accessible per person in cities than in rural areas is caused by two important aspects of the economy. First, there is a strong correlation between rural and urban earnings as a result of unfettered cross-sector movement. Urban employees are more productive and earn higher incomes when there are more government services available in their communities.

Increased migration from rural to urban areas enhances rural wages as a result of higher urban salaries. Second, moving to a city has no immediate impact on the pay there. The marginal product of private capital increases with urban migration, when contemporary technology is used. In an open economy, the increased capital's marginal product leads to an influx of foreign capital that keeps interest rates and urban wage rates stable. Therefore, a concentration of urban government services per capita is the sole way that migration to the city influences salaries. Together, these two characteristics imply that, in order to maximise wages throughout the economy, the government

must allocate productive services in a way that encourages migration in a way that maximises the amount of urban government services provided per person.

The fact that rural government services have an impact on migration shows that focusing the whole government budget on urban services is inefficient, even for a government with a majority of urban residents. Such a programme would increase migration, straining the government's finances and lowering the city's government service per capita as well as salaries in both sectors. Instead, offering certain government services in the rural region in order to reduce migration is the effective policy the one that maximises the supply of urban government services per capita and salaries in both sectors [6].

Given that the government's emphasis on the welfare of rural households has little impact on the urban bias, how is redistribution affected if, as Lipton claimed, urban elites often control politics in developing nations? In our model, a "redistributive" urban bias intended to boost urban welfare must manifest as a cap on out-migration. The government must impose direct administrative measures, such as migration quotas and other limitations that increase the cost of migration, in order to discourage migration in order to redistribute revenue.4 We demonstrate that a rise in migration restrictions will result in higher urban salaries and lower rural wages, even if there is a policy adjustment in the distribution of government services. This finding implies that the distribution of public goods is less likely to be the focus of political discussions than are limitations on immigration.

A basic model is presented that produces a clear urban bias in the delivery of public services based on efficiency. The impacts of economic development, resulting from both balanced and unbalanced technical progress, on migration and the pay difference between rural and urban areas The issue of slum formation in the cities of emerging economies is covered using significant cases of de-urbanization.

DISCUSSION

Urban Bias

Our base economy is tiny and completely open to international commerce in products as well as the movement of physical capital.5 Urban and rural production sectors, both of fixed geographic size, both generate the same good. Each sector's production is carried out by businesses that are fiercely competitive. Families can only work in the sector in which they live, but they may decide whether to live in a rural or urban area. Young families make location decisions before to starting employment. We concentrate on the usual pattern seen throughout the course of development, when young families move over relatively lengthy periods of time from the rural sector to the urban sector in response to pay differences across sectors [7]–[9].

The technology employed in manufacturing is the key distinction between industries. Traditional technology is utilised in the rural sector, where production is produced by combining labour and land, while contemporary technology is used in the urban sector, where output is produced by combining physical capital and labour. It is significant to highlight that one sector could be considered as redundant since the same product is generated in each one. Particularly,

policymakers who favour the urban sector may decide to completely disregard the rural sector by refusing to provide government services there. Feler and Henderson (2011) talk about how some governments pass laws that deny low-income families access to public services in an effort to halt urban migration.

Urbanization with Balanced Growth

The exogenous speed of technological advancement (Et) and the degree to which it is distributed evenly across sectors, or how well Et keeps up with Et, define the dynamics of the economy. A "pull factor" created by balanced technical advancement drives urbanisation but reduces the volume of economically beneficial government services. An rise in Et has the direct effects of raising salaries, lowering the relative cost of moving, and reducing pay inequality (see 8.13). The total impact on inequality is not clear, however, since a rise in Et also decreases gt. One may demonstrate that the direct impact of a higher Et only partially compensates the indirect impact of a lower gt.

The "optimistic" perspective of urbanisation is supported by urbanisation brought on by balanced technical advancement. In this instance, urbanisation is a logical result of development and expanding opportunities. Although there is some service overcrowding, earnings rise and pay disparity decreases. Here, urbanisation and increased worker productivity are linked. The pay difference between urban and rural areas narrows as development continues. As the whole economy shifts towards the contemporary urban sector, the historic rural sector eventually vanishes.

It is crucial to emphasise that this beneficial result would not necessarily occur if technology just advanced in the urban sector. If Et rises and Et does not keep up, there will be a bigger migration to the city. The more migration may reduce gt by an amount sufficient to counteract Et's direct impact on urban wages. To ensure that urbanisation is linked to increased worker productivity and declining pay disparity, balanced technology growth is necessary [9], [10].

Urbanization Without Balanced Growth

a "pessimistic" perspective on urbanisation, as seen by governments' efforts to control migration to urban areas. When the underlying causes of urbanisation are ones that reduce the relative productivity in the rural regions and drive people towards the city, such as an increase in the rural population or relatively sluggish technical advancement in the rural sector, the gloomy perspective is confirmed by the model. For every given value of Et, these variables cause congestion and lower gt. Reduced government service intensity decreases salaries across all industries and widens the pay gap. In this case, urbanisation is linked to declining worker productivity.

Physical capital inflows are also subject to the perception about technological progress that is imbalanced and favours the urban sector. By increasing city production compared to rural output, physical capital benefits the urban sector. For this reason, the influence of physical capital on promoting migration to the city is significant compared to its direct impact on urban wages. Thus, the immediate impact on productivity may be countered by the adverse effect of less government services per worker, and urban wages may decrease.

There are measures that reduce migration and enhance the wellbeing of all families when urbanisation happens without growth. An example of such a strategy would be to target foreign assistance to the rural sector with the goal of boosting Et and so improving the relative level of rural technology. Such a measure would increase gt while reducing ut. Government services would be expanded in both sectors, salaries would rise, and pay disparity would decrease as a consequence. Because of this, families in both sectors will profit when assistance efforts are focused on the rural sector.

It is crucial to remember that raising the degree of technology in the rural sector would not increase welfare if there is no response from the urban population share on fiscal policy. If gt were fixed, then advancing rural technology would lead to a rise in the rural population along Malthusian lines, entirely wiping out any productivity improvements for a particular worker. The fact that effective government services are increased in the urban sector as the fraction of the people living in cities declines is what lowers pay inequality. Increased access to urban government services raises urban salaries and restrains rural population growth, which also raises rural wages.

Redistributive Urban Bias

Even though the welfare of the rural home receives no weight, it is not in the interest of the policy maker to depart from the effective urban bias provided. However, by artificially inflating the cost, the government may add to the migration's inherent costs. Political discussions should be focused here, according to expectation. A rise in xt boosts gt, which raises earnings and productivity in the urban sector. Even when gt increases as well, rural industries' productivity and salaries decline, widening the pay gap.

So, whether directly resulting from government policy or not, raising the cost of migration would alleviate urban congestion and result in an increase in public services across the economy. However, when fewer people opt to relocate due to the greater cost, resulting in the congestion of land and reduced worker productivity, the impact of increased public services will not be sufficient to prevent wages from decreasing in the rural sector. As a result, the politics of unequal urban dominance in policymaking will take the shape of increasing artificial immigration limits or by failing to implement measures that would lower the natural costs of migration.

Government Transfer

Due in large part to the introduction's worries about the overcrowding of urban infrastructure, our emphasis has been on productive government expenditure. But it seems sense to wonder how the existence of government spending and transfers would influence the outcomes. We start by thinking about the scenario where public consumption takes the place of private consumption (such as with housing and food subsidies). If the public supply of the private products does not represent a disproportionately substantial portion of the family budget, this arrangement is analogous to the situation when the government directly distributes cash transfers or salary subsidies to families, a frequent type of claimed favouritism in several developing nations. We'll also take into account an alternative scenario where government spending is not a direct replacement for private consumption and is thus significantly distinct from monetary transfers from the government to families (such as vaccines that result in direct consumption gains from better health).

Impure Public Goods

efficient and effective government services are produced from impure public commodities that are crowded and so unevenly distributed among the workforce. However, effective services are now defined as gt 14 Gt=Mn t, where n is a constant parameter that ranges from zero to one. As previously, we define Gt as a measure of productive government services in the urban sector. The amount of crowding of public goods depends on the value of n.

If n 14 0, pure public goods that are not crowded are used to create Gt. If n 14 1, then Gt is produced entirely from private commodities, and in order to preserve Gt, Gt must increase proportionately with the labour force. Here, we concentrate on the intermediate scenario when n is somewhere between 0 and 1, i.e., where Gt is produced from impure public commodities that are crowded in some way.

Similar to this, we define efficient government services in the rural area as gt 14 Gt=Fe t. The urban sector is seen to have an advantage in the sharing of the services produced by a particular polluted public good because to its smaller geographic region. A good's "public" nature depends in part on its qualities and in part on the population density in the area it is in. The urban sector offers at least as many efficient services per worker for (i) a given local government public benefit delivered to each sector and (ii) a given number of employees in each sector; in other words, we expect 0 ne 1: Consider the scenario where both the urban and rural areas have access to the same size road and both have an equal overall population. It is more probable that a higher portion of the working population in cities lives near enough to a road to take use of it in a useful way. As a result, urbanisation has an efficiency benefit that is directly related to the creation of a shared public good.10 Note that it is still true that a rise in population will result in a decrease in the amount of services provided by the government for each worker.

CONCLUSION

Reduced incentives for investing in human capital provide serious obstacles to social and economic development. In order to create effective strategies to address this problem, it is important to understand the causes and effects of decreased human capital investment. Reduced incentives for human capital investment are mostly due to inadequate access to high-quality education. Lack of educational possibilities, particularly for underprivileged groups, makes it difficult for people to get the information and skills needed for progress and involvement in the economy. Improving access to high-quality education is crucial for raising human capital investment, especially in disadvantaged regions.

REFERENCES

[1] T. Yarovenko, O. Don, and H. Fedorov, “Urbanization And Agglomeration As Modern World Processes Of Economic Development,” *East. Eur. Econ. Bus. Manag.*, 2020, doi: 10.32782/easterneurope.24-6.

[2] L. Abdul and T. Yu, “Resilient Urbanization: A Systematic Review on Urban Discourse in Pakistan,” *Urban Sci.*, 2020, doi: 10.3390/urbansci4040076.

[3] H. Doost Mohammadian and F. Rezaie, "Sustainable innovative project management: Response to improve livability and quality of life: Case studies: Iran and Germany," *Inventions*, 2019, doi: 10.3390/inventions4040059.

[4] H. Doost Mohammadian and F. Rezaie, "I-sustainability plus theory as an innovative path towards sustainable world founded on blue-green ubiquitous cities case studies: Denmark and south korea," *Inventions*, 2020, doi: 10.3390/inventions5020014.

[5] L. L. Peter and Y. Yang, "Urban planning historical review of master plans and the way towards a sustainable city: Dar es Salaam, Tanzania," *Frontiers of Architectural Research*. 2019. doi: 10.1016/j.foar.2019.01.008.

[6] J. Crisp, T. Morris, and H. Refstie, "Displacement in urban areas: New challenges, new partnerships," *Disasters*, 2012, doi: 10.1111/j.1467-7717.2012.01284.x.

[7] A. M. Agarwal, A. Ruchi, and A. Kusum Choudhary, "A Sustainable Model of Urbanization for Indian Cities, A Case Study of New Delhi," *Int. J. Eng. Res. Technol.*, 2021.

[8] N. Sugiyama, S. Sugiyama, T. Catignani, A. S. Z. Chase, and J. C. Fernandez-Diaz, "Humans as geomorphic agents: Lidar detection of the past, present and future of the Teotihuacan Valley, Mexico," *PLoS One*, 2021, doi: 10.1371/journal.pone.0257550.

[9] R. Goldblatt, K. Deininger, and G. Hanson, "Utilizing publicly available satellite data for urban research: Mapping built-up land cover and land use in Ho Chi Minh City, Vietnam," *Dev. Eng.*, 2018, doi: 10.1016/j.deveng.2018.03.001.

[10] J. Vandercasteelen, S. T. Beyene, B. Minten, and J. Swinnen, "Big cities, small towns, and poor farmers: Evidence from Ethiopia," *World Dev.*, 2018, doi: 10.1016/j.worlddev.2018.03.006.

CHAPTER 11

RURAL INDUSTRY IMPACT ON ECONOMIC GROWTH

Dr. Dasinis Nathan Annette Christinal
Assistant Professor, Masters in Business Administration (E-Commerce),
Presidency University, Bangalore, India.
Email Id: annette.c@presidencyuniversity.in

ABSTRACT:

A prominent topic of research in the field of development economics is the effect of rural industry on economic development. In order to better understand how rural industry affects general economic development, this article will examine the link between rural industry and economic growth. It examines how rural industry contributes to job creation, income generation, entrepreneurship, and the strengthening of regional economic ties. The research also looks at the difficulties and political ramifications of rural industrialization. This study offers a thorough review of the effect of rural industry on economic development by analysing theoretical frameworks and actual data.

KEYWORDS:

Economic Growth, Employment, Entrepreneurship, Income Generation, Local Economic Linkages, Policy Implications, Rural Industrialization.

INTRODUCTION

The need for agricultural labour increases gradually and eventually may even decline. Some agricultural labour is replaced by technological advancements and capital accumulation. Because of its low-income elasticity, the ratio of the change in per capita food purchases to the change in per capita income the demand for food in LDCs develops slowly. In contrast, rural regions often see faster population growth than LDCs as a whole, which causes the labour pool to expand quickly. To accommodate these more employees, off-farm employment must increase. Non-farm employment made for 79 percent of rural employment in Latin America, 34 percent in Asia, and 19 percent in Africa throughout the 1970s and 1980s.

Rural unemployment and underemployment are decreased through public works initiatives, small- and medium-scale manufacturing, agriculture, and processing, which also raise relative earnings. China has adopted a strategy of "walking on two legs" since 1958, which entails a "second leg" of small- and medium-sized industry on rural communes to support the country's huge metropolitan industrial sector. India restricted industrial growth and new businesses in metropolitan regions up to liberalisation in 1991, but provided preferential access to resources and facilities for businesses establishing in industrially "backward" non-metropolitan areas [1], [2].

It is unquestionably worthwhile to build businesses that produce and sell everyday consumer goods, as well as blacksmithing, repair, and maintenance facilities. The resources, electricity, markets, financial institutions, communication network, and skilled labour, which are often concentrated in big metropolitan centres, are necessary for many industrial activities to be

competitive. For instance, the energy supply hasn't been consistent enough for many businesses, such as those employing freezers, iron-smelting furnaces, or plastic injector moulding machines, in Nigeria, with the exception of a few major cities. Deng Xiaoping acknowledged in the 1980s that the Chinese Cultural Revolution's focus on rural communes building their own tractors and lathes was very uneconomical, even with the high expenses of transportation and distribution.

Political Constraints

Increasing pricing incentives, successful agricultural cooperatives, better rural social services, and governmental investment on research, finance, rural industry, extension services, irrigation, and transportation are all examples of non-technical concerns that often include politics. State leaders in unstable LDCs must mobilise the support of urban elites civil servants, employees of private and public corporations, businessmen, professionals, and skilled workers via economic policies that forego income distribution and agricultural expansion in order to maintain their political viability. Additionally, LDCs may not have the political will or administrative capacity, particularly in rural regions, to implement programmes that fight poverty. Large farmers, money lenders, and the urban classes are examples of established interests that may resist expenditure and policy changes that are necessary to improve the economic wellbeing of small farmers, tenants, and landless labourers [3], [4].

State market involvement also serves as a tool for political help and control. Governments sometimes employ military to put down food-related riots (as in Brazil, Egypt, and Tunisia in the middle of the 1980s), and government, quasi-government businesses, and private industry lobby political elites for affordable food policy to keep down wages. Numerous LDC administrations have been challenged by urban workers' unrest about the decline in their buying power. Politicians may also assist developing industries in lowering the cost of raw materials or processing. Market involvement gives elites the political clout they need to hold onto power, garner support, and enact legislation.

In anticipation of using the additional earnings for industry, Kwame Nkrumah's Convention People's Party (CPP) in Ghana approved a law in 1954 that forbade cocoa producer prices from changing for four years. But the CPP government undermined the recently founded opposition party in the cocoa-growing provinces by giving potential rebels preferential access to subsidised supplies including loans, seeds, fertiliser, and tools. State agriculture programmes also made public resources accessible to organise support for the Nkrumah government in each seat in the 1960s.

Market-clearing agricultural prices and exchange rates, whose advantages are unfairly dispersed, weaken political support in urban areas and garner little from rural areas. Project-based policies, in contrast, allow for the selective allocation of benefits for maximum political gain. Government encourages participation in initiatives that are detrimental to producers' interests as a whole.

Rural residents, who often lack political clout and worry about government retaliation, seldom band together to resist antirural policies. Rich farmers have too much to lose by protesting, even as poor farmers have little tactical clout. Additionally, they have less expensive choices including selling in underground marketplaces, diverting resources to other commodities, or moving into

cities. But ultimately, the state market hurts the rural classes. To counter the urban and large-farm bias of many modern LDC political leaders, action may be necessary.

DISCUSSION

Agricultural Biotechnology

"The application of biology to human use" is what biotechnology is, according to Burke (1999). Enzymes in cheese manufacturing and other food processing are examples of older usage, along with "fermentation for drink and food, plant and animal breeding," according to Norman (2003). Following slower cross-fertilization and seed production, new biotechnological uses such tissue culture, in-vitro multiplication, or regeneration of plant material in laboratories, and marker-assisted selection that accelerates plant breeding by directly the description and understanding of the sequence, location, function, and interaction of all genes in an organism; and "genetic engineering, in which one or more genes are eliminated and transferred from one organism to another without sexual crossing." These genetically altered organisms (GMOs) initially got marketed in the 1990s [5], [6].

Agricultural biotechnology has advantages like as quality improvements and possibly significant productivity gains lower labour, capital, fertiliser, or harmful herbicide inputs, which are essential to eradicating rural poverty. First, for LDCs, "built-in inputs like pesticides embodied expertise directly into the seeds, reducing output losses where complex production techniques capital-intensive insecticides are challenging to implement or where farmers lack the "management skills to apply inputs at the right time, sequence, and amount." Second, increasing production may result in cheaper costs and more consumer access to nutrient-dense meals, particularly in light of a rising population. Third, a lot of underprivileged people work on marginal land; GM crops may improve the possibility of growing food on salty, acidic, or other bad soils.

Insect-resistant corn, cotton, and other crops; herbicide-tolerant soybeans; virus-resistant genes in tobacco, potatoes, and tomatoes; colour modification in carnations; or stacked traits that embody combinations of insect and virus resistance increased fortyfold globally between 1996 and 2003, reaching seven million farmers in 18 countries and growing 69 million hectares 167 acres), or about 18 percent of the world's food crop cultivation. 6Due to market saturation, cheaper costs from higher yields such as canola, or DC consumer worries about biosafety and human health risks, GMO expansion has slowed off in recent years. Soybeans, maize, cotton and canola account for the majority of the area planted with GM crops in 2001. Farm animals and fish that are genetically modified or transgenic have not been used in commercial food production as of 2004. The first significant GM advancement in LDCs was the adoption of Bacillus thuringiensis cotton in China 2.8 million hectares in 2003 (Elias).

DISCUSSION

The majority of GMOs cannot be adopted in LDCs because poor farmers cannot afford new technology. More drought-tolerant plants, golden vitamin A-enriched rice, medicine or food supplements directly within plants which could improve the nutrition of the poor), speciality oils, anticancer drugs (taxol), poplars grown in France for paper production and requiring less energy

and producing less waste during processing, soybean oil with less saturated fat, and salt-tolerant varieties of rice in China are all in the works.

The use of modern technology carries a number of hazards. Can LDCs take use of biotechnology's promise to boost productivity? The majority of benefits from GM technology go to DCs, particularly a small number of businesses. Only 35 corporations controlled 60% of the global seed industry in 1998, and the markets for cotton, soybeans, and maize seeds were considerably more consolidated. Do researchers take into account the demands of LDCs while studying DC crops and issues? Will DC researchers pay attention to crops like millet or bananas, which are crucial to LDCs' ability to support their populations (FAO 2003:315–324)? In Chapter 8, researchers teach LDC farmers to take use of the new technology and examine challenges in adapting DC technologies to other ecological zones [7]–[9].

The majority of bioresearch is conducted by private research companies, despite the fact that certain agro-biological research conducted by universities, research institutions, and the government may be generated as public goods (some beyond the borders of the nation). Intellectual property rights (IPRs) concerns for private units include their enforcement and their scope of exclusion from competition. Without excludability, private units would not recover their investment, research would stagnate, productivity increases would be slower, and global welfare would also be affected. But increasing IPR raises questions. IPRs may first be overly broad, preventing dissemination, eventual innovation, and spillovers. Second, IPR may make it illegal to change a single gene obtained from publicly available germplasm created by farmers and the general public over the course of millennia.

Third, LDCs think they should get compensation for the genetic variety and contributions farmers and indigenous populations have provided to plants.

Local farmers are particularly worried about genetic use restriction technologies (GURTs), which prevent unauthorised use of genetic material by sterilising the next generation of seeds (FAO 2003:323–324). GURTs include terminator seeds.

The question of whether GM crops and animals harm human health, environmental safety, and biological variety is a final concern, particularly in light of the paucity of risk analysis and the absence of financing for ongoing research in LDCs. Gene mutation, the activation of "sleeper" genes, the spread of allergens, and the spread of intentionally inserted genes to weeds, other plants, or other species are further possible issues (FAO 2003:315, 324-326; Norman 2003).

Transgenics are supported by almost all international organisations for agricultural development, however certain consumer organisations in the West and in LDCs are against them. The European Union supports the precautionary principle, which calls for rejecting biotechnology until science determines that genetically modified organisms are safe for human health, placing the burden of proof on GM proponents, and allowing an informed and democratic public to consider all options, including taking no action. The requirements of LDCs are urgent enough to err on the side of embracing technology to increase food production, even if DCs may be able to afford to be sceptical about GMs.

World Population Throughout History

Population growth averaged 20 per million people per year, or 0.002 percent, during the most of human history. There were significant swings in this expansion as a result of wars, plagues, famines, and natural disasters. However, the pace of population increase has accelerated since about 8000 BCE.

Years after our emergence on the planet, in the early 19th century, there were one billion people on the planet. In 1930, the second billion was added, which was about one century later. The third billion was created in only 30 years, in 1960; the fourth in just 15 years, in 1975; the fifth, in 11 years, in 1986; the sixth, in 12 years, in 1998; and the seventh, in 2013. With the slowing of population growth, the seventh billion is anticipated in 2013. LDCs are home to 81 percent of the world's population.

World Population: Rapid but Decelerating Growth

distribution projections for regional distribution. Asia, Africa, and Latin America are the continents that are expanding the fastest. Their proportion of the world's population climbed from 70.0 to 81.5 percent between 1950 and 2000, and is projected to reach 85.1 percent by 2025. Asia, Africa, and Latin America saw annual population growth rates of 2.1 percent from 1950 to 2000, doubling the region's population every 33 years. Such expansion is unheard of in human history. Africa is predicted to see the fastest growth, averaging 2.4 percent annually, from 2000 to 2025.

With just 26% of married women utilising contraception, this rate, which is the same as its current rate, is the consequence of historically high crude birth rates of 38 per 1,000 and crude death rates of 14 per 1,000.

The mortality rate decreased between 1930 and 1990 as a result of advancements in sanitation, medicine, nutrition, and health. Although growth in Latin America and the Caribbean is anticipated to average 1.3 percent annually through 2025, its current annual pace of 1.7 percent is based on 23 births and 6 deaths per 1,000 people. Despite the fact that Asia's yearly growth 1.3 percent (birth rate of 20 and death rate of 7) will fall to 1.1 percent in the 25 years between 2000 and 2025, it will still account for more than 60 percent of the world's population [10].

The North Atlantic is losing political and military influence to Asia and the Pacific as a result of population growth. The proportion of the world's population residing in North America and Europe (except from the former Soviet Union) has decreased from 18.0 percent in 2000 to 12.3 percent in 2025, from 23.0 percent in 1900 and 29.5 percent in 1950. The Russian Federation and six Asian nations are included in the top ten biggest nations in the globe list. In the developing world, the majority of the significant population growth between 1994 and 2025 is anticipated. In 2025, India's population should surpass that of the United States due to growth during this time [11]. In terms of absolute growth, the third most populous nation in the world, the United States, will see slower growth between 2000 and 2025 than India, China, Nigeria, Indonesia, Pakistan, and Ethiopia (given in that order). In terms of growth throughout these years, Bangladesh, Congo (Kinshasa), Iran, and Mexico are next (International Institute for Applied Systems Analysis 2004).

Despite the world experiencing unprecedented population growth over the past 50 to 60 years, faster growth than any other 50 to 60-year period, the rate of growth has been slowing down since its peak rate of 2.3 percent annually in 1960 to during the period of 1776 to 2176 as a special case of humankind's history, which has typically been close to 0 percent.

CONCLUSION

Rural industry significantly contributes to economic development by supporting entrepreneurship, revenue production, employment, and local economic ties. In order to promote equitable and sustainable economic growth in rural regions, it is essential to understand the processes and policy consequences of this influence. Particularly for rural communities, rural industry is essential for creating job prospects. It offers a substitute for agriculture as a means of subsistence. Rural industry contributes to a decrease in unemployment, underemployment, and rural-urban migration by diversifying the economic base. In turn, this helps to raise living standards and reduce poverty in rural areas.

REFERENCES

[1] G. V. Vicente, V. M. Barroso, and F. J. B. Jiménez, "Sustainable tourism, economic growth and employment—the case of the wine routes of spain," *Sustain.*, 2021, doi: 10.3390/su13137164.

[2] W. Tang and J. Zhu, "Informality and rural industry: Rethinking the impacts of E-Commerce on rural development in China," *J. Rural Stud.*, 2020, doi: 10.1016/j.jrurstud.2020.02.010.

[3] O. Y. Voronkova, L. A. Iakimova, I. I. Frolova, C. I. Shafranskaya, S. G. Kamolov, and N. A. Prodanova, "Sustainable development of territories based on the integrated use of industry, resource and environmental potential," *Int. J. Econ. Bus. Adm.*, 2019, doi: 10.35808/ijeba/223.

[4] K. L. Kline, V. H. Dale, E. Rose, and B. Tonn, "Effects of production of woody pellets in the southeastern United States on the sustainable development goals," *Sustain.*, 2021, doi: 10.3390/su13020821.

[5] A. Sjahza and B. Asmit, "Regional economic empowerment through oil palm economic institutional development," *Manag. Environ. Qual. An Int. J.*, 2019, doi: 10.1108/MEQ-02-2018-0036.

[6] A. Halloran, N. Roos, R. Flore, and Y. Hanboonsong, "The development of the edible cricket industry in Thailand," *J. Insects as Food Feed*, 2016, doi: 10.3920/JIFF2015.0091.

[7] H. Ambrose, D. Gershenson, A. Gershenson, and D. Kammen, "Driving rural energy access: A second-life application for electric-vehicle batteries," *Environ. Res. Lett.*, 2014, doi: 10.1088/1748-9326/9/9/094004.

[8] Y. Li, C. Chen, Y. Wang, and Y. Liu, "Urban-rural transformation and farmland conversion in China: The application of the environmental Kuznets Curve," *J. Rural Stud.*, 2014, doi: 10.1016/j.jrurstud.2014.10.005.

[9] Y. Peng *et al.*, "Livelihood transitions transformed households' carbon footprint in the Three Gorges Reservoir area of China," *J. Clean. Prod.*, 2021, doi: 10.1016/j.jclepro.2021.129607.

[10] F. S. Fun, L. M. Chiun, P. Songan, and V. Nair, "The Impact of Local Communities' Involvement and Relationship Quality on Sustainable Rural Tourism in Rural Area, Sarawak. The Moderating Impact of Self-efficacy," *Procedia - Soc. Behav. Sci.*, 2014, doi: 10.1016/j.sbspro.2014.07.274.

[11] H. G. de Souza, F. A. H. Chaves, C. O. Santos, and J. A. de Araujo, "Spatial influence evaluation research of economic growth on greenhouse gas emissions in Brazil," *Greenh. Gases Sci. Technol.*, 2019, doi: 10.1002/ghg.1936.