



An in-Depth Theoretical Study of the Microeconomic Impact of General Funding

¹Ngozi Onwuka, ²Dr. Ibrahim Abdullahi

¹Research Scholar, Department of Economics, College of Social and Management Sciences, Wellspring University, Benin City, Nigeria

²Assistant Professor, Department of Economics, Economics, College of Social and Management Sciences, Wellspring University, Benin City, Nigeria

dr.ibrahim.abdullahi@gmail.com

Abstract: We raise basic problems concerning the proper contribution of public investment to economic growth, both at the level of the individual family and the firm. Under the assumption that public and private investments are completely complimentary to one another, we investigate the effect that government expenditure has on the spending habits of consumers and the earnings of businesses. Taxation, bank borrowing, and seigniorage are some of the examples of several ways that public investment might be supported, and here we pose an important issue about the ramifications of these diverse techniques. Reason for doing this study is to investigate the impact of public capital on behaviors in the private and public sectors that maximize both utility and profit.

Keywords: Behavioral Maximisation in the Context of the Household, Business, Production Function, Utility, Profit, and Public Capital.

Article History

Received: 18/06/2024; Accepted: 30/09/2024

Corresponding author: Ngozi Onwuka, Email ID: ngozi.onwuka@outlook.com

Introduction

Public investment is seen to have a favourable effect on the economy because of the multiplier effect. The economy is predicted to develop for the better if such investment is increased. As a kind of capital input into the manufacturing process, government spending is crucial. In the production function, the output is directly proportional to the quality and quantity of such capital. An increase in public investment, whether in quality, quantity, or both, is expected to have a

positive effect on business profits and household well-being. which is often considered public capital. In addition, public investment is thought to affect the cost of living, which might have varying effects on individuals and corporations. Depending on the funding mechanism, public investments might have varying impacts on private households and businesses.

Methods of Analysis

Before discussing the potential benefits of public investment for individuals and businesses, we shall first examine the conditions under which such investment may be made. A fundamental advantage of public investment is that it leads to improvements in the quantity and /or quality of products and services that are supplied by the government. Increasing public investment results in a greater number of services being made accessible to the general population. It is generally known that the private sector won't produce public goods since they can't charge anybody for using them and they don't generate enough money to cover the cost of production. This is because they can't charge anyone for using them. Instead, the government is responsible for providing these essentials via the collection of taxes, the provision of aid from other countries, or the borrowing of money from the Central Bank and other countries. Rationing takes place when there are restrictions placed on the amount of a public product that may be consumed by a single company or household. If it were made accessible in bigger amounts owing to additional public investments, households and companies would benefit from a rise in this rationed quantity, which would result in the amount being allocated to them being increased. The following presumptions are very important to our investigation:

1. The phenomenon known as "crowding out" cannot take place since public money serves as the perfect supplement to private capital.
2. Preferences for public goods have been established by individual families as well as by commercial organisations.
3. The level of public investment does not correlate in any way with the amount of taxes that individuals, families, and enterprises are required to pay.
4. There are no compulsory costs for membership. Both consumers and producers behave in a way that is consistent with a rule of rationality, which is to say that they are led by reason in the acts that they do.

5. Neither consumption nor production have reached their optimal levels yet, which keeps the economy from being in a balanced state.

Under these conditions, estimates of the value of government spending are more reliable. Government spending and private investment both serve as necessary inputs in the manufacturing process. This is a very plausible assumption, as public capital would displace private investment if the two were equivalents. There will be a crowding-out effect as a consequence of this. We also suppose that both the consumer and the producer are functioning below equilibrium and that capacity utilisation is low, and that the economy is still performing below its potential. There is still room for improvement on the part of both consumers and businesses with respect to their respective indifference curves and isoquants. This is the reality in many developing countries, when public goods are in insufficient supply despite high demand. It's difficult for many developing countries to amass the resources they need to overcome economic stagnation because of their inability to save enough money to invest in much needed infrastructure improvements. Poor revenue from low production is the root cause of the saving issue. The low purchasing power of the impoverished is a self-reinforcing factor in the cycle of poverty that reduces overall demand. This may affect the firm's sales and overall viability. Similarly, a lack of necessary infrastructure will raise the price of conducting business, which will erode whatever competitive edge that may have been established. When making money is the only motivation for a company, it loses some of its appeal to would-be financiers. Products and services would be produced at lower costs and sold at cheaper prices if the government took any action to increase corporate profits. We then write down the formula for the profit function of a single company:

$$\pi_i = f(P_i, G_k, X_j), \dots \dots \dots (1)$$

Where do the majority of the company's gains come from? How much does the business charge for its various outputs and inputs, respectively? The firm's profitability depends on a number of factors, one of which is the availability of a fixed amount of public money in the form of different forms of equity and debt. The productivity of the company's employees, the convenience of its physical location, and similar variables may all contribute to its low production costs. Following I is a list of additional factors that might have an impact on the profitability of the company. "The effect of public investment on a company is determined by taking the derivative of its profit function with respect to the fixed amount of public capital made

available to the firm from the stock of new public capital. This is indicated by the symbol.” The initial amount of public investment is a significant factor that plays a role in determining the extent of this impact. Because of the law of diminishing returns, the magnitude of this impact will most likely be reduced if the starting amount of public capital is larger. It is also possible for there to be variations between the many forms of public capital as well as the several economic subfields.

Similarly, public spending may improve the lives of individual households by increasing the availability of high-quality goods and services, or by expanding the market for already-existing products and services. To examine this impact, we assume a utility function for a typical family to look like this:

$$U_h = f(N_h, P_h, G_h), \dots \dots \dots (2)$$

where stands in place of the household's usage of public goods, where is the household's utility, where is its disposable income, where are the market prices of the various final items and services it consumes, and where are the market prices of the various final products and services it consumes.

The direct effect of public investment on the welfare of the family is obtained by taking the derivative of the family's utility function with respect to the consumption of public goods. In this case, represents this idea. The rule of declining marginal utility, the first of the three laws of Gossen, also applies here, thus the initial quantity of public good delivered will have an effect on how much of an impact the final result has. When public capital is increased, consumers benefit because their indifference curves move farther to the right. In Figure 1 we see a graphical representation of this concept.

An Examination of the Budget Line and Indifference Curves

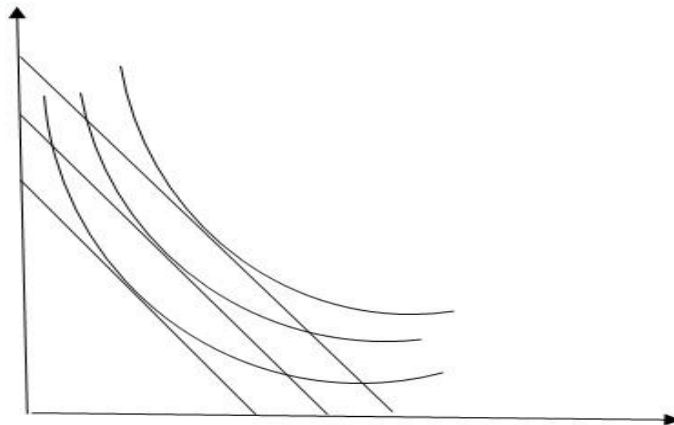


Figure-1.

Figure 1 shows a hypothetical family with a limited income making decisions according to the indifference curve labelled IC1 in the presence of budgetary limitations B1. As a consequence of the government's increased expenditure, households' budget lines expanded from B1 to B3, mirroring the growth in the consumption of public goods.

When public investment is increased, the supply of public goods increases, which in turn reduces the price of production in cases where such products are utilised as input. It decreases costs and broadens availability for the buyer. A greater variety of manufacturing inputs is available to the company, which will cause the isoquants to move farther from the origin. In the accompanying picture, the business works in its first phase along the isoquant curve IS1, which is bounded by the cost or input restrictions I1. Similarly to how an increase in public investment causes an outward shift in the isocost (from I1 to I3), As government spending is up, the isoquant moves away from the zero line (from IS1 to IS3). Figure 2 provides a visual representation of this point.

Evaluation of Isocost and Isoquant Lines and Curves

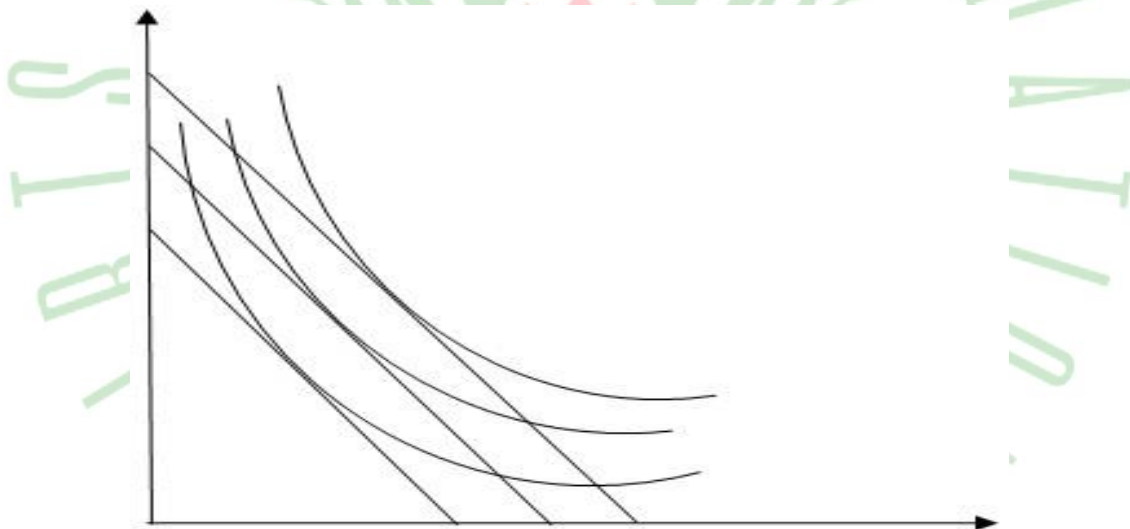


Figure-2.

Then, we examined how changes in public investment impact the costs of goods and services and how that trickles down to individual people and businesses. “The degree to which changes in public investment impact the costs of the different market products and services utilised by businesses and purchased by consumers was also studied. It is possible for this to occur for one of two reasons: either the government-provided good or service is a substitute for, or an addition to, other market goods and services consumed by households or used by firms, or the good or

service is not a pure public good but instead merely contributes to existing private sector production.”

The utility function shown in equation may be used to examine the impact of price changes on individual families . The utility of a household is affected by the price of goods and services in the market as shown by. This bodes well for a drop in prices but poorly for a rise in them. “The degree to which households are affected by price changes depends on the size of their initial consumption of the goods or services whose prices have changed and the ease with which those households can substitute their consumption away from the goods or services whose prices have risen or towards those whose prices have fallen.”

Similarly, the profit function shown in equation may be used to examine the impact of pricing changes on businesses. The result in this situation is provided by. If applied to “the company's output prices, this is positive for price increases and negative for price decreases, but when applied to input prices, the signs are reversed. Businesses are affected by changes in input and output prices in direct proportion to their initial production (or consumption) of the goods or services whose prices have changed, as well as to the ease with which they can either increase or decrease production in response to changes in input prices or output prices, respectively.”

Various modelling tools, ranging from simple partial equilibrium methods to elaborate general equilibrium methods, may be used to predict how public investment would affect market pricing for commodities and services. The latter are preferable because of their consideration of how a rise in investment in one area of the economy could affect the cost of living and the volume of production in other areas.

The government's financing of public investment reflects the multiplicity of ways in which such spending influences private families and businesses. To the degree that public investment is funded via direct taxes, it will have further ramifications for a family's discretionary income. The impact of direct taxes on households will vary depending on the policies the government adopts and the extent to which individual households adapt their habits in response to the new environment. (The impacts of indirect taxes on pricing may be measured.)

Non-income taxes that are implied in certain public investment are also paid by families. One kind of relocation involves moving people from their homes, generally with financial compensation but sometimes with none at all, in order to make way for a new road or other community development project. To be clear, when non-income (psychological) expenses are

imposed on relocating families and are not open to negotiation, the resulting stress may be substantial. Most often, the impoverished masses of people in West African economies in a formative stage are the ones that bear the brunt of this sort of implicit taxation. It is critical to recognize that this population is especially susceptible to this uncompensated forcible relocation since they have a hard time obtaining the documentation needed to be eligible for government compensation. You may have to foot the bill in full if you can't show necessary paperwork to prove your eligibility for government aid. The lack of these records makes it very difficult to pursue legal redress via the traditional judicial system. Many families, for instance, lack the legally required documentation to prove ownership of their homes or other landed properties, reducing their chances of receiving compensation in the event that the government needs to seize such properties to use their value in the creation of services and goods for the public good. Besides, how many poor and helpless people in West African nations have the financial resources to seek legal recourse when they have been wronged? This has significant implications for the economic growth of West African nations and others like them. Given that direct taxes finance a significant percentage of public investment, policymakers must weigh the benefits of taxing individuals and businesses more directly against the costs that disadvantaged families may incur as a result of the aforementioned changes in quantity and cost. As a result, this suggests that the net effect of public investment on household welfare may be positive or negative, depending on the difficulties encountered when attempting to keep tabs on people's tastes.

Conclusion

Through an examination of the impact on private families and businesses, this study theoretically analyses the microeconomic effect of public investment. Investment in public infrastructure may have varying effects on businesses and people, as well as "indirect" consequences via shifts in the relative prices of goods and services, may be accounted for in this kind of highly disaggregated research. The concerns brought forth in this research are crucial since these effects are likely to have a major impact in practise. All development work should be focused on enhancing the living conditions of the greatest possible number of people on Earth. The goal of this procedure shifts to one of maximum utility. The vitality of the companies themselves is of crucial importance to achieving this aim. The maximising of profits is also an important part of this procedure. The health of the economy as a whole is directly tied to the performance of individual businesses. It is important that public goods be provided in a manner that aids

individual households and commercial enterprises in reaching their goals. The prosperity of a society's citizens and the amount and quality of its productive agents are two key factors in that society's level of advancement. Public investment's impacts on aggregate variables like growth and employment may be predicted using this kind of highly disaggregated economic study. Knowing that a healthy economy starts with a healthy population is crucial. This suggests that, in practice, it is useful to conduct both aggregated and disaggregated theoretical analysis when analysing the success of the investment ex-post (i.e., the performance of previous investments) and when assessing the value of investment ex-ante (i.e., the desirability of future investments).

References

1. Aschauer, D., 2000. Public capital and economic growth: Issues of quantity, finance and efficiency. *Economic Development and Cultural Change*, 48(2): 391–406.
2. Barro, R., 1990. Government spending in a simple model of endogenous growth. *Journal of Political Economy*, 98(5): S103–S125.
3. Calderon, C. and L. Serven, 2004. The effects of infrastructure development on growth and income distribution. Policy Research Working Paper No. 3400. Washington, DC: World Bank.
4. Canning, D. and E. Bennathan, 2000. The social rate of return on infrastructure investments. Policy Research Working Paper No. 2390. Washington, DC: World Bank.
5. Deaton, A., 1997. The analysis of household surveys: A micro econometric approach to development policy. London: Johns Hopkins University Press.
6. Edward, A., R. Paolo and L. Stephanie, 2006. The role of public investment in poverty reduction: Theories and evidence. A Working Paper Series No. 263.
7. Gramlich, E., 1994. Infrastructure investment: A review essay. *Journal of Economic Literature*, 32: 1176– 1196.
8. McCulloch, N., 2003. The impact of structural reforms on poverty: A simple methodology with extensions.
9. Policy Research Working Paper No. 3124. Washington, DC: World Bank.
10. Milbourne, R., G. Otto and G. Voss, 2003. Public investment and economic growth. *Applied Economics*, 35: 527–540.
11. Sahn, D. and S. Younger, 2000. Expenditure incidence in Africa: Microeconomic evidence. *Fiscal Studies*, 21(3): 329–347.

