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Higher Education Funding Strategies: Towards Equity, Efficiency, and Quality

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Abstract

As economists have become increasingly interested in higher education, economic reasoning has been applied, resulting in extremely useful research in higher education. With the growth of market forces in higher education, the changing role of government, and advances in research on the economics of higher education, higher education funding is increasingly seen as a tool to stimulate the market. The development of an effective funding strategy may be one of the keys to developing higher education - its quality and efficiency, increasing equity and equality. The article adds to the existing literature on higher education funding and the impact of market forces on higher education. It aims to provide an analysis of economic reasoning applied to higher education, which can be used as a tool to develop a funding strategy. It also includes an overview of different funding models concerning economic reasoning and synthesizes different funding strategies regarding their impact on the higher education market.

Keywords: Higher Education Funding, Funding Strategy, Quality of Higher Education

Introduction

Higher education (HE) funding has been the focus of interest for policymakers and researchers in this field, as it is not simply a mechanism for distributing financial resources, but a tool in the hands of government and

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policymakers to encourage certain behavior and promote the achievement of common goals in HE.

Funding in HE can promote equity and access to HE, development of teaching and research quality, funding can become the most powerful tool for promoting quality and excellence in teaching and research, strategic development, aiming at achieving the best possible results with the limited financial resources (Jooste, 2020; Jongbloed, 2020b). While developing funding policies for HE, the governments are expected to be ensuring equity and accessibility, together with safeguarding quality. The research in education finance has expanded and education financing is often connected to equity and equality (BenDavid-Hadar, 2018).

With the recent trends in HE, the market forces have strengthened and the government control of HE has become loose. What do market forces mean in HE and did the market arrive in HE? If yes, then why do we need government interventions in the HE market? How can funding affect the HE market and decision-making in the market? How can financial resources affect the outcomes? In this article, we will address these issues. First, we will discuss and analyze several HE trends that have impacted HE funding policies and strategies, then explain what market forces mean in HE. We will also dive into several important notions from economics that will help us understand HE funding issues in a more complex and profound way. We will discuss government interventions in the market – what are they and do we need them? Finally, we will conclude the article with discussions of different funding models and how they can serve as a tool for steering the HE market.

Massification of Higher Education and its Impact on HE Funding

Following the democratization of society and moving from elite to mass HE, HE's demand pressures increased dramatically and rising enrollments are a fundamental fact worldwide (Mendiolla, 2012; Dill et al., 2004; Guri-Rosenblit et al., 2007). The process is also accelerated by demographics, an increasing proportion of youth completing their secondary education, changing employment opportunities, and greater competition for better jobs; increasing regard for social mobility and justice, leading to policies designed to boost HE participation (Leach, 2013).

Massification has increased pressures on government funds, which were not able to meet the increasing costs of the HE (Bou-Habib, 2010) in face of growing student numbers, combined with increasing per-student costs and competition from other areas such as secondary education, primary education, and healthcare (Panigrahi, 2018; Callender, 2020). The impact of these growing enrollments on the funding of HE is to accelerate the natural rate of increase of higher education per student costs and to escalate steeply and

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continuously the public resources required to maintain the quality of the higher educational product (Johnstone, 2004).

The effectiveness or ability of government production to meet the rising demands was questioned, and several new trends, including privatization and cost-sharing, appeared (Dodds, 2011).

Cost-sharing is defined as a shift of at least some of the HE cost burden from governments (taxpayers) to students and is manifested in introducing or rising tuition fees in Higher Education Institutions (Johnstone, 2020). This term was first developed by Johnstone (1986) in his study of tuition fees and student finance in the UK, Germany, France, Sweden, and the US. It can be linked to the human capital theory, launched in the 1960s. In this economic perspective on education and labor, students, parents, and the government invest in HE for the sake of a return (Spring, 2015). An almost historical assumption that the state should fully fund HE was questioned, and as the state HEIs are under-funded and lack capacity and quality, we face the emergence of a private, tuition-charging sector. A policy shift towards greater cost-sharing can take the form of encouraging and sometimes even partially subsidizing a largely tuition-fee-dependent private sector. It can also reduce grants or other subsidies or simply freeze them (Armbruster, 2008; Johnstone, 2020).

The underlying assumption here is that HE is not solely a public good, but private as well, bringing private benefits to its consumers (Toutkoushian & Paulsen, 2016) Besides the public benefits of HE, which even include a decreased rate of depression among the population, HE offers private benefits for students and their families (higher future earnings, prestige), which is the reason why they are willing to pay for something that was fully funded by the government in the past (Teixera et al., 2017).

Across Organisation for Economic Co-operation and Development (OECD) countries, 25-64-year-old adults with a tertiary degree earn on average 54% more than those with only upper secondary education, bringing private incentives to get a HE degree (OECD, 2020) The public incentives include financial benefits like greater tax revenues and social contributions (OECD, 2017; 2020).

The cost of instruction, already being very high, is increasing even in the absence of growing demand. HE, being a labor-intensive industry, tends to get more expensive relative to the natural rate of inflation in the economy and one of its consequences is that costs and prices (tuition fees) outpace the rate of inflation (Johnstone, 2002; Teixera & Landoni, 2017).

Another explanation for cost increases in HE is called "cost disease", which explains the slow increase in productivity in service industries, industries where it is impossible to increase productivity rapidly, hence the increase in costs. Although some argue against this idea, believing that cost

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increases result of insufficient performance of HEIs, 'cost disease remains the main explanation for cost increases in HE (Archibald, 2020).

The idea of cost-sharing is shared by the economists as well, as according to the benefits-received principle of equity, which is the part of the economics of the public sector, each party, who receives the benefits of the good or service, should bear its burden (Toutkoushian & Paulsen, 2016) The debates are usually on how much of the cost should each party cover. It is hard to estimate the share – as estimating the proportion of the benefits received is almost impossible.

To sum up our discussions this far, the idea of historically "free", meaning fully subsidized HE was challenged by the increasing demand pressure and increasing per-student costs (Gayardon, 2020) Governments have not been able to meet the growing demand for HE, the private sector has been introduced and there has been an increasing need of more effective and efficient ways of funding HE, due to pressures on public funds and also the growing pressures for more effective management of public funds, which we will discuss later. We often use the term 'market' when we talk about the higher education sector. But what does this mean, and has the market arrived in HE? This question will be addressed in the next section of the article.

Markets and Quasi-Markets, what do they imply for HE?

Alongside the increasing demand for HE, we observe increasing pressures on HE systems and HEIs for efficiency and effectiveness, which in turn can also be tied to the growing pressure on government funds. Political pressures arouse to control the funds allocated to the HE and the need to invent more effective and accountable funding and management models to steer universities to comply with the public interest appeared (Teixera et al., 2004).

New public management (NPM) approaches have brought a market-like environment to HEIs (Hamman & Beljean, 2020) Competition for funding has increased to increase efficiency and quality; Meeting the financial demands of continuously expanding HE is bringing the need for further diversification of financial resources and the new steering instruments (Jongbloed, 2010; Sporn, 2020).

What forms can government interventions in the HE market take and what is the role of government in the HE market? Government interventions in the HE market can take the form of public production, the provision of government subsidies, and issuing of relevant laws and regulations (Eurydice, 2022). Government interventions may provide quality, efficiency, differentiation, and innovation incentives. Widely over Europe, the government control, steering, budget mechanisms, and the monopoly of state-run HEIs were questioned. A new, less hierarchical relationship between government and HEIs was established, with more market-oriented approaches

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to steering/funding and management. Facing the challenges of ensuring equity and efficiency in the market, governments have introduced "quasi-markets" in HE (Teixera et al., 2004).

Governments in the "quasi-markets" of HE are supervising the market, preventing failures; however, in the market-type coordination, decentralized decision-making by providers and clients is essential. Market behavior is stimulated in the "quasi-markets, " and government regulation and financing remain important coordination mechanisms. At the same time, the elements of competition, individual responsibilities, freedom of choice, and user charges are introduced (Jongbloed, 2010). The financial autonomy of universities is reflected in their ability to set tuition fees, borrow money on the financial markets, ability to invest in financial products, issue shares and bonds, own the lands and buildings that they occupy, and the extent to which they can accumulate financial resources and keep surplus on state funding.

The introduction of quasi-markets in HE is composed of three main vectors: promotion of competition increased privatization, and promotion of economic autonomy of HEIs (Teixera et al., 2004).

Before continuing our discussions, we should explain the "invisible hand" concept, popularized among economists and the focal point in our discussions. The term originates from Adam Smith's works and is used to describe the market mechanisms, mostly the efficiency of the market. The "invisible hand" is the ability of the market to regulate itself – it assumes that the decisions made by consumers and the profit-maximizing behavior of producers will distribute goods and services in the economy so that economy produces goods and services in an optimal way for the society. To be concise, the market is self-regulating and does not require government interventions. This idea advocates the "free market", but the reality is seldom this simple, markets do not always regulate themselves optimally, and "market failures", characterized either by excessive supply or insufficient demand/supply often arise (Teixera et al., 2004). As the market failures are common, governments intervene in the markets that provide goods and services crucially important for the state, such as education, healthcare, and public services. As discussed, government intervention is intended to stimulate certain behavior. It can be in the form of government production, subsidizing, and other actions to promote the good/service (it can be vice-versa, intended to decrease production and consumption, but this is not relevant to our discussions now) (Mikesel, 2011).

There is clear empirical evidence of the need for government steering in education to avoid market failures. One of the most important is connected to the notion of the perfect competition - perfect competition presumes that producers and consumers – in our case, HEIs and students possess perfect information about the educational programs, which is almost impossible in the HE market (Dill & Soo, 2004) Consumers and producers make independent

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decisions and the price is determined for the product at the equilibrium price. The perfect information is necessary not only for consumers but also for HE producers. It serves as an incentive for producers to invest in quality improvements and better compete. The lack of information may result in a situation where "the social costs of the HE system may not produce the optimal social benefits" (Dill & Soo, 2004, p. 62). We will now elaborate on this topic further in the next part of the article.

Consumers' and Producers' decisions in HE – Do the market forces work in HE?

After economists started applying their theories to education, the notion of investment in human capital and the costs and returns of HE, as well as the decision-making process in "consumption" and "production" of HE became the sphere of interest of economists. One of the fundamental principles of economics is that due to the scarcity of resources, decision-makers should give up on something to receive something else (Toutkoushian & Paulsen, 2016) We are all well aware that there is no such thing as a "free lunch" and everything has its opportunity cost. Scholars studying education economics apply economic models of decision-making to analyze and understand the behavior of students, faculty, administration, the state in HE, and student enrollment decisions (Spring, 2015).

Economists assume that decision-makers in any field, including education, engage in the optimization behavior – they seek to maximize their goal-achievement facing the constraints they have and are perceiving their best interests. Each participant in the marketplace sends signals and corresponds to others' signals, about the price, quality, and availability of goods supplied or demanded (Massy, 2004).

Aggregate-level and individual-level studies are common in research on the economics of HE. "Aggregate-level demand studies used data on environmental characteristics (e.g., enrollment, high school graduates, starting salaries of college relative to high school graduates, unemployment, etc.), and institutional characteristics (e.g., tuition, financial aid, and other factors) to estimate the coefficients of demand functions that helped explain student enrollment behavior, inform tuition setting policies, and provided a means to forecast enrollment at the institutional, state and national levels, and inform tuition setting policies." (Toutkoushian & Paulsen, 2016, p. 15). The individual-student data focused more on institutional and student characteristics.

The goals of decision-makers vary at different times and contexts, so economists express these goals in a more general form – utility or satisfaction. The decision-makers are trying to maximize their utility or satisfaction from consuming the goods with the constraints they face. The complication of this

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reasoning is that the utility or satisfaction cannot be measured directly (Spring, 2015).

Consumers and producers engaging in the decision-making process in the market, characterized by the optimization behavior discussed earlier, compare the change in benefits – the marginal benefit, to the change in costs – the marginal cost. For instance, the faculty, deciding on admitting a new student, compares the marginal benefits associated with the enrollment of the new student (tuition fees, prestige, reputation, or other benefits), with the marginal costs associated with the student intake. As long as the marginal benefit from the additional student exceeds the marginal costs, the institution admits the student. For the non-profit institution, it is enough for the number of students to cover the costs, while the for-profit institution is interested in the profit left from excluding the costs (Toutkushian & Paulsen, 2016).

The decision-making of "consumers" is also complicated. First of all, as we have noted, education is not a regular good. A person, before entering HEI, should decide whether or not the benefits associated with education outweigh the costs, which include direct (tuition and fees) and indirect costs (foregone income from not entering the labor market, time for other activities). The student pays for the service for several years and gets the benefits years after graduating (Sá & Sá, 2020).

After discussing the decision-making process of students and HEIs, we should turn to the government, one of the most important players in the decision-making process on the HE market. As economists see HE as the medium for forming human capital, they also seek evidence for indirect benefits that educated people can bring to society, ranging from decreased criminal rates and increased literacy to the country's economic growth (Jongbloed 2020a). These may lead governments to invest more or subsidize HE so that more citizens attend university.

Some markets are also characterized by positive externalities, or spillover benefits, which lead to increased government interest. A positive externality occurs when a good or service consumption benefits others who do not participate in the market. The government's decided to intervene in the market of education (which is proven to have the above characteristic), thus can be explained and justified by the nature of the HE market and the positive externalities it produces. Governments decide to influence the production of public goods and goods/services that provide positive externalities. As if left "alone", the market may not "produce" as much as is demanded by society (Mikesell, 2011; Toutkoushian & Paulsen, 2016).

If we return to the free market discussions, we can see why government interventions are necessary for the higher education market. Market failures in the HE market will lead to severe consequences for the state. Moreover, during the cost-benefit analysis of their decision-making process, students and

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prospective students do not consider the positive externalities or their education's impact on the society around them but weigh the private costs and benefits. Let's look only at the private demand. T educational resources will be underproduced and government may decide to intervene, for instance, by providing subsidies (demand-side intervention) (Toutkoushian & Paulsen, 2016).

The interventions should always be planned carefully. Subsidizing every student may not be the cost-effective solution, and in mass HE, it sometimes is less feasible. There is also a risk of cost-ineffectiveness if we are trying to maximize the social benefits of HE, as many students benefiting from the subsidy may have gone to the HEI without financial support. The increased costs do not increase the positive public externalities in this scenario. According to the marginal cost-benefit analysis, the student will choose to attend the HEI if the private benefits outweigh private costs, this is why some decide to receive HE and some do not (Sá & Sá, 2020) So, while giving subsidies in the form of grants, the government is increasing the net marginal benefit for students, but for some of them, the net marginal benefit is already enough to attend university. To maximize the intervention results for the public, the ideal solution was to give grants to students, who, without it will not attend the HEI.

Shortly speaking, the impact of subsidizing HE or funding HE costs for students from low-income families on the society will be higher, but if the outcomes of education of these students are of a relevant level. Otherwise, subsidizing may encourage participation, but not necessarily achievement. In this case, there will be inefficient government spending (Dill et al., 2004).

When the government decides to subsidize education costs by reducing the private costs of education for students, it is a uniform subsidy, which can be arguably inefficient as it is unnecessary for some students and may be seen as an inefficient use of public funds. An example would be merit-based subsidies. Due to the abovementioned concerns, non-uniform subsidies, which vary for students, deserve less criticism (Toutkushian & Paulsen, 2016).

So, suppose the students and their parents weigh the private costs and benefits of HE and make decisions accordingly while looking at the net private benefit. In that case, the governments should decide how much total support to give, to whom to provide the support – students, institutions, or both, and how to distribute the funds – which brings us back to the funding methods and strategies.

The market forces in HE triggers changes in consumers' decisions following the demand curve, the market becomes decentralized and producers are adjusting to the market preferences (Massy, 2004) For-profit HEIs most likely will not offer the programs with low demand on the market, or with low price as the value function will lead to losses, however, a non-profit institution

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may wish to subsidize the program to promote the "public good" and ensure the mission attainment and/or "preserving" of the field.

The discussion in this section will conclude with the free market and, once again, the ability of the market to regulate itself, including prices. We believe that the discussions have provided some arguments for government interventions in the HE market. The market cannot dictate price if there is no perfect information about the goods and their quality (as many argue, in the case of the HE market), the shortage of information prevents the "invisible hand" to guide towards quality improvements. We also mentioned that the funding allocation must guide the maximization of public benefits and foster participation in the HE market. Now we can turn to discuss different funding strategies.

Massy (2004) believes that formula-based steering is the answer to the problems in the HE market. He states that allocating funding based on subjective evaluation and making results public can be used to promote the public good. He offers goals like "technology-based productivity improvement, growth by substitution, and adherence to the mission. Most importantly, they might include investment in the provision of information about educational quality (p. 32)". Performance-based funding, according to Massy, thus, steers universities in the direction that is believed to benefit the public good and at the same time, does not overpower or disempower them, but provides for a more effective delegation of power.

Funding Models and Strategies

We now turn to the funding models used by governments that are supposedly aimed at reaching the goals of HE: quality, efficiency, and equity. Historically, funds were allocated to HEIs according to the input measures – like student enrollments, staff numbers, positions, etc. Now we see the increasing importance of funding HE providers based on measures of institutional performance, which is called the performance-based funding model. For performance-based funding, institutions allocate funds based on their actual or projected results (Jongbloed, 2010; Herbst, 2020).

Even if HE has characteristics of a free, competitive market, government interventions, which can take the form of funding decisions, sometimes are needed to ensure the effectiveness of the market, or attainment of certain goals, as discussed before. One more interesting notion from economics should be explained – the "free rider" problem. Government interventions may be needed to avoid the problem. For example, the research conducted at the universities represents the public good, which everyone can benefit from, but takes plenty of resources to produce. Without policy aimed at promoting research activities, a free-rider problem can arise in research, when instead of investing resources and time to research, people are just using

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the results of others' research (Toutkoushian & Paulsen, 2016) Government, through policies, including funding policy, can promote and foster research in HEIs.

In the report "Funding Higher Education: a view across Europe" (MODERN project of the European Commission), Jongbloed (2010) provides a grouping of funding mechanisms for HE according to the outcome VS input orientation. According to the level of decentralization, which is an interesting viewpoint – the funding mechanisms differ according to their level of decentralization and outcome orientation on a continuum.

There are different ways of allocating funds to the HEIs and we can classify them according to their degree of financial autonomy and input versus output orientation. According to Jongbloed (2010), with a line-item budget universities receive the financial resources by pre-allocated expenses (defined cost items and/or activities) and are not able to make allocation decisions. On the contrary, within the block grants, universities receive financial grants covering teaching, research, and ongoing costs and are able and responsible for allocating these funds according to their needs.

The report also discusses three funding types: formula-based approaches, contracts, and project-based funding. These funding options can be either input or output-oriented. For instance, formula-based funding may imply a fixed amount, formulas based on input measures, and formulas based on output measures. Project-based funding can be competitive or non-competitive. On a competitive basis, the institution receives the funds if it meets the criteria best, while in the non-competitive funding model, the funds are distributed equally or negotiated between the government and HEIs. The funding contracts in the contract-based funding could include either intentions or the agreed performance in detail. These funding models are usually mixed by the governments, for instance, project-based funding is often used to fund the research activities.

According to the European University Association's (EUA) publication "Define Project: Designing Strategies for Efficient Funding of Universities in Europe" (EUA, 2015), performance-based funding can serve different purposes, including an incentive tool. The performance-based funding is often misunderstood and associated with formula funding, while formula funding does not necessarily imply output orientation. Moreover, according to the report, the most common method of funding HE in Europe is the funding formulae which is input-oriented mainly, which are combined with performance contracts, budget negotiations, and historical allocation. However, "A majority of the 28 systems covered consider their basic funding allocation mechanisms to be at least partially performance-based for teaching (via graduate-related criteria), and partially or mainly performance-based for

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research, where indicators related to publications and external research funding are normally taken into account" (EUA, 2015 p. 11).

Performance-based funding, which is associated with NPM, is usually argued as the most useful tool for government steering towards the desired behavior within HEIs. Still, the expected drawbacks of this method are also discussed, including the mainstream approach, the temptation to lower standards in regard to research and teaching quality (Biscaia, 2020).

Another interesting funding method is the voucher system. As the public authorities cannot plan and manage the HE market, self-regulatory mechanisms, where the consumers and producers regulate (to some extent) the market and the choices made by students and HEIs themselves are driving the system. For the HE market, this implies the appearance and importance of demand-side funding, which is the voucher system (Jongbloed, 2004). A voucher represents a sum of money that the student receives to pay for the tuition on approved programs, whether in public or private institutions. The notion of a voucher system implies that institutions competing for students focus on the needs of students and stress the importance of student choice and competition. The voucher system is the market-oriented, demand-driven type of funding for HE (Teixera et al., 2004).

Some questions and critique, however, exists regarding the voucher system:

1. Are the student's informed customers? (the issue discussed in the beginning – is information asymmetry);
2. How useful is the competition? It can lead to some institutions flourishing and others devastated.

Barr, 1998, in Jongbloed, 2004: Governments, while choosing the voucher system should think of it as a continuum and choose from "pure central planning" and "law of the jungle". He argues that governments should consider several constraints:

1. Protecting subjects (disciplines) – this may be done by arranging vouchers for some of the disciplines;
2. Protecting Institutions – Vouchers may be tied to some regional universities;
3. Protecting Individuals – Assigning vouchers to low-income students;
4. Protecting Quality – Imposing standards, evaluating them, and publishing the results.

Another approach, mostly used by economists to describe the government intervention in the education market is to divide the model into two broad categories – the low-tuition/low-aid model, where the government decides to increase participation in the education market by imposing a low tuition rate and offering low aid, which mostly has the form of uniform

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subsidies; on the other hand, high-tuition/high-aid model to encourage attending HE for the students who do not have financial resources to attend the university (Toutkoushian & Paulsen, 2016) However, as the evaluation of individual students' income is time-consuming, it is easier for governments to allocate block grants to the HEIs. They then decide on the financial aid for students themselves.

Based on the discussions in the paper, the funding models differ according to the degree of autonomy that is granted to HEIs, the degree of output orientation, and the way the funds are allocated to the universities. Different, common ways of financing HE were discussed in the previous part of the paper, however, it should be noted that the funding models discussed are not mutually exclusive. The government can decide to use different funding models simultaneously. Even though there is a tendency toward the performance-based approaches to funding, mostly they are combined with other funding models to reach the goals of HE and use the resources efficiently.

Discussion

Throughout this paper, the author discussed several important theories from economics, which were successfully applied to HE and are widely used in research. Even though HE differs much from the market of regular goods and services, the existence of the market forces is still evident in HE, strengthened by the policies aimed at loosening government control and increasing free choice, and the introduction of user pays.

As the existence of market forces is evident in HE, funding can serve as the tool to stimulate behavior on the market – whether of the "consumers" or "producers". The author believes that economic reasoning should be applied to the process of developing the funding strategies for HE, as to maximize the impact that the funding has on the system and institution. The funding strategies should be chosen and mixed carefully and accordingly to the effect that is needed for stimulating the market – whether the highest concern is increasing participation in HE for specific groups of people, whether the aim is to promote the industry orientation, research productivity or other goals, the funding method can be a steering tool.

The discussions in the paper are summarized in the graph below:

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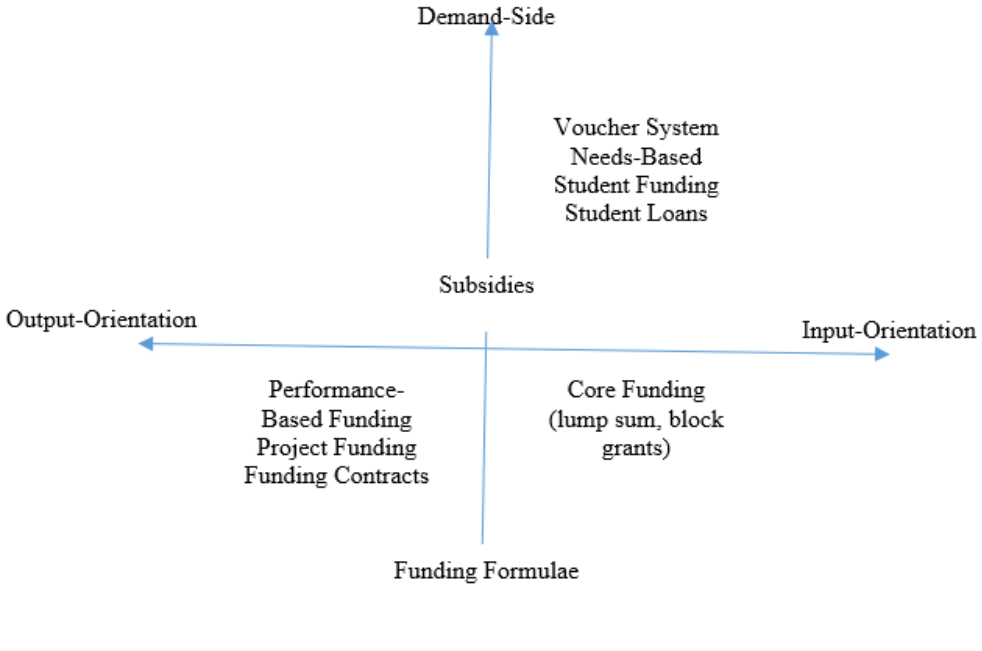
Figure 1: Funding Strategies – Demand versus Supply Orientation and Input Versus Output Orientation



Developed by the researcher

A plethora of research has been carried out on the demand and supply of HE, costs and benefits of HE for individuals and society as a whole, and education financing as the tool for government steering. Most researchers advocate output-oriented funding methods, that are aimed at stimulating certain behavior with the funding, as well as needs-based funding to increase participation of otherwise disadvantaged groups to increase the positive externalities. Many researchers and practitioners argue that government core funding is also needed for HEIs to overcome the challenges of rising costs.

To conclude the discussions, it should be pointed out that the HE market, because of its differences from the 'ordinary' market for goods and services, cannot be analyzed solely by economic reasoning. HEI is the unique "producer" and the marginal benefits from keeping the program or course are not necessarily connected to the financial benefits. For E.g. the university may be interested in operating the course or program just to save or promote the discipline and even though the direct costs associated with the teaching can be higher than direct marginal benefits, the institution can decide to keep running the program. Moreover, the institution may invest in the research project not aimed at increasing the profit, but to increase reputation, prestige, or contribute to the development of society or a particular discipline. The same discussions can be applied to consumers, as student behavior cannot always be explained

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by simple economic reasoning. This makes the analysis of decision-making in the higher education market more complicated. Costs and benefits in the higher education market are not always directly associated with finances. In higher education, there are many non-market characteristics involved in the decision-making process.

Conclusion

The field of economics and finance in higher education is vast and has attracted the attention of researchers around the world. Many researchers have focused on the issues discussed in this article. The paper provided a summary of the important notions and theories from higher education economics, which have an immense impact on funding strategies used by governments. By applying economic reasoning to HE, governments can plan and implement the strategies that impact higher education supply, and demand and maximize the public gain from HE, that increases efficiency, equity, and equality.

Although different strategies can be used to fund HE, whatever the funding strategy, based on the results of previous research and the author's opinion, they can serve as a valuable tool for government steering.

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