

PUBLIC CHOICE ECONOMICS: A CRITICAL REVIEW OF THE LITERATURE ON MARKET FAILURE, GOVERNMENT INTERVENTION AND ARROW THEOREM

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ABSTRACT

This study provides a critical review of the literature on public choice economics by highlighting some of its intriguing complexities to include issues like market failure and government intervention, rent-seeking activities with individual and collective interest, and Arrow's impossibility theorem. The review of existing literature shows that even when a collective goal seems to bind up the general public, individual interests might jeopardize the actualization of such goals and in some cases, certain individuals may devise means to exploit private gains from the privileges of public offices in a situation that is commonly referred to as rent-seeking. Furthermore, Arrow's impossibility theorem argues that collective interest cannot be taken as a mere aggregation of individual interest thus providing an important basis upon which various contributions in the field of public choice economics are founded. The theorem is important for the realization of today's democratic function without creating government failures and thereby helping to contribute to the reform of what the relations between the state and the economy should be for the future vis-à-vis the decision-making mechanism among political parties, voters, and the election process itself. Therefore, this present study provides an understandable review of the Arrow theorem from a futuristic perspective.

Keywords: Public Choice, Market Failure, Government Intervention, Rent Seeking, Arrow Theorem

JEL Codes: D70, D71, D72

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KAMU TERCİHİ EKONOMİSİ: PİYASA BAŞARISIZLIĞI, DEVLET MÜDAHALESİ VE ARROW TEOREMİ ÜZERİNE ELEŞTİREL BİR LİTERATÜR İNCELEMESİ

ÖZ

Bu çalışma, piyasa başarısızlığı, devlet müdahalesi, bireysel ve kolektif ilgi ile rant kollama faaliyetleri ve Arrow'un imkânsızlık teoremi gibi konuları içerecek şekilde ilgi çekici bazı karmaşıklıklarını vurgulayarak kamu tercihi ekonomisi hakkındaki literatürün eleştirel bir incelemesini sunmaktadır. Mevcut literatür, bir toplumu genel olarak ilgilendiren kolektif bir hedef olsa bile, bireysel çıkarların bu kolektif hedeflerin gerçekleşmesini tehlikeye atabileceğini göstermektedir. Ayrıca bazı durumlarda; bazı bireyler, genel olarak rant kollama olarak adlandırılan bir faaliyet aracılığıyla kamu ofislerinin ayrıcalıklarıyla özel kazançlar elde etmek için araçlar yaratmaya çalışmaktadırlar. Ek olarak, Arrow'un imkânsızlık teoremi, kolektif çıkarların, sıradan anlamda varsayılabileceği gibi, sadece bireysel çıkarların salt bir toplamı olarak kabul edilemeyeceğini savunur ve bu teoremin, kamu tercihi ekonomisi alanında birçok önemli katkının üzerine kurulduğu devasa bir temel sağlamıştır. Arrow teoremi kişisel çıkarlar ile toplumsal çıkarlar arasındaki uyumsuzluklar ve kamu ekonomisinin karar alma süreçlerinde siyasi tercihlerle belirlenen işleyiş mekanizması, dolayısıyla siyasi partiler-seçmenler-seçimler çerçevesinde ortaya çıkan çelişkileri tanımlamaktadır. Arrow teoremi; günümüz demokrasi işleyişinin, kamu başarısızlıklarına yol açmaksızın gerçekleştirilmesi açısından önem taşımakta ve gelecek açısından ekonomi-devlet ilişkilerinin reform edilmesine katkı sunmaktadır. Bu nedenle amacı, gelecek perspektifinde anlaşılabilir bir Arrow teoremi eleştirisini ortaya koyabilmektir.

Anahtar Kelimeler: Kamu Tercihi, Piyasa Başarısızlığı, Devlet Müdahalesi, Rant Kollama, Arrow Teoremi

Jel Kodları: D70, D71, D72

INTRODUCTION

Various economies have revolved and undergone diverse reformations across the globe. The majority of the reformations in many economies can be better understood when there is a careful assessment of the various decisions of the economic agents that drive the wheel of the economy. Of course, economic system varies from one society to the other, however, all the systems can be basically seen as the mechanism for the ownership, distribution, and control of societal or economic scarce resources ranging from the concept of capitalism to socialism. In the former system, there exists a mechanism whereby the market forces allocate resources with the instrumentality of the price system with respect to the preferences and knowledge of the individual members of the society. Whereas, in the latter system, the government handles the control and distribution of economic resources with the instrumentality of the state power or sovereignty in line with the generally limited preferences and knowledge of the populace, elected officials, and also the bureaucrats who are often appointed. The range of systems is not just limited to these two systems as there can also be a more dynamic and complex system that recognizes the mixture of the aforementioned two systems simultaneously in what is popularly known as the mixed economy system (Nelson, 1987: 541-566; Nee, 1992: 1-27; Ikeda, 2002: 1-28).

In a better attempt to understand the functionality of government and the justification for its existence with respect to its relevance in the economy and how individuals react or make crucial decisions, the field of public choice economics seeks to specifically research and analyze these interwoven connections between the state, individuals and the general economy. In other words, it is the field of economics that deals with the application of economic knowledge in analyzing various decisions taken by a government or an aspect of economics that study political decisions and developments by adopting the methodologies of economic science. Public choice is an interdisciplinary field whose history can be dated back to the 18th century and it started gathering more popularity in economics especially towards the end of the 1940s (Mueller, 2008: 31). It has also been noted that public choice should be assessed based on the level of consistency of its hypotheses about the total consequences of the political decisions of people with respect to the available evidence or empirical realities rather than just a set of behavioral assumptions (Buchanan and Tullock, 1962: 282-294).

As the world continues to transform in all ramifications with many societies witnessing socio-economic reformations and various political transformations, the scope of public choice economics has also witnessed sporadic growth in the last couple of decades. This development is connected to various issues including the need to systematically address new intriguing questions that are arising in the field and the quest to develop more efficient approaches or proper methodologies for a better understanding of individual behaviors vis-à-vis their political and socio-economic decisions. Despite the continued rise in the contributions to the literature on public choice and economics of regulations, some of the fundamental questions that encompass the general quest in this field still remain a dynamic puzzle in

many societies. For example, there is no unanimous answer to the extent to which government intervention is to be tolerated or to be viewed as being excessive depending on individual nation peculiarity. In addition, there is still no sufficient explanation or perfect justification for the voting pattern or reasons why people vote in the juxtaposition of what their real intention or expectations are vis-à-vis an individual or collective interest.

1. DECISION MAKING IN THE FRAMEWORK OF PUBLIC CHOICE THEORY

An individual who operates within the framework of public choice economics as relating to politics stands to be a choice or decision-maker and this could be as a voter or a politician, as a bureaucrat or a regulator, and even as a lobbyist or a political party as the case may be. Such individuals are assumed to have their own personal preferences and these preferences in most circumstances are usually influential factors to their decision or choices among the available alternatives.

In most situations, decisions are often directed towards attaining personal aims and objectives and may not necessarily be for the interest of the public. Thus, the attention of many public theorists has been drawn to the significance of the impacts of individual interests in decision making processes vis-à-vis what the collective interests are in typical society.

1.1. Individual vs Collective Interest: Rent-Seeking Activities in Decision Making Process

As noted earlier, individuals in the framework of public choice economics are often faced with the task of making choices among available alternatives in different regards and the ultimate decision that will be taken is often been affected by numerous factors with respect to individual and collective interest. For instance, the individual-interest of various political parties is often to win the maximum votes and as such, they usually develop and implement the best strategy that can enable them to win the maximum number of votes in order to secure a target political office. This sometimes explains why many lobbyist groups with vested interests are sometimes prepared to spend or 'invest' heavily in rent-seeking activities.

In theoretical and practical terms, rent-seeking refers to a situation whereby an economic agent device means on how to increase its overall value of wealth without necessarily gaining such an increase in wealth from any additional productive ventures, gainful employment or improved value chains. It is a concept that should not be confused with the literal profit-seeking or profit-making as there is an important line of difference between the two concepts. Tollison (2004) while drawing a distinction between rent-seeking and profit-seeking viewed the former as a socially costly pursuit of wealth transfers that destroys valuable resources despite being an unproductive action. As such, Tollison, (2004) further noted that rent-seeking should not be viewed as a theory that seeks to resist all forms of profit-seeking.

Aidt (2016: 144), noted that rent-seeking can generally be defined as the act of seeking private gains from government. For instance, a readiness to spend a huge amount to secure political office due to the huge benefits that come from such positions can be said to be an act of rent-seeking in government

and it has been identified as one of the factors militating against both social and economic developments in many nations even in the face of strong democracy (Murphy, Shleifer, and Vishny, 1993: 409; Svensson, 2000: 437; Iqbal and Daly, 2014: 16-22).

1.2. Decision-Making Process and Rent-Seeking in Democratic Settings

There are various systems of government being practiced around the world and these include monarchy, oligarchy, aristocracy, autocracy, and theocracy among others. Out of all the aforementioned systems of government, the democratic system of government appeared to have received more international acceptance over the years. Qvortrup and Qvortrup (2005:1), viewed democracy as a system of government by the people. Schmitter and Karl (1991: 75-88), also noted that there is a distinction between democratic leaders and the non-democratic rulers since they often come to power through an expected democratic process in addition to the fact that they can also be held responsible for their various actions and decisions.

Despite having a high level of global acceptance with similar fundamental principles in many countries, nevertheless, the democratic system of government may still be characterized by some variations in the degree of its applications or practicality from one society to the other. As such, when considering decisions making procedures vis-à-vis individual or collective interest, the nature of the democratic settings ought to be dully accounted for. For instance, a smaller proportion of electorate might wield too much power in a representative form of democracy in some societies while the rule that 'the majority carry the votes' might place the minorities at a huge level of disadvantages regardless of how large their proportion is given that direct system of democracy is in operation in another society. Thus, the whole interplay sometimes creates a reflection of the possible limitations or challenges in the democratic system. Furthermore, Qvortrup and Qvortrup (2005: 1-55), noted that the roles of citizens have been reduced to periodic exercise like conducting referendum and general elections in many democratic societies.

In an ideal democratic setting, individuals or groups of voters are often assumed to examine and rank the available alternatives in order to ensure that optimal decisions that can guarantee their individual interests are taken; or they may form cooperation in order to unanimously actualize their collective interest. However, this may not always be the order of the day especially when issues bordering around the principle of unanimity and transitivity are concerned. For example, it may not really be in the interest of a person to cooperate especially if s/he has a better personal alternative even if cooperating can ensure the realization of goals of larger numbers of people including such individual himself. This shows that the task of getting people to take common decisions or cooperate might be very difficult especially when there aren't any stipulated sanctions or extra motivations for cooperation thus, making the achievement of common goal often difficult or unattainable in some conditions. As such, Butler (2012: 21-29) noted that most public choice theorists are of the opinion that there is a need to have some forms of constitutional guidelines for restricting political decision-making procedures even

in a democratic environment. The framework of public choice economics is thus a complex one; such that the challenges of understanding a typical democratic setting are highly voluminous. These challenges range from the task of rightly defining what constitutes individual and collective interests to how such interests are to be met, in addition to the challenges of managing the decision-making process in a democracy such as the issue of minority exploitation among other factors.

2. MARKET FAILURE AND GOVERNMENT INTERVENTIONS IN PUBLIC CHOICE PERSPECTIVE

In a quest to guarantee order and tranquility in human societies, the establishment of a body as an authority for maintenance of law and orderliness has been a common global practice. Having identified some basic anomalies that plagues people in many societies to include the possibility of rightly utilizing language as a means of promoting human capacity and the possibility of also abusing the power of the same language for misinformation, the misuse of power and authority, the rule-ruler-ruled relationship, and the crave for political influence for actualization of self-interest among other issues, Ostrom and Ostrom (2004: 105-147) still emphasized the importance of constitutional government in providing basic foundations for order and stability in human societies.

Government as a sovereign and powerful force also engages in various degrees of regulations in the society and these regulations could cut across both the social and economic aspects of the societies or the cultural and structural regulations as the case may be (Vickers, 1991: 13-30). According to Den Hertog (2010: 10-18), regulation is the application of legal instruments or the act of compelling individuals or organizations to comply with certain standards or behaviors under prescribed penalties or sanctions for the realization of target social-economic policy objectives. In the economic sense, many reasons have been highlighted in the literature as a key justification for government intervention or regulation and one of the central focus points for the need for a regulated economic framework has been on the theory of market failure (Stiglitz, 1989: 202; Le Grand, 1991: 423-442; Stiglitz, 2008: 1-25).

Market failure is a term that is commonly used to describe a situation whereby the adjustment mechanism under the free market operation of demand and supply has failed to produce desired optimality as far as allocation and redistribution of resources are concerned. Samuelson (1954: 387-389) noted that when goods are characterized by collectivity in terms of consumption, a decentralized pricing system will become an inefficient means of attaining desired optimality. In addition, MacRae and Wilde (1985: 325), viewed market failure as a condition whereby individual interests override the public or societal interest in allocation and redistribution of resources.

Thus, rather than promoting individual interest, the market failure concept provides a wider justification for a larger government size which rests on an increase in public spending or expansionary fiscal policies and wider regulatory activities with the intention of improving the general welfare condition of the public. The perception for an increased role of government in the economy has therefore been on the rise over the times and these roles have been broadened to include practices like price

control, wage legislations, taxations and regulations of business environment and other regulatory practices. For instance, in the case of Britain, the government has applied some regulations to include vertical and horizontal integration, removal of entry barriers, pricing and quality control and others (Vickers, 1991: 13-30). Although a substantial part of the arguments for government intervention is often hinged on the necessities that arise from the failure of the market forces to efficiently allocate and redistribute societal resources, however, Zerbe and McCurdy (1999: 558-578), observed that the concept of market failure is often based on generalizations that are not necessarily backed by empirical evidence.

3. OVERVIEW OF ARROW THEOREM AND DECISION-MAKING IN DEMOCRACY

Perhaps setting an ideal collective societal goal is a more convenient exercise compared to the task of defining what is the best approach to actualize those goals. Ironically, the first task raises a major question of what actually constitutes a collective goal or preference? A critical understanding of this question might be a precondition for the proper identification of what the optimal strategy or decision to actualize such collective goals should be if they have been clearly defined.

Given a set of individual preferences in a typical society and considering the fact that all society is made up of a collection of various individuals, it might be assumed that the aggregate of the individual preferences should provide what the collective preference ought to be, but on the contrary, based on Arrow's impossibility theorem, there is no general rule for aggregating such individual preferences to accurately assumed what the collective preferences should be (Hardin, 1990: 184-203; Geanakoplos, 2005: 211-215).

Arrow (1951) shows that any social welfare function that satisfies the condition of an unrestricted domain, independence of irrelevant alternatives, and unanimity is a dictatorship given that there are at least three candidates and finitely large voters (Kelly, 1988: 80; Mossel and Tamuz, 2012: 127-140). Thus, in line with the theorem, it is impossible to establish a social order based on the ranking of preferences without violating some important natural conditions or assumptions of group decision-making methods.

3.1. Major Assumptions

From the public choice perspective, voting is a major concept in the decision-making process as far as democracy is concerned. The Arrow theorem argues that there exists no collective welfare function from an aggregate of individual preferences that can wholly justify some important conditions under group decision-making framework. The representation of the Arrow theorem vis-à-vis the main assumptions is provided in Figure-1.

Figure-1: Diagrammatical Representation of Arrow Assumptions

The main assumptions include the assumption of unrestricted domain and social ordering, the assumption of independence, the assumptions of unanimity, and the assumption of non-dictatorship. Thus, we shall be exploring these major assumptions.

Unrestricted Domain and Social Ordering: This assumption holds that there is freedom of choice for everyone such that any individual can order his/her preferences as s/he pleases and most importantly, the voting process should account for every individual's preferences.

Independence of Irrelevant Alternatives: By the assumption of independence, it is expected that the knowledge of each individual's preferences can be aggregated into a collective preference independently. In other words, the order of preferences about candidates participating in a voting process is not expected to change even in the circumstance of withdrawal of an irrelevant candidate or in the alteration of the preference of others. For instance, if there are 3 candidates X, Y and Z as available alternatives to be voted for and given that the alternative X is ranked better than Y, the withdrawal of alternative Z is not expected to change the higher preference given to X above Y.

Unanimity: Given two alternatives say X and Y, the unanimity assumption holds that when all individuals in the voting process prefer alternative X to Y, then the society can be said to prefer that alternative X to the Y. In other words, high priority must be given to the unanimous preference of all individuals. As such, the assumption emphasizes the need for a constitution that follows the unanimity principle in the decision-making process in such a way that the constitution ranks X above Y given that every individual ranks X above Y.

Non-dictatorship: This assumption essentially discards the possibility of the strength of an individual's preference in influencing the entire society's choice. Thus, this implies that there should be consideration for the combine preferences of multiple voters such that the strict preference of a dictator who prefers an alternative say X to Y does not guarantee that the society will also strictly prefer alternative X to Y.

3.2. Simple Illustration

Given the three individuals X, Y, and Z, who are to rank their preferences (P) among three alternatives A, B, and C, in a given order such that $1 \leq P \leq 3$, the Arrow theorem can be simply illustrated by using the Condorcet's approach as a special case of the impossibility theorem.

Table-1: First Scenario

	PREFERENCES (P)		
Voters	A	B	C
X	1	2	3
Y	3	1	2
Z	2	3	1

If a decision were to be made on majority rule, then a candidate would need at least a two-third majority of the vote. From the first scenario in Table 1, two voters prefer the alternative A to B and these voters are the voter X and the voter Z. Thus, the two in this category represent the two-third majority.

In another scenario, we might also be interested in checking out the number of voters who prefer the alternative B to C. Interestingly, the outcome of this scenario can also produce a two-third majority as represented in Table 2.

Table-2: Second Scenario

	PREFERENCES (P)		
Voters	A	B	C
X	1	2	3
Y	3	1	2
Z	2	3	1

From Table 2, two voters namely voter X and voter Y prefer the alternative B to C, and this also represents a two-third majority. Thus, we can say that the majority prefers A to C and in like manner, the majority also prefers A to B and B to C. However, going by the Arrow theorem, it is possible that the majority might have also ranked C above A as shown in Table 3.

Table-3: Third Scenario

	PREFERENCES (P)		
Voters	A	B	C
X	1	2	3
Y	3	1	2
Z	2	3	1

From Table 3, two voters namely voter Y and voter Z prefer the alternative C to A and they also represent the two-third majority of the voters. When considering the whole scenario, it all ends up that the majority prefers alternative A to C and also turns out to prefer the alternative C to A which of course is an impossible situation.

3.3. Possible Implications of Arrow Theorem in Contemporary Times

Kenneth Arrow has made a huge contribution to the subject matter of public choice economics through his renowned theorem and there are series of empirical studies to substantiate the theorem's axioms (Geanakoplos, 2005: 211-215; Yu, 2012: 523-525; Maniquet and Mongin, 2015: 519-532). The complexity illustrated by the Arrow theorem often plays out in democratic systems in our contemporary

times. It is expected that most decision-makers would likely reject a dictatorship in a democracy, however, going by Arrow theorem this would imply that they might have to give up on unanimity or independence of irrelevant preference to achieve non-dictatorship. In addition, there may also be more implications for democracy with multiple alternatives (more than two choices) since third parties can eliminate the possibility of having fair voting outcomes. As such, the third party would be saddle with the responsibility of demonstrating the need for a voting system that should accommodate more than a two-party system.

The theorem identifies discrepancies between personal interests and social interests, and the mechanism of action of the public economy, which is determined by individual preferences in decision-making processes thereby reflecting contradictions that may arise within the framework of the interconnectivity among political parties, the voters and the elections process itself. The theorem is important for the realization of today's democratic function without creating government failures and thereby helping to contribute to the reform of what the relations between the state and the economy should be for the future.

It is worthy to note that the theorem is often utilized in the decision-making framework where there is room for the ranking of preferences and this approach may not be applicable in some other voting framework such as range voting in the case of cardinal voting system. Nguyen, Kosheleva and Kreinovich, (2009: 27-47) noted that it is possible to have a reasonable general decision rule by applying some modern decision-making approaches such as game theory where information can be gathered on the utility values of each alternative since Arrow's theorem only cater for the situation where individual preferences among available alternatives represents only their binary preferences.

Furthermore, Hinich and Munger (1997: 1-33), observed that satisfying the Arrow paradox would require a situation of an active dictatorship. The possibility of having dictatorship in a democratic setting would most likely depend on the structure and the scope of government in place under the democracy that is being practiced in a society. Thus, there is a line of difference between the importance of the Arrow theorem in democracy under the framework of democratic socialism and capitalistic democracy. Makovi (2016), observed that the aims of democratic capitalist institutions are usually not to gravitate the society towards attaining a collective interest and as such, their effectiveness is less susceptible to the Arrow paradox compared to those of the democratic socialist institutions. In the case of the latter, society tends to gravitate towards attaining a single societal preference thereby reinforcing the importance of the Arrow paradox (Makovi, 2016: 12-13).

The Arrow's impossibility theorem has been instrumental in creating an important foundation for various contributions in the development of the subject matter of public choice economics. However, the importance of the propositions of the theorem vis-à-vis its fundamental assumptions and its implications for decision making in a common system like democracy in contemporary times; still

remains as an issue that is open to discussion and more investigations especially on the empirical aspect, but it should not be limited to the quantitative research only.

CONCLUSIONS

Public choice economics is the field of economics that deals with the application of economic knowledge in analyzing various decisions taken by public institutions or government in a political establishment or it is an aspect of economics that studies political decisions and developments by adopting the methodologies of economic science. Thus, public choice economics creates more insights on main issues like strategizing and making decisions in voting processes in line with individual or collective preferences. Although the challenges that are connected to the fears of market failure have remained as part of the important bedrocks for the main arguments for crucial government interventions, however any assertion that presupposes the supremacy of government intervention in all cases might not be outrightly correct since there can also be worrisome challenges arising from government failure too (Tullock, Brady, and Seldon, 2002: 12; Stiglitz, 2008: 2). Hence, public choice analysis aims to explain the aggregate results of various individual choices given specific political circumstances through the prism of various economic methodologies.

Any decision taken by the government or policymakers among alternative policies has a unique way of creating a multiplier effect on the lives of the citizens in terms of their general welfare and standard of livings and as such, those policy choices are often being weighed and reviewed by various interested parties including the general public or the common citizens. Following the rising importance of choices made by policymakers, Bellinger (2016: 6-7), identified three general criteria for reviewing and comparing various public policies based on their intended target goals and they include efficiency, equity, and political practicality. Based on these criteria, interested parties are expected to review available public policies in order to guide them in their decision-making processes. However, there is no consensus on a single conventional way of understanding individual decisions within the framework of public economics. The review of existing literature has shown that even when there is a collective goal that seems to bind up the general public in a society, decisions that put individual interests ahead of the societal interest might eventually jeopardize the actualization of such collective goals. Furthermore, in certain conditions, some individuals can even go ahead to devise means to exploit private gains from the privileges of public offices in a situation that is commonly referred to as rent-seeking.

In the light of the foregoing, there is a degree of important complexities surrounding decision making process within the framework of public choice economics; coupled with the challenges of variations in individual societal differences which include both socioeconomic and political factors among other issues. These factors often pose significant limitations on understanding the intricacies of the field. Public choice theorists like Kenneth Arrow and others have made huge contributions to various concepts in the framework of social choice theories by providing important foundation for subsequent

studies, nevertheless, the implications of the propositions of some of the popular theorems in the field vis-à-vis their fundamental assumptions still remain as an issues that is open to further discussions. Hence, we suggest that adequate attention should be given to the peculiarity of individual country's specific differences when both quantitative and qualitative investigations are being carried out in various societies.

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