



Cycling Testing and Vote Trading in the Iranian Economy; The Case of the Islamic Consultative Assembly and the Competition Council*

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Abstract

Public choice faces fundamental difficulties. Arrow's Impossibility Theorem highlights the inherent challenges in achieving fair and coherent aggregation of collective preferences. Beyond the issues raised by Arrow, collective preference aggregation also encounters problems such as cycles and vote trading. This paper aims to examine the presence of cycles and vote trading in collective decision-making in Iran. Using data related to the allocation of development budgets and the budgets of medical universities to the provinces, the occurrence of cycles in the budget distribution process is analyzed. Considering that the variance of the total share of the provinces from the distributed budgets is greater than the sum of the variances from the 8 budget periods distributed among the provinces, The results indicate stability and the absence of cycles in budget distribution in the parliament. Additionally, based on two cases presented in the Competition Council and using the full information maximum likelihood method, we test for vote trading in the mentioned committee. Although no evidence of vote trading was found in the Competition Council, the findings suggest that the issues under vote are not independent of each other. Furthermore, the individual characteristics of the members have a greater impact on their voting behavior compared to the size and importance of their respective organizations.

Keywords: Collation, Redistribution, Cycling, Majority Rule, Vote Trading.

JEL Classification: D39, D71, D72, D78.

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1. Introduction

Public choice theory applies economic methodologies to political decision-making, built on the assumption that citizens and policymakers act in their self-interest. Traditional economic models viewed governments as external, benevolent planners aiming solely to maximize public welfare. However, this optimistic view does not hold consistently, as political actors often pursue personal or institutional agendas. Decision-making committees, particularly in public sectors, play a critical role in shaping policies that impact social welfare. Understanding voting dynamics—such as voting cycles and vote trading—within these committees provides insights into both the challenges and opportunities for improving resource allocation. This study examines these phenomena in the Iranian context using budget allocation data and committee decision outcomes.

2. Theoretical framework

Public choice theory offers a robust framework for analyzing collective preference aggregation. Democracy relies on mechanisms like majority rule to synthesize individual preferences into collective decisions. However, majority rule introduces complications, including voting cycles and vote trading:

1. *Voting Cycles*: These occur when committee preferences are inconsistent, leading to indecisiveness and instability. For example, preferences might cycle between options without yielding a clear winner, undermining the credibility and efficiency of decision-making.

2. *Vote Trading*: In committees, members may exchange votes on different issues to advance personal or regional interests, often at the cost of equitable outcomes. While vote trading can theoretically enhance efficiency by accounting for preference intensity, it may also introduce biases and inefficiencies.

Iranian committees like the Islamic Consultative Assembly (Parliament) and the Competition Council frequently operate under majority rule to allocate public resources, such as development budgets and medical university funding. Investigating the presence of these phenomena sheds light on their broader implications for governance and public policy.

3. Methodology

This study adopts a dual approach to empirically test for voting cycles and vote trading:

1. *Voting Cycles*: Using budget data (2014–2021) for development and medical university allocations across Iran's provinces, variance analysis tests for the presence of voting cycles. If voting cycles exist, successive allocations would show unstable patterns, with significant variance in benefit distributions over time. Conversely, stability in distributions would indicate an absence of cycles.

2. *Vote Trading*: Two closely-timed Competition Council decisions from 2019

serve as case studies. A system of simultaneous equations, estimated using the Full Information Maximum Likelihood (FIML) method, is employed. Key variables include:

Personal Characteristics (per): Attributes like tenure, academic background, and professional role.

Institutional Importance (org): A normalized measure of the size and influence of the member's organization.

Predicted values of dependent variables from one equation are incorporated into the other to identify correlations indicative of vote trading. Statistical significance of these predictions would confirm the occurrence of vote trading.

4. Discussion

Findings on Voting Cycles:

Variance analysis reveals no evidence of voting cycles in budget allocations. Across eight years, development budgets show a stable distribution, with provinces consistently ranking as either high or low recipients. The stability is further corroborated by a high correlation coefficient (0.9) between yearly allocations. This consistency suggests that past allocations significantly influence current decisions, indicating either a coherent decision-making framework or entrenched allocation patterns favoring certain regions.

A similar pattern emerges in medical university budgets, where provinces like Tehran and Khorasan maintain high allocations, while smaller provinces consistently receive lower shares. This highlights the presence of stable coalitions within committees, reducing the likelihood of voting cycles. However, this stability may also mask biases, such as majority dominance or a lack of equitable redistribution mechanisms.

Findings on Vote Trading

The analysis of Competition Council decisions does not provide direct evidence of vote trading. While the predicted variables in the simultaneous equations are statistically insignificant, personal characteristics (e.g., professional background, tenure) have a strong positive influence on voting behavior. Institutional factors, such as organizational size, show weaker and often negligible effects.

Notably, a positive correlation is observed between voting outcomes on different issues, indicating interdependencies in decision-making. While this does not confirm vote trading, it suggests that decisions on one issue may influence outcomes on others, potentially undermining the independence of committee decisions. This interdependency warrants further investigation into strategic behavior and coalition dynamics within committees.

5. Conclusion and Suggestion

5.1. Conclusion

This study finds no evidence of voting cycles in the allocation of development

and medical university budgets in Iran. The absence of cycles reflects stability and predictability in resource distribution, likely influenced by past allocations. While this stability may indicate coherent decision-making, it could also signal entrenched biases, inequities, and majority dominance.

Vote trading analysis also yields no conclusive evidence within the Competition Council. However, the dominance of personal characteristics over institutional factors in shaping voting behavior underscores the importance of individual preferences, beliefs, and experiences in collective decisions. Furthermore, interdependencies between voting outcomes suggest potential strategic behavior that challenges the independence of decisions.

5.2. Suggestion

1. Incorporate public choice principles to analyze voting behavior and design mechanisms for efficient and equitable resource allocation.
2. Mandate the disclosure of committee voting records and electoral contributions to strengthen oversight, uncover strategic behavior, and deter vote trading.
3. Implement legal frameworks to address conflicts of interest, regulate vote trading, and ensure equitable resource distribution.
4. Strengthen political parties and foster consensus on core societal values to align individual and collective preferences more closely.
5. Extend analyses to larger committees, such as Parliament, incorporating additional variables like party affiliations, regional interests, and leadership influence. These insights could provide a deeper understanding of committee dynamics and inform strategies to mitigate inefficiencies and biases.

6. Ethical Considerations

6.1. Author's Contribution

The authors equally contributed to the preparation of this work.

6.2. Conflict of Interest

The authors declare no conflict of interest.

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