http://dx.doi.org/10.18778/7969-119-7.02

Rafał Bill

Uniwersytet Ekonomiczny w Krakowie

Game of election promises and a problem of the best choice for elections.

In the article I research the optimal strategy for political party which starts in election. It is hypothetic situation – it is not focused on real examples or ideology-side of the subject. An analyzed model is simplified to zero-sum approach which may be similar to two-party system which exists in inter alia United Kingdom and United States of America. Therefore I decided to use zero-sum model of game theory with two players: the ruling and the opposition party which choose one of two strategies – active or passive. The active strategy stands for making election promises – the passive is the opposite. a main concept of the research assumes that a party, to have a chance of winning the political power, has to make the election promises. Otherwise, it is discarded as a potential player. I assumed for needs of this research that maintaining the power of the ruling party is less difficult than overtaking it. For purpose of the analyze patterns of RTDP and predator-prey (or another name: predator-behavior) game were used.

A two-party system should be considered as a zero-sum model because there is only one ruling and one opposition party. Analyzing history and the present state of American or British parliamentary system confirms that parties have been constantly changing power but never made a political coalition. Minor parties in this analyze were omitted as they do not play a major role.

An election may be compared to a model of RTDP (Reward-Temptation-Danger-Punishment) which was presented in table (Tab. 1). It takes an approach of Player a which can make two decisions: {A,B}. Regarding the choices of Player B, an outcome for Player a may be such as stated in table. This model is a basis to explain an election game.

Tab. 1. a model of RTDP for Player A.

		Player B	
		A	P
Player A	A	Reward	Temptation
	P	Danger	Punishment

Source: own elaboration.

Tab. 2. A model of RTDP for ruling party with outcomes based on election strategies.

		Opposition party	
		Makes election promises	Does not make election promises
Ruling party	Makes election promises	Maintains power	Maintains power
	Does not make election promises	Loses power	Maintains power

Source: own elaboration.

Tables following a presentation of the general RTDP model introduce outcomes for a ruling and an opposition party based on their election strategy. In table for ruling party (Tab. 2) I assumed that maintaining power occurs in every case except the ruling party takes passive strategy and does not make election promises. Such situation has a real reflection – a political party has to make promises in order to gain popularity among potential voters. Therefore the ruling party, that does not do them against opposition party which makes them, loses power for a second player. In other cases an assumption presented in the beginning that maintaining power is more likely than overtaking it by the second player is used.

Comparing the outcomes of the ruling party with a RTDP model it states that only “danger” situation exists for this player. In other cases there is no difference – the outcome is the same.

Tab. 3. A model of RTDP for opposition party with outcomes based on election strategies.

		Ruling party	
		Makes election promises	Does not make election promises
Opposition party	Makes election promises	Stays as opposition	Overtakes power
	Does not make election promises	Stays as opposition	Stays as opposition

Source: own elaboration.

A table above (Tab. 3) present analogical situation described before but for the opposition party. Places of players were switched due to use of RTDP model. In this case only "temptation" box functions for opposition party when a ruling party takes passive strategy and does not make election promises.

Tab. 4. Preferences of political parties.

		Opposition party	
		Makes election promises	Does not make election promises
Ruling party	Makes election promises	1,1	1,0
	Does not make election promises	0,1	0,0

Source: own elaboration.

Both tables (Tab. 2, Tab. 3) present an optimal choice for parties which is making promises. However, opposition party due to the adopted assumption is not going to win if both players take the same strategy. Their preferences were shown in next table (Tab. 4).

Preferences shown in table above (Tab.4) may be misinforming as they present sets {1.1} and {0,0} which can suggest that in two-party systems there is a possibility that both players are satisfied. Said before a coalition is not possible, therefore this hierarchy of preference should be expanded. For this a model of prey and predator may be used.

The prey and predator model is proper for analyzing a game between two political parties. It differentiates preferences and payoffs of both players according to their roles. I prepared simulations of two games. In either of them the opposition party is a predator as it tries to attack the ruling party and overtakes the power. The main difference between simulations is a perspective of players` preferences. Outside the table is a sum of preferences for each party. Seeing them it is clear which strategy should be taken by players.

Tab. 5. Simulation a for predator and prey model.

		Opposition party (predator)		
		Makes election promises	Does not make election promises	
Ruling party (prey)	Makes election promises	4,2	4,0	8
	Does not make election promises	-1, 4	1,0	0
		6	0	

Source: own elaboration.

The simulation a presents a situation which neither of parties prefers. It concludes that payoffs for the ruling party is (4) when it makes election promises and thus wins elections maintaining power not regarding the second player's decision. The payoff for passive strategy were counted as (-1) and (0) due to fact that in first case the ruling party loses power but for second, what is interesting, it maintains it but without effort. The payoff (1) is then a minimal but still positive. The simulation B presents alternative payoffs where strategy combines the effort which has to be used to win election. Therefore, the predator needs to make promises not

regarding the prey does it or not. Adopting an assumption that the opposite party in equal situation ([A,A]) is not able to win elections the ruling party in most cases have higher payoffs than the second player (it maintains power). However, they are small because the ruling party has to compete with opposition and make "bigger" vows which has to be fulfilled later during governing. In this situation if the ruling party promises too much it might not be able to introduce them what will have an important impact on voters' opinions. Therefore, the second strategy may be more appealing in which the ruling party does not make promise. If the second player does not make them too, then the prey maintains power without any effort and is safe. It is only a hypothetical situation as political practice shows that parties does not risk and always present promises to voters, otherwise they make lose to the second player. This situation is present by payoffs (-1,1).

Tab. 6. Simulation B for predator and prey model.

		Opposition party (predator)		
		Makes election promises	Does not make election promises	
Ruling party (prey)	Makes election promises	1,0	1,0	2
	Does not make election promises	-1,1	4,0	3
		1	0	

Source: own elaboration.

Either simulation a and B presents a situation in which the predator has lower sum of payoffs than the prey and may win only in case when the ruling party does not choose an optimal strategy. It states that both players should choose the same strategy – an aggressive one which means making election promises. Otherwise, they are not able to maintain or overtake power.

Conclusion

A process of a political election requires from its participators that they do vows directed to potential voters. More advanced theoretical models of games may account the effects of such steps. I mentioned them before – most of promises are not fulfilled later and it depends on voters if they plan to settle score on this issue with a party which ruled last term of office. Despite these, it is recommended for political parties to prepare promises for elections leaving a problem of their level for another paperwork.