LEGISLATIVE ACTIVITY RATING ALGORITHM (LARA)

APPLICATION TO THE CZECH AND THE SLOVAK PARLIAMENT

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1 INTRODUCTION

The legislative process of a modern parliamentary democracy is usually a complex system that is difficult to comprehend and to regularly follow for most citizens. At the same time, at least some level of interest and understanding of an issue is a necessary condition for a success of many advocacy strategies. Therefore, various stakeholders advocating their political agenda (e.g. journalists, anti-corruption experts, political elites) are often limited by a lack of general public's capability to understand how proposed policy changes translate into actual decisions made by elected representatives in parliaments. This also reduces political accountability of parliamentary groups and individual MPs.

There are methods that partially remedy this problem. Most of them aim at reducing complex information about the legislative process into simple and easier to understand, yet still meaningful and socially relevant information. The goal of this paper is to present my method. It will henceforth be called LARA (a legislative activity rating algorithm) in this paper. It is *a* legislative activity rating algorithm and not *the* legislative activity rating algorithm to stress that it is only one of many approaches to this problem. LARA allows a researcher to construct a rating of MPs' activity in the legislative process that is tied to a specific issue, e.g. corruption, environmental protection, gender equality or economic redistribution by the public sector.

LARA is issue-specific, meaning it only strives to capture MPs' legislative behaviour related to one clearly defined issue or policy area. It is normative, meaning that a researcher using the method starts with an explicit formulation of desirable and undesirable outcomes of MPs' parliamentary voting and the legislative process in general. LARA's output is a rating of MPs from the one whose legislative behaviour in a given period of time was the most in line with the desirable outcomes defined by a researcher to the one whose legislative behaviour was the least in line with the desirable outcomes.

LARA is applicable to any decision making process in a representative body, be it a national parliament, local representative assembly or even a super-state political entity, such as the European Parliament or the UN General Assembly, provided that the institution in question makes formal political decisions on the issue in question. LARA is more valuable as a tool for presenting complex political information in a simple but meaningful way when the institution makes many decisions on the issue.

The legislative process is to a large extent unique in every representative body. Specific localizations of LARA therefore have to be developed. This paper will present two localizations applicable to national parliaments in the Czech Republic and Slovakia. LARA can be either weighted or non-weighted. Also, the ranking of MPs can either penalize absences of MPs or not. Combination of these two variables produces a total of four versions that can be applied to one country.

Table 1: Versions of LARA

	Penalizing absences	Not penalizing absences
Weighted	LARA-WA	LARA-WnA
Non-weighted	LARA-nWA	LARA-nWnA

This paper will first operationalize the concept of legislative behaviour. In the second section, the paper will introduce non-weighted versions of LARA using the example of Czech Republic. Weighted versions of LARA will be introduced afterwards. Applications of LARA to the Slovak parliament will be introduced in the fourth section of this paper. The final section gives recommendations how to present LARA-based ratings transparently.

2   LEGISLATIVE BEHAVIOUR

Legislative behaviour is a set of formal actions that MPs take in the legislative process. These actions generally fall into two categories: actions aiming to move legislative proposals in the legislative process, and actions aiming to amend legislative proposals. The legislative process is a process where a legislative proposal (a bill) moves from one stage to another until it is approved, withdrawn, rejected or otherwise terminated. Transition of a bill from one stage to another can be automatic or it can be triggered by an action taken by an individual MP, a group of MPs, or a formal collective body such as a committee or a parliamentary chamber (mostly via voting). Sometimes, transitions occur due to MPs' inaction, for example when a parliamentary chamber fails to address a bill in a predefined period of time. For the sake of simplicity, we will consider introduction of a bill as a transition as well: a bill moves from a stage of not being present in the legislative process to a first stage in the process. Similarly, a termination of a bill is a transition as well since a bill moves from its last stage in the legislative

process to a stage of no longer being present in the process. Apart from moving bills in the legislative process, MPs can be active in amending legislative proposals in the legislative process to produce new versions of these proposals.

Given this informal description of the legislative process, any action taken by an MP on any transition of a bill from one stage to another can be positive, negative or neutral. Polarity of the action is a product of two variables: whether the bill in question is itself positive, negative or neutral given the issue at hand, and whether the action contributes towards the bill being approved or not. It is obvious that if a bill is positive, any action that aims at moving it closer to final approval in the legislative process is also positive and vice versa. Table 2 contains all possible combinations.

Table 2: Polarity of actions in the legislative process

	Action contributes to the bill being approved	Action does not contribute to the bill being approved
Positive bill	Positive action	Negative action
Neutral bill	Neutral action	Neutral action
Negative bill	Negative action	Positive action

There are two categories of MPs' actions in the legislative process: actions taken by all MPs and actions taken by only some MPs. The first category of actions is typically represented by plenary voting. All MPs in a parliamentary chamber vote on approving, rejecting or moving a bill in the legislative process. Even absence is treated as a voting option so an MP cannot possibly escape from being included into the rating in these situations (except when he resigns). Let us call actions in this category "actions I". The second category is typically represented by introducing bills or amendments into the legislative process and by voting in committees. In this category, only some MPs take an action—only some MPs introduce a bill or are members of a given committee. Other MPs do not take part in this action. Their legislative behaviour is not neutral, it is non-existent. Let us call actions in this category "actions II".

Therefore, LARA can be broken down into two components. The first component rates MPs on actions in the first category and the second component on actions in the second category. Both components can be added up and standardized or can be reported separately. This decision is ultimately arbitrary and thus lies in the hands of the researcher. The following text will present the first option.

3 NON-WEIGHTED LARA

This section of the paper introduces the simplest version of LARA in case of the Czech Parliament. It is a bicameral national representative body consisting of the Chamber of Deputies and the Senate. The legislative initiative is in the hands of the cabinet, a deputy, a group of deputies, the Senate and the Regional Assembly of a region, a second-level local government. In case of the Senate, a bill is introduced by a group of senators on a plenary session and voted on by the chamber. It is then introduced in the legislative process if it passes this initial step.

The legislative process is relatively straightforward. A bill moves through the Chamber via three readings first and then into the Senate. The later chamber can reject or amend it. In these cases, it returns into the Chamber. If the Senate rejects it, it needs to be re-approved by a majority of all deputies. If it is amended by the Senate, deputies first vote on the amended version. A plurality of deputies is sufficient to approve the bill. If the amended version is not approved, the original version is voted on and it requires a majority of all deputies to be approved, otherwise it is terminated. It is obvious that the Senate can effectively terminate a bill by amending it in such a way that the Chamber will not re-approve it. When the Chamber is dissolved, any bill rejected or even amended by the Senate is automatically terminated. When a bill exits the Parliament, it goes to the president who can either sign it, refuse to sign it or fail to address it in a given period of time. In the two later cases, the bill returns again to the Chamber where it needs to be re-approved by a majority of all deputies. The president can, therefore, also indirectly terminate a bill.

Table 3 shows all possible actions that can take place in the Czech legislative process listed more or less chronologically and split into actions that all members of a chamber take and actions that only some members of a chamber take. In brackets, it includes information on who exactly can take this action. "Polarity" includes information about polarity of a given action if the bill in question is positive. Obviously, if it is negative polarity is reversed. If it is neutral, then all actions are automatically neutral. "Fatality" includes information whether failing to complete a given action results in termination of a bill. "Majority" informs whether a majority of all members of a given chamber instead of plurality is needed to complete the action.

Table 3: Actions in the Czech legislative process

Phase of the legislative process	Actions I	Actions II	Polarity	Fatality	Majority

Pre-introduction		Introducing a bill in the Chamber (a deputy, a group of deputies)	1		
	Voting in favour of introducing a bill in the Senate (the Senate)	Introducing a bill in the Senate (a group of senators)	1	1	0
The Chamber	Voting in favour of including a bill into the agenda (the Chamber)	Proposing a vote about including a bill into the agenda (a deputy)	1	0	0
	Voting in favour of excluding a bill from the agenda (the Chamber)	Proposing a vote about excluding a bill into the agenda (a deputy)	-1	0	0
	Voting in favour of rejecting a bill in the 1st reading (the Chamber)	Proposing a vote about rejecting a bill in the 1st reading (a deputy)	-1	1	0
	Voting in favour of returning a bill in the 1st reading (the Chamber)	Proposing a vote about returning a bill in the 1st reading (a deputy)	-1	1	0
		Proposing to include a bill into the agenda of a committee (a member of a committee)	1		
		Proposing to exclude a bill from the agenda of a committee (a member of a committee)	-1		
		Proposing an amendment in a committee (a member of a committee)	1 / -1 / 0		
		Voting in favour an amendment in a committee (members of a committee)	1 / -1 / 0	0	0
	Voting in favour of an amendment (the Chamber)	Proposing an amendment (a deputy)	1 / -1 / 0	0	0
	Voting in favour of rejecting a bill in the 3rd reading (the Chamber)	Proposing a vote about rejecting a bill in the 3rd reading (a deputy)	-1	1	0
	Voting in favour of approving a bill in the 3rd reading (the Chamber)		1	1	1 / 0
The Senate	Voting in favour of not discussing a bill (the Senate)		1	0	0
	Voting in favour of approving a bill (the		1	1 / 0	0

	Senate)				
		Proposing an amendment in a committee (a member of a committee)	1 / -1 / 0		
		Voting in favour of an amendment in a committee (members of a committee)	1 / -1 / 0	0	0
	Voting in favour of an amendment (the Senate)	Proposing an amendment (a senator)	1 / -1 / 0	0	0
	Voting in favour of approving an amended version of a bill (the Senate)		1 / -1	1 / 0	0
	Voting in favour of approving the original version of a bill (the Senate)		1	1 / 0	0
The Chamber	Voting in favour of an amended version of a bill (the Chamber)		1 / -1	0	0
	Voting in favour of approving the original version of a bill (the Chamber)		1	1	1

In some actions, polarity is undefined. In case of amendments, it depends on whether an amendment itself is positive, negative or neutral. In case of voting in the Senate, it depends on whether a researcher constructing the rating views a bill returning to the Chamber as something positive or not. If the bill is genuinely improved in the Senate and there is a low risk that it will not be re-approved by the Chamber, this action is positive. This is the most challenging decision of the researcher to make since it is usually difficult to estimate motivations behind senators amending bills. In case of constitutional changes, majority is always required in some votes and voting in the Senate may be fatal since changes of the constitution must be approved by both chambers.

In non-weighted LARA, score of an MP is calculated using the following formula:

$$S = \frac{\sum b * (m * v * r) + \sum b * a}{s_{max} - s_{min}}$$

The first part of the numerator calculates the score for actions I and the second part for actions II. *S* is score, *b* is polarity of a bill, *a* is polarity of an action, *m* is polarity of an amendment (if the vote is not about an amendment, it is excluded from the formula), *v* is polarity of a vote taken from Table 3 and *r* is polarity of a voting result taken from Table 4. It is determined by a version of LARA (penalizing or not penalizing absences of MPs during voting) and by plurality or majority necessary to complete the given action. It is obvious that absences during votes requiring majority are penalized in both versions of LARA because in these situations, absence is always identical to being present and actively voting against in respect to the result of the vote. "Not voting" is a specific option allowed in the Parliament. It happens when an MP registers to vote but fails to push any button on the voting machine. Since quorum of a vote is calculated from all registered MPs during plurality votes, not voting is always identical to actively voting against. S_{max} is the highest possible score a given MP can obtain and S_{min} is the lowest possible score. These two products differ among MPs. Members of committees typically have wider ranges of the possible score since they can gain or lose points for actions in committees. The final score (*S*) varies between 0 and 1 (or 0 % and 100 %).

Table 4: Polarity of voting results

Vote	Penalizing absences		Not penalizing absences	
	Plurality	**Majority**	**Plurality**	**Majority**
In favour	1	1	1	1
Against	-1	-1	-1	-1
Abstain	-1	-1	-1	-1
Not voting	-1	-1	0	-1
Absent	-1	-1	0	-1

There is one additional qualifier to the final score. If an action is fatal and an MP is awarded negative one point for this action he receives the lowest possible rating (0 or 0%) despite his other activities. This reflects the fact that an MP can be very active in supporting a bill but this goes entirely in vain if he fails to actively vote in favour of it in a decisive vote. If the score is "restarted" for some MPs this way but the bill in question is not terminated in the decisive vote, these MPs start accumulating points again until the next decisive vote.

4 WEIGHTED LARA

In the non-weighted version of LARA, all bills and actions are treated equally. In reality, however, this may not be the case. Some bills may be crucial to a given issue while others may be of only some minor importance. The same may apply to amendments to bills. In the non-weighted version, this is only reflected by determining zero and non-zero polarity of bills and actions. This is, however, not sufficient. Zero polarity option reflects relevance of a bill or an action to a given issue and not its importance within the issue. To reflect importance, weights are introduced into the formula:

$$S = \frac{w_c \sum b * w_b * (m * w_m * v * w_v * r) + \sum b * w_b * a * w_a}{s_{max} - s_{min}}$$

Weight terms are positive numbers. Their values are determined by a researcher according to his expert knowledge of the issue at hand and his normative framework. Values of $w \in \langle 0,1 \rangle$ are advisable but in theory, there is no value range. As we can see, there are five different weight terms. Term w_b assigns importance to a bill. Term w_a assigns importance to an action II. Term w_m assigns importance to an amendment. Term w_v assigns importance to a specific vote. In case of proposing and voting on amendments, corresponding terms w_m and w_v should be equally proportional to other amendments and votes. Term w_c assigns importance to actions I in relation to actions II. If it is lower than one, actions I will be less important than actions II in the overall score. Notice that there is no "w_r" term. This reflects the fact that all voting options are equal in respect to the result of a vote. Obviously, a researcher can choose to apply only some weights. If he, however, decides to apply a weight, he should do so consistently—if he chooses to weight bills, for example, a weight value should be assigned to all bills considered.

5 SLOVAK LOCALIZATION OF LARA

Table 5 presents actions in the Slovak legislative process. When constructing the rating, formulas and tables 2 and 4 above are used. The major difference between the two parliaments is the fact that the National Council of the Slovak Republic is unicameral so the legislative process is greatly simplified. Upon leaving the Council, a bill can be amended or rejected only by the president. In that case, 2nd and 3rd reading is repeated and the Chamber votes on the president's amendments and then on the whole bill.

Table 5: Actions in the Slovak legislative process

Phase of the legislative process	Actions I	Actions II	Polarity	Fatality	Majority
Pre-introduction		Introducing a bill in the Chamber (a deputy, a group of deputies)	1		
The Council	Voting in favour of including a bill into the agenda (the Chamber)	Proposing a vote about including a bill into the agenda (a deputy)	1	0	0
	Voting in favour of excluding a bill from the agenda (the Chamber)	Proposing a vote about excluding a bill into the agenda (a deputy)	-1	0	0
	Voting in favour of rejecting a bill in the 1st reading (the Chamber)	Proposing a vote about rejecting a bill in the 1st reading (a deputy)	-1	1	0
	Voting in favour of returning a bill in the 1st reading (the Chamber)	Proposing a vote about returning a bill in the 1st reading (a deputy)	-1	1	0
		Proposing to include a bill into the agenda of a committee (a deputy)	1		
		Proposing to exclude a bill from the agenda of a committee (a deputy)	-1		
		Proposing an amendment in a committee (a deputy)	1 / -1 / 0		
		Voting in favour an amendment in a committee (member of a committee)	1 / -1 / 0	0	0

	Voting in favour of an amendment (the Chamber)	Proposing an amendment (a deputy)	1 / -1 / 0	0	0
	Voting in favour of rejecting a bill in the 3rd reading (the Chamber)	Proposing a vote about rejecting a bill in the 3rd reading (a deputy)	-1	1	0
	Voting in favour of approving a bill in the 3rd reading (the Chamber)		1	1	1 / 0

6 REPORTING LARA–BASED RATINGS

When reporting ratings based on LARA it is insufficient to only report scores of individual MPs. For the sake of transparency, a list of bills, amendments and votes must be reported as well with the corresponding value of polarity and weight. It is recommended to break down the formula of the rating for each MP so that the calculation can be repeated.