The Third Russian Duma:
Cleavages and Coalitions

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SUMMARY

Using the roll-call data, this study examines the voting behavior of the Russian Duma in passing economic legislation between 1999 and 2003. Specifically, we addressed two questions: i) what main factors systematically divided the Parliament in voting over the economy; and ii) what coalitions did the parliamentarians build to get around those cleavages? Our results contradict the conventional wisdom that says the main source of economic voting cleavages within the State Duma comes from a traditional ideological divide, which separates the deputies along a left-right continuum. Instead, we find that the most common type of disagreement had to do with the attitude of the deputies toward Russia's executive power and its economic reforms, while the second most typical division had to do with the deputies' positions toward the role of the state in the economy. In general, the pro-presidential forces were most successful in building coalitions and passing the government's proposals into laws. This is because their position overlapped, on the one hand, with most liberals along the first cleavage dimension (support of the executive's economic legislation), and with most conservatives along the second cleavage dimension (strengthening the state's role in the economy).

INTRODUCTION

The analysis of the legislative behavior has a long standing history in countries with developed parliamentary systems. First studies of parliamentary systems emerged in the beginning of the 20th century (Rice, 1928). Rapid development of econometric methods in the second half of the last century gave the researchers formal tools to account for subtle aspects of legislative behavior including the structure of the process (i.e. specific committee analysis) or impacts of the lobbying efforts (Poole and Daniels, 1985). Furthermore, the development of computers and statistical software over the past few decades made it possible to develop and implement such models of legislative behavior that was unthinkable in the previous times.

Among many approaches to the legislative behavior, the analysis of the roll-call voting results has recently proved to be more and more popular. The extensive voting data has been made publicly available in the digital form in the case of developed democracies. In Russia, however, this data was not available due to the lack of true parliamentary culture during the Soviet Union. The gathering of the voting data in Russia began only after

the adoption of the new Constitution in 1993. Since then three parliaments (the State Dumas) have completed their term in office in Russia.

The significant number of the legislative studies has traditionally been based on the data from the US Congress voting. But their conclusions are hardly applicable to the Russian parliamentary system. The Russian system differs from the US system in at least two important ways. First, only half of deputies are elected by the majoritarian method, while the other half by the proportional method. Therefore, many deputies elected by the majoritarian method tend to join in the called "deputy groups", which are less ideological and less disciplined. On the other hand, the deputies elected with the proportional method form the party factions that usually show more voting discipline along the party line. Second, more than two parties usually manage to secure the number of seats required to form a faction in the Duma. In addition to the factions the deputy groups tend to form and pursue their interests as well. Besides, the Russian party system is unstable and each new electoral cycle brings some new parties to the parliament. These factors lead to high variation in the distribution of power among the political forces from one term to another. Sometimes they result in unpredictable coalition formation.

The goal of this research is to analyze the voting behavior of the party factions and the deputy groups on the economic issues in the 1999-2003 Russian Duma. We specifically focused on addressing the following two questions. First, what major cleavages systematically divided the deputies when they voted over the economy? Second, what coalitions did the deputies build to get around those cleavages?

To answer those questions, we organized the paper in the following manner. The first section describes the composition of the factions and deputy groups in the 1999-2003 State Duma. It also gives a short description of the economy-related roll call voting data that we used to analyze those factions and groups.

The second section addresses the nature of the major cleavages among the deputies over the economic issues. To determine those cleavages, we draw on the voting models based on the comparison of each individual deputy position to the ideal point in the finite dimensional policy space. We particularly use the Heckman-Snyder linear factor model (see Heckman and Snyder (1997)), which is a computationally simple alternative to the D-NOMINATE and W-NOMINATE models by Poole and Rosenthal[2]. In addition, we wanted to know how similar were those cleavages within the more specific voting themes,

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[2]See Poole and Rosenthal (1997) for details.

such as taxation, property, budget, and pensions?

Our results contradict the conventional wisdom that says the main source of economic voting cleavages within the State Duma comes from a traditional ideological divide, which separates the deputies along a left-right continuum. Instead, we find that the most common type of disagreement had to do with the attitude of the deputies toward Russia's executive power and its economic reforms: supporters of the president's economic legislative agenda faced a systematic opposition to those initiatives. Both the followers and the opposition of Putin's economic reforms drew their support from a mixed composition of the left and the right forces. The second typical cleavage among the deputies concerned their position toward the level of the state's involvement in the economy. An alliance of the "centrists" (Unity and OVR) and the "conservatives" (Communists), which stood together for a stronger regulatory role of the government in the economic matters, faced an opposition from a smaller faction of the liberal parties, which normally voted for a limited ability of the state to affect the economy.

The third section describes the coalitions built by the deputies to bridge the major cleavages. We specifically look at the coalition-building process between the three main opposing forces in the third Duma: the pro-presidential deputies (Unity and OVR factions), the conservative deputies (CPRF faction and Agrarian deputy group), and the liberal deputies (SPS and Yabloko factions). While each of those forces occupied a unique position in the two-dimensional cleavage space, none of them by itself was large enough to pass separate legislation. As a result, all of them had to compromise by forging different coalitions with each other to promote their personal legislative agendas.

Using the spatial analysis of the roll-call votes, we demonstrate that, in general, the pro-presidential forces were most successful in building coalitions and passing the government's proposals into laws. This is because their position overlapped, on the one hand, with most liberals along the first cleavage dimension (support of the executive's economic legislation), giving them a chance to jointly defeat the conservatives' opposition on that front. On the other hand, the position of the pro-presidential forces coincided with the conservatives along the second dimension (strengthening the state's role), which gave them a winning coalition against the liberals in the respective area.

1. The Third Russian Duma and the Economic Roll Call Votes

The State Duma of the Russian Federation consists of 450 deputies, elected for the term of four years. Half of the deputies are elected by the majoritarian principle in single

member districts, and another half – by the proportional principle from the political parties which clear the 5% electoral threshold.

The "majoritarian" deputies can form deputy groups (with the minimal size of 35 people), while the "proportional" deputies can form party factions. Factions and deputy groups give access to various perks, including leadership positions in standing committees and commissions. The former operate on the permanent basis, while the latter emerge to address some specific issues.

Six factions were formed in the 1999-2003 State Duma. These were Unity ("Edinstvo"), Fatherland-All Russia (OVR), Yabloko, Union of Right Forces (SPS), Communist Party of the Russian Federation (CPRF) and Liberal Democratic Party of the Russian Federation (LDPR). In the summer of 2001, parties Unity and OVR made a landmark decision to merge with each other, forming in the following years a new brand "United Russia".

Deputy groups included "Peoples' Deputy" ("Narodny Deputat"), "Regions of Russia" ("Regiony Rossii"), and Agrarian Deputy Group (APG). 20 deputies chose not to join any faction of deputy group. Figure 1 shows the distribution of deputies by factions and groups.

FIGURE 1. Distribution of deputies by factions and groups.
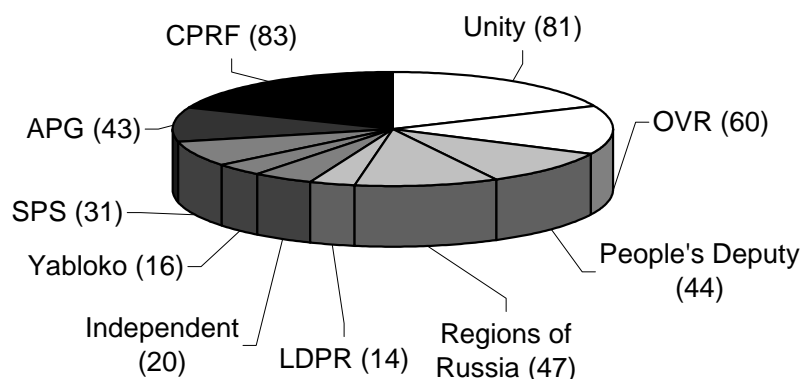
The State Duma is charged with passing federal legislation. Most of the bills are reviewed in three readings (with exception of special cases such as the Federal Budget). The amendments are usually introduced in the second reading. Federal laws require regular majority (50% of deputies plus one vote) to be passed. Federal constitutional laws require qualified majority, i.e. the two thirds of all deputies plus one vote. In our analysis we only used the federal legislation that required regular majority.

The "INDEM-Statistics 2" database of the roll call votes served as the basis of the

TABLE 1. Number of economy-related votes by session.

Session	1	2	3	4	5	6	7	8	Total
General Economy	409	382	830	769	739	605	661	50	4445
Of them:									
Property	50	67	270	83	201	56	69	8	804
Taxes	169	36	263	87	134	86	133	1	909
Budget	66	213	47	228	60	263	57	4	938
Pensions	12	25	58	96	38	30	29	10	298

analysis. It contained information on each deputy's position ("Yea", "Nay", "Abstained", "Did not vote") on all subjects, including the time and short information regarding the vote. In cases when additional data were needed, we used the minutes of plenary sessions from the website of the State Duma[3].

Our analysis focused on the economic legislation. The dataset included 4,445 economic roll call votes (out of all 15,068 votes held). Table 1 contains the detailed information about the distribution of votes. For the purpose of more subtle analysis, we selected within the general economy set four subsets of economic votes on: i) property (including real estate, land and forest codes,), ii) taxes (tax code, tariffs, licensing etc.,), iii) budget (federal budget, budgets of federal funds, budget classification, etc.) and iv) pensions (pension legislation, pension fund budgets, etc.). Table 1 shows the number of the votes in each subsection. Since the Duma adopts the federal budget each fall, a larger number of votes relating to the federal budget turns up in each even (fall) session. The fall session of 2001 was characterized by the intensive debates on the pension laws; while review of the land code increased the portion of property-related votes in the spring of 2002.

Formally, each deputy has four options to stand his/her position on each issue. These are: "Yea", "Nay", "Abstained", "Did not vote". For the purpose of passing a legislative initiative, the last three positions have the same consequence – failure to pass. Often, the Duma deputies, who wanted to kill an initiative quietly, simply did not show up for the vote. To account for this behavior, we reduced four possible vote outcomes to only two options for each deputy – "Pass" and "No Pass", in which the latter included "Abstained" and "Did not vote").

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[3]http://www.duma.gov.ru

2. The Nature of the Main Cleavages

According to the common cliché of the Russian mass media, the major cleavage in the third Duma was ideological in nature. As some observers claimed, it grew out from the conflict between the left forces, which advocated the conservative values, and the right forces, which stood for the liberal values. The left forces were represented by the communist faction and the agrarian deputy group, whereas the right forces – by the SPS and the Yabloko factions. According to this view, the alliance of the Unity and OVR factions represented a strong centrist position between the right and the left.

Using the roll-call data we decided to test this assertion. The Appendix describes in detail the procedure for selecting the votes and statistical methodology. For the remaining analysis, we divided the entire work of the third Duma into two parts. The first part covers the first three sessions (from January 2000 to July 2001), whereas the second covers another five sessions (from September 2001 to October 2003). The primary reason for that was the unification of Unity and OVR into United Russia in 2001. While those factions often voted against each other's will during the first three sessions, after unification they pursued a joint legislative agenda.

Figures 2 and 3 show the results of the factor analysis. It estimates the factors that characterized the most systematic dimensions of disagreements between the deputies. The marks show the positions of individual deputies and different symbols identify the faction (group) affiliation of those deputies. Projection of the position-marks on the horizontal x-axis gives the cleavage factor, which turned out to be the most significant. It accounted for 33.3% in variation in the first sub-period and for 44.3% in the second. The vertical y-axis gives the second most significant cleavage factor, which accounted for much less of the variation – about 5% in both periods. According to the two figures, the economic preferences of the deputies appear to be quite stable throughout the two periods of the Duma.

On the x-axis, which shows the most significant cleavage, pro-presidential forces (Unity ○ and later OVR ✚) stand in clear opposition to the conservatives (CPRF □ and APG ■). The liberals (SPS ▲ and Yabloko △) stand in-between, with SPS gravitating toward the pro-presidential position and Yabloko – toward the conservative one. The y-axis gives the second most significant cleavage between the deputies. It shows a stable opposition of the liberal forces to both the conservative and the pro-presidential forces. How can we interpret the meaning of these two most important cleavages?

FIGURE 2. Estimates of legislators' position parameters (sessions 1–3, variance explained by the components is shown in parenthesis).
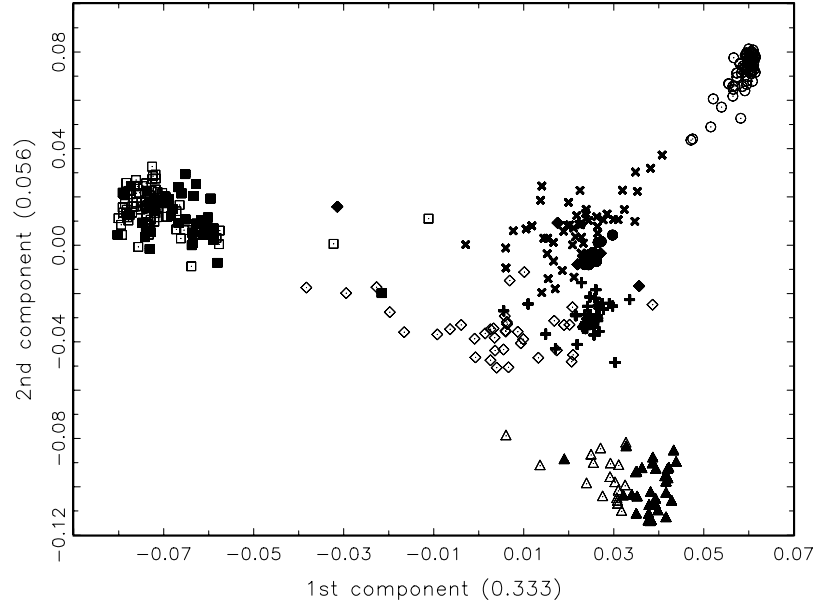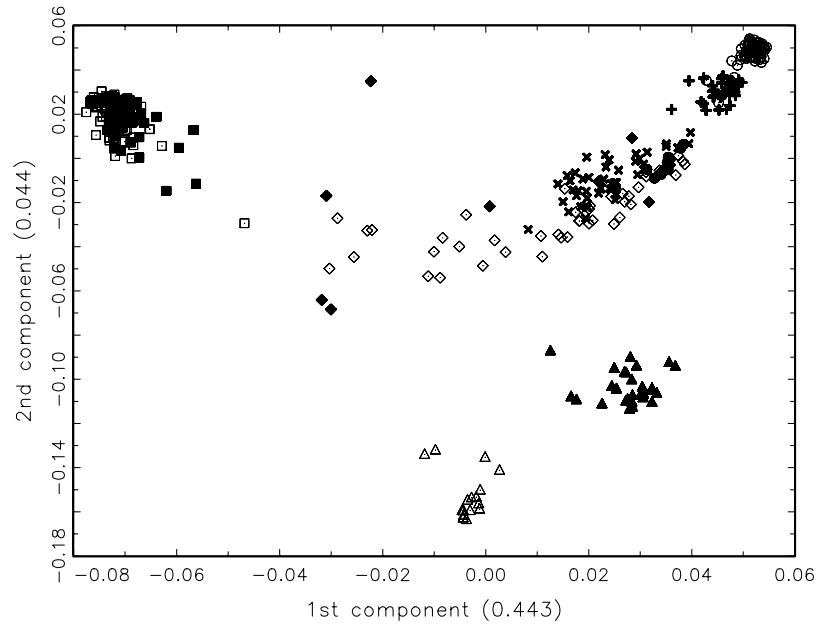

FIGURE 3. Estimates of legislators' position parameters (sessions 4–8, variance explained by the components is shown in parenthesis).

⊙	Unity	+	OVR	✕	Peoples' Deputy	●	LDPR
▲	SPS	△	Yabloko	◇	Regions of Russia		
□	CPRF	■	APG	◆	Independent		

The faction positions along the first factor prove that the ideological divide between the right and the left was not the most important cleavage between the deputies. Instead, their relation toward the initiatives of the executive branch actually defined the most important direction of disagreement between the deputies. Both figures show that, contrary to the public view, pro-presidential forces were not the "strong centrists", as they often labeled themselves in the media. They occupy the extreme position relative to the other factions and groups along both directions of cleavage. The real centrists were the groups "People's Deputy" (✖) and "Regions of Russia" (◇). During both sub-periods, they stand in the middle – between the three major forces along the two cleavage factors. But even those groups, which were formed by the single-mandate deputies, did not represent the "strong center". As we show in the next section, those groups did not exert any autonomous influence on the Duma and practically did not put forward any own legislative initiatives.

Why were the Unity and OVR not the centrist factions? To answer this question, let us examine first the horizontal, i.e. the most important, direction of cleavage. Contrary to the common view, it demonstrates that the main direction of disagreements was not the conflict between the right forces (SPS and Yabloko) and the left forces (CPRF and APG), but rather the conflict between the pro-presidential forces (Unity and OVR) on the one hand and the conservative forces (the CPRF and APG) on the other. All other deputies have occupied the positions between those two forces, gravitating toward the pro-presidential factions.

This configuration of the deputy positions challenges the ideological interpretation of the main differences in the Duma. It rather suggests that the real substance of those differences was the closeness to the legislative initiative of the executive power. While the Unity faction most vigorously backed the economic laws of the president and his government in the Duma, the communists were equally eager to oppose them. The standoff between the two forces defines therefore the main substance of this factor, which can be called "support versus opposition of the executive power".

The examination of the vertical, i.e. the second most important, factor suggests some interesting interpretation as well. In contrast to the main cleavage, the projection of the deputy position-marks on the vertical y-axis reveals a close proximity of positions between the conservatives, the centrists, and the pro-executive factions. Altogether, these deputies stand in opposition to the liberals. How to explain the situation when the adversaries along the first cleavage factor turn into the allies along the second one (the communists and the presidential factions), while those who cooperated – now stand against each other

(Unity and SPS)?

The analysis of the voted laws, which have contributed most to the variation in the deputy positions in the second cleavage factor, provides an explanation to that puzzle. In most cases, the divergent deputy positions could be explained by the different attitudes of their factions toward the role of the government in the economy. As the data shows, despite the firm opposition to the economic course of the executive power, the communists were ready to support the Kremlin by joining their factions Unity and OVR on the strategic question of increasing the regulating functions of the government in the economy. This coalition was usually supported by the "centrist" deputy groups "People's Deputy" and "Regions of Russia". All these deputies jointly stood against the liberal position of SPS and Yabloko, which in most cases called for limiting the role of bureaucracy in the economy. The examples of this confrontation of the "statists" and the liberals were the laws on imported radioactive waste, cash registers and accounting procedures for small businesses, telecom regulations, environment protection, the code of administrative violations, pensions for public workers, alcohol production, etc.

The Analysis of the Cleavages across Two Periods and Four Voting Themes. As mentioned before, we divided the entire sample of the economy-related votes into two periods and four specific topics, which nearly exhausted the total sample. These topics included votes on budgetary issues, pensions, property, and taxation. The goal was to compare the configurations of deputy positions between those sub-samples in order to identity some meaningful differences.

In the case of the two periods, we wanted to see what impact the merger of the Unity and OVR factions had on the deputy positions. In spite of significant similarity of both figures (2 and 3), the consequences of Unity-OVR unification can be clearly observed. First, the positions of Unity and OVR became much closer to one another. While in the first three sessions OVR (✛) stood far away from Unity, in the following sessions it made a remarkable move to converge with the latter. Second, the positions of the liberal factions changed as well. Figure 2 shows SPS and Yabloko to be very close to each other in the first three sessions. In fact, their stances along the second ("role of the state") factor are almost identical. Yet in the second period Figure 3 shows Yabloko faction moving to the left and downward, departing from Unity along both axes. Indeed, Yabloko did go into opposition to the government during the 6-th and 7-th sessions, while SPS assumed a more pro-government position. This further supports our interpretation of the first

TABLE 2. Number of economy-related roll-calls by period and correlation of legislators' positions.

	Period 1: 01/2000–07/2001			Period 2: 09/2001–09/2003		
Topic	Number of roll-calls	Correlation		Number of roll-calls	Correlation	
		1st factor	2nd factor		1st factor	2nd factor
Total	1523	-	-	2464	-	-
Of them:						
Property	365	0.98	0.85	334	0.99	0.90
Taxes	428	0.99	0.52	384	0.99	0.57
Budget	318	0.99	0.94	569	1.00	0.95
Pensions	89	0.87	0.77	184	0.98	0.91

cleavage factor as related to the executive power.

In the case of the four voting topics, we wanted to know whether some factions would significantly change their positions (or keep them stable) along the "executive power" and the "regulatory state" cleavage factors when they moved from one voting topic to another. Table 2 provides the basic data (number of votes and correlation of topics across the two cleavage factors). Visual comparison (see Figures 4-11) of the results shows the significant stability of the deputy positions across the topics, excluding, perhaps, the taxation. To test that more formally, we calculated the correlation coefficients between the deputy positions, obtained from all roll-call votes, and the votes within each topic. The correlation coefficients are presented in Table 2. They show that the first factor is very stable across the topics and the periods: all coefficients except pensions in the first subperiod exceed 0.97. The stability of the second factor is also quite high. The only exception is taxes, where correlation is about 0.5.

It is hardly a challenge to interpret the differences in the deputy positions across the topics. Regarding pensions, for example, both the "centrists" and the liberals were pre-disposed to move toward the position of the communists, who always voted for bigger pensions, along the first cleavage factor, especially in the first three sessions. The issue of pensions is one of the most populist and the deputy groups, in order to please the electorate, were willing to go against the Kremlin, represented by the Unity faction.

On the issue of property (Figures 6 and 7), however, the communists found themselves

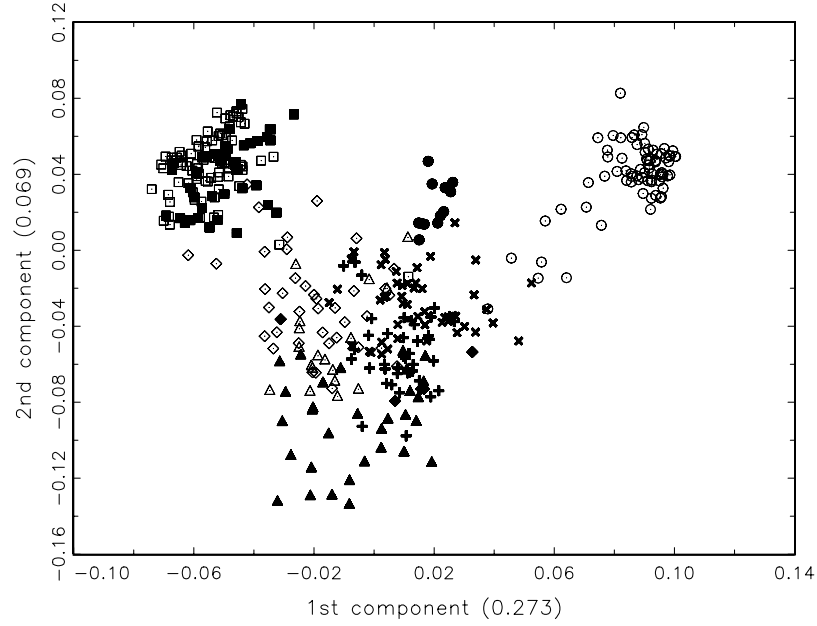FIGURE 4. Estimates of legislators' position parameters (pensions, sessions 1–3).
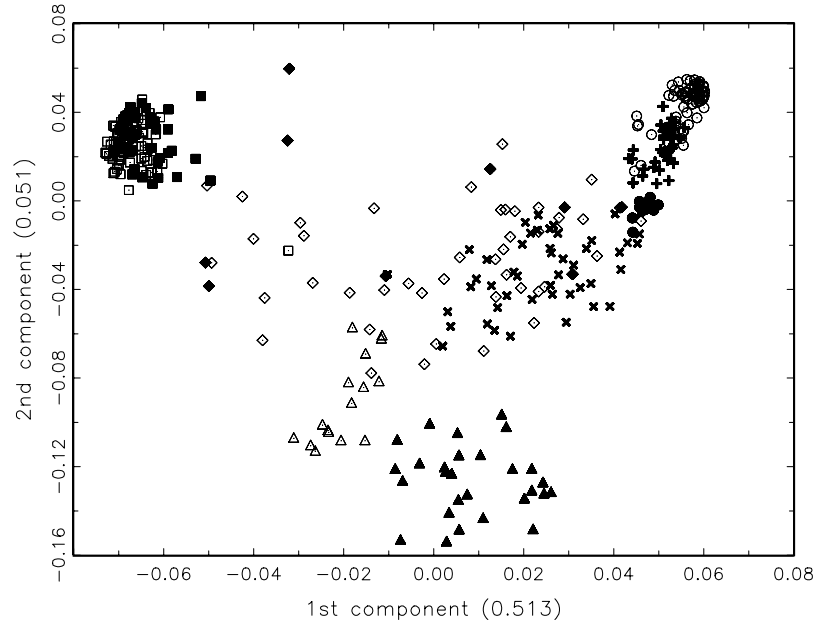

FIGURE 5. Estimates of legislators' position parameters (pensions, sessions 4–8).

⊙	Unity	+	OVR	✖	Peoples' Deputy	●	LDPR
▲	SPS	△	Yabloko	◇	Regions of Russia		
□	CPRF	■	APG	◆	Independent		

FIGURE 6. Estimates of legislators' position parameters (property, sessions 1–3).
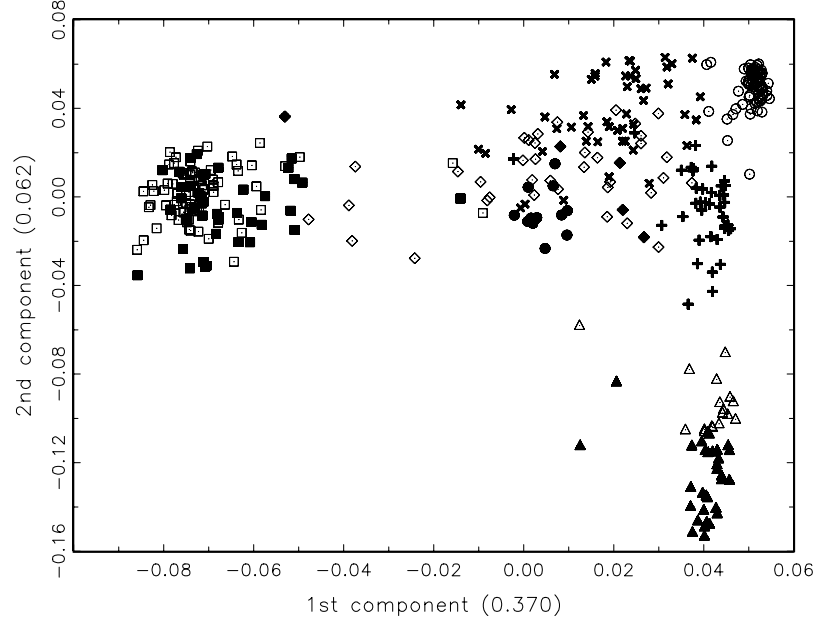
FIGURE 7. Estimates of legislators' position parameters (property, sessions 4–8).
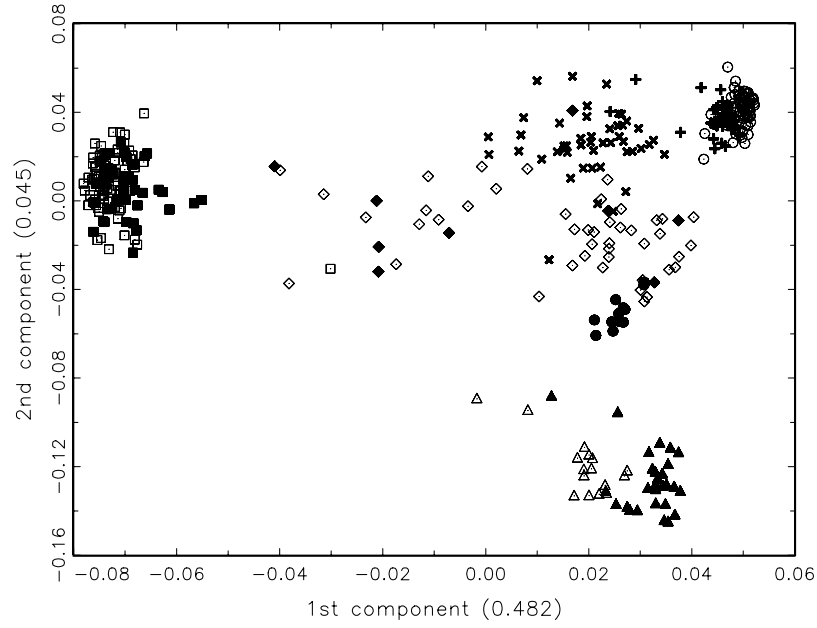
⊙	Unity	✚	OVR	✖	Peoples' Deputy	●	LDPR
▲	SPS	△	Yabloko	◇	Regions of Russia		
□	CPRF	■	APG	◆	Independent		

FIGURE 8. Estimates of legislators' position parameters (budget, sessions 1–3).
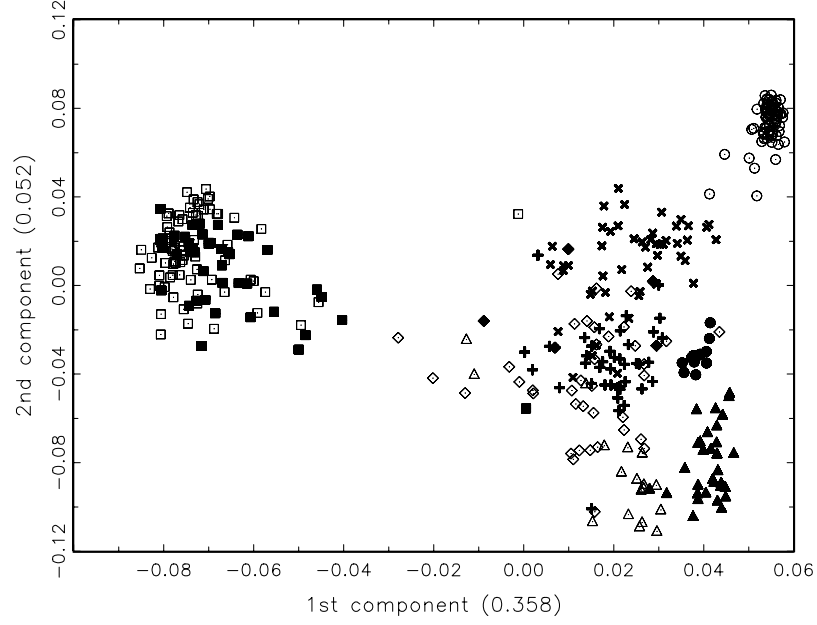
FIGURE 9. Estimates of legislators' position parameters (budget, sessions 4–8).
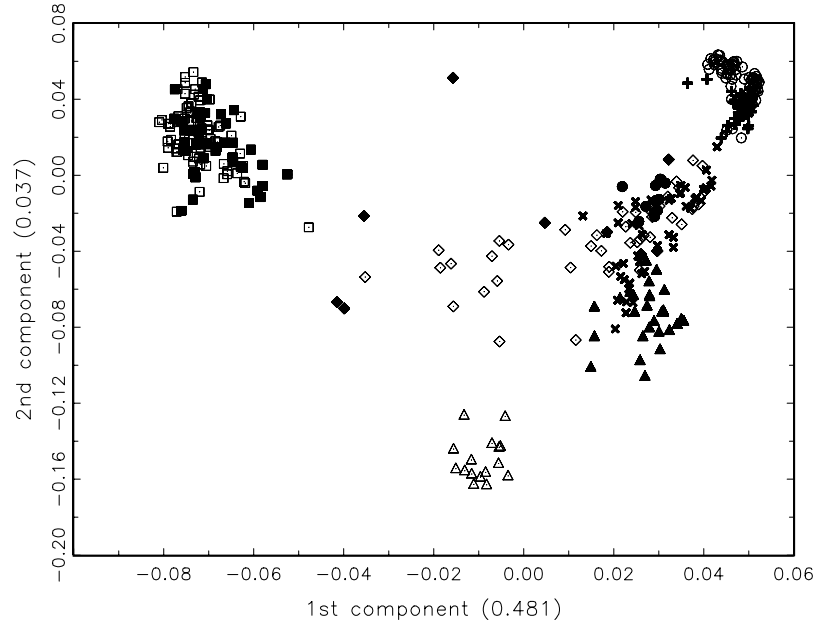
⊙ Unity	✚ OVR	✖ Peoples' Deputy	● LDPR
▲ SPS	△ Yabloko	◇ Regions of Russia	
☐ CPRF	■ APG	◆ Independent	

FIGURE 10. Estimates of legislators' position parameters (taxes, sessions 1–3).
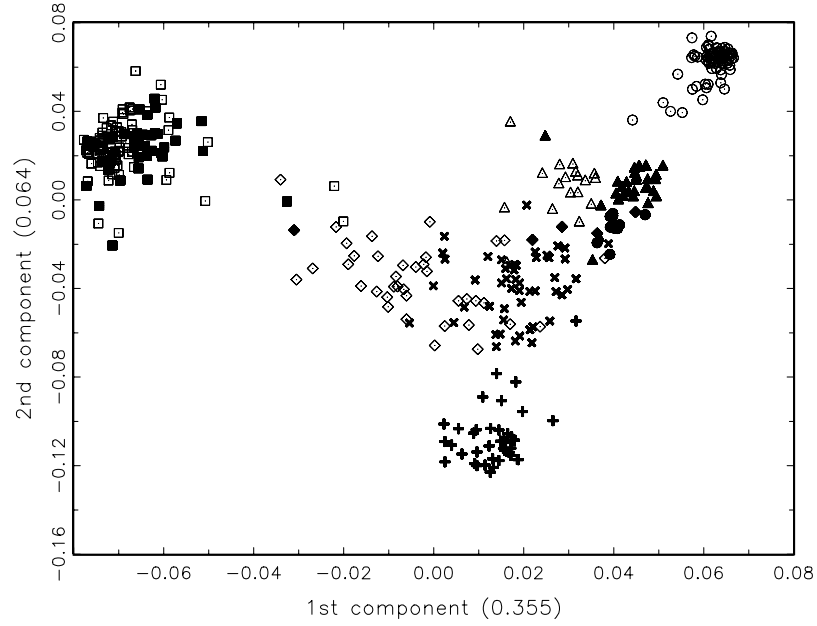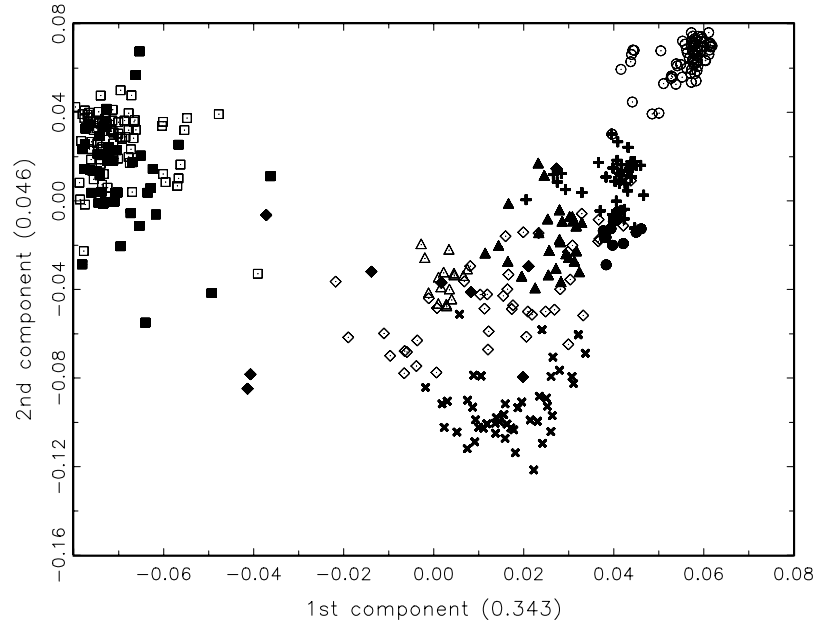

FIGURE 11. Estimates of legislators' position parameters (taxes, sessions 4–8).

⊙ Unity	✚ OVR	✖ Peoples' Deputy	● LDPR
▲ SPS	△ Yabloko	◇ Regions of Russia	
□ CPRF	■ APG	◆ Independent	

in total isolation. This fact is illustrated by the increased significance of the first factor (in the first three sessions) in this topic and the drift of the liberal factions toward the presidential factions (Figures 6 and 7). Yabloko remained close to Unity on the issue of property not only during the first period but also during the second period. This situation can be explained by the liberal character of the government-sponsored legislation as well as by the radical opposition of the communists to such issues as the privatization of state property.

The budgetary issues (Figures 8 and 9) turned out to be very representative of the entire economy-related sample of votes. The deputy positions are very similar to those in Figures 2 and 3, which is further corroborated by the high correlation coefficients in Table 2.

Finally, the issue of taxation had exhibited the most significant shifts in deputy positions (Figures 10 and 11). The place of liberal parties, which usually positioned themselves far to the left along the second cleavage factor, is occupied by OVR in the first period and Peoples' Deputy in the second. Those changes can be explained by intense lobbying in voting over taxes rather than by the changes in the ideological interests of the deputies.

3. The Process of Coalition Building in the Third Duma

How did the main inter-faction coalition form? What were they based on? As the analysis above indicated, most of the Duma deputies were affiliated with three major political forces. Among them were the pro-presidential forces (Unity and OVR, later United Russia (UR)), the conservatives (the communist faction and agrarian deputy group) and the liberals (SPS and Yabloko). Altogether they directly commanded more than half of 450 Duma deputies. The remaining deputies, usually elected with the single-mandate method, either formed relatively amorphous deputy groups or remained independent.

Although the pro-executive force was the largest and the most powerful group of deputies, it did not have enough deputies to act on its own, especially when there was a danger of a united opposition to their laws from the conservatives and the liberals. The latter two forces were even less powerful. Hence they were even more dependent on the coalition-building efforts to pass their legislation. This section discuses the process of coalition formation among these three groups.

We first evaluate the level of internal voting cohesion between the different factions within each of the three forces. In order to do that, we computed the index of cohesion for each pair of factions. This index shows the similarity of voting behavior for each pair

TABLE 3. Index of cohesion for factions and coalitions.

Topic	General Economy		Property		Taxes		Budget		Pensions	
Period	1	2	1	2	1	2	1	2	1	2
Unity – OVR	0.76	0.91	0.85	0.91	0.71	0.86	0.75	0.94	0.62	0.92
CPRF – APG	0.92	0.92	0.91	0.93	0.92	0.92	0.90	0.91	0.93	0.94
Yabloko – SPS	0.77	0.69	0.84	0.77	0.73	0.71	0.79	0.69	0.70	0.67
UR – Communists	0.46	0.43	0.46	0.44	0.44	0.52	0.42	0.35	0.47	0.33
Communists – Liberals	0.48	0.52	0.42	0.47	0.47	0.60	0.42	0.45	0.71	0.58
Liberals – UR	0.73	0.73	0.77	0.77	0.76	0.74	0.75	0.76	0.59	0.60

of deputy groups (see Aleskerov et al. (2003)). The formal definition of the index can be found in Appendix.

Table 3 (upper panel) reports the values of the index of cohesion. CPRF and APG appear to be most cohesive. The level of cohesion for Unity and OVR had increased over time, while it had declined for SPS and Yabloko. These results were easy to predict based on the analysis in the previous section (see Figures 2 and 3).

Now we can analyze the cohesion of voting behavior between the three forces. The results are reported in the bottom part of Table 3. We observe that, on the one hand, the coalitions of United Russia-Communists and Communists-Liberals lack common grounds. On the other hand, the coalition of Liberals-United Russia tends to be very cohesive. It is not hard to explain these differences in the cohesion index. For instance, we observed drop in cohesion among Liberals-United Russia on the issue of pensions. Yet on the same topic, the index for the group of Communists-Liberals rapidly increases.

Factions enter into coalition in order to obtain the votes necessary for passing the laws they need. Therefore, we focus below on the impact that each of the three forces had on the passing of legislation. Although there are a lot of approaches to measure influence of groups[4], we used in this research one of the most straightforward methods. We measured effectiveness of the deputy group by measuring the share of the positive votes that coincided with the position of a given coalition. Table 4 reports the values of effectiveness for the different inter-force collations and the frequency of their occurrence. Each group is considered as voting "Yea" only if 75% of its members voted "Yea". Each

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[4]See, among others, Banzhaf (1965), Shapley (1977), Shapley and Shubik (1954), Deegan and Packel (1979), and Shenoy (1982).

TABLE 4. Frequency and efficiency of coalitions.

UR	Communists	Liberals	General Economy		Property		Taxes		Budget		Pensions	
			Period 1	Period 2	Period 1	Period 2	Period 1	Period 2	Period 1	Period 2	Period 1	Period 2
Yea	Yea	Nay	0.97	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00	-
			70	39	21	9	11	3	19	10	1	0
Yea	Nay	Yea	0.86	0.94	0.85	0.95	0.78	0.88	0.92	0.95	1.00	0.86
			186	290	41	66	67	43	37	41	5	14
Yea	Nay	Nay	0.13	0.47	0.50	0.33	0.07	0.40	0.00	0.63	0.00	0.57
			31	66	4	15	14	10	4	8	1	7
Nay	Yea	Yea	0.91	0.38	1.00	1.00	1.00	0.44	0.75	0.23	1.00	0.45
			47	56	4	1	4	9	4	13	18	22
Nay	Yea	Nay	0.11	0.01	0.01	0.05	0.21	0.03	0.10	0.00	0.00	0.00
			337	428	113	75	87	39	91	155	3	21
Nay	Nay	Yea	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	-	0.00
			16	24	10	3	1	1	0	1	0	4

group is considered as voting "Nay" if only 25% of its members voted in the affirmative. It is interesting to observe, which votes have contributed most to the cleavage factors, which were obtained in previous section. Figures 12-15 show the values of factor Z (one symbol for each vote). Coalition votes are divided in several clusters. Let us review all possible coalitions.

As Figures 12-15 show, the most effective coalition was the union of all three forces: in all cases, when the pro-executive forces voted "Yea" along with the conservatives and the liberals in favor of any laws or amendments, they would always have those laws or amendments passed. In terms of the cleavage factors, those laws were neutral along each dimension, lying in the center of the two-dimensional cleavage space. Analogously, the unanimous voting against of any law by all three forces always led to the rejection of that law.

The less obvious and more interesting are the results of those voting sessions, which are located around the center in the form of six clusters (represented by different symbols). Each cluster consists of the voting cases, when the two forces created a coalition, i.e.

voted very similar, against the will of the third one. We are specifically interested in the following characteristics of those cases. First, we want to see where exactly the cluster is located along the two cleavage dimensions. That helps us to interpret more carefully the nature of the coalition between the two forces and the basis for their common disagreement with the third force. Second, we want to know the total number of voting sessions within each cluster. The more points each cluster has – the more intensive was the process of coalition-building between the two respective forces. And finally, we want to know the proportion of positive outcomes, i.e. the adopted resolutions, to the total number of voting cases. The higher that proportion – the more effective is the coalition of the two respective forces. Now let's examine the clusters representing different coalition configurations of the three forces.

What characterized the coalition-building strategy of the pro-executive forces? Let's examine the first alternative that was available to the United Russia – to partner with the conservatives, against the interests of the liberals (■). The effectiveness of this coalition, when it occurred, was very high: more than 98 percent of jointly supported initiatives were approved by the Duma. This fact is illustrated by almost complete absence of ■ on Figures 13 and 15. The coalition between Unity and the communists occurred two times more often before the unification of Unity and OVR, than after. Most likely, the unification made it less important for the enlarged United Russia to cooperate and compromise with the communists on its legislative initiatives. The location of those initiatives on the cleavage map shows that they were usually compromising along the first cleavage factor (support of the executive), but were clearly oriented toward strengthening of the state role in the economy.

In the cases when the government needed the deputy's support for carrying on their economic reforms of the liberal character, the United Russia was changing its tactics and tried to forge the coalition with the liberals against the communists (○). Throughout all sessions, such coalitions were four times more popular than the coalitions of the pro-executive and conservative forces.

Finally, in those cases when the United Russia wanted to pass the initiatives, which were designed to strengthen both the regulatory role of the state and the position of the current ruling elite, it was losing support of both the communists and the liberals. There was a viewpoint that the merger of Unity and OVR into "United Russia" in 2001 made that faction influential enough to pass any pro-executive laws, ignoring both the right and the left forces. According to our results, power of "United Russia" in passing

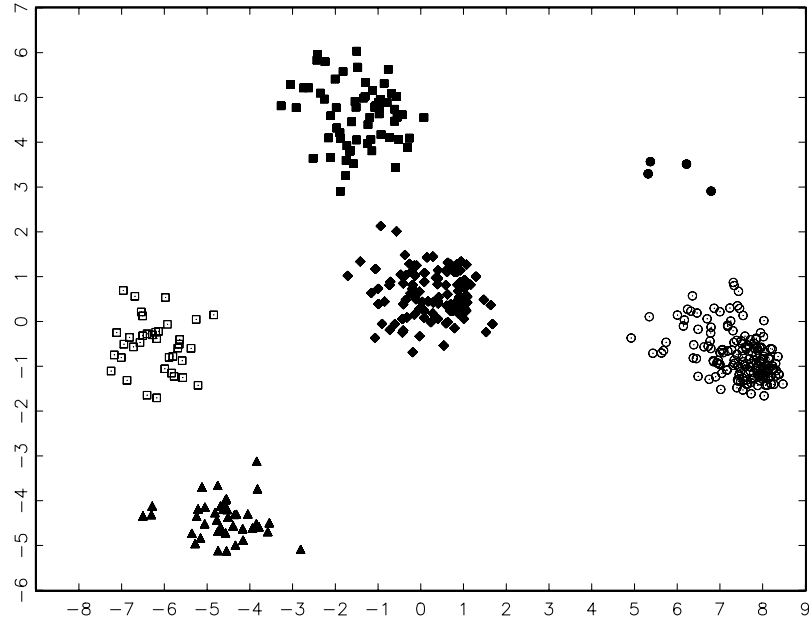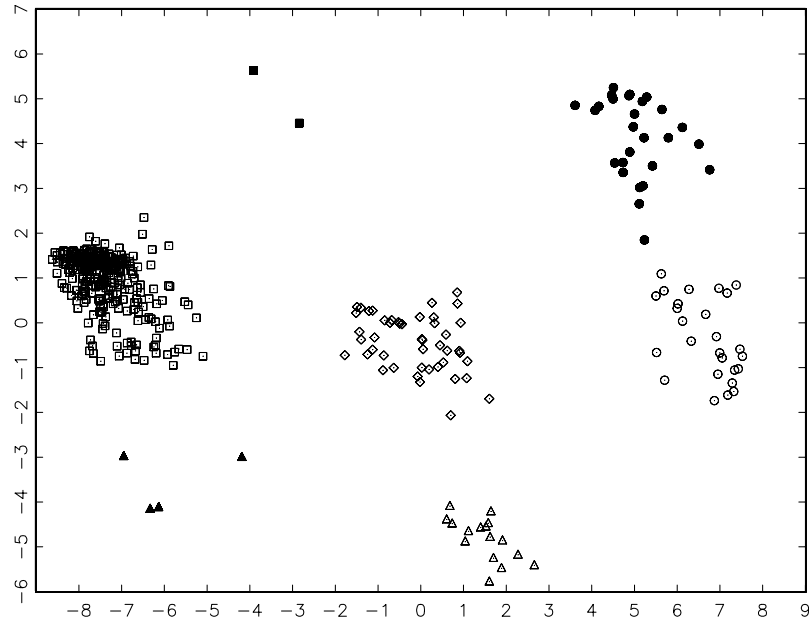FIGURE 12. Estimates of unobserved factors (accepted bills, sessions 1–3).

FIGURE 13. Estimates of unobserved factors (rejected bills, sessions 1–3).

Symbol	◆	■	○	●	▲	▢	△	◇
UR	Yea	Yea	Yea	Yea	Nay	Nay	Nay	Nay
Communists	Yea	Yea	Nay	Nay	Yea	Yea	Nay	Nay
Liberals	Yea	Nay	Yea	Nay	Yea	Nay	Yea	Nay

FIGURE 14. Estimates of unobserved factors (accepted bills, sessions 4–8).
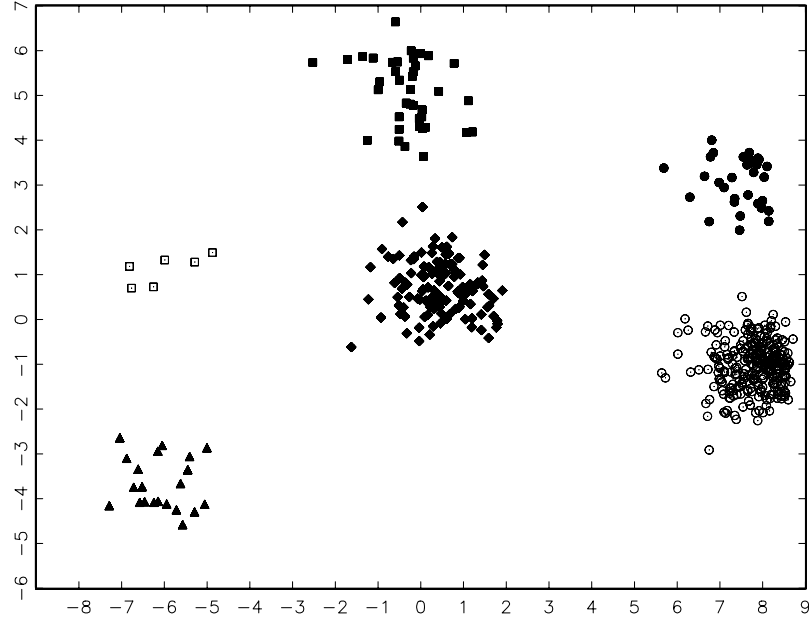
FIGURE 15. Estimates of unobserved factors (rejected bills, sessions 4–8).
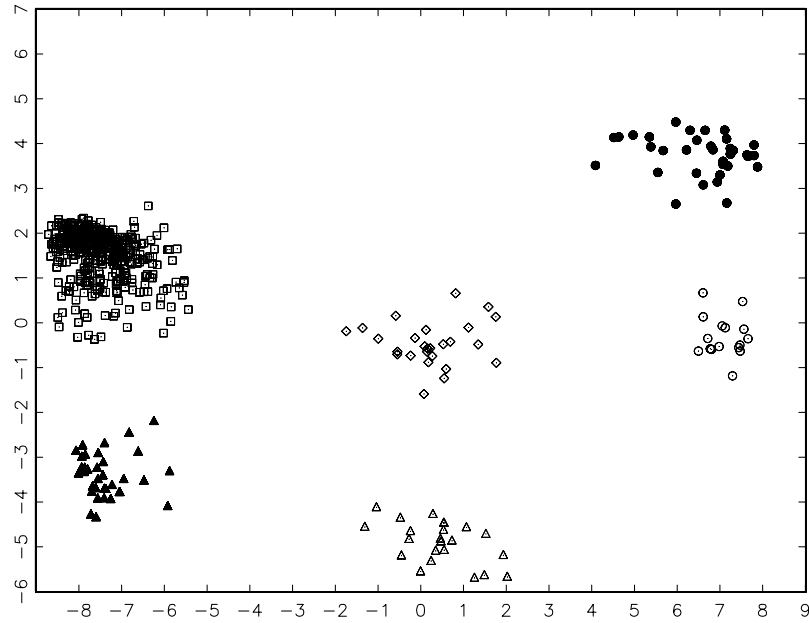
| Symbol	◆	■	○	●	▲	☐	△	◇
UR	Yea	Yea	Yea	Yea	Nay	Nay	Nay	Nay
Communists	Yea	Yea	Nay	Nay	Yea	Yea	Nay	Nay
Liberals	Yea	Nay	Yea	Nay	Yea	Nay	Yea	Nay

economic legislation was often exaggerated. Despite almost fourfold increase of United Russia's rate of success in passing legislation against the will of both the liberals and the communists after the merger (from 13% to 47%), it was successful doing so in fewer than half of all cases. This fact is illustrated by the predominance of ● in Figures 13 and 15 over ● in Figures 12 and 14. Another way to show that the United Russia did not have legislative monopoly is to examine the number of cases, when both the liberals and the communists were voting "Yea" and the United Russia – "Nay" (▲). As Figure 12 makes clear, such initiatives, although infrequent, had rather a high rate of success. Out of 103 such cases, 64 were successfully passed by the Duma. The communists united with the liberals against the pro-executive forces most effectively on the subject of pensions. Such coalition occurred 6 times more often than on the general economy in average. Its effectiveness declined only to 45% after the merger of the Unity and OVR, whereas it did so to 38% on the general economy.

During the entire work of the third Duma, the most numerous were the vote proposals initiated by the communists and blocked by the joint efforts of the liberals and the United Russia (□). They comprised 40% of all economic roll call votes. The effectiveness of such initiatives, which were usually intended to increase the state responsibilities and obstruct the government reforms, was very low. It was equal to 11% before the merger of the Unity and OVR, and it plummeted to 1% after. The low effectiveness of the communist-backed initiatives is illustrated by the overwhelming predominance of □ in Figures 13 and 15 over □ in Figures 12 and 14.

Regarding the independent initiatives of the liberals (△), they never passed through the Duma when the other two forces voted against them. That fact is demonstrated by the entire absence of △ in Figures 12 and 14. But, in contrast to the communists, the liberals attempted to introduce such initiatives almost 20 times less frequently. When they nevertheless did so, they used those initiatives to reduce the role of the state in the economy.

Finally, let's consider the behavior of the real centrists in the Duma, i.e. those deputy groups that occupied the central position in Figures 2 and 3 – "People's Deputy" and "Regions of Russia" (and also OVR during the first three sessions). We want to know how active and autonomous those groups were in comparison to other groups and factions. Figure 16 show the location and the outcomes of the votes actively supported by the centrists and not backed by the communist, the liberal, or the pro-executive factions. In other words, these are the initiatives which were voted for by more than 75% of the

FIGURE 16. Estimates of unobserved factors (all sessions).

●	accepted centrists initiatives
+	rejected centrists initiatives
○ □	other roll-calls
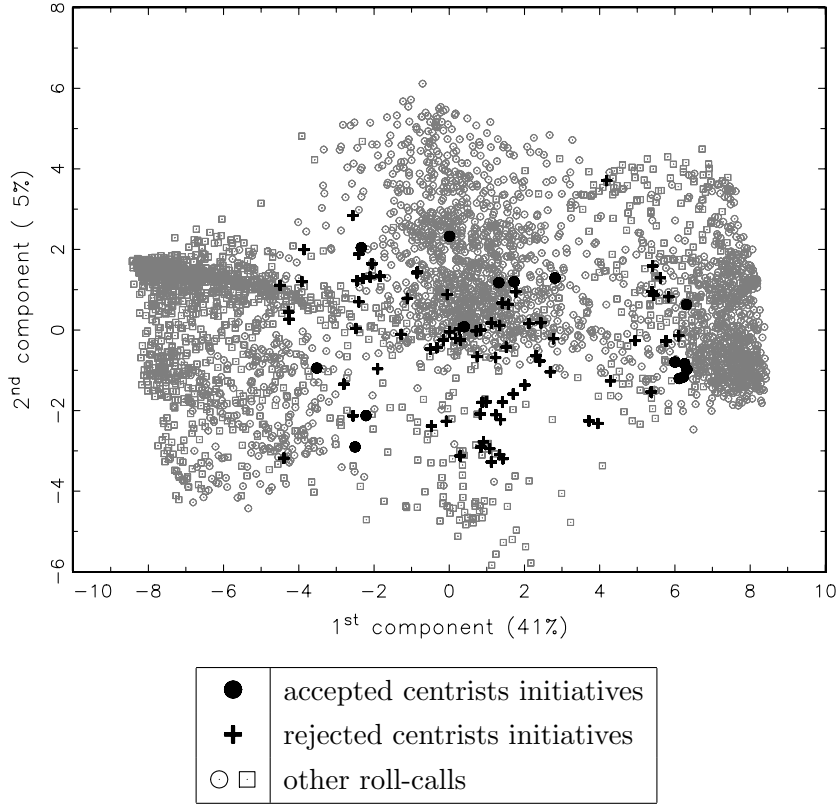
deputies from "Regions of Russia" or "People's Deputy" (or OVR during the first three sessions) but were not supported with more than 75% of votes by any of all three forces. As the figure makes clear, such cases were very rear (2,3%). That means that the two deputy groups were extremely passive. In addition, the fivefold predominance of failed outcomes over the successful ones in the case of initiatives, which were endorsed by either of the two groups, implies very low level of individual influence of the centrists on the Duma.

4. Conclusion

This paper analyzed the legislative activity of the 1999-2003 (Third) Russian State Duma using the results of roll call voting in the area of economic legislation.

Using the principal component analysis we evaluated the distribution of deputy positions on the two-dimensional cleavage map. We discovered that the main cleavage direction reflected the attitudes of the deputies toward the initiatives of the executive branch

of power. These findings contradicted some accepted assertions about the domination of the ideological cleavage within the State Duma. The second cleavage dimension had to do with the deputies' relation to the state involvement in the economy.

The analysis of the coalition building process within the State Duma discovered that none of the three forces carried enough power to independently implement its legislative agenda. However, the pro-executive forces emerged as the most successful in passing their economic initiatives. That happened because they were able to forge two winning coalitions: with the liberals against the conservatives along the first cleavage factor (support of the executive economic agenda), and with the conservatives against the liberals along the second cleavage factor (strengthening state's role in the economy).

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Appendix

Selection of roll-calls and deputies. In this research we concentrated on the economic legislation only. Our sample includes all roll-calls on economic bills during January 2000 – October 2003. All procedural roll-calls, as well as roll-calls that are not directly connected to the legislation were excluded from the sample. In addition, the roll-call in which more than 90% of deputies were on the majority side were excluded. Linear factor model was estimated only for those deputies who do not change their factions during the whole period.

Cohesion index. This simple index of group cohesion was introduced and extensively used for studying Russian parliament in Aleskerov et al. (2003). It characterizes the similarity of actions for each pair of groups. Let q_{i1} and q_{i2} be deputies voting "Yea" in the i-th roll call vote in the first and second groups respectively, then the index of cohesion is defined as

$$C_{i12} = 1 - \frac{|q_{i1} - q_{i2}|}{\max(q_{i1}, 1 - q_{i1}, q_{i2}, 1 - q_{i2})}. \tag{1}$$

For several roll-calls we define an average index of cohesion as

$$C_{12} = \frac{1}{N} \sum_{i=1}^{N} C_{i12}.$$

Theoretical model of voting. Let us consider the following voting model. We assume that each legislator j is characterized by its *ideal point* φ_j in so-called *policy space* with k dimensions. Each roll-call voting i is characterized by two points x_i^Y and x_i^N in this space, corresponding to "Yea" and "Nay" positions. Legislator i votes "Yea" in roll-call j, if

$$U(\varphi_j, x_i^Y) + \varepsilon_{ji}^Y > U(\varphi_j, x_i^N) + \varepsilon_{ji}^N,$$

where U is her utility function and $\varepsilon_{ji}^Y, \varepsilon_{ji}^N$ are stochastic elements of utility. Let us denote the position of legislator i in roll-call j by d_{ji}; it is equal to 1, if she votes "Yea", and 0,

otherwise. The probability of the event that d_{ji} equals 1 is given by

$$\Pr\{d_{ji} = 1\} = 1 - F(U(\varphi_j, x_i^N) - U(\varphi_j, x_i^Y)),$$

where F is the cumulative distribution function of $\varepsilon_{ji} = \varepsilon_{ji}^Y - \varepsilon_{ji}^N$.

To complete the model we should specify functions U and F. There is a number of ways to do this. In the well-known NOMINATE model by Poole and Rosenthal (1985) it is assumed that

$$U(\varphi_j, x) = \theta \exp\left(-\frac{(\varphi_j - x)'(\varphi_j - x)}{8}\right),$$

and ε_{ji} has logistic distribution, which is quite standard for binary choice models. Such a function U implies that the utility of the legislator is characterized by monotonically transformed Euclidian distance between her ideal point φ_j and the position of alternative x.

Another possible choice for U is to assume that

$$U(\varphi_j, x) = -(\varphi_j - x)'(\varphi_j - x).$$

In such a situation we obtain that the difference $U(\varphi_j, x_i^N) - U(\varphi_j, x_i^Y)$ become linear in φ_j, i.e.,

$$U(\varphi_j, x_i^N) - U(\varphi_j, x_i^Y) = \alpha_i + \beta_i'\varphi_j.$$

If in addition we specify uniform distribution on some interval $[-M_i, M_i]$ for ε_{ji}, we get the linear factor model by Heckman and Snyder (1997). This model implies that

$$\Pr\{d_{ji} = 1\} = a_i + b_i'\varphi_j. \tag{2}$$

The linearity of Heckman-Snyder model simplifies estimation considerably, namely, there is no need to estimate parameters x_i^Y and x_i^N (which is impossible to do consistently when the number of roll-calls goes to infinity). This is one of the major advantages of Heckman-Snyder model over NOMINATE model, in which the estimates of φ_j are, in general, inconsistent. Also, Heckman-Snyder model has much less parameters than NOMINATE. Because of these two facts we adopt the approach of Heckman and Snyder (1997) in this paper[5].

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[5]It should be noted, however, that the linearity of Heckman-Snyder model is quite a strong assumption, see the discussion on this issue in Clinton et al. (2004).

Estimation of linear factor model. Suppose that we have a sample of voting results for J legislators and N roll-calls. Let D be the a $J \times N$-matrix with elements d_{ji}, representing votes of the legislators, that is, d_{ji} is equal to 1, if j-th legislator votes "Yea", and 0, otherwise. Let P be a $J \times N$-matrix consisting of elements p_{ji} where

$$p_{ji} = \Pr\{d_{ji} = 1\}.$$

We consider the following specification:

$$D_i = P_i + \zeta_i, \tag{3}$$

where D_i is i-th column of matrix D, P_i is i-th column of matrix P, and ζ_i is an error vector.

Further we assume that policy space has k dimensions, i.e., i-th roll-call is described by $k \times 1$-vector Z_i, and the position of j-th legislator are described by $1 \times k$-vector of parameters φ_j. Let

$$\Phi = \begin{pmatrix} \varphi_1 \\ \varphi_2 \\ \vdots \\ \varphi_J \end{pmatrix}$$

be the matrix of legislators' position parameters of dimension $J \times k$, and let

$$Z = \begin{pmatrix} z_1 & z_2 & \dots & z_N \end{pmatrix}$$

be the matrix of roll-calls' parameters of dimension $k \times N$. The main assumption of the linear factor model is that P can be represented as

$$P_i = \delta + \Phi Z_i, \tag{4}$$

or, in terms of matrix D,

$$D_i = \delta + \Phi Z_i + \zeta_i. \tag{5}$$

So, this model assumes that the results of roll-calls are described by matrix Z, which consists of k *unobserved factors* representing parameters of roll-calls, and by matrix Φ, which consists of *unknown* legislators' position parameters.

Since the variables Z are unobserved, the estimation procedure is non-standard. Heckman and Snyder (1997) proposed several different methods for the estimation of model (5), based on the sample analog of covariance matrix

$$\Sigma = \mathrm{Var}[D_i].$$

Let us assume that $\mathrm{E}[Z_i] = 0$, $\mathrm{E}[Z_i Z_i'] = I_k$, $\mathrm{E}[\zeta_i | Z_i] = 0$, $\mathrm{E}[\zeta_i \zeta_i'] = \Psi$, and matrix Ψ is diagonal. In this case equation (5) implies that

$$\mathrm{E}[D_i] = \delta,$$

and

$$\mathrm{E}[D_i D_i'] = \delta\delta' + \Phi\Phi' + \Psi.$$

Consequently, we get

$$\Sigma = \Phi\Phi' + \Psi.$$

Under some conditions (see Heckman and Snyder (1997)), a consistent[6] estimate is given by

$$\widehat{\Sigma} = \frac{1}{N} \sum_{i=1}^{N} (D_i - \bar{D})(D_i - \bar{D})'.$$

The simplest methods of estimation of parameters Φ are principal components and Minimum Distance Estimation. In the former case the estimates of Φ are obtained as the eigenvectors of $\widehat{\Sigma}$ corresponding to the largest eigenvalues. This estimate is consistent but inefficient. An estimate of Z can be computed as

$$\widehat{Z} = D'\widehat{\Phi}(\widehat{\Phi}'\widehat{\Phi})^{-1},$$

however, it is in general inconsistent.

The second method is Minimum Distance Estimation. In this case the estimate is given by

$$\widehat{\theta} = \arg\min_{\theta}(\mathrm{Vech}\,\widehat{\Sigma} - \mathrm{Vech}(\Phi\Phi' + \Psi))'(\mathrm{Vech}\,\widehat{\Sigma} - \mathrm{Vech}(\Phi\Phi' + \Psi)), \qquad (6)$$

where θ consists of elements of Φ and Ψ. Since we are mostly interested in Φ, we can use only subdiagonal elements of $\widehat{\Sigma}$ to avoid the estimation of Ψ. Such estimate is consistent and asymptotically normal, but also inefficient. To achieve efficiency, one may use optimal weighting in (6). However, in practice it is possible only for small J: the weighting matrix is of dimension $\frac{J(J+1)}{2} \times \frac{J(J+1)}{2}$, thus, it is difficult to get its estimate of satisfactory quality[7].

The remaining important issue is to determine the dimension of policy space (k). Cragg and Donald (1996) proposed a method for estimation of this dimension based on the above mentioned Weighted Minimum Distance procedure. However, as it was explained earlier, this is possible only for small values of J. An approximation of the policy space dimension can be obtained by using Cragg and Donald (1996) procedure for random subsamples of

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[6]We consider the asymptotics for fixed J as N goes to infinity.

[7]See a discussion on this issue in Heckman and Snyder (1997).

legislators (see Heckman and Snyder (1997)). As an alternative the standard methods for determination of the number of components in principal component analysis can be used.

Minimum Distance procedure and principal component analysis yield very similar results for the Russian data (at least for the Third State Duma), so in the paper we present only estimates obtained via principal component analysis. Also, we limited our analysis to the first two dimensions of the policy space because remaining dimensions are less stable.