National party system dynamics and electoral volatility in Belgium under changing social, political and institutional conditions

Tom Schamp[1]
& Carl Devos

Final edited version of the paper
for the ECPR's Joint Sessions of Workshops
"Party system dynamics. New tools for the study of party system change and party transformation"
11-16 March, 2013
Mainz, Germany

[1] The author is PhD-student and fulltime assistant at the Ghent University, Faculty of Social and Political sciences - Department of Political science, Universiteitstraat 8, 9000 Gent, Belgium, e-mail: tom.schamp@ugent.be. **No citation without prior permission of the first author.**

1. Introduction

The background paper of this article (Schamp, Devos 2013) gives a historic account of the election outcomes of the national legislative of Belgium. Throughout the paper the thesis that within the institutional boundaries of the system the political elite tried to seek and to strike a balance between competing (political) ideologies and (socio-economic) approaches in order to avoid ending up into *a system crisis* seems largely supported. Given the nature of the Belgian national party system[2], the question that is looked at here is whether or not electoral rules were adapted to preserve democracy, political stability, law and order and the fit with the changing societal and (national) political context. In the present part we study some of the most central factors underlying the party system change in Belgium.

Is a party system change a sign of changing societies? And to what extent does the case of Belgium support such an assumption? For the analysis the authors rely on broad-scaled long-term serial data (time series) of representation and proportionality of electoral and parliamentary parties, i.e. analyzing trends of fractionalization, the size of the national parliament and the district magnitude, other characteristics of the electoral system (like electoral threshold), the number of electoral and parliamentary parties, or the representativeness of the parliament (like permissiveness, (dis)proportionality, durability of the representation and many other ratios). The relationship between the development of the Belgian electoral system and the national party system was studied using aggregated national election outcomes of the larger ideological party families, individual parties and the smaller factions in the Chamber of Representatives (1900-2010).

Apart from the historiographic description of the electoral and party system, this research paper will also add some new insights that are central for a better understanding of the electoral equilibrium hypothesis which assumes that the introduction of the proportionality-based electoral system (in Belgium passed in 1899 and applied for the first time in 1900) offers a solution to the problem of the systematic overrepresentation of the larger political parties and the underrepresentation or even non-representation of the smaller parties. In order to make valid claims about the disproportional traits of the Belgian electoral system we study a series of measures that are most commonly applied in this line of research. We check for associations between redistricting, electoral formula, proportional representation, and the effective number and size of electoral and parliamentary parties. The authors examine both the institutional and the mechanical side of parliamentary representation. Special attention goes to at the one hand the sustainability of party strength (durable electoral support) versus on the other hand the electoral volatility which makes the outcome of the electoral competition highly unpredictable.

In that respect the above graph suggests that at the federal level the inter-party family (or ideological) competition has increased since the end of WWII. Being two sides of the same coin the inter-party family (or ideology-based) competition between parties (score between 0 and 1) is higher when there is no clear party leading the electoral market (= electoral market leadership, score up from 0^3). The other way around, if there is a clear leading party then the electoral competition is low.

First we look at the representation of parties in the Belgian national parliament and thus the electoral formula. Changes of the electoral formula are understood to have an impact on the chances of representation of parties and hence on the likelihood that (new) parties will enter the election battle. Secondly, we address the question what the impact of the size of the parliament or the district magnitude is on the emergence and/or representation of political initiatives and parties.
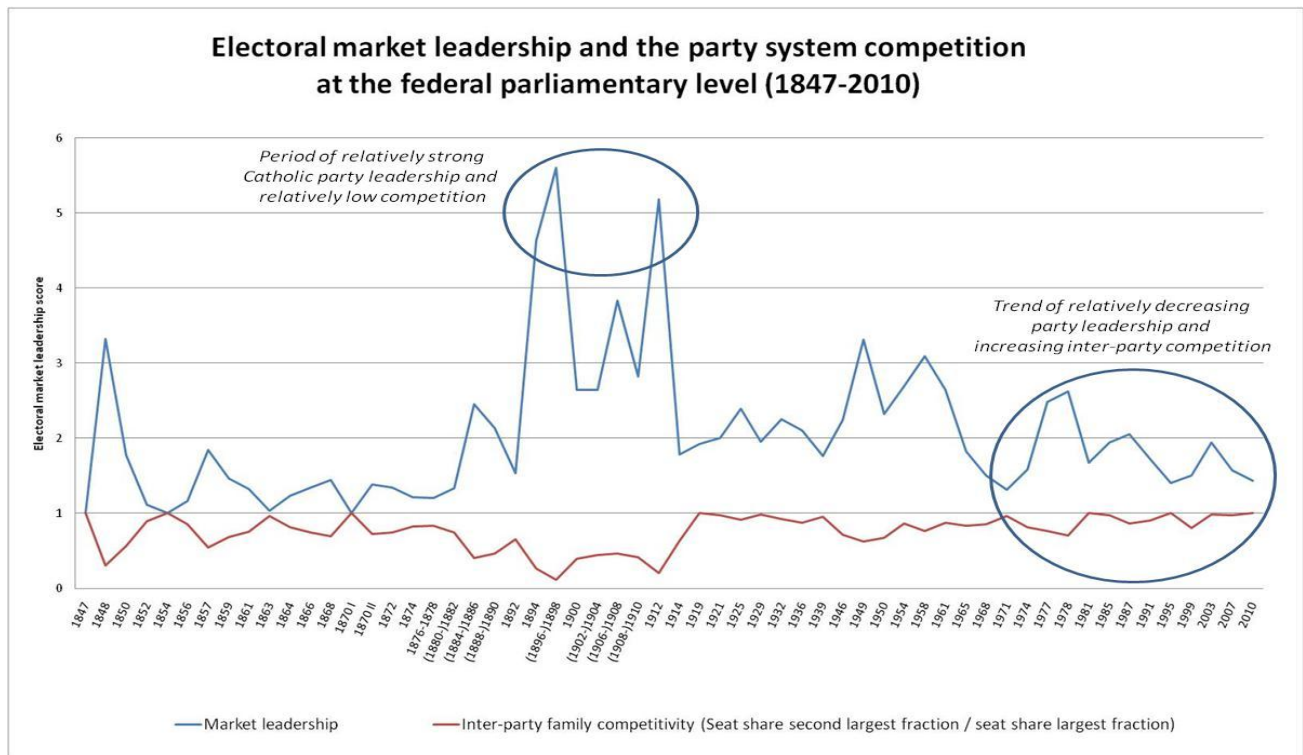
2. The study of the impact of the electoral formula: vote share versus seat share

Since the 1960s studies of proportionality have focused on two elements chiefly: the electoral formula and

---

[2] In fact, at the level of the legislative elections, there is not just one nation-wide party system in Belgium but a multitude of systems depending the unit of analysis (electoral or parliamentary parties). And, since the fourth state reform of 1993 we can clearly discern at least four party system geographies, depending the level of analysis: the federal party system, the Flemish regional party system, the Walloon regional party system, and the Brussels regional party system. This paper however, studies the development of the party system at the aggregated national (federal) level only.

[3] The electoral market leadership score is calculated as follows: EML = Seat share of the largest party family / AVERAGE ∑ (Seat shares all other parties). The EML measure is sensitive to the fractionalization of the party system and the relative electoral weight of the parties. Though it does not say anything about the electoral size of a given party family, ideology or political fraction, in combination with the party competition measure it gives a rather good intuitive picture of the evolution of the national party system.

district magnitude or the total number of available seats.[4] Both are in fact two sides of the same coin: district magnitude being the decisive factor in determining proportionality (Taagepera & Shugart 1989:112) but only after separating the proportional from non-proportional electoral systems based on the electoral institution (and thus the formula) which is the decisive factor for this kind of categorization (Katz 1997:137 in: Farrell 2001:154-155).

Electoral market leadership and the party system competition at the federal parliamentary level (1847-2010)

Period of relatively strong Catholic party leadership and relatively low competition

Trend of relatively decreasing party leadership and increasing inter-party competition

Market leadership — Inter-party family competitivity (Seat share second largest fraction / seat share largest fraction)

According to Patrick Vander Weyden at least four methods can be applied to study the mechanical characteristics of disproportionality. (2006:70) Measures studied here are first of all the simple deviation from perfect proportionality (%), secondly, the reduction effect (being the difference between the effective number of electoral parties and the effective number of parliamentary parties)[5], and, thirdly the large party electoral bonus (i.e. the extra vote versus seat gain of the largest parties versus the loss of smaller parties). The calculation of the real or effective electoral thresholds (i.e. the minimum vote share that any party must obtain in order to win a parliamentary seat), the fourth measure, is not studied here because it does not correspond with the level of analysis which is largely based on aggregated data for party families (or factions) on the national level (and not on the district level).
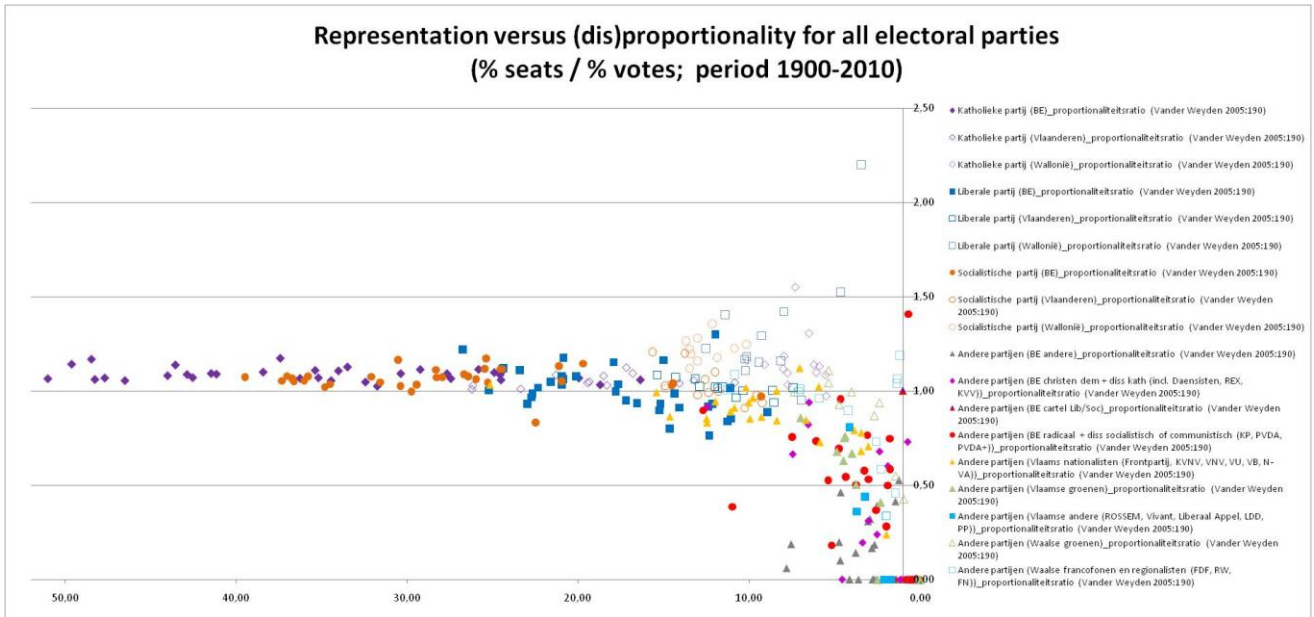
In his doctoral dissertation Patrick Vander Weyden (2005) confirms that it has never been shown or evidenced that large, middle-sized or small parties profit from the disproportional character of an electoral system.[6] In our opinion the correctness of such assumption depends to a large extent on the definition of a large, middle-size and small party. In order to test the underlying assumption, we here use the definition of a large party as Vander Weyden has used it –i.e. a party with at least 40% vote share. A small party has less than ten percent of the vote. (Vander Weyden 2005:196)[7]

---

[4] Douglas Rae (cf. *infra*) was among the first to conclude that the ballot structure has no effect at all on the proportional representation. (Farrell 2001:154) This conclusion has been contested in the 1990s by Arend Lijphart (1990, 1994).

[5] $ENP = \dfrac{1}{\sum p_i^2}$, where p is either the party i's vote share in the legislative election (= the effective number of elective of electoral parties (ENPv → Neff$v$)) or the party i's seat share in the legislative election (= the effective number of legislative or parliamentary parties (ENPs → Neff$s$)) (Amorim Neto, Cox 1997:170)

[6] "Nooit is empirisch aangetoond of het grote, middelgrote of kleine partijen zijn die voordeel halen uit het disproportionele karakter van het kiessysteem." (Vander Weyden 2005:192)

[7] Please note that at the time of the larger party families or so-called traditional parties, there were virtually no political initiatives that belong to this category. Hence, according to Vander Weyden's definition there were no small parties before 1908, the election in which the cartel of liberals and socialist won 11,14 % of the vote.

Representation versus (dis)proportionality for all electoral parties
(% seats / % votes; period 1900-2010)

Note: Because of the built-in time dimension this graph reads from left to right and depicts the absolute increase of the system complexity shown in the dense number of parties and their relative aggregated under- and overrepresentation of each individual faction at the federal level. Both in absolute and relative terms Walloon parties that address the French-speaking community (in Brussels-Halle-Vilvoorde (BHV) and Wallonia) are being more frequently overrepresented than Flemish parties that address the Dutch-speaking community (in Flanders and BHV).[8] Even this kind of aggregate analysis makes it all too clear that the representation of the Flemish (more frequently underrepresented) and Walloon parties (more frequently overrepresented) is different from each other.

Analyzing all election results since the first application of the P.R. system in 1900 (graph above) we conclude that at an aggregate party family level we observe that higher vote shares go hand in hand with higher levels of overrepresentation. Thus, the more votes a faction receives, the more it will be overrepresented (compared to smaller factions or parties). On a more detailed account, factions that receive 23% or more of the vote will be overrepresented.[9] Factions receiving 10-23% of the vote show a mixed pattern. For the non-classical factions however, underrepresentation seems to be the rule. Though Flemish factions with a vote share of less than 10% are, generally speaking, heavily underrepresented, there are continuously several Walloon factions of the same size (mostly it concerns the liberal and catholic factions) that are being overrepresented in the federal parliament. Our conclusion therefore is that at least on the factional level there is a strong correlation between the vote share and the proportional representation. More to it, based on the levels of over- and underrepresentation of factions, there is no reason to believe that non-traditional factions (read: small factions of 'Other parties') are equally represented as the traditional parties, quite on the contrary, the opposite (still) seems to be the case. Since the first application of the P.R.-based seat distribution system the relative underrepresentation of the smaller factions has remained more frequent and generally larger than the overrepresentation of the larger ones.

Looking at the periodic over- and underrepresentation of the three traditional political families (cf. graph above) we can clearly see a shift from extreme (+50%) average disproportional representation in the 1890s to significantly lower levels of overrepresentation of all three traditional party factions since the 1980s.[10] Apart from the typical disproportional traits of the plurality-based majoritaritarian system which was still in place

---

[8] Hence, parties present themselves to the voter only in their own region, Flanders and Wallonia and in the bilingual region of Brussels Capital.

[9] There is one exception only, namely the Socialist party being underrepresented after the 1914 elections. But that is merely the result of the *two-yearly partial elections* where only half of the members of the assemble were replaced. Because of this practice the substantial increase of vote share (from 9,28% in 1912 to 30,39% in 1914) did not (entirely) reflect in an increase of the number of seats taken by the socialists (from 18 in 1212 to 26 in 1914). Moreover, the period 1902-1912 is also very specific because of the changing number of available seats. This is a direct outcome of the number of parliamentary seats, which changed with each two-year election: from 152 seats in 1900 to 168 in 1902 to 166 in 1906, 1908 and 1910 and to 186 in 1912.

[10] The party specific disproportionality is calculated as follows: $\frac{s_i}{v_i} = \frac{S}{V}$. "Let $v_i = \frac{V_i}{V}$, $s_i = \frac{S_i}{S}$ be the vote and seat shares that party i receives. We call $y_i = \frac{S_i}{V_i}$ the representation of party i. Party i is overrepresented when $\frac{S_i}{V_i} > \frac{S}{V}$, and party i is underrepresented when the opposite inequality holds. Using representations, it is possible to compare various parties with each other. In the ideal case, each vote has equal force and each party obtains a share of seats equal to the share of votes, $v_i = s_i, \quad i = 1, n$." (Karpov 2008:1422)

until the 1898 elections.of the late 19th century and the combination with the compulsory and multiple voting, another reason for the 1894-1898 peak of the total disproportionality produced by the electoral formula was the presence in that era of a handful of newcomers in the political arena. As stated in the previous section, it was this political 'reality' together with the risk that the Catholic party would have to oppose the Socialist party all by itself, that convinced the former to replace the existing electoral system by a more P.R.-based system.

**Average periodic disproportionality rates
(1876-2010, inclusive 'Other parties')**
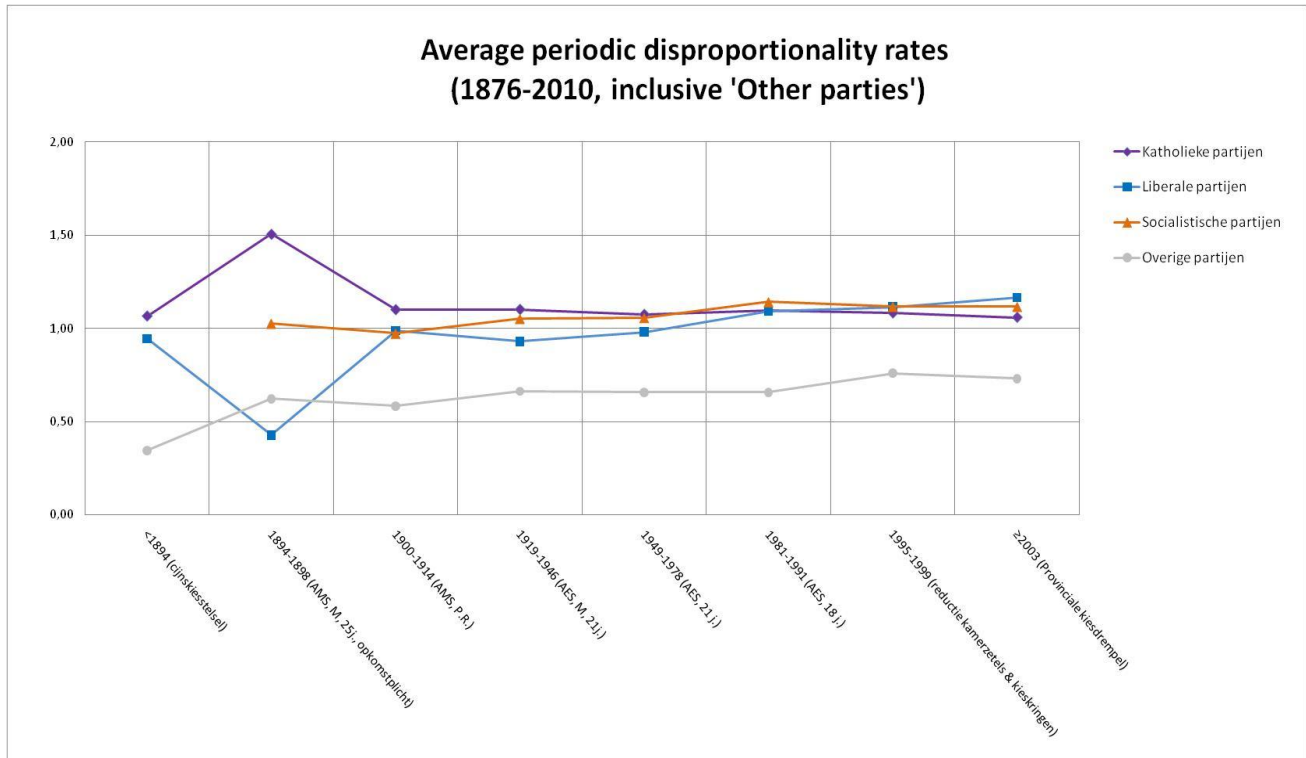
Note: The recent climb and stabilization of 'Other parties' in the last two periods is the result of the rise of Vlaams Belang and Ecolo (1995-1999) and the relative successful comeback of the Flemish ecologists (*Groen!*) since its parliamentary annihilation in 2003 and the rise of the N-VA. (cf. supra)

With the introduction of a P.R.-based system D'Hondt the Belgian political system became close to a three-party system.[11] As seen in the historic outline later changes of the electoral system have systematically improved the level of proportional representation, especially the apparentment (1919), the reduction of the number seats at the federal level (form 212 to 150) and the reduction and pooling of electoral districts (from 30 to 20) in 1995 and the further reduction of the number of electoral districts to eleven in 2002. The overall effect was obvious: in the second half of the 1990s the overrepresentation of the three traditional party families was reduced for the most part and at the same time more smaller parties were able to win one or more parliamentary seats. The increasing P.R. was, however, largely undone by the negative effect of the introduction of a five percent threshold at the provincial level introduced in 2002.

The following graph summarizes the total disproportionality at all elections in the period from 1876-2010. We include five different measures: the Gallagher Least Square LSq index (°1991)[12], the Rae RID index (°1967)[13],

---

[11] Cf. graph infra: this corresponds with the theoretic number of effective parliamentary parties (Neff*s*) in 1919 (3,14).

[12] $LSq = \sqrt{\dfrac{\sum (v_i - s_i)^2}{2}}$ "The lower the index value [raging from 0 to 100] the lower the disproportionality and vice versa. Michael Gallagher, who created the index, included 'other' parties as a whole category, and Arend Lijphart modified it, excluding those parties. (http://en.wikipedia.org/wiki/Gallagher_Index) "[The index] has a different sensitivity to large and small deviations between vote and seat shares. Small differences have less influence on the index than big ones, which increase the index significantly. Small deviations are generally not eliminated. Big deviations imply that the distribution is less proportional." (Karpov 2008:1424)

[13] $I_{Rae} = \dfrac{1}{n} \sum_{i=1}^{n} |s_i - v_i|$. Because this index is based on the number of parties elected, the higher the number of parties, the lower the index. Since lower Rae-index rates indicate a higher proportionality, "The lower values of the index do not correspond to a more accurate representation. Only those parties that have more than 0.5% of votes should be considered in order to avoid misinterpretation of the low values of the index. Nevertheless, this measure does not resolve the problem of potential misinterpretation." (Karpov 2008:1422) Because of this data in the here-presented graph will not take into account the parties that received <0,5% of the votes.

the Sainte-Laguë SLI index[14], the Loosemore-Hanby D disproportionality index (°1971)[15] and the Lijphart I*L* index (1994)[16]. Reduced to their long-term 'trends' all five indexes follow a similar (curvi)linear path.[17]

All indexes illustrate the all time high of total disproportional representation at the (1896-)1898 elections and the rather moderate levels towards the end of WWI and the late 1960s-early 1970s. But we may wonder: which is the most appropriate index to adopt for further statistical analysis? Referring to the Annex 3 the Pearson R correlation coefficients for all indexes used vary between ,628** for the Rae's I on Sainte-Laguë's SLI index and ,990** for the Gallagher's LSq on Loosemore-Hanby's D index.[18] Such strong correlations are comparable to the findings in Arend Lijphart's study of *Electoral systems and party systems* in 27 post-WWII democracies (1994:67)[19] and though each measure has its own specific distinctive focus (and therefore limitation), we chose to calculate a mean index of total disproportionality (MID) representing the averaged total disproportionality (mean total disproportionality or MTD) for each election. Including the variations of all five indexes, the MID would allow for a more robust interpretation of the disproportional representation at any point in time.

Based on the MID trend line (graph above: red colored), the gravity of the skewed 'situation' under the plurality system –the parliamentary representation being far from representative- becomes also obvious very obvious in long term statistical terms. With the introduction in 1893 of the general multiple suffrage for 25-year men and the compulsory voting at the same time, the MTD climbed to 13,11% in 1894 and to an unprecedented 18,22% at the 1898 national elections. Though such 'theoretic' levels of total disproportional representation are far below the ones we have calculated based on the 'real' seat share versus vote share ratio noted in the previous part, these MTD levels support the general tendency and the observation that the over- and underrepresentation at the end of the 19th century surely did not go unnoticed by either the political elite or the public….

As said, partly because of strategic considerations, partly because of electoral considerations, and partly because of social-democratic motivations the Belgian political establishment under the ruling of the national Catholic party was prompted to undertake measures to cope with the problem of non-proportional representation before the next national election of 1900. What was the effect in terms of dealing with the (dis)proportionality issue of the swift introduction of the P.R.-based system D'Hondt? What does the long term data analysis of the MTD learn us? Since the first application of the P.R.-system in 1900 basically three trends emerge: a first trend of decreasing total part system disproportionality from 1900 to the mid-1950's; a second trend of increasing total disproportionality from the late 1950s to the early 1990's, and a third trend of decreasing disproportionality from 1991 on.

[14] $SLI = \sum \frac{(S-V)^2}{V}$ "(…) is a weighted sum of squares of relative deviation. (… and has) no upper limit, making the interpretation more difficult. The Sainte-Lague index is significantly different (…). It has the same form as the Pearson χ^2 statistic of some tests. (Karpov 2008:1433)

[15] $D = \frac{1}{2}\sum_{i=1}^{n} |v_i - s_i|$ "The value of the Loosemore–Hanby index gives the total excess of seat shares of overrepresented parties over the exact quota and the total shortage accruing to other parties." (Karpov 2008:1423) The index is more sensitive to small discrepancies than for instance the Gallagher index.

[16] $I_L = \frac{|s_i - v_i| + |s_j - v_j|}{2}$ "… is calculated in the same way as the Rae index, but only the two largest parties are considered. (…) Since the largest parties usually have the most significant deviations from their exact quota, this measure can be used to evaluate the disproportionality of the whole system." (Karpov 2008:1423)

[17] In-between index correlations are highly significant at a p<.01 level, which means that all indexes –the mean index too- measure more or less the same levels of growing and declining disproportionality. The relatively higher correlation of the Gallagher's LSq and Loosemore-Hanby's D with most other indexes would indicate that the LSI and D successfully capture best the nuances included in those other indexes and therefore one could argue that these indexes are more robust. In order to limit the scope of the more detailed analysis we base our selection of one disproportionality index on the averaged correlation scores. Because Gallagher's LSq (average R=,916) is the highest, hence forward the LSq-index will be used further more in depth analyses, amongst other of (the effect of) (dis)proportionality.

[18] The high correlation between the LSq and Loosmore-Hanby's D is no surprise since "Gallagher's least-squares disproportionality index, ranging from 0 to 100, [is] similar to the well-known Loosemore–Hanby (1971) index but registering small discrepancies less than large ones (Gallagher 1991)." (Benoit 200b:383)

[19] Lijphart however excluded the Sainte-Laguë index.

Disproportionality indices ("Other parties" included; period 1876-2010)
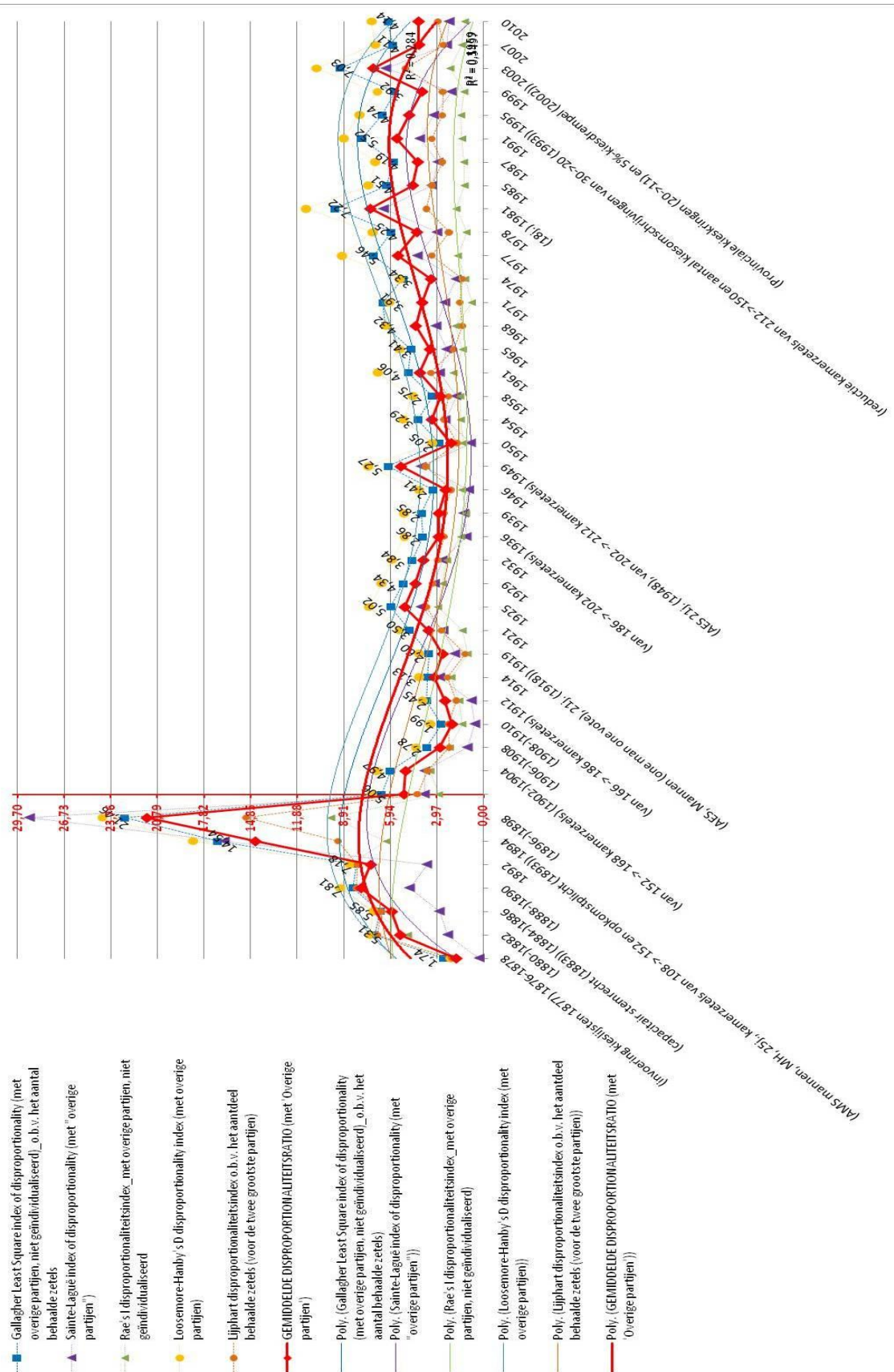
Note: because of the fluctuation of the data we use a polynomial regression line. The order of the polynomial is four ($y = ax^4 + bx^3 - cx^2 + dx + e$) and was determined by the cyclical nature (number of bends) hence the number of fluctuations in the data (in casu four post-1899 election years with a disproportionality score close to or higher than the mean value (2,19) plus one standard deviation ($\sigma=0,78$) –so considerably higher than the average- are considered years with above-average total disproportionality. When the total disproportionality of 'Other parties' is included in the analysis the average total disproportionality rate is 4,85 ($\sigma=3,44$), thus indicating a high underrepresentation of these parties (cf. *infra*) (cf. Annex 2) Please note that the here-mentioned cyclical pattern of the data does not imply any form of causality whatsoever. The trend line(s) therefore has(have) no predictive value whatsoever!

So far for the illustration of the general MTD trend. But, what does this mean in terms of the representation of the largest political faction, or the smaller ones? Lijphart's D'Hondt disproportionality index (D)[20] gives an indication of the overrepresentation of the largest parliamentary faction. Such overrepresentation had reached exceptional levels in Belgium in the two election years following the introduction of the general multiple suffrage for 25 year old males. The requirement to vote is understood to have amplified the already existing disproportional outcome of these parliamentary elections. Compulsory voting –still in force today in Belgium- supported the democratic participation[21], however the broadened access to the elections did not really show in the parliamentary representation of the competing parties. (cf. *supra*) Because of the extreme underrepresentation of the socialists and liberals, at the end of the day, even the Catholic party could no longer ignore the facts and supported the introduction of the P.R.-system in 1899.
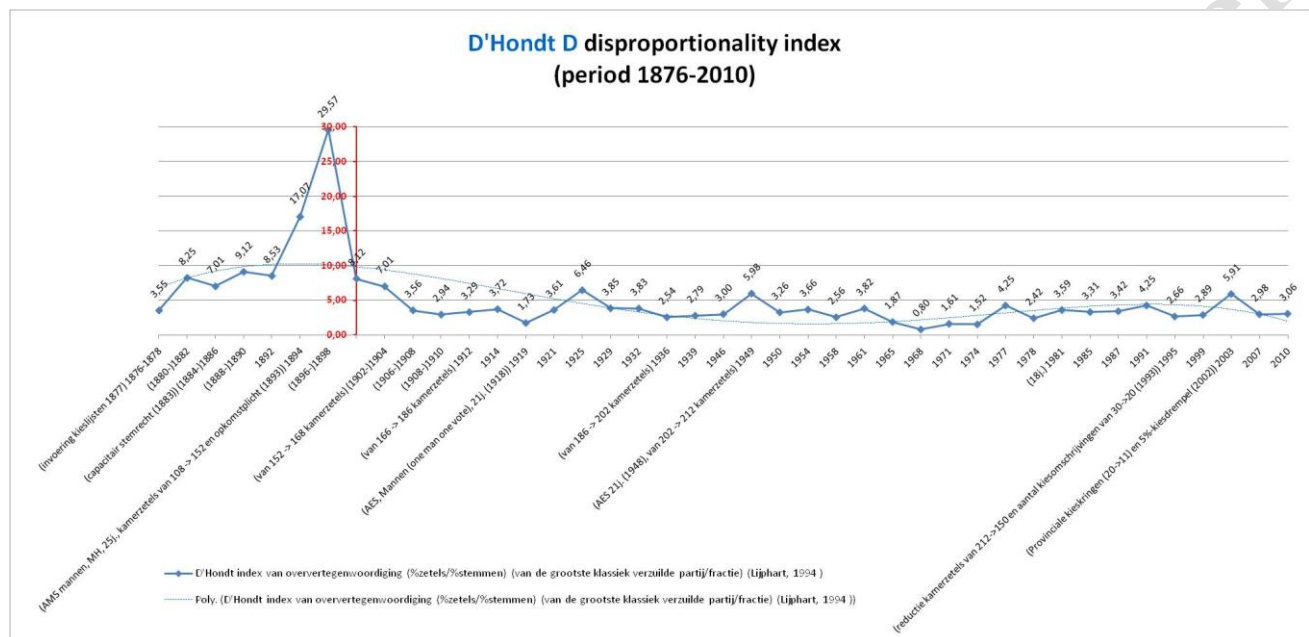

Assuming that the overrepresentation of the largest faction (measured by D'Hondt D) affects the total disproportionality and that the disproportional representation merely gives the largest party a bonus, we controlled for positive correlations between the individual disproportionality indexes used as a basis for our MID and the D'Hondt D disproportionality bonus of the largest faction. The correlation is very high for all indexes[22], but is the largest for the LSq-index. This does not come as a surprise because LSq is foremost sensitive to large vote versus seat share differences. (cf. *supra*) This explains why both vote-seat share differences as well as the disproportionality bonus are significantly higher in the years preceding the introduction of the P.R.-system and why the trend line are basically equivalent.

---

[20] D'Hondt D is comparable to Benoit's "bonus ratio of seats to votes awarded to the party winning the largest number of votes, calculated as the percentage of seats won by the largest party divided by the percentage of votes cast for the largest party. This measure is identical to the "advantage ratio" of Taagepera and Laakso (1980) applied to the largest party." (2000:383) Party i is relatively overrepresented when $si/S > vi/V$ and party i is underrepresented when $si/S < vi/V$. In the case of perfect proportional representation $si/S = vi/V$. D'Hondt's D only takes into account the representation of the largest party. In all cases this party is also most overrepresented.

[21] The compulsory voting was applied for the first time in the national legislative elections of 1894 resulted in a participation rate of 88,81%. Since then the participation varies between 88 and 95% with an average over all post-1900 elections of more than 92,5%. In sum, national electoral participation –in the sense that people cast a vote- is very high in Belgium, making these elections very democratic and giving the outcome of the elections a broad legitimacy. Since the late 1970s we notice a slight drop of the voter participation with a 80-year low at the latest 2010 federal elections (89,28% participation rate) because people were 'fed up' with two governments that fell due to broken promises in-between coalition partners.

[22] For the predictive value of the disproportionality indexes see Annex 4: if LSq-index resp. Lijphart's IL increases with one then D'Hondt's D disproportionality bonus of the largest faction/party increases with 2,46 resp. 1,07 (p<.0001). If Loosemore-Hanby's D or Rae's I increase with one then D'Hondt D decreases with 2,07 (p<.0001) resp. ,431 (p<.001). There's no significant explanatory power for Sainte-Laguë's LSI. Notwithstanding the strong positive correlations (cf. Annex 2), LSq and L-H's D indexes for instance predict D'Hondt's D in a complete different way.

Disproportional representation of "Other parties"
(period 1876-2010)
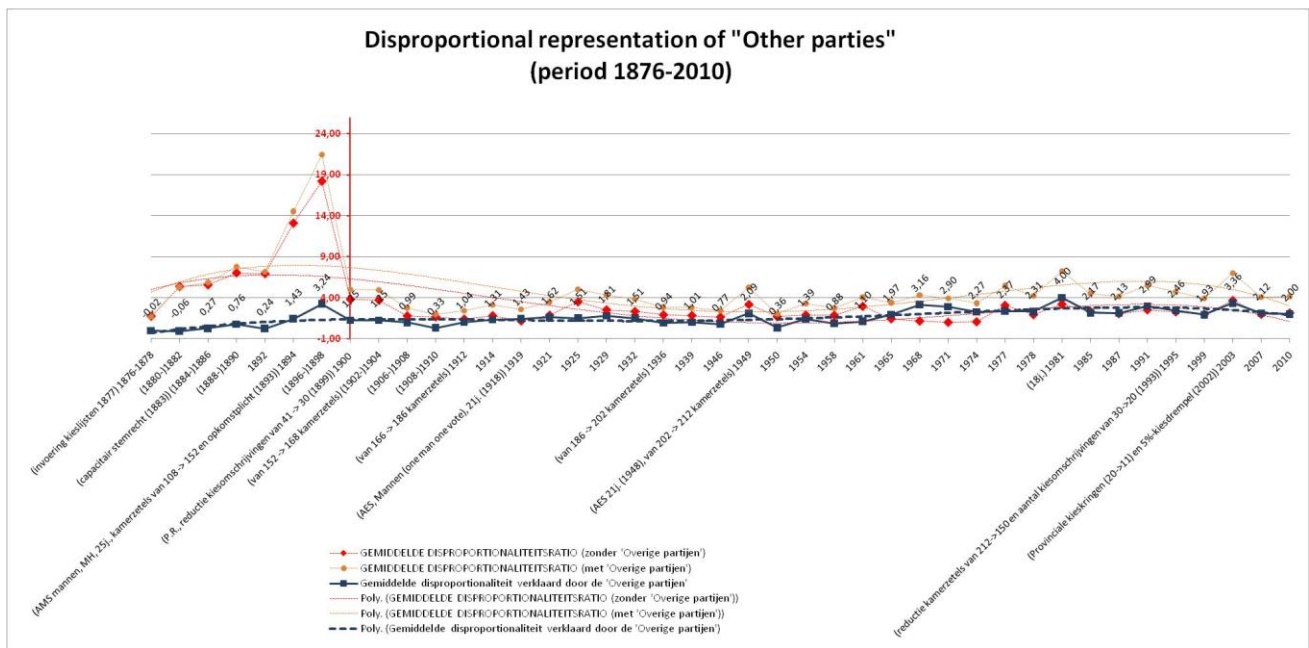
Conversely, following the above finding one could argue that higher MID levels will lead to higher levels of total underrepresentation of the smallest parties or factions. The graph above shows the other side of the same medal and plots both the MID as well as the total disproportionality rates for the (non-traditional) 'Other parties'. When looking at the discrepancy between the total and the small factions disproportionality trend lines, one notices that disproportional representation of 'Other parties' was like the overrepresentation of the largest faction the highest in the year 1898 but that such levels of underrepresentation (and overrepresentation, cf. *supra*) dropped with the introduction of the P.R.-based electoral system D'Hondt. Nevertheless, underrepresentation of the smallest factions –like the overrepresentation of the largest factions- has never disappeared. Quite on the contrary, since 1900 the underrepresentation of the smaller factions has been increasing steadily until the early 1990s, the point at which the upward long term trend bends downward.[23] Also, it is clear from the span of both trend lines that the underrepresentation of small parties vis-à-vis the total disproportionality of the system has been rather stable in the period 1900-1921 but that is has widened further ever since until the 1991 federal elections.

3. Party system competition, system stability and electoral volatility

Party system change or instability implies change in the electoral strength of competitive parties, and therefore changing numbers of electoral parties –*party strength volatility*- and the increase of *electoral volatility* as a consequence.[24] Party system stability on the contrary would imply stable electoral support and therefore more stable party representation, which according to Stefano Bartolini and Peter Mair (1990) has been the case in the one hundred years from 1885 onwards in Europe. Using a wide range of various measures of aggregate volatility both authors describe "a trend of less, not more, volatility and hence increasing political stability." (in: Listhaug 1992:98) This being said, the place of electoral volatility being defined as the total in between election turnover of the vote[25] measuring how much the support of the parties changes between elections, in the discussion of the representation of parties is not very clear. According to the American researchers Scott Mainwaring and Edurne Zoco who studied electoral volatility in 47 old and new democracies (2007) electoral volatility is important for the following reasons. First electoral volatility more likely produce less stable party systems based on programmatic representation. Second, increasing electoral volatility make politicians more uncertain about the electoral outcomes and in some cases increases elite strategizing and/or strategic voting, both weakening sincere democracy. Third, in highly electoral volatile contexts the entry barriers to new parties are lower and political outsiders come to power more easily. (Mainwaring, Zoco 2007:157-158) Thus, electoral volatility reflects both changes in the demand side (electorates preferences) as well as changes on the

---

[23] The general post-1900 linear trend is upward: from a level of 1,25 in 1900 over 1,49 in 1919 to 2,09 in 1949 and even 4,00 in 1981. With the introduction of the 5% electoral threshold the disproportionality of smaller parties lowered to 3,39.

[24] The election result of parties like *Vlaams Belang* (12 seats of 212) and R.O.S.S.E.M (three seats) for instance were explained by a profound anti-politics sentiment and a widening gap between politics and the people.

[25] Electoral volatility is the sum of the absolute value of change in percentage of votes gained or lost by all parties in the system from one election to the next, divided by two. (=/= total number of floating voters)

supply side (party switching of candidates, party mergers or alliances, newcomers, etc.) of the party system economy. According to the UK researchers Richard Rose and Derek Urwin "[f]luctuations in a party's electoral strength are not equal to totals of floating voters." (1970:292) In their opinion, at the aggregate party system level, "[o]ne possible explanation for the appearance of little change in (…) party support is that considerable movements occur among individual voters but that these changes cancel each other out." (ibid.:301) However, because of the widespread believe that a certain party-political demand can be created (by the parties themselves: either by the normal development of existing parties or by the creation of genuine new parties, not in the least the so-called 'flash' parties) and that by offering this wider choice the electorate will in fact make a more differentiated choice among the electoral parties, we believe that there might be a link –worthwhile to study- between party system change, what is commonly understood as electoral volatility at the aggregate party system level and the representativeness of the electoral system (i.e. the overrepresentation of large factions and *cc.* the underrepresentation of the smaller factions). Anyway "(…)using a statistical measure of electoral volatility has many advantages, not least because of its easy operationalisation as a clear and comparable quantitative measure." (Torcal, Deegan-Krause, Casal Bértoa 2012:2)

From the previous part of this study (i.e. the detailed historic account of the electoral and party system dynamics) we remind that underlying democratic forces of the late 1960s and the 1970s reshaped Belgium both politically and institutionally and triggered a unprecedented proliferation of political parties. The result was a hyper-competition between regionalized political parties, competing for the electoral space in each language community. Just like party bloc volatility enlightens best the ratio and pace at which voters change their preferences, if one "(…)would like to stick to bloc distance as the appropriate independent variable it seems logical that [one] uses bloc (class-cleavage) based volatility as the relevant dependent variable." (Listhaug 1992:100) For these reasons we will treat electoral volatility as a mediating variable, both being influenced by the choice pattern that is offered at the time of election, and by the incidence of societal changes, including those that lead to cleavage-based frictions or divisions. But as Listhaug (1992) advises strongly we look at the volatility at the micro-level[26], i.e. the party level and we include in our analysis the share of the invalid votes and the total non participation.

On the other hand electoral volatility could also be due to macro-economic factors. If so then those factors might also explain why certain democracies are more stable than others. Following the conclusions of the study by Mainwaring and Zoco, we tested the correlation between the levels and the par annum change of inflation and gross domestic growth (BNP). As the below figure shows, the per annum change of the Gross Domestic Product (*Bruto Binnenlands Product*) of Belgium does correlate very strongly and negatively to electoral volatility, meaning that higher increases of GDP interrelate to decreasing levels of electoral volatility (Pearson R=-,45). This correlation however becomes unimportant (R=-,06) at the periodic level (based on the mean per annum changes of GDP and the mean periodic per annum change of electoral volatility. From this we conclude that the change of GDP in the year before an election correlates with the level of the electoral volatility. Unlike Mainwaring and Zoco we have found a modest correlation between the change rate of inflation in the year before an election and the level of electoral volatility (R=,32). Here the correlations at the periodic level between the average per annum change of inflation and electoral volatility is strongly positive (R=,76 for the per annum average year inflation; R=,78 for the end of the year Y1-Y0 inflation). As shown in the below figure, both have an S-shaped form. Lower (higher) the levels of averaged periodic inflation change rate are linked to lower (higher) levels of averaged periodic electoral volatility, but the relation becomes insignificant in the extremes (very low/high levels of mean periodic inflation).

---
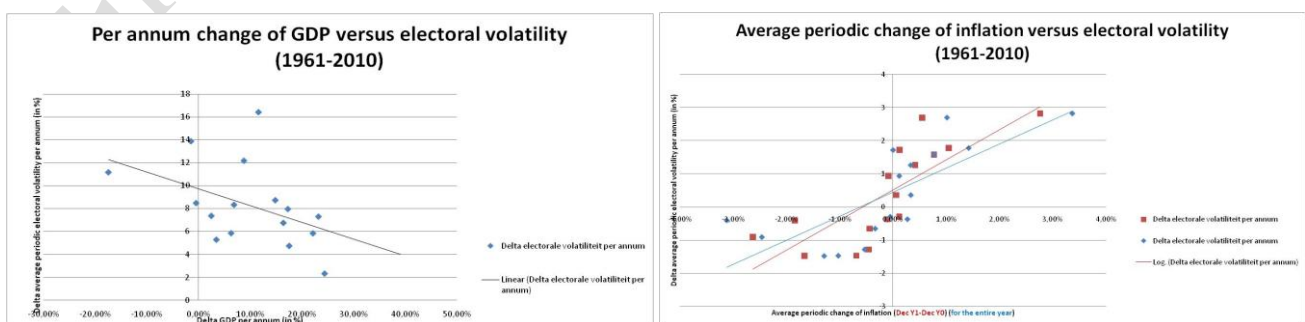
[26] "While there are convincing reasons, (…), to assume that [bloc-cleavage] aggregate volatility is an appropriate indicator of individual vote shifts, the analysis of aggregate data is clearly less satisfying than an investigation of micro-level data, since individual data permit the investigator to measure the theoretically relevant variables more directly."

Note: Though high inflation "(…)can have corrosive effects on governing parties and boost volatility" the absence of a positive correlation in the extremes could in the case of Belgium be explained by two elements. One, the downside of elevated levels of inflation (i.e. the fact that life becomes more expensive) is largely corrected by upside of wage indexing mechanism (i.e. wages increase at around the same rate). The consequence of this mechanism is that working people, pensioners and other groups in society don't necessarily feel the negative consequences of inflation. Second, inflation is often an indicator of a growing economy and of a higher standard of living, which is by and large considered a good thing, even if life gets more expensive. (cf. Mainwaring & Zoco who considered this element an important explanation for the lower volatility rates and the relative party system stability in post-1978 or 'third wave' Southern European democracies like Portugal, Greece and Spain) The same logic goes for negative inflation (or deflation) the result of which is not automatically translated into the wage levels, but at the same time makes life more comfortable. Thus decreasing inflation relates to lower levels of electoral volatility. Hence, both higher and low than average levels of per annum inflation rate changes might lead to 'a conservative reflex', and thus will not affect the electoral volatility.

Now what is the political consequence of the above? In how far do GDP or inflation relate to the party system changes already described? Does GDP growth reinforces the party system? Do periods of economic crisis or decline affect the party system stability? Based on Mainwaring and Zoco's findings electoral volatility is largely and significantly determined by a combination of decreasing GDP, rising effective number of electoral parties and the 'freshness' of democracy. (2007:165 (R^2=0,42; p<.05)) The general conclusion drawn from their research is that "democratic party systems do not become more stable over time" (ibid.:168) and that "the growing longevity of competitive regimes does not produce the stabilization of electoral competition" (ibib.:170), hence contesting Grumm's electoral equilibrium hypothesis and Lipset and Rokkan's frozen party systems these. The reason for the constant change of democratic competitive multi-party systems is found mainly in the electoral volatility, which seems to persist election after election, whatever the age of a democracy: "the critical determinant of the stabilization of electoral competition is when democracy was born" (not the age a democracy has) (ibid.:171)

From the below figure we can see that in Belgium electoral volatility increased significantly in the period 1965-1971, in 1981, in the early and late 1990s (Devos, Bouteca, Van Liefferinge, Lannoo 2009:17-20[27]) as well as in the year 2010. In all those instances the main reasons for the electoral volatility were a combination of public discontent with the polity, a growing distrust and unbelief in politics in general and in the political elite more specifically, a lack of party identification, as well as an growing interest for a new kind of politics (cf. a *new political culture or NPC*) being less preoccupied by economic issues (cf. Bartolini, Mair 1990 in: Listhaug 1992:98) and guided by post-materialistic values and a new sense of belonging. Under such circumstances, as Philip Converse predicted in 1969 "(…)citizens grow increasingly disaffected or hostile (Mainwaring et al 2006). They reject parties and turn to political independents and outsiders…" (Mainwaring, Zoco 2007:169) The consequence of party-voter *dealignment* and the following electoral volatility was that since the beginning of the 1990s –when electoral volatility truly gained momentum[28]- most parties undertook attempts to change their image (e.g. the party presidency, the party leadership, the party name or logo, the organization of ideological congresses etc.), that more and more politicians change parties (the so-called '*party swingers*'), that parties risk to fall apart because of internal conflicts and that it offers opportunities to new political initiatives, to more popular or mediagenic personalities and their incumbent parties, in its turn increasing opportunities for the electorate to change its vote. But these changes are country specific and though overall party membership in Belgium seems to gradually decrease since the late 1980s, periods of low volatility will always alternate with periods of high volatility.

The graph below mentions total bloc class-cleavage electoral volatility (A) and total inter-parties electoral volatility (A'). The former shows the evolution of the inter-bloc (old cleavage-based) total change of the vote, whereas the latter shows the inter-party change of the vote, hence taking the regionalization of the traditional parties into account. If A<A' than intra-bloc inter-party electoral volatility is high (e.g. 2010 when there was a major shift from *Vlaams Belang* voters to N-VA, higher than the shift from the voters from the other party blocs to the Flemish nationalist faction). If A<A' than extra-bloc inter-party electoral volatility is high (e.g. 1965 when new party blocs appeared and were well received by the electorate like Francophone FDF and *Rassemblement Wallon* or where old parties regained support like the liberal party (PVV/PRL) and the Flemish Nationalist party (*Volksunie*)). If A=A' than the total vote change in between individual parties equals the total vote change between party blocs.

---

[27] Cf. footnote 19 on page 19 considering a volatility score ≥10% as high.

[28] Devos, Bouteca, Van Liefferinge, Lannoo 2009:31.
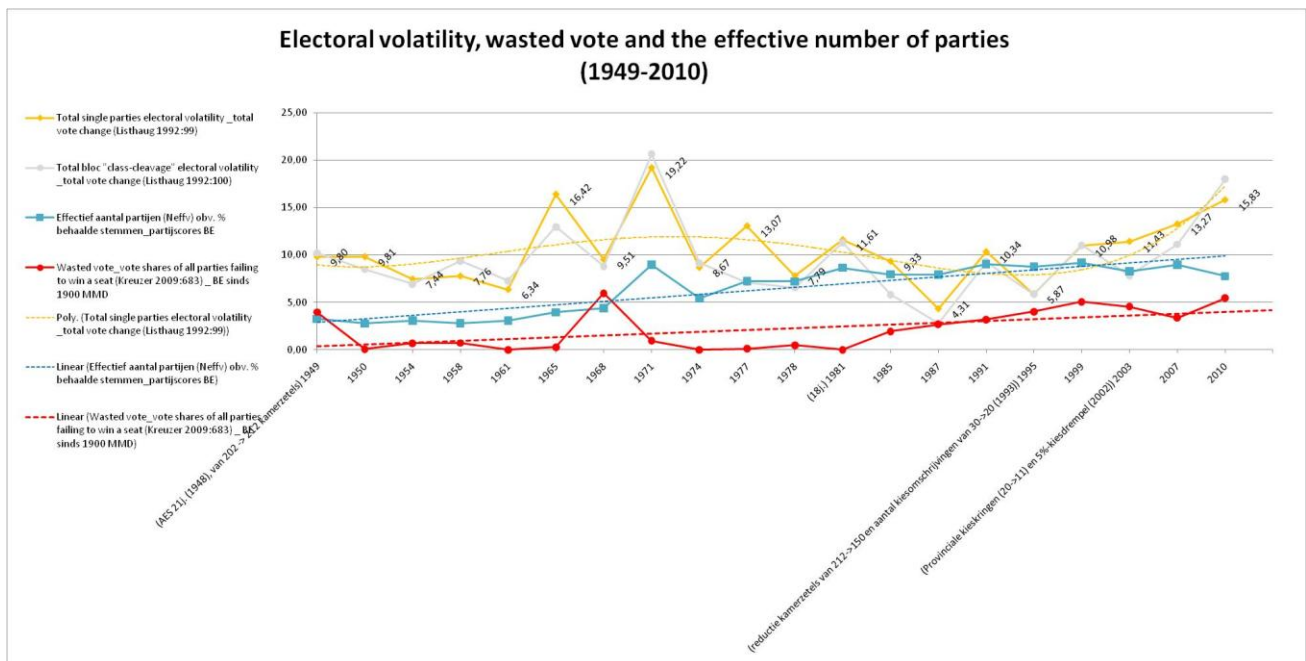
Note: The trend line of the here plotted evolution of the (aggregate) bloc 'class-cleavage' electoral volatility in Belgium (at the national level) is very similar to the trend lines for the Pedersen Index in parliamentary elections in Western Europe, 1945-2011 plotted by Dassonneville and Hooghe (2011:18, figure 1), with most observations within a 3 to 15% range[29]. Total electoral volatility at the party-level is in general higher. Total vote change and total wasted votes follow a different pattern. On average total bloc-cleavage based electoral volatility fluctuates around 10,50% over time. Average total inter-party electoral volatility is a bit higher (11,31%). Moments of increased electoral volatility are 1965, 1971, and the 2000s. Total electoral volatility seems to increase. The total vote wasted (i.e. votes given to parties that were not successful in winning a parliamentary seat) is 2,17% on average. In 1949, 1968 and since the 1987 election onwards the share of wasted votes topped the average for the entire period. The 1950s until 1961 were a period of relative low levels of electoral volatility and wasted votes, as were the years from 1974-1978. Since 1987 both indexes increase. There is no significant association between the evolution of both; however there is a strong positive relationship between the change of the total wasted vote from one election to another and the level of electoral volatility in the subsequent election (Pearson R=,32). Overall there seems to be a rather strong positive association between the total vote wasted and the number of represented parties (Pearson R=,31).

Ordeshook-Shetsova's indexes (1994) for 'durable' electoral support and parliamentary representation at the party level are one of the many ways to explicit party system cohesion or stability. The graph shows the development of for the national elections since the late 1840s. The results are inconclusive: though the relationship with electoral volatility is there, there is no clear indication that periodic drops of the GDP (cf. 1979-1983, 1994-1999 or 2007-2009) can be related to any significant changes in the national party system (measured by the level of party system fractionalization, the number electoral and parliamentary parties etc.). Quite on the contrary, since the early 1970s a period of consolidation of party system cohesion (cf. figure below) seems to have started.

As said earlier, the political system until 1876 was stable with two parties alternating parliamentary majority and executive power. In the period 1876-1900, the socialist party and some ultra-catholic initiatives and the liberal-socialist cartel party were capable of impairing the hegemonic position of the Catholic party, and the effect was amplified by the introduction of the general multiple suffrage (1893). The introduction of the P.R. system in 1900 preluded a consolidation period that lasted until the beginning of the 1960s, with in general four to six parties were successfully retaining the already mentioned (marginal) vote support and/or the least possible parliamentary representation. The two indexes developed by Ordeshook and Shetsova (1994) are actually indirect measures of party system fractionalization: imagining an increase of the number of electoral parties, the more diverse voter preferences risk to become and therefore the more varied the political landscape and more competitive elections might become. Because the correlation between the Neff*v* and Neff*s* is very high, the correlation between lower (or higher) levels of party fragmentation and durable electoral support of the respective parties and between the latter and electoral volatility ought to be negative.

---

[29] "Although the number of elections with a volatility index of over 20% has clearly increased, the 1950s were equally marked by some high volatility elections. More telling than this amount of exceptional and groundbreaking elections across western Europe is the very limited number of low volatility elections since the nineties. While in the beginning of the period of observation [1945], the Pedersen Index in parliamentary elections was frequently under 5%, there are hardly any low volatility elections anymore in the last two decades observed." (Dassonneville, Hooghe 2011:17)

Durable electoral support and sustained parliamentary representation (1847-2010)
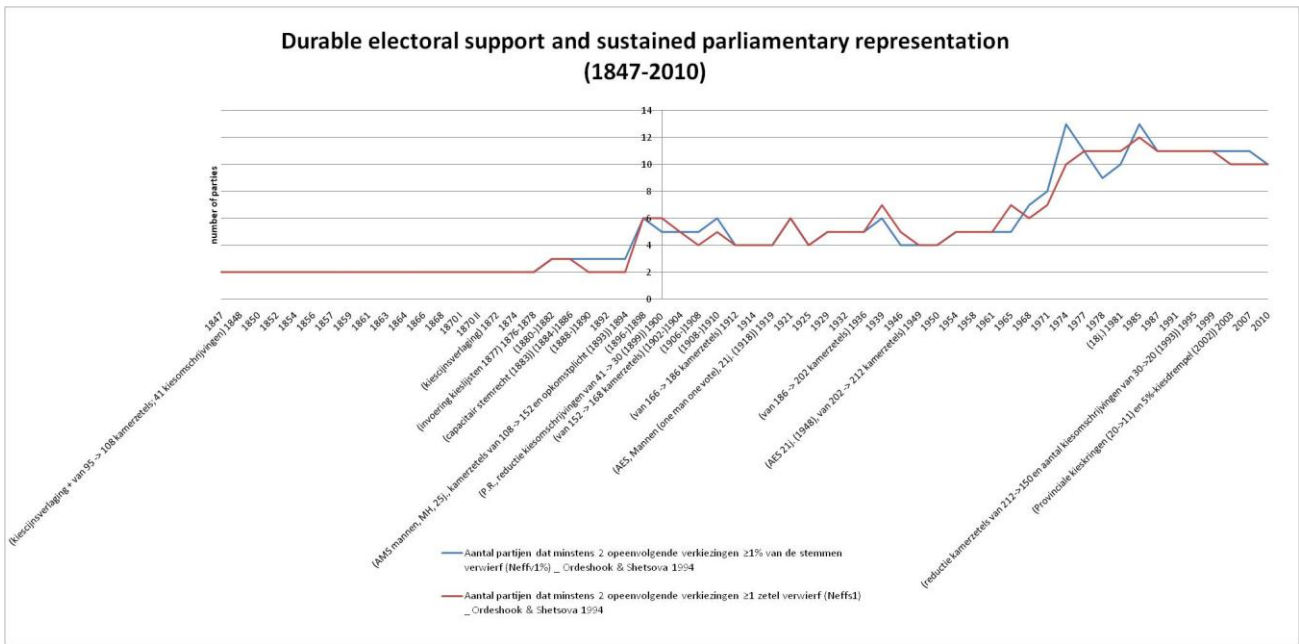
Regarding the former association, the Pearson correlation between Rae's fractionalization index (resp. for electoral parties and parliamentary parties) and the two measures of durable party support and parliamentary presence are very high: R is respectively .81 for the entire period 1847-2010 and .75 for the period under the P.R. system for sustained electoral support, and .92 for both periods for sustained parliamentary representation. Regarding the latter of both mentioned associations, we used the Listhaug index of *total vote change* (1992:100)[30] to control for the association between 'electoral volatility' and the level of sustained electoral support for individual parties as well as sustained individual party representation in the federal legislative. The assumption tested is that more frequent and important shifts of the electoral preference leads to weaker durable party support and therefore to less durable or sustained parliamentary representation. Statistical checks confirm these (strong) negative correlations (Pearson R are resp. -.24 and -.21) for the entire period 1847-2010. Looking at the post-1899 P.R. era only, a period in which political parties would actually have less institutional obstacles and therefore more reason to take part in the electoral competition, the R values become (as expected) even more negative: respectively -.28 for the durable electoral support and -.27 for durable parliamentary representation. Thus, a more democratic electoral institution not only relates to an increase of the fragmentation of a party system (here at the national level) but also to an increase of the volatility of the electorate which in its turn was associated with a less stable party system. However, from one conclusion that we may also draw is that its mainly the larger parties who benefit from electoral volatility, not the smaller parties or the incumbents. Hence, electoral volatility is a phenomenon that concerns foremost the mainstream or 'older' parties.
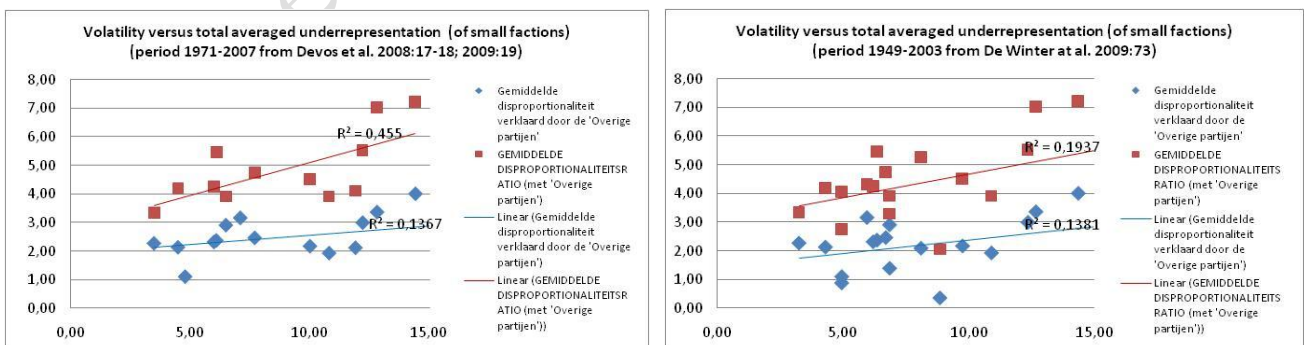
Note: the volatility measure used is Pedersen's index (= total electoral volatility)[31].

---

[30] Total bloc "class-cleavage" electoral volatility _total vote change (Listhaug 1992:100).

[31] "One of the first authors drawing attention to a trend of growing electoral instability in several advanced industrialized countries was Pedersen (1979). By stressing the presence of increasing levels of electoral volatility, he argued against the notion of frozen party systems which was prevailing at that time, largely because of the influential work of Lipset and Rokkan (1967). Pedersen's article The Dynamics of European Party Systems: Changing Patterns of Electoral Volatility (1979) became one of the most cited in political science. (…)Inspired by previous authors, Pedersen introduced a measurement of volatility that sums the absolute changes in vote

13

When comparing the electoral volatility in the period 1971-2007 (left graph above) with the total averaged disproportionality the correlation is very strong (Pearson R=.84). The association between voter volatility and the underrepresentation of the smaller parties too is positive and statistically significant (Pearson R=.56) Thus it seems that in the last quarter of the 20th century higher levels of electoral volatility relate well to higher levels of underrepresentation of the smaller factions (and thus added to the high levels of total disproportional representation of the political system). However, if we broaden the scope (1949-2003) than the general correlation drops to rather insignificant levels of association.

Whatever the specific part of electoral volatility might be in trying to understand the mechanisms of (dis)proportional representation, we notice that volatility rates on average increased with 50% since the 1970s compared to the rest of the post-WWII period (with 1965 as the only exception[32]). Hence we conclude that there is an association between the increased levels of electoral volatility since the 1970s and the increased fragmentation of the national political landscape, i.e. the number of electoral and parliamentary parties and vice versa, that there is a relationship between the lower levels of electoral volatility and the lower numbers of electoral and parliamentary parties in the 1950s and 1960s.

4. Party elite gamesmanship[33]

In his study on the way party systems formed in Germany, Marcus Kreuzer states at some point that "politicians have the capacity to reshape the party systems between elections." (2009:674) This was a reference to Michael Laver and Kenneth Benoit's study of *The evolution of party systems between elections* (2003), in which elite behavior in general and coordination strategies in particular[34] were linked to the creation of certain equilibria in the party competition. Because electoral stability offers certainty to the parties involved, in theory all parties in the system ought to strive towards the maximization of stability and hence the consolidation of the party system. However, election markets are not efficient markets[35] and therefore coordination strategies always risk to shake up as much as it aimed at stabilizing the party system. Also, co-ordination strategies –like the *kartellization* of the Belgian parties in the early 2000s- are often the result of election outcomes and of institutional constraints. But they also aim at digesting election market outcomes, whether or not foreseen or unexpected. Because of their *accelerator effect*, coordination strategies are therefore key to the better understanding the temporal dynamics of transitional party systems. (Kreuzer 2009:675-676) Now that we know that party elite coordination strategies serve many purposes, does electoral strategizing help to understand the increasing levels of fractionalization of the Belgian party system and the way in which a stable equilibrium was (never) reached? Does the Belgian case provide evidence in support of the assumption that coordination strategies between party elites (e.g. mergers, acquisitions, alliances, name changes, party switching, kartels etc.) especially matter in transitional party systems (from a one party system to two party system to multiple party system) where electioneering strategies (electoral threshold, list connection and apparentment rules, electoral rule, redistricting etc.) are often limited in their effectiveness?

The first thesis we explore is the creation of the demand: i.e. expanding the offer of electoral parties motivates voters to change their party preference more commonly than in the situation with a smaller supply of parties. If political demand can be created then this would mean that fluctuations of the effective number of electoral parties (Neff$v$) would correspond with changes in total electoral volatility. A Pearson R correlation of -,12 (and -,08 for the real number of electoral parties), however, is not high enough high to conclude that for the

---

shares from one election to the other for all political parties. This sum, called total net change, is then divided by two, since a switch would otherwise be counted twice (losses for a certain party equal wins for another party). As a result, the index varies between 0 and 100 and is more easily interpreted (Pedersen 1979)." (Dassonneville, Hooghe 2011:5)

[32] According to Lieven De Winter et al. the (electoral) volatility rate in the 1965 elections was 15,80. (2009:73) The pre-1980 volatility rate was on average 7,08; the post-1980 rate 10,45.

[33] Cf. refers to Jack Bielasiak's description of co-ordination strategies applied by party elites and the fact that elections and parliamentary activity are catalogued as screening devices that elevate political contenders to prominent roles and marginalize other party formations. (in: Kreuzer 2009:673)

[34] Based on Cox' *Making votes count* (1997) five strategic moves or co-ordination strategies influencing either the strategic entry of parties (through party registration laws, candidate selection procedures, campaigning rules, funding rules,…), or the change of the seat (via redistricting, implementing electoral threshold and changing the electoral formula), or party switching (candidate hopping, party mergers, fissions…), or forging electoral coalitions (electoral alliances, connecting party lists prior to elections (+ apparentment), or (national) party formation through aggregating votes across districts.

[35] Information about parties' strength (number of members, votes, seats, organization and public support) is widely available, but detailed, correct and freely available information about voter expectations and preferences is largely missing.

post-WWII period there is a such correlation between the total supply of (electoral) parties and the total volatility of the vote. These correlations however get stronger when the percentage change of the electoral volatility from one year to the next is taken into account (not shown on the below graph!) (Pearson R of respectively ,33 for Neff*v* and .31 for Neff*s*). Secondly, changes of the number of parliamentary parties in year x-1 correlate in a strongly negative way with changes in electoral volatility in the year x (R = -,31) (when taking the percent change of electoral volatility into account, R remains -.31). The higher the positive or negative change of the number of parties that actually won a seat in the national parliament in the previous election, the more likely a negative or positive change of the volatility of the electorate. So it seems that the electorate is sensitive for increasing levels of fractionalization in the parliament, though the number of electoral parties (Neff*v*) does only relate in any significant way to the level of electoral volatility at election day.

The other way around, when we compare changes in the electoral volatility in year x-1 to changes in the number of electoral parties the correlation is even stronger (Pearson R = -.49) (when taking the relative change of electoral volatility into account, R drops to -.32 –still this is significant). Overall, parties too seem to be sensitive for increasing levels of electoral volatility: (+ or -) changes of electoral volatility resulting from the previous election corresponds widely with (- or +) changes in the number of electoral parties. Or else, the higher the increase of the total vote change, the higher the number of electoral parties that will step out of the electoral race to the parliament. As shown from the history of the Belgian party system at the national (federal) level, such exits foremost concern the smaller parties. From our longitudinal study it certainly looks as if electoral demand for new party initiatives can be created but -at least at the national level- there seems to exist a rather effective *stop loss mechanism* that controls the changing levels of electoral volatility (as the linear trend line shows: on the longer term there actually is no change of the electoral volatility at all), a mechanism that engages primarily at times when the number of parliamentary parties changes considerably. The latter observation connects to the main conclusions of Dassonneville and Hooghe's research on the relationship between electoral systems, party systems and electoral volatility: "With regard to differences in party systems, electoral volatility is significantly higher in systems with more political parties. The more parties participate in elections and the more options voters have in the polling booth, the higher levels of volatility. (…)The length of democracy is [also] significantly related to the Pedersen Index.." (2011:25) None of the tested institutional electoral system variables (e.g. compulsory voting, turnout, time between elections) were found to be significant predictors of net electoral volatility.

Having said this, how and why the self-controlling and corrective stop loss mechanism weights varying electoral volatility against varying party system complexity are questions worthwhile looking at in the context of the operationalization of the electoral equilibrium theorem. (Grumm 1958) In any case the volatility measures "(…)capture the essence of what researchers seek to explore: the dynamics of party system change and stability (Bartolini and Mair, 1990)." (Torcal et al. 2012:2) And, referring to Dassonneville and Hooghe's work, vice versa.

To summarize this part, under the pre-1900 plurality system we noticed typically high levels of disproportional representations and high electoral bonus for the larger political factions. As of 1900 under the P.R.-based system D'Hondt we notice lower levels of total disproportional representation, lower levels of electoral bonuses for the larger factions, but still increasing levels of total disproportional representation of the smaller parties and factions (even at an aggregate level!). Even under P.R. rule the election data show a substantial and systematic association between the marked lower levels of proportional underrepresentation of (smaller) factions and the average disproportional overrepresentation of the largest factions (Pearson R = .26)[36], as well as between the disproportional representation of the smaller factions and the number of parliamentary parties as a whole (Pearson R = .73)[37]. In other words, the higher the overrepresentation of the largest factions, the higher the underrepresentation of the smaller factions. Elements or indicators that we could statistically link to the phenomena of under- and overrepresentation of parties are the rising number of electoral parties (Neff*v*) as well as the increasing electoral volatility since the mid-1960s (cf. the regionalization of the traditional parties between 1968-1978). Being basically two sides of the same medal, new party birth and voter volatility got a serious boost in the mid-1980s and 1990s –hence, prior to the so-called *stabilization of the European electorates* (1885-1985) mapped in great detail by Stefano Bartolini and Peter Mair (1990)– a boost which was sharpened in Belgium by the acknowledgment of a broadly perceived widening gap between a distrustful

---

[36] Based on Lijphart's disproportionality index of the (averaged) number of seats of the two largest parties.

[37] Based on the Neff*s* based on the share of the seats won by each faction (or party) at each point in time.

public and a by scandals inflicted political elite. By the end of the 1990s a new politics paradigm (*Nieuwe Politieke Cultuur* or NPC) as well as a heavily fractionalized Belgian national party landscape (cf. part two of this study) were a fact, accommodating the preferences of the voter in almost every way, however putting the traditional (large) parties in a situation where they had to deal with it (e.g. by introducing an electoral threshold).

Apart from the electoral formula, the size of the assemblee –which is actually the sum of the size of all underlying district magnitudes- affect the level of proportionality of the parliamentary representation.

5. District magnitude, social heterogeneity and the size and fractionalization of the parliament

In the last part of this paper we focus on the question how far does changing the district magnitude allows politician to strike a balance between the often conflicting goals of ethnic or social subgroup representation and defractionalizing the political system? (Rae 1995) "The strongest relationship found by Rae is that between district magnitude and proportionality: as magnitude increases, disproportionality goes down." (Rae 1971 in: Lijphart 1990:486)[38] But whether or not this correlation is amplified by the level of social heterogeneity was not so clear.

The general thesis linking increasing district magnitude to increasing proportional representation was also supported by many other researchers, among them Powell and Bingham (1982), Ordeshook and Shetsova (1994), Cox (1997) and Clark, Golder and Golder (2009). According to Powell and Bingham party system "(…)fractionalization is encouraged by non-majoritarian electoral laws but most of all by the heterogeneity measures" (Powel, Bingham 1982:101 in: Neto, Cox 1997:154) Clark et al.'s research of the participation and representation of parties in 17 countries in parliamentary elections in the period 1946-2000 shows that in sum the relation found between DM and both the participation and the representation is as follows: chances of representation is highest when DM equals 150 (comparable to the size of the Dutch national parliament) in which case "[…] increasing the number of ethnic groups by one […] yields about one and a half electoral parties and one and a quarter legislative parties." (Clark, Golder, Golder 2009: 596) A DM smaller than 20 decreases the chance of representation profoundly and a DM equal to one lowers the theoretical chance for any (new) political candidate (faction) to run for office to 11% and to get elected to only 7% (p≤.07). All other variables kept the same- the higher the average district magnitude (DM)[39], the higher the proportionality and therefore the more democratic the representation of relatively more parliamentary parties. (Annex 5)

Because of the above one would assume that drastic changes of the size of the federal parliament (cf. the reduction of the number of seats in the federal parliament from 212 to 150 in 1993) as well as changes of the district magnitude (cf. the pooling of the 30 old arrondissemental constituencies into eleven provincial districts in 2002) will affect the number of electoral parties (Neff*v* (aka ENPV)) as well as the number of parliamentary parties (Neff*s* (cc. ENPS)). In the first case because of the auto-out-selection mechanism one would logically expect fewer electoral parties and therefore lower levels of (total) disproportional representation. In the later case one would expect more electoral parties and thus higher levels of (total) disproportional representation. In fact, the research of ethnic heterogeneity, district magnitude and the number of parties of 23 more or less stable Western democracies (1945-1990) by Ordeshook and Shetsova (1994) makes clear that political systems become foremost sensitive to district magnitude when ethnic fragmentation is high. High social heterogeneity increases the likelihood of more politically organized groups, no matter what (average) district magnitude. Or, "[a] polity will have many parties only if it *both* has many cleavages *and* has a permissive enough electoral system." (Amorim Neto, Cox 1997:155) However, when ethnic fragmentation is low, only *especially* large electoral districts will experience an increase of the number of electoral parties. But at a relative lower scale then the case where both conditions are fulfilled. In the case of SMD the party system is more or less 'impervious'. (Ordeshook, Shetsova 1994:122) We will hereafter explore the here-described mechanical as well as strategic effects of the electoral system for the national legislative: focusing on the relationship between district magnitude, the presence of social cleavages and the number of parties.

The regression function used to describe the interaction effect of DM, cleavage structure and the relevance of

---

[38] "[Rae] compares the effects of electoral systems classified according to five categories of average district magnitude, m: (1) single member districts where m = 1, (2) m between 2 and 6, (3) m between 6 and 10, (4) m between 10 and 20, and (5) m between 100 and 150, which occurs in the two countries with a single nationwide district, Israel and the Netherlands." (Lijphart 1990:ibid.)
[39] Cf. Rae (1971:20) and Lijphart (1994:11). See Annex 6 for details.

the seat distribution at the upper tier district level in relation to the Neff$s$ is the following[40]:

$$\text{Neff}s = \alpha + \textbf{(real) Neff}v * 1 - [\ 1/(\beta0 + \beta1\ \text{LogDMa} + \beta2\ \text{ENETH} + \beta3\ \text{UPPER})\ ] + \varepsilon$$
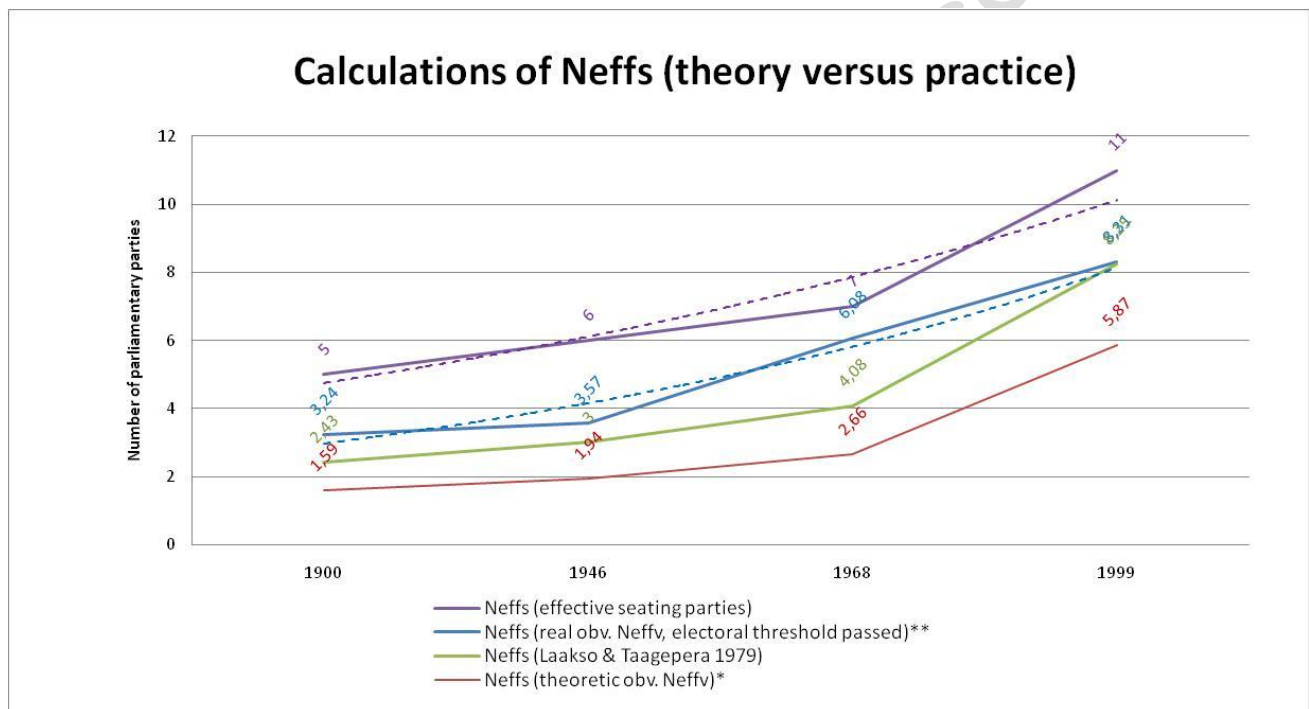
where *Neffv* is the effective number of electoral parties (0-∞) and real Neff$v$ is de number of electoral parties that passed the electoral threshold,
where *LogDMa* is the logscale distribution of the average district magnitude at the time of the election (0-∞);
where *ENETH* is number of societal groups based on the number of old and new societal divisions (social structure or cleavage structure)[41] (0-∞); and
where *UPPER* is the percentage of seats (0-1) that is allocated at the upper tier district level (hence after apparenting of two or more party lists)[42].

The dependent variable used here (Neff$s$) thus gives an indication of the fragmentation of the party system (Neff$v$, ENETH) and the characteristics of the electoral system used to distribute the parliamentary seats at the national legislative (LogDMa, UPPER). As the below graph shows for a small sample of election years, the above function describes with 99,99% precision (p<.01) the evolution of the Neff$s$ (theoretic) effective number of parliamentary parties using the formula proposed by Laakso and Taagepera (1979). In general, the above formula hence is a good predictor of the development or evolution of the effective number of seating parties (effective seating parties).

Calculations of Neffs (theory versus practice)

*Neffs = α + **Neffv** * 1-[1/(β0 + β1 LogDMa + β2 ENETH + β3 UPPER] + ε
Neffs = α + **real Neffv * 1-[1/(β0 + β1 LogDMa + β2 ENETH + β3 UPPER)] + ε

However, what interests us is to find a formula that is robust enough to sufficiently trustable describe the real number of parliamentary parties. The second regression function used in the above figure to describe the Neff$s$ is based on the effective number of parties that have passed the electoral threshold. If we control for the real number of electoral parties that passed the electoral threshold (real Neff$v$), then we see clearly that the values

---

[40] This regression function is very similar to the one that produced the best model fit (R^2 = .686) and a significant coefficient tested by Amorim Neto and Cox (1997:164-165) (N = 51); however, this function also included two other variables i.e. the proximity of presidential elections and the number of presidential candidates. (cf. Amorim Neto, Cox 1997:162: the number of parliamentary parties is determined by the following regression: Neff$s$ (ENPS) = α + Neff$v$ * (β0 + β1 LogDM + β2 UPPER + β3 ENETH) + ε)

[41] Cf. part one of this article: 'old' class, religion and centre-periphery-based cleavages that were longtime facilitating group politics and 'new' age, sex and ethnicity-based cleavages that catalyze person(ality)-based politics. ENETH is based on the average for all, based on their relevance over time.

[42] UPPER comprises the share of the seats that is distributed at the arrondissemental level until 1999 and since the 2003 national elections at the provincial level (except for the districts of Leuven, Nijvel and Brussel-Halle-Vilvoorde (BHV, for the 2010 election apparentment concerned seven seats in total (= 4,67%)).

are closer to the real numbers of represented parties. The Pearson correlation with the number of effective seating parties in the national parliament is again very high (R=,966). Though the correlation between the theoretically ciphered Neff*v* (*) and the real Neff*v* that have passed the electoral threshold (**)[43] is very high (R=,997) from the comparison of the number of parties follows that the theoretic number of parties is an underestimation of the real propositions or the effective outcome –i.e. the number of real elected and represented parties in the parliamentary assembly-. More importantly, there is a relation between the societal structure (ENETH) and the number of parties. This correlation is strongest for the electoral parties that have successfully passed the electoral threshold (R=,973), and lowest for the theoretic Neff*s* (R=,954).[44]

Since the first application of the P.R. system in 1900 the gap between the total disproportionality rate and the disproportional representation of small parties more specifically started to narrow. However, the premature move towards an electoral equilibrium between the political factions and more specifically the decrease of the total disproportionality of the smaller factions occurred not so much at the time of the introduction of the P.R. system like one would expect knowing that the distribution of the seats is done in an essentially proportional way, but rather at the time of the reduction of the number of seats in the federal parliament from 212 to 150[45], first applied in the federal elections of 1995. The result of the pooling of the constituencies was an increase of the average DM from 7,01 (= 212/30) to 7,5 (= 150/20). What has been the outcome of these changes of the electoral institution?

Since the 1995 elections the smaller parties have been gradually represented in the federal parliament in a less disproportional way. At the same time the total number of parties participating in the 1995 federal elections climbed from 34 in 1991 to 59 in 1995 (= +73,5%). Though the total size of the federal parliament decreased with 29%, we notice lower levels of total disproportionality and lower total underrepresentation of the smaller factions, as well as a increase in the number of electoral parties. How can this be explained? As said, parallel to the reduction of the parliament size a pooling of old electoral constituencies into larger electoral districts was effectuated. The combination of both resulted in a augmentation of the average DM with 7% and according to the theory any change of DM may be relevant for explaining changes of the total number of Neff*v* (and Neff*s*). Hence, the theory-based hypotheses about party coordination behavior or strategizing (i.e. boiled down to the question 'to participate or not to participate' in the federal elections and 'how') under changing electoral-institutional conditions seem to fit the electoral-political reality of the 1990s. As the (average) DM rises, it makes sense for (more) parties to participate in the elections and chances of gaining (at least) one seat are realistically higher. The other way around, in the years 2003-2007 the electoral strategies deployed by a majority of the Flemish parties takes a turn in view of the introduction of the 5% electoral threshold and the provincial districts (2002). In those years party elites of a large majority of the Flemish traditional parties started to forge alliances and created kartels in order to consolidate their electoral positions. For the smaller parties like Vivant, Spirit, and N-VA the alliance was a matter of survival. Soon the traditional parties noticed that the reduction effect of the introduction of the electoral threshold was largely compensated by the introduction of the (larger) provincial districts and that all traditional parties succeeded in preserving their electoral score or even improve it. But as the smaller parties inside the kartels tried to value their share within the alliances and pushed forward their political agendas, most of the kartels breached soon after the 2007 elections. By the 2010 elections some parties, like Vivant or Spirit, were languishing; N-VA on the other hand was booming on an issue on which the party insisted already for decades, an issue that the successful Christian-democratic leadership of Yves Leterme was not capable of solving despite his 'five minutes of political courage', namely the division of *Brussels-Halle-Vilvoorde* (B-H-V). As a result most the kartels did not survive this turbulent period prior to the June 2010 elections (two changes of the prime minister between 20 March 2008 and election day[46]). In the elections one in three of the Flemish voters and 12% of the voters of

---

[43] **Neff*s* (electoral threshold passed) = α + Neff*v* * 1/(β0 + β1 LogDMa + β2 ENETH + β3 UPPER) + ε

[44] The average underestimation of the real number of parliamentary parties for the theoretic Neff*s* (theoretic)* is 60% (hence ε = ,60), that for the Neff*s* (electoral threshold passed)** the difference is on average only 27% (ε = ,27), yet not systematically pointing at an underestimation of the actual number of parliamentary or seating parties.

[45] The fourth transformation of the Belgian state in 1993 made Belgium officially a "federal" state with three communities (a Flemish, Walloon- and German-speaking community) and three regions (Flanders, Wallonia and the Brussels Capital Region), each represented in regional parliaments or assemblees. Because of the installation of the new parliamentary assemblees at the regional level the size of the federal parliament was reduced from 212 to 150 for the Chamber of Representatives and from 70 to 40 for the Senate. There is not overlap possible between mandates in these parliaments. As a result the composition of the federal as well as each regional parliament is unique.

[46] Leterme I (20 March-30 December 2008), Van Romuy I (30 December 2008-25 November 2009), and Leterme II (25 November 2009 until election day and 541 days of caretaker government ('*regering van lopende zaken*') (cf. Crepaz, Steiner 2013:111), until December 6th, 2001 when the cabinet Di Rupo I was formed.

B-H-V rallied behind Bart De Wever, leader of N-VA. The developments of party strategizing of the last two decades (since the 1990s) underscores the conclusion drawn by Kreuzer that "(…)politicians in transitional democracies rely just as much on co-ordination strategies as they do on electioneering strategies." (2009:676)

In the following paragraphs we look at the relation between the levels of (average) DM and, firstly, the total disproportionality under a specific electoral system, secondly, the levels of overrepresentation of the largest political factions (or parties), and thirdly, of the reduction effect (i.e. the Neff$s$/Neff$v$ ratio). Since many authors find that the driver of a representative electoral system is the DM (e.g. Rae 1971:20; Lijphart 1994:11 and Dodeigne & Binard in: Bouhon & Reuchamps 2012:571-587), we take the descriptive statistical analysis one level up and study the data in a non-periodic way. Analysis of the association between the (average) district magnitude (DM) and the disproportionality levels for the period 1900-2010 demonstrates a strong negative correlation between the average DM and the level of disproportionality, measured by Gallagher's LSq-index (R= -.386*, sign. at a p<.05 level).[47] The era concerned however includes one without (1900-1999) and one with an electoral threshold (2003-2010). In the period before 2003 an increase of the DM with one unit leads to a decrease of the total disproportionality measured by the LSq-index of 0,52. Referring to the empirical data collected and analyzed by Vander Weyden (2005:172, 175 & 176): the lower (or higher) the average DM, the higher (or lower) the observed disproportionality rate. At the federal level and based on our aggregate results for all political factions, this negative relation between the level of the average DM and the total disproportional representation of the party system is strong. As a result of the first application of the 5% electoral threshold in the 2003 federal elections (LSq=5,09), the disproportionality levels -yet again- peaked but normalized back to under-average LSq-levels in 2007 (LSq=2,80) and 2010 (2,99).[48]

Higher district magnitudes are (in theory) also linked to lower overrepresentation of the largest parliamentary faction or party (Vander Weyden 2005:160-161; 163; 168). Using D'Hondt's D index to test the correlation, the above graph clearly shows a negative association between average DM and D. Each increase of DM with one unit results in a 1,25 unit cut of the overrepresentation of the largest faction. However, even though the overrepresentation of the largest faction has diminished over time, it obviously did not disappeared fully. Now, does the increased proportionality signify that (all) parties (hence newcomers too) have higher (read: equal) chances to gain a seat and be represented in parliament, as suggested by Maurice Duverger and John Grumm? Vander Weyden (2005:185) formulates and tests the following hypothesis: the higher the DM, the lower the *relative reduction effect* of the seat distribution system (i.c. the system D'Hondt)[49]. Based on the election results for the years 1900 to 2010 the linear trend line in the below scatter plot would basically contradict this supposition. More to it, as shown in the below graph in the period before 2003 the relation was clearly inverse: with every extra unit of DM, the reduction effect increases with 6,25%.[50] The explanation for this result, is not the use of the measure (average DM)[51] but rather that the reduction effect has most likely more important 'causes', in casu the sheer increase of the number of electoral parties due to large numbers of newcomers that did *not* succeed in entering the parliament as well as the introduction of the electoral threshold, which clearly had an impact (cf. outliers on the right of the graph). (cf. *infra*: the real fractionalization of the national party landscape (Pv) (2.2))

Concerning the central hypothesis (that P.R. systems induce the chances for an electoral equilibrium), whereas the drop of the electoral support at the national level of the three traditional party families has been significant during the course of the past fifty years (since the mid-1960s), the rise of the other (smaller) parties only started around the mid-1980s and accelerated towards the late 1990s. But even then, (except for the Walloon liberal party) the smaller factions represented in the federal parliament on average remained underrepresented, to the profit of the traditional parties. Based on the statistical analysis of correlation between size of the parliament en de average DM, and notwithstanding the introduction of the electoral threshold (who's effect was very temporary (cf. *supra*)), we conclude that there are signs of a progression towards a more or less 'equal' representation for *all* electoral parties.
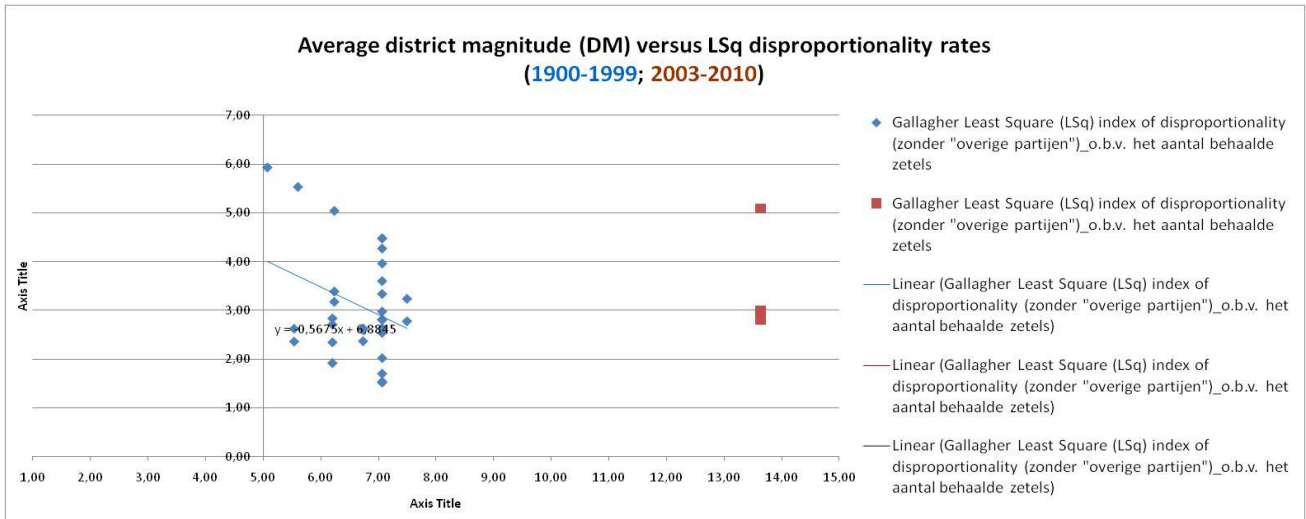
---

[47] Following Lijphart (1994) who had a clear preference for Gallagher's LSq-index for the study of disproportional representation, we chose to use the LSq-index for the analysis concerning the relation between the DM and the proportionality of the P.R.-system.

[48] The average LSq-score for the period 1900-2010 is 3,15. For the pre-1900 period the LSq-index is 10,18. (cf. Annex 1)

[49] The relative reduction effect $r = (Nv - Ns)/Nv$ (Taagepera & Shugart 1989:273)

[50] Not really equivalent to the reduction effect of some non-permissive electoral systems signaled by Clark et al. (2006, 2009) where the proportionality of the seat distribution is reduced to one-fifth (or 20%). (Clark, Golder, Golder 2009:592 en 594)

[51] Cf. some state that for this sort of analysis the median DM is preferred above the average DM (cf. Rae 1971:20 en Lijphart 1994:11). The correlations based on the median DM are somewhat stronger but largely comparable to that of the average DM (reduction effect Y=0,1012x+0,1476). (cf. Annex 6) The average DM for the period 1900-1971=5,1, for 1973-1991 = 7,1, for 1995-2003 = 7,5 and since 2003 = 13,6. (based on Dodeigne & Binard in: Bouchon & Reuchamps 2012:571-587)

Average district magnitude (DM) versus LSq disproportionality rates
(1900-1999; 2003-2010)

Note: Outlying values at the right end of the graph (election years 2003, 2007 and 2010) are the result of the change of the electoral institution in 2002, including the replacement of the smaller arrondissemental electoral districts by larger "provincial" districts (the effect of which theoretically ought to be the increase of the proportionality of the electoral system) as well as the introduction of a 5% electoral threshold (which in theory should increase the total disproportional representation). Cf. Annex 6 for the intervals corresponding to each average DM level.

Average district magnitude (DM) versus D'Hondt overrepresentation index
(1900-1999; 2003-2010)
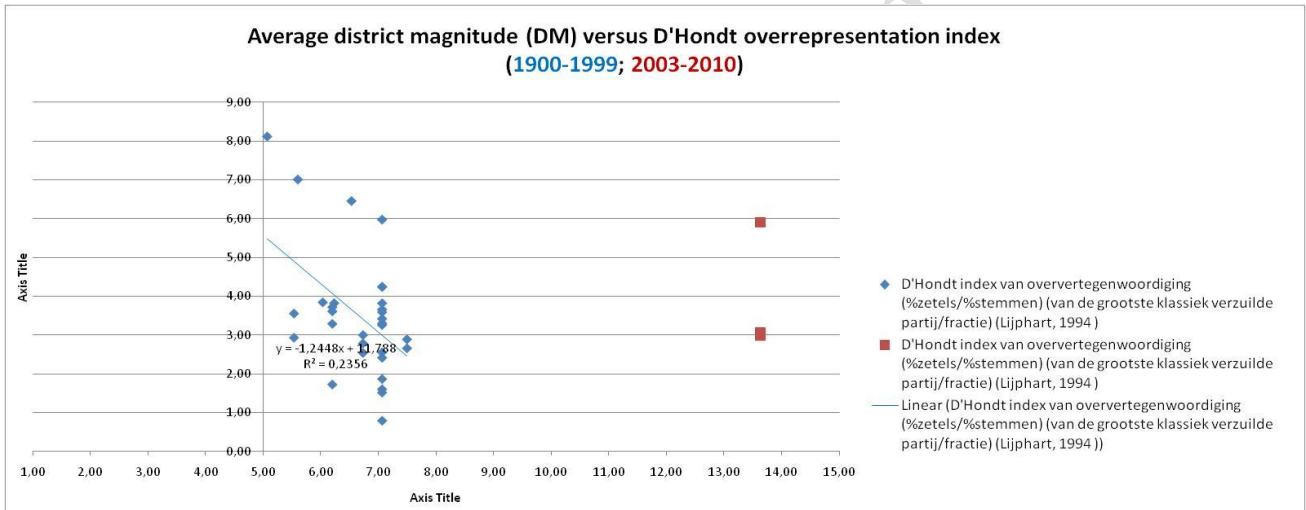
Note: Here again, outliers at the right of the graph again are the result of the 5% electoral threshold, which raise D'Hondt's D. Cf. Annex 6 for the intervals corresponding to each average DM level.

Average district magnitude (DM) versus reduction effect
(1900-1999; 2003-2010)
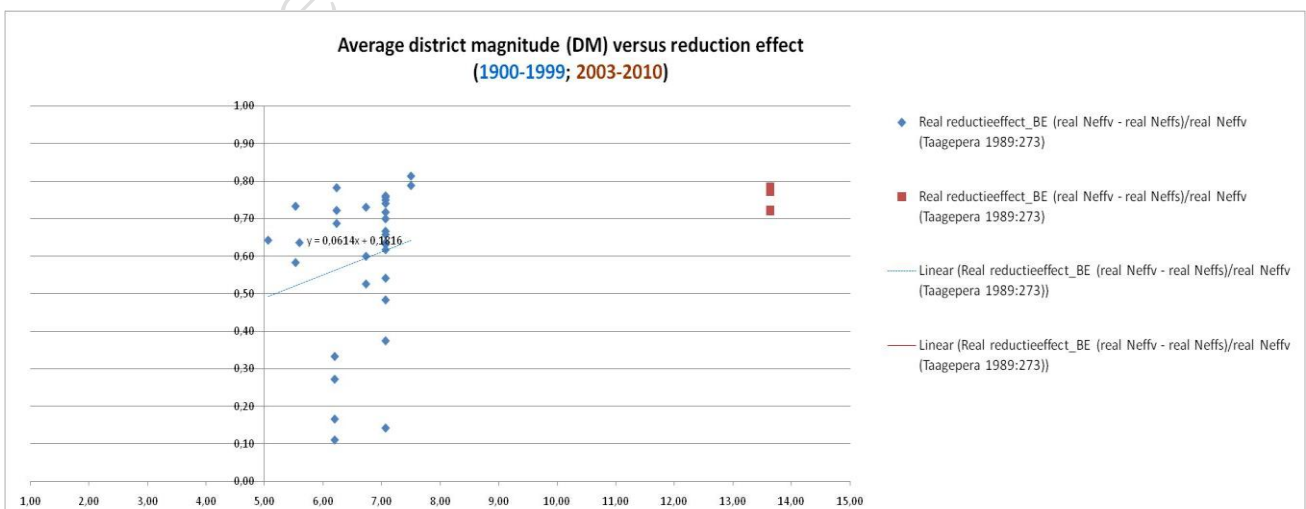
Cf. Annex 6 for the intervals corresponding to each average DM level.

On the other hand one cannot be blind for the fact that in spite of the P.R. being in place many of the smaller parties (the Communist Party (CP), the Front party (*Frontpartij*), the People's Union (*Volksunie*), SLP, Vivant

20

and many others) did not survive the highly competitive nature of the Belgian national or federal party system, excluding rather than including smaller parties from the federal parliament. Therefore, though the electoral data point at *a nascent electoral equilibrium* at the Belgian federal level we need to mitigate Grumm's 'equal chances for survival' argument.

6. Conclusion

This statistical historiographic way of looking at the election results for the Belgian national legislative (1876-2010) in an attempt to validate the electoral equilibrium hypothesis put forward by Grumm in 1958 adds value to the broader study of electoral systems and party systems, in particular to our understanding of party adherence and value shifts. The focus on the study of election data, institutional reform (i.e. electoral laws) and the impact of the (national) electoral system and on the (national) party system are essential. Just like the equilibrium is en economic concept, so are many other here used constructs: inter-party (bloc) competition, electoral market leadership, electoral fragmentation or concentration and so on. Following this approach of a statistical historiography of the Belgian national elections and the mapping of representation, proportionality, fractionalization, and so on and so forth makes the study of electoral and party system dynamics manageable. The combination of the history (facts) with the statistics (figures) is not at all new but tends to get bypassed by the super-aggregated comparative studies –a unfavorable evolution.

In this article we focused on the a statistical analysis of long-term time series of representation of parties and the consequences of disproportional party representation at the national level, i.e. analyzing trends of proportionality (i.e. vote share versus seat share), over- and underrepresentation and electoral volatility. Based on the aggregated national election outcomes of parties and factions in the Chamber of Representatives (1900-2010) we studied the relationship between the Belgian electoral system and the party system dynamics. Our main observations are that over time (i.e. with the opening up of the electoral system for more parties) the party system in itself got more complex, new parties were though their systematic underrepresentation more and more successful in entering the national parliament, that the latter evolution helped to bring down the supremacy of the three old parties (cf. electoral market leadership), at the same time increasing the overall electoral competition (i.e. more equally-strong and electorally successful or durable parties). This perfectly relates to a concept that includes many of the here discussed trends and evolutions: electoral volatility (not just Pedersen's total vote change). On another level we have also displayed that the wider (economic) context is important since it seems to support the more general trends: the more harsh the economic situation the more visible the electoral volatility measures become.

From the above conclusions also follow (further research) questions dealing with the electoral strategies of political parties in those countries where the electoral system has been changed (for instance from plurality to P.R. like it has been the case in Belgian in the late 1890s). But in the current context, hence against the background of a highly fractionalized political environment, the question of how political parties manage to develop a strategy for electoral reform (= electoral strategic logic) is as crucial as unanswered. In other words, what does the decision-making process to reach such point of no return of changing profoundly the electoral system decision look like? And, how do parties anticipate (large) electoral system reforms (as defined by Lijphart (1994), cf. supra)? What (strategic) resources are used, hired, built, renewed to bear up this strategic process, i.e. how do parties handle the management of such (strategic) resources? Because electoral strategizing would also include the (choice to) support or oppose changes of the electoral institution, what way can (the study of) party strategizing learn us something about the link between electoral reform and electoral success? Combining the contextualization of a historic overview of the election results for the Belgian national legislative (1876-2010) and a theory-based statistical validation of the electoral equilibrium hypothesis adds value to the broader study of electoral systems and party systems, in particular to our understanding of party adherence and value shifts. The focus on the study of election data, institutional reform (i.e. electoral laws) and the impact of the (national) electoral system on the (national) party system are essential. This way (only) a statistical historiography of the Belgian national elections and the mapping of the underlying dynamics (representation, proportionality, fractionalization, and so on and so forth) is manageable. The combination of the history (facts) with the statistics (figures) is new but strongly desired.

Other routes of taking this line of research further are to study the secrets and the impact of fractionalization of the national party system in more detail. The relationship between the electoral system, democratic representation and the behavior of political parties and their electorate may seem evident in many ways and has been proven to be the outcome of many case studies, including the Belgian case. However, the more quantitative study of this link is more problematic.

REFERENCES

Alonso, S. (2012). *Challenging the state: devolution and the battle for partisan credibility*. Oxford: Oxford University Press.

Andeweg, R. (2012). Peter Mair en de vertegenwoordigende democratie. *Res Publica*, 54(3), 361-369.

André, A., Depauw, S. (2012). Electorale competitie en het contact met de bevolking. *Res Publica*, 54(3), 269-288.

Bartolini, S., Mair, P. (2007 [1990]). Identity, *Competition, and electoral Availability: the stabilisation of European electorates - 1885-1985*. Cambridge: ECPR Press [Cambridge University Press].

Benoit, K. (2000). Which electoral formula is the most proportional? A new look with new evidence. *Political Analysis, 8*(4), 381-388.

Bielasiak, J. (1997). Substance and process in the development of party systems in East Central Europe. *Communist and Post-Communist Studies*, 30, 23-44.

Bogdanor, V., Butler, D. (1983). *Democracy and elections: electoral systems and their political consequences*. Cambridge / UK: Cambridge University Press.

Bouhon, F., Reuchamps, M. (Ed.). (2012). *Les systèmes électoraux de la Belgique*. Bruxelles: Bruylant.

Bricman, C. (2011). *Comment peut-on être belge*? Café Voltaire: Flammarion.

Buelens, J. (2009). Volksraadplegingen: kan België wat leren van Nederland? *Res Publica*, 59,1, pp.13-31.

Carstairs, A. M. (1980). *A Short History of Electoral Systems in Western Europe*. London: George Allen & Unwin.

Celis, K., Wauters, B. (2012). Vertegenwoordiging van oude en nieuwe breuklijnen in de Lage Landen. *Res Publica*, 54(3), 309-330.

Clarck, W., Golder, M. (2006). Rehabilitating Duverger's Theory. Testing the mechanical and strategic modifying effects of electoral laws. *Comparative Political Studies, 39*(6), 679-708.

Clark, W. R., Golder, M., Golder, S. (2009). *Principles of Comparative Politics*. Washington: CQ Press.

Colomer, J. M. (2004). *Handbook of electoral system choice*. New York: Palgrave Macmillan.

Colomer, J. M. (2005). It's parties that choose electoral systems (or, Duverger's Laws upside down). *Political Studies, 53*(1), 1-21.

Colomer, J. M. (2007). On the origins of electoral systems and political parties: the role of elections in multi-member districts. *Electoral Studies, 26*, 262-273.

Converse, P. (1969). Of time and partisan stability. *Comparative Political Studies*, 2, 139-171.

Cox, G. (1983). *Party and constituency in Victorian Britain*. Dissertation (Ph.D.). California Institute of Technology.

Cox, G. (1997 [1995]). *Making votes count: strategic coordination in the world's electoral systems*. Cambridge: Cambridge University Press.

Crepaz, M., Steiner, J. (2013). *European democracies* (8th ed.). Boston (USA): Pearson Education.

De Winter, L., Swyngedouw, M., Dumont, P. (2009). Party system(s) and electoral behaviour in Belgium: from stability to balkanisation. In W. Swenden, Brans, M., De Winter, L. (Ed.), *The politics of Belgium. Institutions and policy under bipolar and centrifugal federalism* (pp. 71-94). London / NY: Routledge.

Daalder, H. (1974). the consociational democracy theme. *World Politics*, 26(4 (July)), 604-621.

Dassonneville, R. (2012). Ontzuiling van kiesgedrag. Een proces van generationele vervanging gedreven door cognitieve mobilisatie? *Res Publica*, 54(3), 331-357.

Dassonneville, R., Hooghe, M. (2011). *Mapping electoral volatility in Europe. An analysis of trends in electoral volatility in European democracies since 1945*. Paper presented at the 1st European Conference on Comparative Electoral Research, Sofia (Bulgaria).

Deschouwer, K. (1992). De teloorgang van de catch-all partij. Een bespreking. In G. Voerman (Ed.), DNPP Jaarboek 1992 (pp. 230-240). Groningen: Rijksuniversiteit Groningen.

Deschouwer, K. (2006). And the peace goes on? Consociational democracy and Belgian politics in the twenty-first century. *West European Politics*, 29(5), 895-911.

Deschouwer, K. (2009). And the peace does on? Consociational Democracy and Belgian politics in the twenty-first Century. In M. Brans, De Winter, L., Swenden, W. (Ed.), *The politics of Belgium. Institutions and policy under bipolar and centrifugal federalism* (pp. 33-49). Londo, NY: Routledge.

Deschouwer, K., Van Parijs, Ph. (2009). A country-wide electoral district for Belgium's federal Parliament. In K. Deschouwer, Van Parijs, Ph. (Ed.), *Electoral engineering for a stalled federation. A country-wide electoral district for Belgium's federal Parliament* (pp. 7-19). Brussels: University Foundation.

Devos, C. (2006). Politieke partijen. In C. Devos (Ed.), *De kleermakers en de keizer. Inleiding tot politiek en politieke wetenschappen* (pp. 247-313). Gent: Academia Press.

Devos, C., Bouteca, N, Van Liefferinge, H., Lannoo, S. (2009). Democracy, parties and representation: a complex and dynamic triangle. In F. De Rynck, Verschuere, B., Waeyenberg, E. (Ed.), *Re-Thinking the state. Critical perspectives on the citizen, politics and government in the 21ste Century* (pp. 15-40). Mechelen: Wolters Kluwer.

Dodeigne, J., Binard, M. (2012). Les circonscriptions électorales depuis 1830 (Annexe No. 3). In F. Bouhon, Reuchamps, M. (Ed.), *Les systèmes électoraux de la Belgique* (pp. 569-576). Bruxelles: Bruylant.

Drummond, A. (2006). Electoral volatility and party decline in Western democracies: 1970-1995. *Political Studies*, 54(3), 628-647.

Duverger, M. (1950). L'Influence des systèmes électoraux sur la vie politique. In M. Duverger (Ed.), *L'Influence des systèmes électoraux sur la vie politique* (pp. 11-68). Paris: Librairie Armand Colin.

Duverger, M. (1951). *Les parties politiques*. Paris: Librairie Armand Colin.

Eyskens, G. (1993). *De memoires* (Third ed.). Tielt: Lannoo.

Farrell, D. (2001). *Electoral Systems. A comparative introduction*. New York: Palgrave MacMillan.

Goguel, F. (1950). L'Influence des systèmes électoraux sur la vie politique d'après l'expérience française. In M. Duverger (Ed.), *L'Influence des systèmes électoraux sur la vie politique* (pp. 69-83). Paris: Librairie Armand Colin.

Grumm, J. G. (1958). Theories of Electoral Systems. *Midwest Journal of Political Science, 2*(4), 357-376.

Gschwend, T. (2003). *Ticket-splitting and strategic voting in mixed electoral systems*. Mannheim: MZES / University of Mannheim.

Guelke, A. (2012). *Politics in deeply divided societies*. Cambridge UK: Polity Press.

Hooghe, M. (2005). *Democratie zonder partijen kan niet*. Leuven.

Hooghe, M., Noppe, J., Maddens, B. (2003). The effect of electoral reform on Belgian election results of 18 May 2003. *Representation*, 39(4), 270-276.

Hooghe, M., Maddens, B., Noppe, J. (2006). Why parties adapt: electoral reform, party finance and party strategy in Belgium. *Electoral Studies, 25*(2 (June)), 351-368.

Horowitz, S., Browne, E. (2005). Sources of post-Communist party system consolidation : ideology versus institutions. *Party Politics*, 11(6), 689-706.

Ignazi, P. (1996). The crisis of parties and the rise of new political parties. *Party Politics*, 2(4), 549-566.

Jacobs, K., Leyenaar, M. (2011). A conceptual framework for major, minor, and technical electoral reform. *West European Politics*, 34(3 (May)), 495-513.

Karpov, A. (2008). Measurement of disproportionality in proportional representation systems. *Mathematical and Computer Modelling, 48*(9-10 (Nov.)), 1421-1438.

Katz, R. (1997). *Democracy and elections*. Oxford: Oxford University Press.

Katz, R. (2005). Why are there so many (or so few) electoral reforms? In M. Gallagher, Mitchell, P. (Ed.), *The politics of electoral system*s (pp. 57-76). Oxford: Oxford University Press.

Katz, R., Mair, P. (1995). Changing models of party organization and party democracy. The emergence of the cartel party. *Party Politics*, 1(1), 5-28.

Kreuzer, M. (2009). How parties systems form: path dependency and the institutionalization of the post-War German party system. *British Journal of Political Science*, 39(4), 669-697.

Laakso, M., Taagepera, R. (1979). Effective number of parties: a measure with application to West Europe. *Comparative Political Studies, 12*(1), 3-27.

Laver, M., Benoit, K. (2003). The evolution of party systems between elections. *American Journal of Political Science*, 47, 215-233.

Lijphart, A. (1968). *The politics of accommodation. Pluralism and democracy in the Netherlands*. Berkeley: University of California Press.

Lijphart, A. (1969). Consociational democracy. *World Politics*, 21(2), 207-225.

Lijphart, A. (1977). *Democracy in plural societies. A comparative exploration*. New Haven: Yale University Press.

Lijphart, A. (1981). The Belgian example of cultural coexistence in comparative perspective. In A. Lijphart (Ed.), *Conflict and coexistence in Belgium. The dynamics of culturally divided society* (pp. 1-13). Berkeley: University of California.

Lijphart, A. (1990). The Political Consequences of Electoral Laws, 1945-85. *The American Political Science Review, 84*(2 (June)), 481-496.

Lijphart, A. (1994). *Electoral systems and party systems: study of twenty-seven democracies, 1945-90*. Oxford, UK: Oxford University Press.

Lijphart, A. (1999). *Patterns of democracy. Government forms and performance in thirty-six countries*. New Haven / London: Yale University Press.

Lipset, S., Rokkan, S. (1967). Cleavage structures, party systems, and voter alignments: an introduction. In: Lipset, S. & Rokkan, S. *Party systems and voter alignments: cross-national perspectives*. New York, The Free Press, 1-64.

Lipset, S., Rokkan, S. (Ed.). (1967). *Party systems and voter alignments: cross-national perspectives*. New York: Free Press.

Lipset, S. (1990). How do political parties arise? *This Week's Citation Classic (CC)*, Vol. 12, No. March, p.16.

Lipset, S. (2001). An historical context for election research. In E. Katz, Warshel, Y. (Ed.), *Election studies. What's their use?* (pp. 111-126). Boulder (Colorado, USA): Westview Press.

Listhaug, O. (1992). Book review of: Identity, Competition, and Electoral Availability: The Stabilisation of European Electorates 1885-1985 by Stefano Bartolino & Peter Mair. *European sociological review*, 8(1), 98-101.

Mair, P. (1990). The electoral payoffs of fission and fusion. *British Journal of Political Science*, 20(1), 131-142.

Mair, P. (1998). *Party system change. Approaches and interpretations*. Oxford: Clarendon Press.

Mair, P. (2006). *Polity-scepticism, party failings, and the challenge to European democracy*. 24th Uhlenbeck Lecture. Wassenaar (The Netherlands).

Matagne, G., Verjans, P. (2012). Evolution des résultats électoraux et systèmes partisans de 1830 à nos jours. In F. Bouhon, Reuchamps, M. (Ed.), *Les systèmes électoraux de la Belgique* (pp. 85-110). Bruxelles: Bruylant.

Mudde, C. (2012). Drie decennia populistisch radicaal-rechtse politiek in West-Europa: So what? *Res Publica*, 54(2), 221-238.

Muylle, K. (2012). Le mode de scrutin. In F. Bouhon, Reuchamps, M. (Ed.), *Les systèmes électoraux de la Belgique* (pp. 307-329). Bruxelles: Bruylant.

Neto, O.A., Cox, G. (1997). Electoral institutions, cleavage structures, and the number of parties. *American Journal of Political Science, 41*(1 (January)), 149-174.

Neumann, S. (1956). Toward a comparative study of political parties. In S. Neumann (Ed.), *Modern political parties. Approaches to comparative politics* (pp. 395-421). Chicago & London: The University of Chicago Press.

Nohlen, D. (1984). Changes and choices in electoral systems. In A. Lijphart, Groffman, B. (Ed.), *Choosing an electoral system* (pp. 217-224). New York: Prager.

Ordeshook, P., Shetsova, O. (1994). Ethnic heterogeneity, district magnitude, and the number of parties. *American Journal of Political Science*, 38(1 (Febr.)), 100-123.

Pilet, J.-B. (2007). *Changer pour gagner? Les réformes des lois électorales en Belgique*. Bruxelles: ULB.

Pilet, J.-B. (2012). Comprendre les dynamiques des reformes électorales. In F. Bouhon, Reuchamps, M. (Ed.), *Les systèmes électoraux de la Belgique* (pp. 419-436). Bruxelles: Bruylant.

Pilet, J.B. (2012b). 'De Franstaligen zijn bang dat de N-VA in 2014 incontournabel worden', *Knack*, 17 oktober 2012, p. 44.

Pinto-Duchinsky, M. (1999). Send the rascals packing: defects of proportional representation and the virtues of the Westminster Model. *Representation*, 36(2), 117-126.

Quintal, D. (1970). The Theory of Electoral System. *The Western Political Quarterly, 23*(4 (December)), 752-761.

Rae, D. W. (1968). A note on the fractionalization of some European party systems. *Comparative Political Studies, 1*(4), 413-418.

Rae, D. W. (1969 [1967]). *The political consequences of electoral laws*. New Haven / London Yale University Press.

Rae, D. W. (1995). Using District Magnitude to Regulate Political Party Competition. *Journal of Economic Perspectives, 9*(1), 65-75.

Reeve, A., Ware, A. (1992). *Electoral systems: a comparative and theoretical introduction*. London: Routledge.

Renard, H., Dodeigne, J. (2012). Les résultats électoraux depuis 1847 (Annexe No. 2). In F. Bouhon, Reuchamps, M. (Ed.), *Les systèmes électoraux de la Belgique* (pp. 545-568). Bruxelles: Bruylant.

Rose, R., Urwin, D. (1970). Persistence and change in Western party systems since 1945. *Political Studies*, 18(3), 287-319.

Sanders, W. (2012). *Recategorizing electoral systems analytically and judging some undemocratic (or learning from an Australian mistake)*. Paper presented at the IPSA International Political Studies Conference, Madrid, Spain.

Sartori, G. (1976). *Parties and party systems. A framework for analysis. Cambridge*: Cambridge University Press.

Sartori, G. (1997). *Comparative constitutional engineering: an inquiry into structures, incentives and outcomes* (2nd ed.). London: MacMillan / NY University Press.

Schamp, T., Devos, C. (2011). Verkiezingen en kiessystemen. In C. Devos (Ed.), *Een plattegrond van de macht. Inleiding tot politiek en politieke wetenschappen* (pp. 487-580). Gent: Academia Press.

Schamp, T., Devos, C. (2012). Verkiezingen en kiessystemen. In C. Devos (Ed.), *Een plattegrond van de macht. Inleiding tot politiek en politieke wetenschappen* (pp. 495-597). 2nd edition. Gent: Academia Press.

Schamp, T., Devos, C. (2012). *The electoral equilibrium hypothesis tested. A statistical historiography of the Belgian national electoral and party system.* Paper presented at the IPSA's XXIInd World Congress of Political Science, Reshaping Power, Shifting boundaries, Madrid, Spain.

Schamp, T., Devos, C. (2013). *A statistical historiography of Belgium's national electoral and party system. Background paper.* ECPR's Joint Sessions of Workshops, Mainz (Germany), 35p.

Schattschneider, E. E. (1942). *Party government: American government in action* (2nd ed.). Austin, Texas: Holt, Rinehart and Winston.

Sinardet, D. (2010). From consociational consciousness to majoratarian myth: consociational democracy, multi-level politics and the Belgian case of Brussel-Halle-Vilvoorde. *Acta Politica*, 45(3), 346-369.

Swenden, W., Brans, M., De Winter, L. (2009). The politics of Belgium: Institutions and policy under bipolar and centrifugal federalism. In M. Brans, De Winter, L., Swenden, W. (Ed.), *The politics of Belgium. Institutions and policy under bipolar and centrifugal federalism* (pp. 1-11). London / NY: Routledge.

Swenden, W., Jans, M. T. (2009). 'Will it stay or will it go?' Federalism and the sustainability of Belgium. In M. Brans, De Winter, L., Swenden, W. (Ed.), *The politics of Belgium. Institutions and policy under bipolar and centrifugal federalism* (pp. 15-32). London / NY: Routledge.

Swyngedouw, M. & Vander Weyden, P. (2006). Het kiesstelsel en de verkiezingen. In: E. Witte & A. Meynen (red.), *De geschiedenis van België na 1945*. Antwerpen, Standaard Uitgeverij, pp.197-231.

Taagepera, R., and M. Laakso (1980). Proportional Profiles of West European Electoral Systems. *European Journal of Political Research*, 8, 423-446.

Taagepera, R., Shugart, M. (1989). *Seats and votes. The effects and determinants of electoral systems*. New Haven & London: Yale University Press.

Torcal, M., Deegan-Krause, K., Casal Bértoa, F. (2012). Party system dynamics. New tools for the study of party system change and party transformation. *ECPR 2013 Joint sessions of Workshops proposal*. Mainz, Germany.

van Biezen, I., Mair, P., Poguntke, Th. (2012). Iet, wiet, waat, ... weg? De afname van partijlidmaatschap in hedendaags Europa. *Res Publica*, 54(3), 387-390.

van Velthoven, H. (1981). De taalwetgeving en het probleem Brussel (1830-1914). *Taal en Sociale Integratie*, IV, 247-260.

van Velthoven, H. (1981b). Taal- en onderwijspolitiek te Brussel (1878-1914) *Taal en Sociale Integratie*, IV, 261-388.

Vander Weyden, P. (2001). Disproportionaliteit van het Belgische kiessysteem. *IPSoM-paper*. KUBrussel, Brussel.

Vander Weyden, P. (2005). *Effecten van kiessystemen op partijsystemen in nieuwe democratieën*. Proefschrift tot het verkrijgen van de graad van doctor in de Sociale wetenschappen. Brussel, Leuven.

Vander Weyden, P. (2006). Kiesdrempels, districtgrootte en het aantal partijen in systemen van evenredige vertegenwoordiging. *Res Publica*, 30(1), 66-82.

Van Haute, E. (2012). Emergence et disparition des parties. In F. Bouhon, Reuchamps, M. (Ed.), *Les systèmes électoraux de la Belgique* (pp. 209-223). Bruxelles: Bruylant.

Velaers, J. (2012). Le cadre institutionnel des élections dans la Belgique actuelle, à la lumière du principe de représentation In F. Bouhon, Reuchamps, M. (Ed.), *Les systèmes électoraux de la Belgique* (pp. 111-137). Bruxelles: Bruylant.

Witte, E. (1996). *Politiek en Democratie*. Brussel, VUBpress.

ANNEXES

Annex 1

Federal elections 2010	Liberal faction	Christian-democratic faction	Socialist faction	Flemish nationalist faction	Green faction	Other factions
Number of seats (total = 150)	MR (incl FDF[52]): 18 Open Vld: 13	CD&V: 17 CDh: 9	PS: 26 Sp.a: 13	N-VA: 27 VB: 12	Groen! & Ecolo: 13	LDD: 1 MLD: 1
Share of the available seats	23,33%	17,33%	26%	26%	8,67%	1,33%
Share of the total vote	17,92%	16,37%	22,94%	41,29%	9,18	3,60%

Note: A handful of other parties that did not obtain a seat (Front National, Rassemblement Wallonnie France, PVDA+, Wallonie d'abord…). Regarding the party MLD (*Mouvement Libéral Démocrate*), the only representative is Laurent Louis who founded his own party in 2011 after being elected for the Persons Party (PP) of the business man Mischaël Modrikamen in 2010.

Annex 2

Disproportionality indices
("Other parties" included; period 1876-2010)
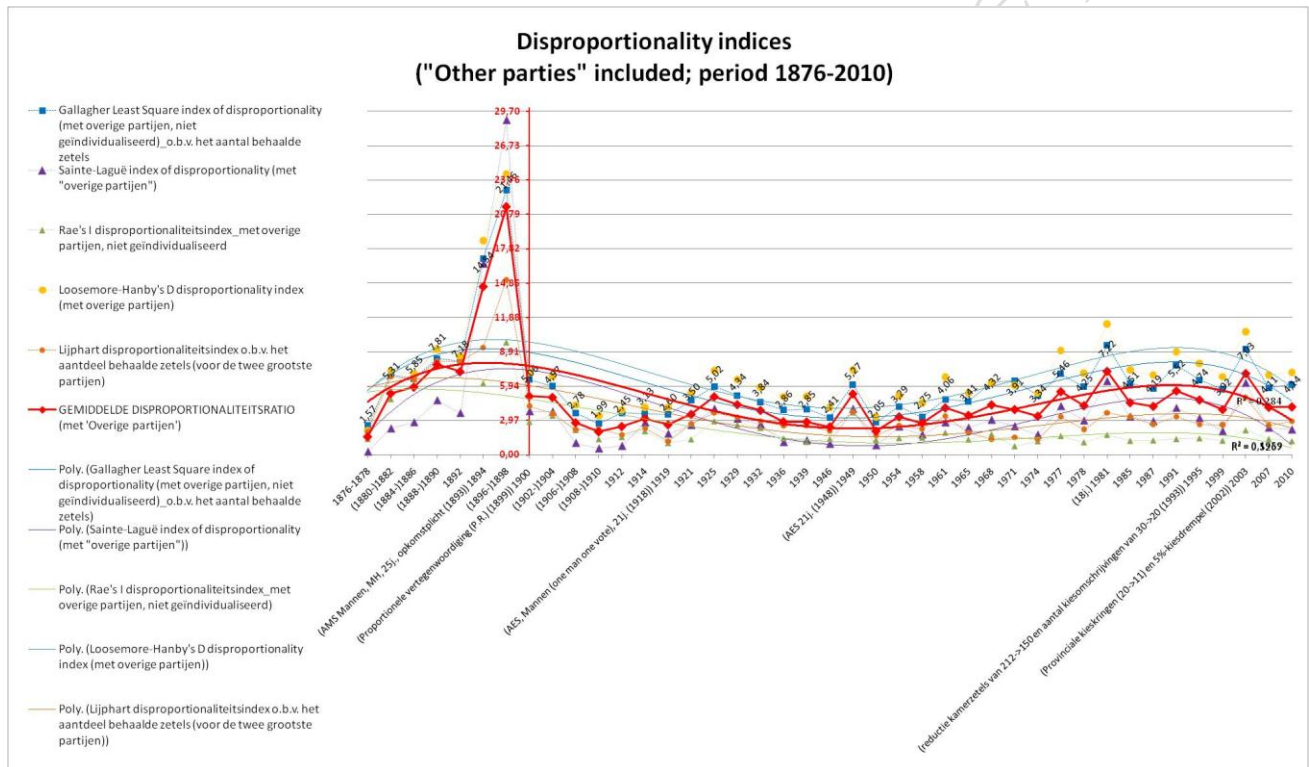
Annex 3

Correlations

		DHondtindexvanoververtegenwoordigingzetelsstemmenvan D'Hondt index van oververtegenwoordiging (% zetels/%stemmen) (van de grootste klassiek verzuilde partij/fractie) (Lijphart, 1994)	GallagherLeastSquare LSqindexofdisproportionalityzonder Gallagher Least Square (LSq) index of disproportionality (zonder "overige partijen")_o.b.v. het aantal behaalde zetels	Lijphartdisproportionaliteitsindex o.b.v. hetaantaldeelbehaalde Lijphart disproportionaliteitsindex o.b.v. het aantal behaalde zetels (voor de twee grootste partijen)	Loosemore Hanbys Ddisproportionalityindexzonderoverigepa Loosemore-Hanby's D disproportionality index (zonder "overige partijen")	Raes Idisproportionaliteitsindexzonder overigepartijen Rae's I disproportionaliteitsindex (zonder "overige partijen")	Sainte Laguëindexofdisproportionality zonderoverigep artij Sainte-Laguë index of disproportionality (zonder "overige partijen")
DHondtindexvanoververtegenwoordigingzetelsstemmenvan D'Hondt index van oververtegenwoordiging (% zetels/%stemmen) (van de grootste klassiek verzuilde partij/fractie) (Lijphart, 1994)	Pearson Correlation	1	,962**	,926**	,931**	,773**	,938**
	Sig. (2-tailed)		,000	,000	,000	,000	,000
	N	41	41	41	41	41	41
GallagherLeastSquare LSqindexofdisproportionality zonder Gallagher Least Square (LSq) index of disproportionality (zonder "overige partijen")_o.b.v. het aantal behaalde zetels	Pearson Correlation	,962**	1	,921**	,990**	,806**	,947**
	Sig. (2-tailed)	,000		,000	,000	,000	,000
	N	41	41	41	41	41	41
Lijphartdisproportionaliteitsindexo.b.v.hetaantaldeelbehaalde Lijphart disproportionaliteitsindex o.b.v. het aantal behaalde zetels (voor de twee grootste partijen)	Pearson Correlation	,926**	,921**	1	,924**	,896**	,819**
	Sig. (2-tailed)	,000	,000		,000	,000	,000
	N	41	41	41	41	41	41
LoosemoreHanbys Ddisproportionalityindexzonderoverigepa Loosemore-Hanby's D disproportionality index (zonder "overige partijen")	Pearson Correlation	,931**	,990**	,924**	1	,805**	,925**
	Sig. (2-tailed)	,000	,000	,000		,000	,000
	N	41	41	41	41	41	41
Raes Idisproportionaliteitsindexzonderoverigepartijen Rae's I disproportionaliteitsindex (zonder "overige partijen")	Pearson Correlation	,773**	,806**	,896**	,805**	1	,628**
	Sig. (2-tailed)	,000	,000	,000	,000		,000
	N	41	41	41	41	41	41
Sainte Laguëindexofdisproportionaliyzonderoverigepartij Sainte-Laguë index of disproportionality (zonder "overige partijen")	Pearson Correlation	,938**	,947**	,819**	,925**	,628**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	
	N	41	41	41	41	41	41

**. Correlation is significant at the 0.01 level (2-tailed).

Annex 4

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,268	,340		,788	,436
	GallagherLeastSquare LSqindexofdisproportionality zonder Gallagher Least Square (LSq) index of disproportionality (zonder "overige partijen")_o.b.v. het aantal behaalde zetels	2,458	,304	2,012	8,077	,000
	Lijphartdisproportionaliteitsindexo.b.v.hetaantaldeelbehaalde Lijphart disproportionaliteitsindex o.b.v. het aantal behaalde zetels (voor de twee grootste partijen)	1,069	,121	,583	8,844	,000
	LoosemoreHanbys Ddisproportionalityindexzonderoverigepa Loosemore-Hanby's D disproportionality index (zonder "overige partijen")	-2,076	,253	-1,567	-8,215	,000
	Raes Idisproportionaliteitsindexzonderoverigepartijen Rae's I disproportionaliteitsindex (zonder "overige partijen")	-,431	,121	-,204	-3,571	,001
	Sainte Laguëindexofdisproportionaliyzonderoverigepartij Sainte-Laguë index of disproportionality (zonder "overige partijen")	,152	,098	,141	1,549	,130

a. Dependent Variable: DHondtindexvanoververtegenwoordigingzetelsstemmenvan D'Hondt index van oververtegenwoordiging (%zetels/%stemmen) (van de grootste klassiek verzuilde partij/fractie) (Lijphart, 1994)

Annex 5

De vertegenwoordigingskans van een nieuwe groepering en de districtsgrootte (DM)
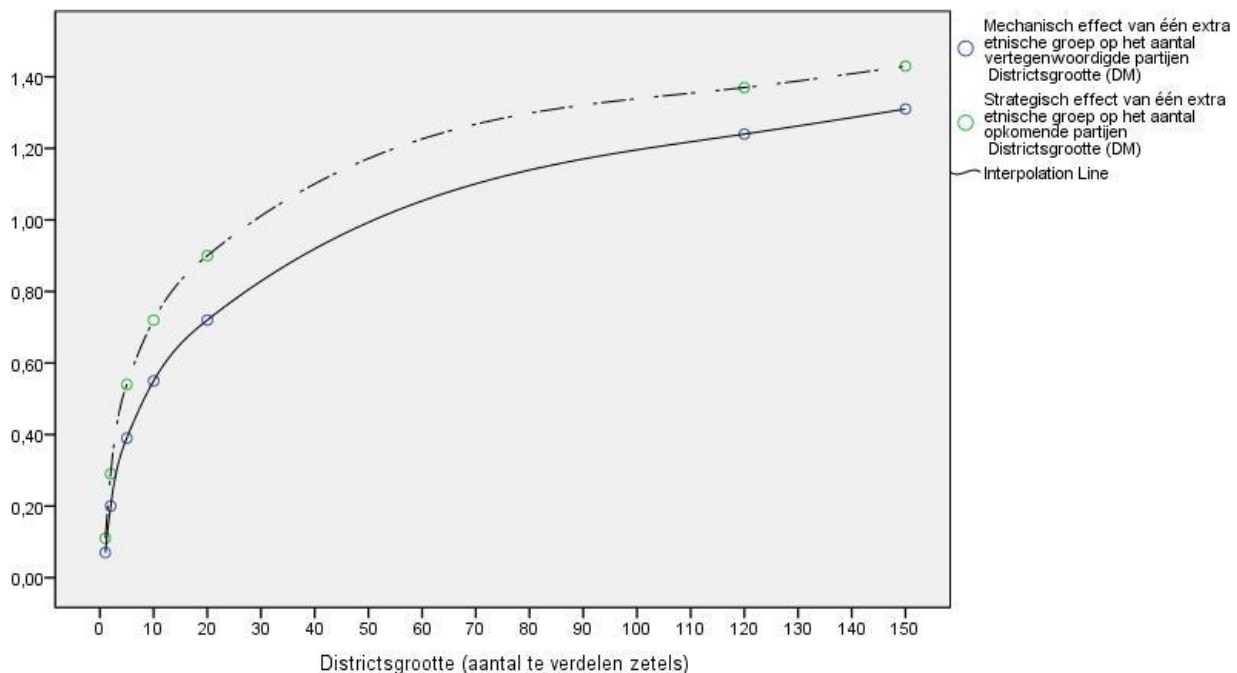
Based on Clark en Golder 2006: 705 en Clark, Golder, Golder 2009: 596.

Related to the above graph, in this section we look at the (evolution of the) size of the parliament and the district magnitude in relation to the (evolution of the) total disproportional representation under a certain Belgian electoral system. Similar to Patrick Vander Weyden who studied the electoral impact of the electoral reform in the period from 1981 to 1999 (2006), we assume that the larger the parliament and the larger the magnitude of the electoral districts, the smaller the real electoral threshold to gain a seat will be, and thus the lower the vote share may be in order to pass that threshold. (Vander Weyden 2001:37) On the aggregated level these assumptions were confirmed.

Even under the P.R. system the rule of the large numbers is indeed straightforward: the larger a parliament, the more equal the chances of all electoral parties to win at least one seat. All other variables being the same this means that small parties have more difficulties in obtaining one or more seats in a relative small parliament (or small district) than in larger parliament (districts), and vice versa for electorally successful parties.

From the above graphs follows that the higher the DM, the lower the effective threshold becomes and therefore the higher the chances of being elected. Following Duverger's laws concerning the mechanical effects of electoral institutions higher district magnitude would lead to more proportional representation and thus to a moderation of the strategic effects of parties and of voters. One of the most strategic decision a political organization can make is that of participating yes or no in elections and in what district. Because larger average numbers of parliamentary seats (per district) are favorable for the number of newcomers and the number of elected parties overall (Clark, Golder, Golder 2009:596) it is more interesting for 'new' political parties to present themselves to the voter in electoral districts with an above average DM (in today's Belgium these are a.o. Antwerp, East Flanders, Henegouwen, Brussels, West Flanders, Liège or Flemish-Brabant (DM > 13,6)).

On the other hand, from a recent study of electoral competition and contact with the local electorate in the Low Countries by André and Depauw it seems that local orientation of party candidates decreases as district magnitude grows even in electoral systems where the electorate can cast a personal vote, hence disregarding the presence of a closed or open list system, and no matter what the opinion on representation of the candidate might be. Hence, the larger the electoral district, the smaller the amount of the time and energy oriented in building a relationship with the locality. This is particularly true for those electoral systems not providing the possibility to cast a name vote. (André, Depauw 2012:269, 279-280, 283) Taken the main conclusions of this

paragraph together we could say that launching or intensively promoting a party or its candidates in a relative small districts is perceived to be a great deal of wasted energy, especially in systems where the electorate cannot cast a name vote. And vice versa for relative larger districts and under a arrangement that allows for preferential voting: there the percentage of uptake of issues that live at the locality and the number of initiatives to engender bottom-up contacts increase significantly, as well as the electoral bonus of the local support. And so it is concluded that electoral institutions that translates votes into seats hold incentives for individual MPs to build, maintain and reinforce the personal contact with their local followers. (ibid.: 283-284)
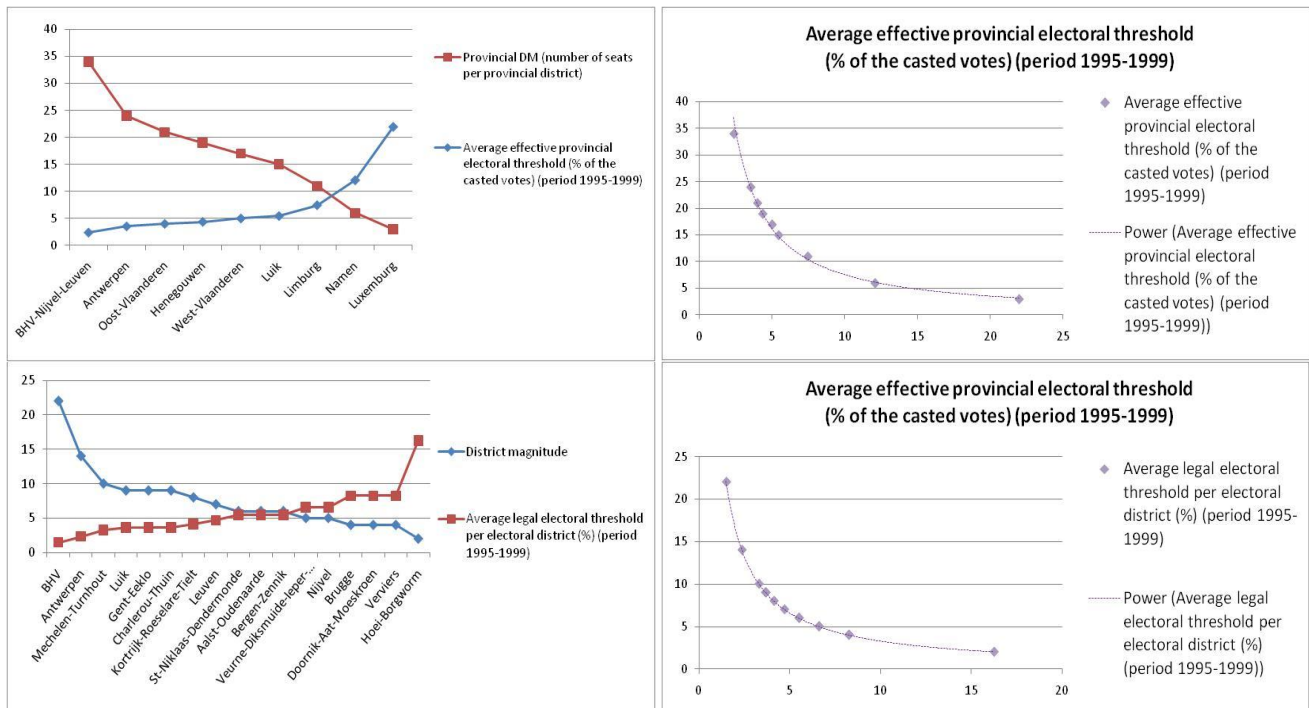
Data source: Vander Weyden 2001:40. In the period 1995-1999 the *effective* provincial electoral threshold for BHV-Nijvel-Leuven is 2,374% (DM=34) versus 22% for Luxemburg (DM=3).[53] In the same period the *legal* provincial electoral threshold varied from 1,5% in BHV (DM=22) to 16,25% in Hoei-Borgworm (DM=2). Because since the introduction of the P.R.-system and the reduction of electoral districts from 42 to 30 in 1900, the smallest DM has been 'two seats' (a situation that lasted until 2002). As of the 2003 federal elections the smallest electoral district is Luxembourg (DM=4) and the largest is Antwerp (DM=24). (Cf. Schamp & Devos 2011: 544)

---

[53] The districts Nijvel and Leuven in 2002 became the new provincial districts Waals-Brabant and Flemish-Brabant (first application: federal elections of 2003). The electoral district BHV was split in an electoral district Brussels and an electoral district Halle-Vilvoorde, part of the provincial electoral district Flemish-Brabant on 22 June 2012.

Annex 6

Average and median DM
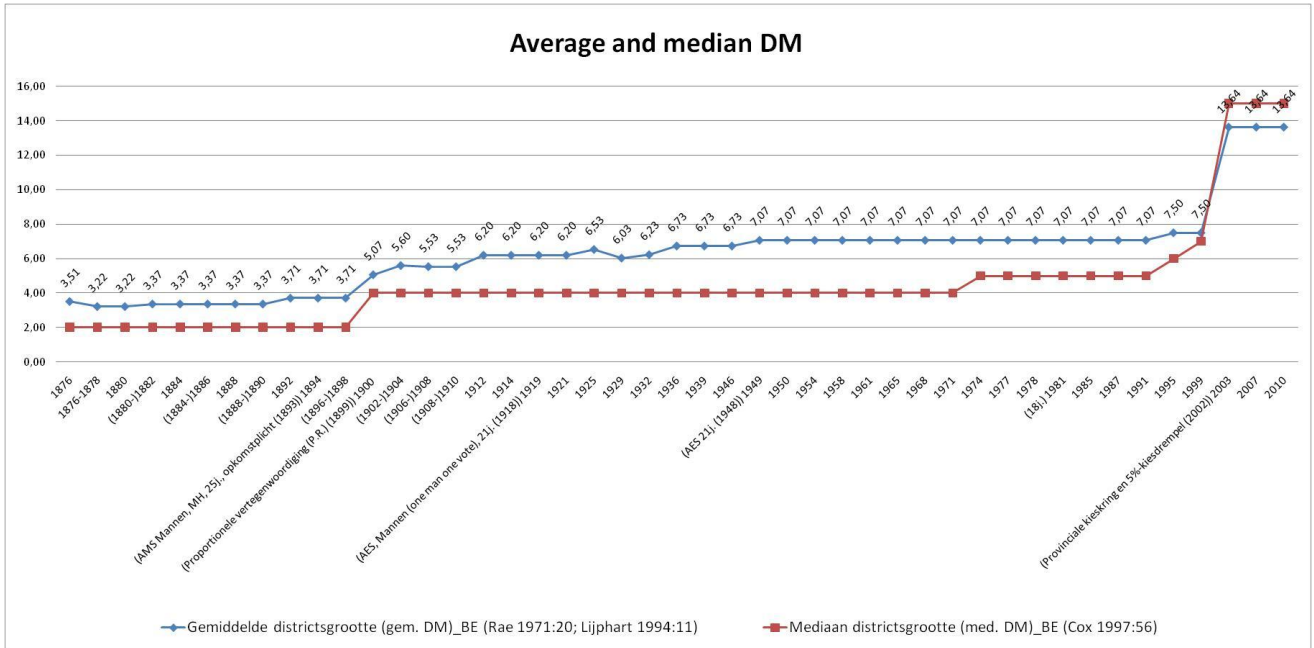
Average DM is based on the size of the parliament reported in the www.verkiezingsdatabase.be and the number of electoral districts reported by Cox (1997:48-49) and Colomer (2004:193). Median DM values are based on the data collected by Dodeigne, J., Binard, M. (2012). Les circonscriptions électorales depuis 1830 (Annexe No. 3). In F. Bouhon, Reuchamps, M. (Ed.), Les systèmes électoraux de la Belgique (pp. 569-576). Bruxelles: Bruylant.