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Party System Dynamics in Japan:

Measuring the underlying changes and status-quos

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Abstract

The paper aims to contribute to a further understanding about party system dynamics by providing single-case narratives of party system changes in Japan while proposing a measure of party system changes different from those available in the literature. As Japan has undergone a significant transformation of her party system in the 1950s and the 1990s, there have been more than a dozen of *new parties* at national level over the decades. Despite variations in its origin and ideological profile, all of these parties are either a split or a merged party of the established political forces. In light of these party system changes, the existing measures such as net volatility (Pedersen, 1979) could at best capture the extent to which votes moved between parties across two elections. As the unit of analysis is political parties, such measures cannot distinguish these *new parties* with a deep old root from 'genuinely new parties' (Sikk, 2005). This paper proposes to set parliamentary members as the unit of analysis to calculate the level of volatility as it would better reflect the extent to which *new parties* are composed of newly elected members in parliament. While this Member Volatility will be used to weight the classical index of net volatility, New Party Volatility indices are presented.

Keywords: Party System, Net Volatility, New Party, Legislative Member, Japan

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Introduction

One of the major empirical devices to measure party system dynamics is the index of 'volatility'. Recent developments in the field have broadened a variety of volatility scales and improved the quality of ‘volatility’ measurement. The breadth of available indicators now ranges from the aggregate indices of the classical Pedersen Index of net volatility (Pedersen, 1979), Block Volatility (Bartolini and Mair, 1990), indices to distinguish between party switches of old parties and new party entries and old party exits (Birch, 2003; Sikk, 2005; Tavits, 2008; Powell and Tucker, 2013), and to individual-level indices such as Gross Volatility, Overall Volatility, and Party Switching (Crewe and Denver, 1985; Ersson and Lane, 1998). In the midst of this development, this paper applies aggregate indices to the Japanese party system and sheds light on an unaccounted aspect of party system change in the existing literature. While political parties have been a major unit of analysis to date for the aggregate volatility measures, this paper pays attention to politicians as the unit of analysis. In light of recent attempts to take split and mergers of political parties into account, this exercise could be another useful venue in illustrating party system dynamics from multi-faceted perspectives.

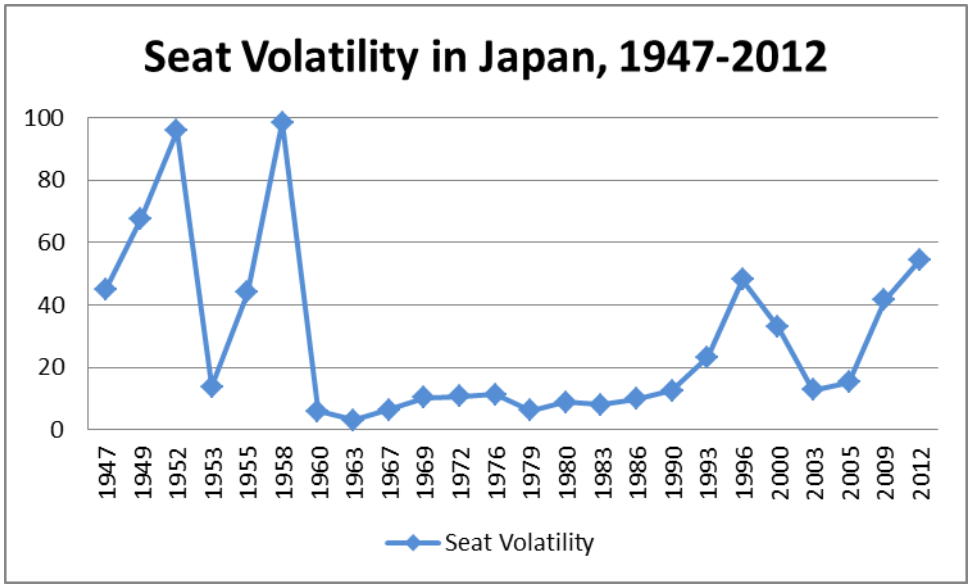
Net volatility in Japanese party system

Let us begin by applying the classical index of net volatility to the Japanese party system. The Pedersen Index is calculated by adding the absolute difference of votes obtained by party *i* between two elections (*t* and *t-1*) and dividing the sum for all parties by two. More formally, the index is expressed as: $Vt = \sum_{i=1}^{n} \left| P_{it} - P_{it-1} \right| / 2$. While the ordinary net volatility index is based on vote share of each party, we apply here seat share of each party instead. Japan has undergone an electoral system change in the 1990s and now adopts a mixed system of the Westminster style of 300 first-past-the-post single member districts and 11 regional blocs of Proportional Representation. Since each party normally receives two different types of votes (and some parties field candidates only in a limited number of PR blocs), it is difficult to judge which vote should be used as vote share. Seat share of parties is used here instead to measure party system dynamics for the sake of simplicity[1].

[1] Certainly, the use of seat share brings in the question about effects of institution including electoral systems and this has to be taken into considerations in further analyses.

Figure 1 illustrates the seat volatility of the Japanese party system from the late 1940s to the most recent general election in 2012. As shown in the figure, the Japanese party system was far from stable in the early post-war years in the 1950s. After a quasi-frozen period throughout 1970s and 1980s, the party system has been once again going through the decades of changes and fluctuations.

Figure 1. Seat volatility in the Japanese party system, 1947-2012



What is remarkable from the figure of seat volatility is that the index nearly hits one hundred twice in the 1950s. First time in 1952 when the score of seat volatility indicated 95.9, while second time in 1958 when the figure indicated an even higher score of 98.5. Given that net volatility score ranges from 0 to 100 (Pedersen, 1979)[2], the scores in the 1950s are remarkably high, suggesting that its party system was completely shuffled.

What we can learn from 'highly volatile' elections: splits and mergers

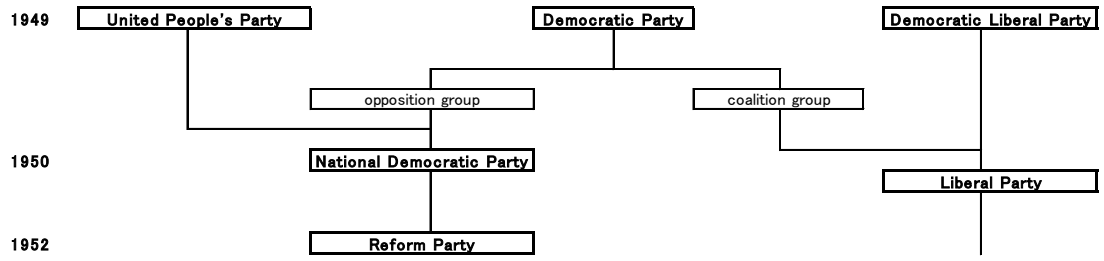
The high volatility score in the 1950s is the results of *splits* and *mergers* of political parties in the early phase of post-war democratic consolidation. Let us briefly look at the evolution of political parties and factions, first in the period between 1949 and 1952, and second in the period between 1952 and 1958.

[2] Pedersen (1979: 4) defines 'Volatility (V_t)' as '1/2 x Total Net Change (TNC_t)'. TNC_t ranges from 0 to 200, and V_t ranges from 0 to 100.

Splits and mergers between 1949 and 1952

In the 1949 election, Democratic Liberal Party headed by Prime Minister Shigeru Yoshida seized 264 seats out of 466 Lower House seats and its conservative rival Democratic Party plunged to 69 seats from 124 seats won in the previous election in 1947. The tension amounted within the Democratic Party whether or not to stay in the opposition or to join the incumbent Democratic Liberal Party government. Democratic Party then split into two groups in early 1950. One group of politicians merged with the Democratic Liberal Party in March 1950. This new merged party was named Liberal Party. The other group of Democratic Party members merged with United People's Party and created National Democratic Party in April 1950 and then to Reform Party in February 1952. Thus, all three conservative parties above experienced mergers in this period caused by the split of Democratic Party and fielded in the 1952 general election with new party labels respectively (see Figure 2 for the illustration). We may classify these Liberal Party and Reform Party as *split and merger types* of new parties.

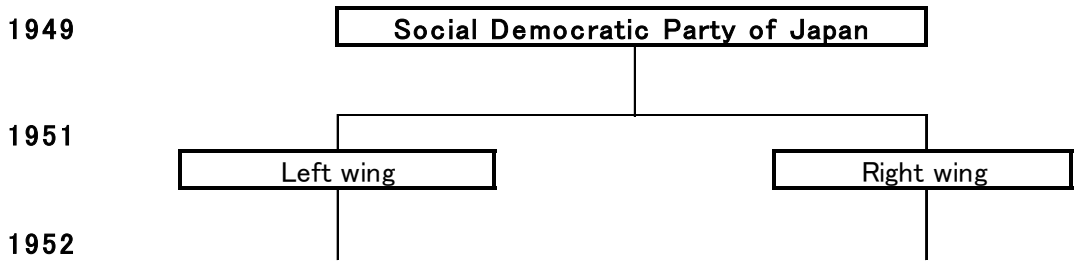
Figure 2. Splits and mergers of conservative parties, 1949-1952



In the meantime, Social Democratic Party of Japan, which was part of the coalition government with Democratic Party and United People's Party after the 1947 election likewise suffered from its internal strife. While the left wing promoted 'class party' as a model of the party, the right wing supported 'nation party' as a model. Both wings once split in January 1950 but reunited after two and a half months later. The party once again split into two in October 1951 disagreeing over the San Francisco Peace Treaty since the left wing rejected but the right wing supported the ratification of the treaty. They presented their candidates in the 1952 election under different party labels (Figure 3). We classify these Right Wing and Left Wing as *split types* of new parties. This paper takes an inclusive approach in considering new parties and treats these two wings of Social Democratic Parties of Japan as new parties since they competed in the 1952,

1953, and 1955 general elections with the labels of Right Wing and Left Wing SDPJ.

Figure 3. Split of Social Democratic Parties of Japan, 1949-1952



Given the evolution of political parties in this period, note that none of the above parties competed in the 1952 election with the same party labels with the 1949 election. As shown in Table 1, most parties present in the 1949 election disappeared in the 1952 election, thereby producing large absolute differences between the 1949 (*t-1*) election and the 1952 (*t*) election and resulting in a high volatility score.

Table 1. The results of 1949 and 1952 general elections and seat volatility

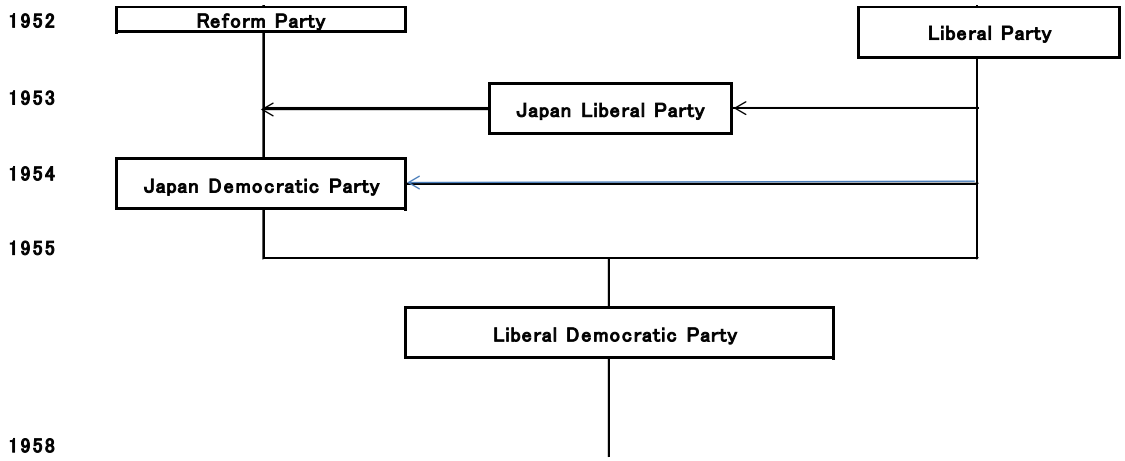
Party Name	1949		1952	
	number	share	number	share
Democratic Liberal Party	264	56.65		
Liberal Party			240	51.50
Democratic Party	69	14.81		
Reform Party			85	18.24
United People's Party	14	3.00		
Social Democratic Party of Japan	48	10.30		
Right Wing SDPJ			57	12.23
Left Wing SDPJ			54	11.59
Social Progressive Party	5	1.07		
Cooperation Party			2	0.43
Japan Reconstruction Union			1	0.21
Japanese Communist Party	35	7.51		
Labour Farmers Party	7	1.50	4	0.86
Farmers New Party	6	1.29		
New Liberal Party	2	0.43		
Japan Farmers Party	1	0.21		
Japan People's Party			1	0.21
Others	3	0.64	3	0.64
Non Affiliated	12	2.58	19	4.08
Total	466	100	466	100

*Seat Volatility = 95.9

Splits and mergers between 1952 and 1958

The general election of 1955 was completed by, among other parties, Japan Democratic Party and Liberal Party in the conservative camp and by the Left Wing Socialists and the Right Wing Social Democrats in the socialist camp. Japan Democratic Party was created in 1954 by the anti-Yoshida (Prime Minister at the time) faction of Liberal Party, headed by Ichiro Hatoyama, after merging with Reform Party[3]. Prior to this merge, a part of the atoyama faction already defected from Yoshida's Liberal Party under the new party label of Japan Liberal Party in 1953 (see Figure 4 for the illustration).

Figure 4. Splits and mergers of conservative parties, 1952-1958



The 1955 general election was a turning point in the post-war Japanese politics. Japan Democratic Party won the 185 seats and Liberal Party decreased its power from 199 to 112 seats after the split of the anti-Yoshida faction from the party. The party leader of the Japan Democratic Party, Ichiro Hatoyama, was aiming at a constitutional change to re-militarise the country and Left Wing Socialists and Right Wing Social Democrats were reunited in October 1955 with a view to blocking the conservative's motives of changing the constitution (see Figure 5). As the socialist camp seized more than one-third of seats in the 1955 election, the reunification could block a constitutional change. Following the reunification of the socialist wings, Japan Democratic Party and Liberal Party were merged and Liberal Democratic Party (LDP) was created in November 1955.[4] We classify these Social Democratic Party of Japan (SDPJ) and

[3] The volatility score of the 1955 election was relatively high (V_t=44.1) but not as high as the 1952 and the 1958 elections.

[4] This series of mergers paved the way to what is coined as the '55 system' where Liberal Democratic Party remained in power until its demise in 1993 and Social Democratic Party of Japan

Liberal Democratic Party (LDP) as *merger types* of new parties[5].

Figure 5. Merger of Social Democratic Parties of Japan, 1952-1958

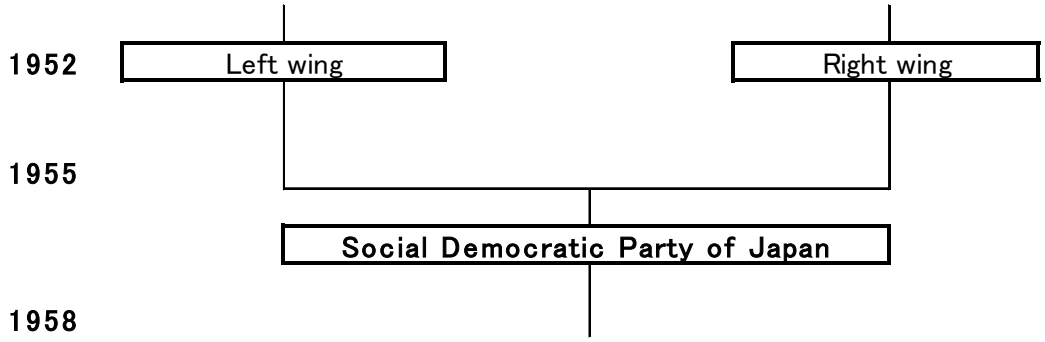


Table 2 shows the change of seat share between the 1955 and 1958 elections. Similarly to the 1952 election, all parties but Japanese Communist Parties were transformed into different parties in the 1958 election. Seat volatility is remarkably high 98.5 reflecting the mergers of conservative parties as well as socialist factions after the 1955 election.

Table 2. The results of 1955 and 1958 general elections and seat volatility

Party Name	1955		1958	
	number	share	number	share
Japan Democratic Party	185	39.61		
Liberal Party	112	23.98		
Liberal Democratic Party			287	61.46
Right Wing SDPJ	67	14.35		
Left Wing SDPJ	89	19.06		
Social Democratic Party of Japan			166	35.55
Japanese Communist Party	2	0.43	1	0.21
Labour Farmers Party	4	0.86		
New Party Common Goals	2	0.43		
Others			1	0.21
Non Affiliated	6	1.28	12	2.57
Total	467	100	467	100

*Seat Volatility = 98.5

The above two elections exemplify the cases in which volatility scores are largely influenced by splits and mergers of political parties. Pedersen's net volatility index reveals the extent to which a party system changed between two elections as it appears.

remained in opposition.

[5] Potentially all merging parties are split from other parties at some point of party genealogy. The paper considers parties split recently before a merger as split parties. Rather than classifying categorically, one could also quantify the time between a previous split and a merger.

Yet, what the index may not reveal is how much continuity parties have even after splits and mergers. To this end, the paper discusses below a different aspect of party changes.

Member Volatility, the composite Volatility Scale, and Party Volatility

Party system dynamics is underpinned by the appearance of new political parties and the disappearance of existing political parties as seen above. New political parties can result from a split or a merger of existing political parties or 'genuinely new parties' (Sikk, 2005) which do not have a root in existing political forces. In practice, new parties could be a mixture of these ideal types as new members could reasonably form a party with politicians from existing parties. 'Newness' of new parties thus depends on the extent to which new members are involved in the party making. In turn, 'oldness' of new parties depends on how much old wines (i.e. members) are poured into a new bottle (i.e. new party label).

To reflect continuity of elected members between two consecutive elections, the index of Member Volatility (MV_t) is set as follows:

$$MV_t = \sum_{j=1}^{n} \left| \mathrm{M}_{jt} - \mathrm{M}_{jt-1} \right| / (N_t + N_{t-1})$$

, where M_{jt} denotes whether or not politician j was elected at election t (1 when elected, 0 when not elected), M_{jt-1} is whether or not politician j was elected at election $t-1$ (1 when elected, 0 when not elected), N_t is the number of parliamentary seats at election t, and N_{t-1} is the number of parliamentary seats at election $t-1$.

The index ranges from 0 to 1[6]. The index is 0 when all the parliamentary members elected at election $t-1$ are reelected at election t and there are no new members in the parliament. The index is 1 when all the parliamentary members elected at election $t-1$ are replaced by new members elected at election t. The sum of member changes (i.e. $\sum_{j=1}^{n} \left| \mathrm{M}_{jt} - \mathrm{M}_{jt-1} \right|$) is equal to the total number of parliamentary members across two consecutive elections (i.e. N_t+N_{t-1}). In other words, there are as many politicians as the number of parliamentary seats for two elections and each belongs to either parliament.

[6] The index can be transformed into the 0 to 100 scale by multiplying by 100 to allow a direct comparison with the Net Volatility.

With the index of Member Volatility, we can measure the degree of continuity of elected members and distinguish between the appearance of new political parties where members are 'genuinely new' and the new parties where members come from existing parties. This variation of old and new members does not seem to have been taken into account in the measurement of volatility. The index of Member Volatility could illuminate such a black box.

Based on the index of Member Volatility, the following formula is set as a composite scale of volatility:

Volatility Scale$_t$ (*VS*$_t$) = *Net Volatility* (*NV*$_t$) * *Member Volatility* (*MV*$_t$)

$$VS_t = \left[\sum_{i=1}^{n} \left|P_{it} - P_{it-1}\right| / 2\right] * \left[\sum_{j=1}^{n} \left|M_{jt} - M_{jt-1}\right| / (N_t + N_{t-1})\right]$$

$$= \sum_{i-1}^{n}\sum_{j=1}^{n} \left|P_{it} - P_{it-1}\right|\left|M_{jt} - M_{jt-1}\right| / 2(N_t + N_{t-1})$$

While the net volatility is concerned with the share of political parties, the index of Member Volatility is concerned with the variability of members within each party. The composite of net volatility and the index of Member Volatility is a way to reflect both dimensions of *between* variability across parties and *within* variability of parties[7].

The logic of the Scale of Volatility is as follows. We suppose that a new party should be composed only of new members for being a 'genuinely new party'. If all parties meet this condition, MV will be 1 and the net volatility is not discounted in the overall scale of volatility. This makes sense as the net volatility is bound to be higher due wholly to the appearance of a new party. On the other hand, a party disguised with a new label is not a 'genuinely new party' in most cases of a split or a merger. In such cases, a net volatility needs to be discounted based on the degree to which members of parliament overlap over the two elections. Consequently, the scale of volatility is not as high as it appears to be with the net volatility. The idea is to weight net volatility (*NV*$_t$) with *MV*$_t$.

[7] The idea of calculating a composite Volatility scale partly derives from the F scale of ANOVA (Analysis of Variance) where between variability across groups is weighted by within variability of each group.

The index of Member Volatility can be further broken down to each single party to measure the extent to which each party has kept its members elected over two elections. This index of Party Volatility (PV_{it}) is set as follows:

$$PV_{it} = \sum_{j=1}^{n} \left| \mathrm{M}_{ijt} - \mathrm{M}_{ijt-1} \right| / (S_{it} + S_{it-1})$$

, where M_{ijt} denotes whether or not politician j was elected for party i at election t (1 when elected, 0 when not elected), M_{jt-1} is whether or not politician j was elected for party i at election t-1 (1 when elected, 0 when not elected), S_{it} is the number of parliamentary seats that party i held at election t, and S_{it-1} is the number of parliamentary seats that party $\underline{i}$ held at election t-1.

In the case of new parties, they do not hold any seat at election t-1 by default. Thus, the index of New Party Volatility (NPV_{it}) can be set as follow:

$$NPV_{it} = \sum_{j=1}^{n} \left(\mathrm{M}_{ijt} - \mathrm{M}_{jt-1} \right) / S_{it}$$

, where M_{ijt} denotes whether or not politician j was elected for party i at election t (1 when elected, 0 when not elected), M_{jt-1} is whether or not politician j was elected at election t-1 (1 when elected, 0 when not elected), S_{it} is the number of parliamentary seats that party i held at election t.

This index of New Party Volatility measures the extent to which new parties are 'genuinely new' in the sense that it is composed of new members who did not hold seats in the previous parliament. The index takes the value of 1 if new parties are composed of all members who made a debut in election t, while it takes the value of 0 if new parties are filled with experienced members who also won at election t-1.

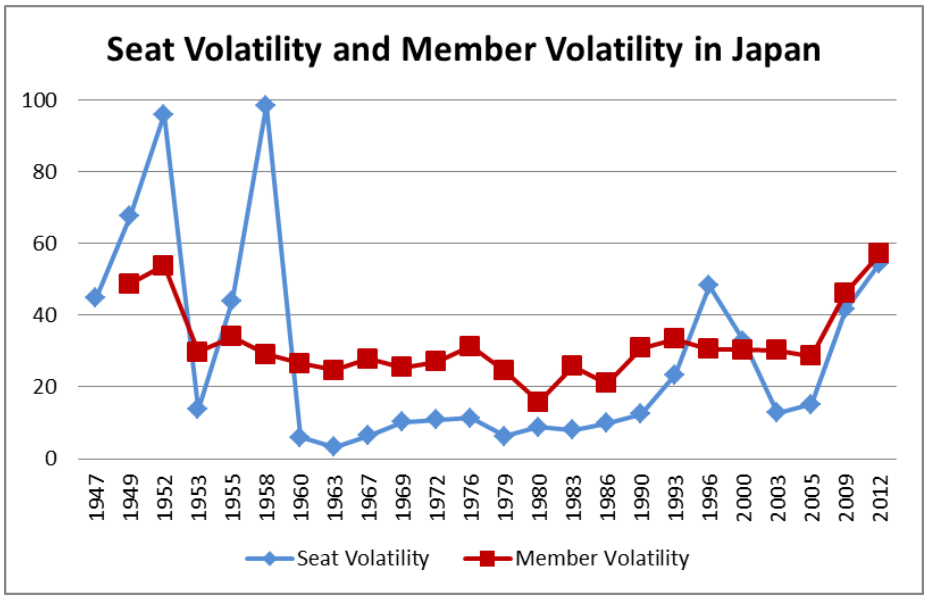
Changes and status quos of the Japanese party system

Figure 6 shows the trend of Member Volatility together with the changes in the seat volatility already seen in Figure 1. Note that the trend of Member Volatility is mildly correlated with the seat volatility[8], but its changes do not necessarily coincide with those of the seat volatility. A comparison of the election in 1952 and 1958 as we have

[8] The Pearson's correlation $r = .68$ ($p<.01$)

seen above illustrates this point effectively. The Member Volatility in 1952 is 53.9, while the score in 1958 remains 29.0, rather low in comparison with other elections.

Figure 6. Seat Volatility and Member Volatility in the Japanese party system, 1947-2012



Note: Member Volatility is multiplied by 100 to allow a comparison with Seat Volatility.

The higher score of Member Volatility in the 1952 election and the low score of Member Volatility in the 1958 election are well reflected in each party's score of New Party Volatility. Table 3 shows that 45 % of the members elected with Liberal Party in 1952 are new members, whereas 56% were new members for Reform Party. The New Party Volatility scores are higher for the split parties of Social Democratic Party of Japan, marking 56% for Right Wing and 70% for Left Wing respectively. In the 1958 election, the New Party Volatility scores are much lower, producing 27% for both Liberal Democratic Party (LDP) and Social Democratic Party of Japan (SDPJ).

Table 3. New Party Volatility in the 1952 and 1958 elections

Party Name	Types	Seats won	Newly elected	New Party Volatility (NPV)
1952 general election				
Liberal Party	*Split/Merger*	240	109	.45
Reform Party	*Split/Merger*	85	48	.56
Right Wing SDPJ	*Split*	57	32	.56
Left Wing SDPJ	*Split*	54	38	.70
1958 general election				
Liberal Democratic Party	*Merger*	291	79	.27
Social Democratic Party of Japan	*Merger*	166	45	.27

These results may suggest that the New Party Volatility index is higher for the *split types* of new parties than for the *merger types* of new parties. As seen above, Right Wing and Left Wing of Social Democratic Party of Japan (SDPJ) are purely *split types* of new parties, while Liberal Democratic Party (LDP) and Social Democratic Party of Japan (SDPJ) are purely *merger types* of new parties. Liberal Party and Reform Party are both the *split and merger types* as they are formed based of a merger of split parties. The New Party Volatility index appears to be higher in the order of the *split types*, *split and merger types*, and *merger types* of new parties.

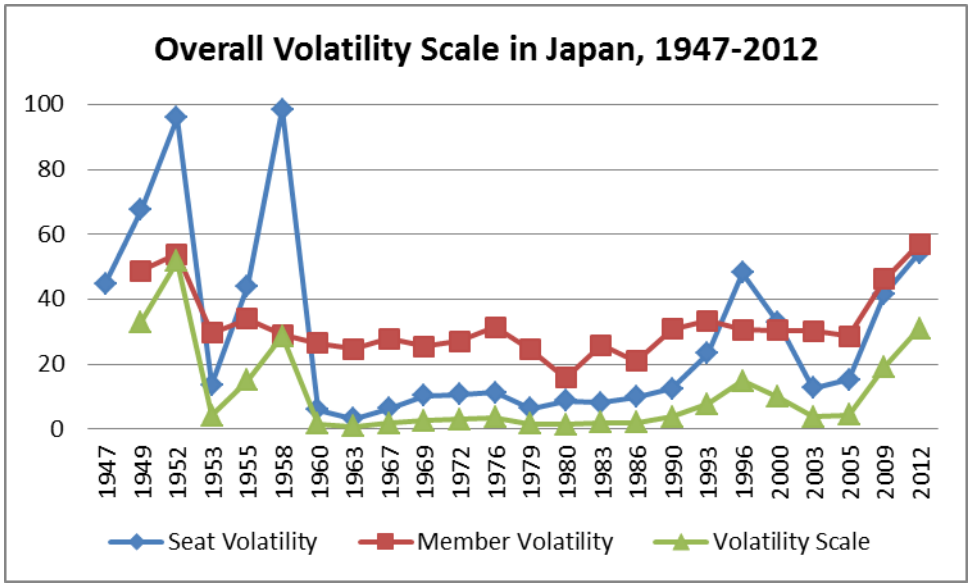
The results also imply that *merger types* of new parties are better off at the first election after a merger as more members succeed in returning to office (i.e. being reelected) than *split types* or *split and merger types*. Obviously, *merger types* of new parties tend to secure more seats than *split types* of new parties. Split types of new parties, as exemplified by the Right Wing and the Left Wing of Social Demographic Party, could face difficulty at the first election after a split as fewer members can achieve reelection and the percentage of newly elected members becomes higher.

Returning to Figure 6, the discrepancy between extremely high seat volatility and a relatively low Member Volatility score in 1958 is noteworthy. An asymmetric relation between the net volatility and Member Volatility is similarly found in the 1996 election where two new parties competed for the Lower House for the first time. New Frontier Party, found in 1994 after a merger with five different parties (thus classified as the

merger type of new parties), seized 157 seats, out of which 113 members were reelected delegates. Democratic Party of Japan, found in 1996 after a merger of a split from Social Democratic Party of Japan and a major part of New Party Sakigake (a sprinter from Liberal Democratic Party formed in 1993), won 57 seats, out of which 31 members were reelected ones. The New Party Volatility scores are .28 for New Frontier Party and .45 for Democratic Party of Japan respectively. Democratic Party of Japan can be classified as the *split and merger type* of new parties and its higher New Party Volatility score compared to the *merger type* of New Frontier Party is in line with the findings in the 1950s discussed above.

From these exemplary elections in 1958 and 1996, we can learn that one should not only rely on the net volatility but also on the variation *within* parties. The measurement of this within variation of parties (i.e. Member Volatility) can be further applied to the overall scale of Volatility shown in Figure 7.

Figure 7. Overall scale of volatility in the Japanese party system, 1947-2012



The Volatility Scale weights Seat Volatility based on Member Volatility. The score in the 1958 election is thus not as high as what the score of Seat Volatility suggests. The score in the 1996 is likewise weighted downward according to the score of Member Volatility. The overall Volatility Scale reflects both dimensions of the net differences of party share and the variability of representatives within parties and is not susceptible to the problem that net volatility can be inflated when new parties are formed with old members.

Conclusion

The paper attempted to examine the party system dynamics from the perspective of member continuity in the case of Japan. One of the advantages of looking at member continuity is that it allows us to classify a variety of new parties. New Party Volatility could be useful in classifying a set of different new parties ranging from old parties with a new label to genuinely new ones. Relatedly, this study adopts an inclusive approach in counting new parties and a party is considered new as long as it competes in election in a new form, be it a split or a merger. While taking all parties that apply in the basket, they were weighted by the index of Member Volatility which measures the extent to which members overlap between two elections. By including all parties, the volatility score reflects both the supply side of party system changes as well as the demand side of the dynamics. This approach is in the same line with the recent attempts in the literature (Powell and Tucker, 2013) but differs from them in that it does not require an often difficult judgment of which party to be analysed and to be considered new or old.

A disadvantage is that the paper does not use the vote share of parties and does not capture the demand side of the dynamics. This can be adopted in further analyses despite the two ballot problem in the Japanese case. The analyses of member continuity over elections require a collection of data on parliamentary members. Mair (2001: 32) once noted on the macro net volatility score: ‘Aggregate continuities may … conceal significant individual-level flux, or so it is argued, and hence may disguise the real extent of unfreezing’. This was to suggest that micro individual-level information also forms an integral part of the whole picture of party system dynamics. The paper likewise suggests that the meso level information about party members (elected or fielded at election) may also be an important aspect of party system dynamics.

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