

The Power of Connections

The Influence of Electoral Systems on Economic Growth in Japan and South Korea*

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Abstract

Do formal political institutions, namely electoral systems, affect economic growth? Using data on South Korea and Japan, I investigate whether their electoral system reforms produced a significant change in the rate of economic growth. I find that both countries grew faster under SNTV than under other systems. SNTV allows for the formation of close ties between politicians and society. This, in turn, makes it easier for politicians to sell specific policy agendas to the citizens. I conclude that formal political institutions, especially the electoral system, affect economic growth and that SNTV was one of the key catalysts of both Japan's and South Korea's economic booms.

Keywords: single non-transferable vote (SNTV); electoral systems; institutions; economic growth; Japan; South Korea

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1. Introduction

What are the effects of formal institutions on the political and economic performance of a country? More specifically, do formal political institutions, namely electoral systems, affect economic growth? These questions are inspired by Robert Putnam's famous puzzle about the effects of formal institutions on 'the practice of government' (1993: 3) and by Acemoglu and Robinson's (2012) discussion on the influence of inclusive political institutions on economic growth. In this paper, I utilize a quasi-experimental design: the electoral system reforms that took place in South Korea and Japan in the 1980s and early 1990s. These watershed events allow me to investigate how the speed of economic growth of the two East Asian countries reacted to the change in electoral institutions.

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The single non-transferable vote (SNTV) is a system in which voters cast their ballots for one candidate in multi-member districts. There are M seats in each district, which are determined by the population size, and the M candidates who secure the highest number of votes are elected to office (Baker, Scheiner 2004; 2007; Scheiner 2006; Grofman et al. 1999: 2; Reed, Thies 2001b). The non-transferable portion of the name refers to the fact that voters are not able to indicate alternative preferences in case their first-choice candidate is either unable to secure enough votes to win a seat or is already safely elected (Reed, Thies 2001a). Literature tends to refer to SNTV as a 'semi-proportional' system (Grofman et al. 1999: 2), but more careful research shows that it more closely resembles proportional representation (PR) or single transferable vote (STV) systems with high election thresholds (Lijphart 1999: 297). In the post-WWII era, SNTV was used between 1947 and 1993 to conduct Lower House elections in Japan, while in South Korea it was used from 1973 to 1988.

I hypothesize that the SNTV system provided political stability. It enabled a system in which close ties formed between the government, businesses, the bureaucracy, and the citizens. This, in turn, promoted a constant environment that facilitated economic growth in both South Korea and Japan. In other words, Japan and South Korea developed faster under the SNTV system than under other alternative electoral systems. I test my hypothesis using a time-lagged growth OLS regression model on data from the World Bank, OECD, and the Center for Systemic Peace. I find that SNTV predicts economic growth in both Japan and South Korea and that this finding holds across different specifications of the models.

I structure the paper as follows. First, I review the theory and argument. In doing so, I assess previous academic contributions that help to shape this research agenda. I then formally state the hypothesis. Second, I examine the data and methodology. In the third section of the paper, I present the results of my statistical analysis. The final section summarizes the results and provides concluding thoughts.

2. Political Institutions and Economic Booms in Japan and South Korea

The booming economic growth of East Asia in the second half of the 20th century has been a favorite scholarly topic. The discussion revolves around the question of whether the economic miracle in East Asia was a product of careful government interventions or if it is merely a realization of the extensive growth processes that are common for newly industrializing economies. A World Bank research team minimized the importance of government involvement. Instead, they argued that the reason for the rapid and sustained economic growth in East Asia during the second half of the 20th century was due to the countries 'getting the basics right' by enjoying high levels of private domestic investment and savings, and enjoying a stable macroeconomic environment (World Bank 1993: 5–6). Alternatively, Krugman (1994) argues that the rapid growth of Japan, South Korea, and other East-Asian Tigers can be classified as 'extensive' and therefore unsustainable in the long-term.

However, these arguments systematically downplay the role of state interventions in promoting the growth in East Asia and fail to account for the origins of the extensive growth

(see Gilpin 2001 for more detail on these criticisms). Japan and South Korea were able to develop so rapidly because the government not only actively engaged in growth promotion but also imposed strict standards on business and demanded discipline from private companies (Amsden 1992; Wade 1996). Rodrik (1994) adds that the World Bank approach discounts the role of government interventions in the growth of Japan, South Korea, and other East Asian countries. Importantly, the governments of East Asian countries did not seek to replace the markets when stimulating economic growth. Instead, states limited their engagement to market creation, financial market regulation, export promotion, and the promotion of political stability (Stiglitz 1996: 156–157).

If the state is indeed the root of the East Asian miracle, what political institutions made this possible? Amsden and Wade readily recognize the role of the state in providing stable institutions that reduce transaction costs and in constructing reliable ‘rules of the game’ for socioeconomic interactions (see North 1990: 3; North, Weingast 1989). However, they leave the discussion on the role of specific institutions mostly untouched. Some scholars argue that democracies are particularly effective at providing this stability since they establish an institutional framework that can efficiently maintain the rule of law, protect property rights, regulate the economy to fight moral hazards, engage in macroeconomic stabilization through central banks, and provide social insurance (see Rodrik 2000).

However, this assertion is problematic for at least two reasons. First, the argument remains unsettled on whether democracies promote higher rates of economic growth than non-democracies (Przeworski, Limongi 1993), although economic growth makes democratic institutions more likely to survive once they are established (Przeworski et al. 2000). Second, the purely democracy-driven argument does not take into consideration the specific institutional conditions of the East Asian countries. I argue that the SNTV electoral system provided pathways for rapid economic growth in Japan and South Korea. In both countries, SNTV fostered an inclusive institutional environment that effectively accommodated multiple societal actors in an ongoing cycle of interactions, which led to economic growth. This argument corresponds with and expands on the assertions of scholars who place a great deal of emphasis on inclusive institutions as the source of growth (see, e.g., Acemoglu et al. 2005; Acemoglu, Robinson 2012; Nooruddin 2011).

2.1. Japan

SNTV has a long tradition in Japan. In the period following the Meiji restoration, Japanese policymakers experimented with several electoral institutions (Fukui, Fukai 1999). Ultimately, SNTV was introduced in the early 1900s with the hopes of limiting the political power of oligarchs and large landowners. While this plan was not entirely successful, SNTV remained at the core of the Japanese political system with minimal alterations from 1900 to 1932, and then again from 1947 to 1993 (Grofman et al. 1999: 6–7). Admittedly, in the post-WWII era, the American occupation authority experimented with transforming SNTV into a PR system with large districts (approximately 14 members per district) in order to root out nationalism and militarism from Japanese politics (Grofman et al. 1999: 6; Woodall 1999: 27). This worked perhaps too well, as several Communists and Socialists won seats

in the new districts during the 1946 election. This panic-inducing situation resulted in the re-introduction of the medium-size (3–5 members per district) SNTV in 1947 (Grofman et al. 1999: 7; Woodall 1999: 26–27). This institutional arrangement lasted until 1994 when a mixed-member system replaced SNTV (Woodall 1999: 26).

What were the other reasons, besides limiting the access of leftist parties to politics, for the adoption of SNTV? The second principal reason speaks directly to my thesis. Post-war Japanese politicians were aiming for a rapid economic recovery fueled by export-led growth. In the eyes of Japanese policymakers, SNTV would ensure that the Liberal Democratic Party (LDP) would always be the most powerful actor, since the system would constrain other parties' access to power on both the local and the national level (see Scheiner 2006). This, in turn, ensured that 'state-led economic development would not be undermined by narrow partisan demands' (Grofman et al. 1999: 7).

SNTV had three substantial effects on the Japanese political system. First, SNTV led to factionalism and intraparty competition (Grofman et al. 1999: 8). The strategic behavior for any party hoping to win the parliamentary majority under SNTV was to field multiple candidates per district (Grofman 1999; Reed, Thies 2001b). Thus, LDP politicians had to run against members of their own party, which meant that they could not rely on policy differences to set themselves apart from other co-partisans (Bouissou 1999: 97).

The inability to compete against each other using the policy platform produced the second result of SNTV: highly personal politics. Candidates focused their efforts on specific 'home-turf' (*jiban*) territories and used their extensive networks of support groups (*koenkai*) to build a favorable personal image that would attract voters (Bouissou 1999: 87, 97–98). Politicians spent considerable effort and resources on forming emotional connections between themselves and their electorate so that the voters would keenly listen to what their *sensei* had to say (Bouissou 1999: 110). This was essential for the politicians' ability to sell reform measures to the citizens and made pursuing pro-growth policies on a country-wide scale even easier.

The personalized campaigning was very expensive.¹ This reality, together with complicated election financing rules, produced the third effect of SNTV in Japan: the growth of money politics (Kohno 1997; Grofman et al. 1999; Winckler 1999: 346; Woodall 1999: 31; Reed, Thies 2001b). Hence, Japanese politicians were forced to rely on local businesses of all sizes for campaign contributions. Construction companies were the most important as they were able to both effectively fundraise and to extend the support base by motivating clients to vote for a particular candidate (Bouissou 1999: 106). Naturally, the companies expected rewards for their support in the form of public construction projects, which the government would subsidize (Fukui, Fukai 1999: 125). The businesses would choose candidates based on who had the best chance to deliver these projects (Fukui, Fukai 1999: 135). Furthermore, businesspeople from related industries used the *koenkai* networks to connect with each other and form mutual help societies (*keiretsu*) to win the government contracts even more easily (Bouissou 1999: 111).

Overall, this situation was beneficial for the economic growth of Japan, as it allowed the companies to grow at a tremendous pace (Fukui, Fukai 1999: 126). However, adverse externalities also emerged because of the money politics. Factionalism strengthened, as LDP politicians fought one another for support of the wealthiest companies. The influence of

bureaucrats at the ministries and the state agencies also increased, as they were the ones allocating the subsidies (Fukui, Fukai 1999: 126, 136). Government bureaucrats also built ties with LDP politicians and the businesses so that they could retire into lucrative positions within the party and both private and public companies, a practice commonly known as *amakudari* or 'descent from heaven' (Colignon, Usui 2003). These clientelist and financially centralized structures further facilitated the weakening of the opposition groups on both the regional and national level (Scheiner 2006: 4–5). Still, the Japanese system remained democratic as the intra-party factions transformed the formerly conservative LDP into a party of broader ideological appeal (Pempel 1990: 31; see also Muramatsu, Krauss 1990).

SNTV in Japan produced a stable, if a bit cronyistic, political environment that allowed for consideration of long-term policies centered on economic growth and recovery (Woods 1999: 34). The LDP enjoyed limited electoral opposition because SNTV caused the fragmentation of other political parties (Reed, Bolland 1999: 213). Furthermore, the personalized politics meant that election competition was not about issues but about the character and image of the candidates (Rosenbluth, Thies 2012). Therefore, even if the voters replaced the politicians in power, the policies remained unchanged (Grofman et al. 1999: 8), which enhanced policy stability and allowed LDP politicians to pursue export-focused strategies while at the same time adopting social and business protection programs to limit the negative aspects of growth (Calder 1988; Inoguchi 1990). These redistributive and protectionist measures, various subsidies, and favorable loan regimes targeted at the core of the LDP support (farmers, small- and medium-sized businesses) helped to quell discontent as the country pursued its high-growth objectives (Ramseyer, Rosenbluth 1993; Winckler 1999: 338).

The 1994 reforms overhauled the system by changing three realities that made the close relationship between politicians, bureaucrats, businesses and citizens possible under SNTV. First, it imposed rules on the public financing of parties and regulated the corporate funding of politicians (Reed, Thies 2001b: 383). The number of candidates prosecuted for violations of campaign finance rules increased and several elections were nullified, which almost never happened prior to the reform (Reed, Thies 2001b: 397–398). Second, electoral district borders were redrawn to diminish the interconnected support structures and to alleviate vote malapportionment (Horiuchi, Saito 2003: 673), which in turn promoted interparty competition (Reed et al. 2012: 374; Scheiner 2012: 372, 374). The newly-drawn district borders shattered the traditional political support structures by weakening ties between the incumbents and their geographic base (Hirano 2006: 81). Third, the reform limited the influence of the individual politicians and bureaucrats on budget allocation, which equalized the distribution of government subsidies (Horiuchi, Saito 2003: 680). When combined, the 1994 reforms created an environment in which the LDP politicians could no longer safely rely on their traditional links to the supporters, the businesses, and the bureaucrats, which were essential in selling the desired economic policies. This fact explains why the LDP did not handle the economic downturn of the 1990s better.

Beckley and colleagues (2018) have recently suggested that the rapid growth of Japan was due to the economic benefits linked to the 1958 security treaty between the East Asian country and the United States of America. The authors raise a valid point, and I do not dispute the crucial role that the special relationship between the two countries played in promoting Japanese economic growth. However, the authors do not adequately consider the

effects generated by SNTV on fostering an environment in which U.S.-sponsored low-interest loans had the desired effect. Secondly, this research is more broadly applicable, as it tests the theory on two cases rather than one.

2.2. South Korea

In South Korea, the history of electoral institutions is much more complicated than in Japan. The country has had four different electoral systems since the end of the Korean War (Grofman et al. 1999: 8). SNTV was one of these institutions, and it was in operation between 1973 and 1988. From 1973 to 1981, two-thirds of the seats in the legislature were elected by two-seat SNTV, and the remaining one-third was allocated through appointments by the president. From 1981 to 1988, the personal appointment component was replaced with a version of proportionality rule, where the seats were assigned to the parties based on how many seats they secured in the SNTV portion (S-Ch. Lee 1999: 51). Importantly, even though South Korea was not a democracy at this time, the SNTV seats still mattered for the ease of governance, and there were relatively free and fair elections for these seats (K-Y. Lee 1999).

The reasons for adopting SNTV in South Korea were similar to those in Japan. President Park Chung-hee and the DRP wanted to maintain control over the politics of the country to continue the pro-growth economic policies (S-Ch. Lee 1999: 52). Therefore, to constrain the challenges from urban areas, where the DRP was less popular, SNTV was adopted to ensure that the DRP candidates, who frequently ended up second, could secure seats (S-Ch. Lee 1999: 56). The effects of the reform corresponded with the expectations of President Park and his party. The opposition became fragmented and lost power. The DRP seat share in the urban areas also increased (Mo, Brady 1999: 227–228, 231).

Although some intraparty competition emerged, it was not as prevalent as in Japan, since the DRP fielded only one candidate per district (S-Ch. Lee 1999; Mo, Brady 1999). Money politics did not become an issue in South Korea either, primarily due to stringent campaign finance laws. Still, many resources did change hands under the table (S-Ch. Lee 1999; Mo, Brady 1999). More importantly, personal connections between the politicians and their districts developed in a similar way to Japan. Successful candidates were expected to perform various favors to the voters, such as securing places in schools for supporters' children or bringing government projects into their home districts (Park 1988a; Park 1988b; S-Ch. Lee 1999: 62).

* * *

Ultimately, other electoral institutions replaced SNTV in both South Korea and Japan. In 1988, the South Korean policymakers reverted to a system that was a mix of SMD and proportionality (Grofman et al. 1999). In 1993, the Japanese lawmakers reformed SNTV into a combination of SMD and PR with dual candidacy (Klíma 1998: 222; Reed, Thies 2001b: 383). These changes emerged due to widespread dissatisfaction with the previous systems. South Koreans associated SNTV with the authoritarian rule of President Park, so

the citizens preferred its replacement irrespective of any benefits of the former institution (Grofman et al. 1999: 9). In Japan, large-scale corruption scandals caused Japanese citizens to demand reforms, even though they did not explicitly demand changes to the electoral procedures (Reed, Thies 2001b). Redistricting increased political competition, and anti-corruption oversight was expanded in both countries after SNTV was abolished. As a result, the stable policy environment that both the LDP and DRP enjoyed in the decades prior to the reform was made more difficult. Hence, I expect that the rate of economic growth will decrease during this period.

To summarize, SNTV was one of the essential factors in promoting economic growth in both Japan and South Korea. First, in Japan and to a lesser extent in South Korea, the use of SNTV helped to establish a mutually beneficial network between the government, the bureaucracy, the businesses, and the citizens. This system of connections made it easier for politicians to tailor their image to their specific constituencies. Ergo, the politicians were able to sell critical pro-growth measures to the citizens as well as provide both businesses and ordinary people with assistance in periods of economic hardship. Furthermore, since the electoral fate of the LDP at large was not tied to the success of the individual candidates (Bawn et al. 1999: 306–307), the longevity of the Japanese dominant party system was further enhanced. This is what differentiates the Japanese and Korean cases of SNTV from other more competitive electoral systems, such as PR or SMD.

Second, SNTV allowed both LDP and DRP to retain control over the long-term economic policies of their respective countries (Grofman et al. 1999; Reed, Bolland 1999; Mo, Brady 1999). The dominant parties could afford to pay less attention to the dissenting opinions that they could not co-opt. This allowed for a simplified process of policy adoption and adjustment. This feature was especially useful when the governments needed to quickly address negative externalities of economic growth or react to economic downturns.

Hence, I propose the following hypothesis:

H_A : Japan's and South Korea's economies grew faster under the single non-transferable voting system than under other electoral institutions.

Put more precisely, I expect to find that Japan experienced higher rates of economic growth while the SNTV rules were in place than after SNTV was replaced by the mixed system in 1993. Similarly, I expect to find that South Korea grew faster during the SNTV period than under either the pre-1972 SMD system or after the adoption of the mixed system in 1988. Thus, although not the only explanation for the economic boom in the two countries, SNTV is nevertheless one of the most important determinants of it.

3. Data and Methods

The core question of this paper is whether electoral institutions influence economic growth, particularly in Japan and South Korea. This pair of countries provides a useful set of cases because both countries share a historical experience with a somewhat unique type of

electoral institution and because both countries provide variation in the presence of SNTV. In particular, both experienced electoral institution reforms in the second half of the 20th century. Hence, I can use the reality of institutional change as a quasi-experiment to more directly explore the influence of specific electoral institutions on economic growth.

To test my hypothesis, I employ time-lagged growth regression models. The unit of analysis is country-year in the pooled analysis, and year in the single-country analysis. This method, regularly used by economists and political scientists, deploys ordinary least square regression to determine which variables best predict the economic growth of a country across a given time-period. Since the goal of this paper is to identify whether the presence of SNTV contributes to faster growth in South Korea and Japan, the use of growth regression analysis is appropriate.²

That said, growth regression modeling is not without its flaws. Both Levine and Renelt (1992) and Sala-I-Martin (1997) point out that there is little agreement on what variables to include in the models as controls. However, the authors suggest specific variables, such as secondary education enrollment, population growth, the share of trade in the GDP (Levine, Renelt 1992), and regime type (Sala-I-Martin 1997), since they robustly correlate with growth. I will include some of these control variables in my model as well.

Sala-I-Martin (1997) suggests controlling for geographic latitude and cultural aspects, such as religion. While these variables are useful when dealing with a large dataset containing diverse countries, they are not relevant to my research. Japan and South Korea share both geographic location and a cultural heritage. Therefore, I omit these variables since they serve no purpose.³ Similarly, Levine and Renelt (1992) recommend including a measure of secondary school enrollment in the regression model. However, due to limited data availability, doing so would significantly reduce the number of observations to the point that the model would no longer be informative. Thus, I opted not to include this variable in my model either. Fortunately, this omission does not pose serious trouble for this project, as both countries record high enrollment numbers during the period of interest (see World Bank 2016).

The second issue with using the growth regression model is the fact that the findings generated by the growth regression are sensitive to model specifications (Levine, Renelt 1992). Unfortunately, there is no straightforward way to address this issue. The best method to deal with this sensitivity, however, is to include variables that other scholars use in their models. Hence, I include population growth, trade, and the regime type in my model.

I test my hypothesis using the World Development Indicator dataset provided by the World Bank. Although the WDI collects indicators for the period between 1960 and 2016, the variables used in my model were only available for the period between 1961 and 2015. The second source is the OECD database. Data from this source cover the period between 1980 and 2014. I also include measures of democracy which come from the Polity IV dataset. When discussing the operationalizations of my variables, I will indicate from which dataset each variable originates.

My dependent variable is a year-on-year change in the gross domestic product. Some scholars such as Sen (1999) or Nussbaum (2011) will point out that my measure of growth is imperfect. However, my operationalizations are satisfactory for the following reasons. The measure is simple to understand, commonly used, and reliably captures the process

of economic growth of the countries of interest.⁴ The measure of GDP is available for the period between 1961 and 2014. I use the percentage change between years rather than the absolute value to capture annual fluctuations. Figures 1 and 2 provide visualizations of the shifts in values of the dependent variable. Measures for these variables come from the WDI dataset.

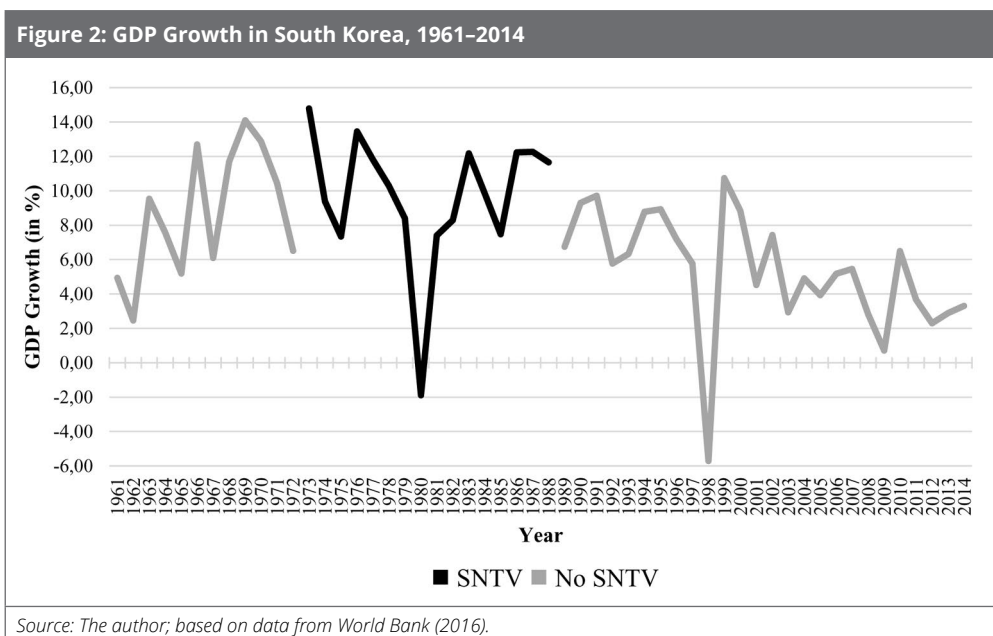
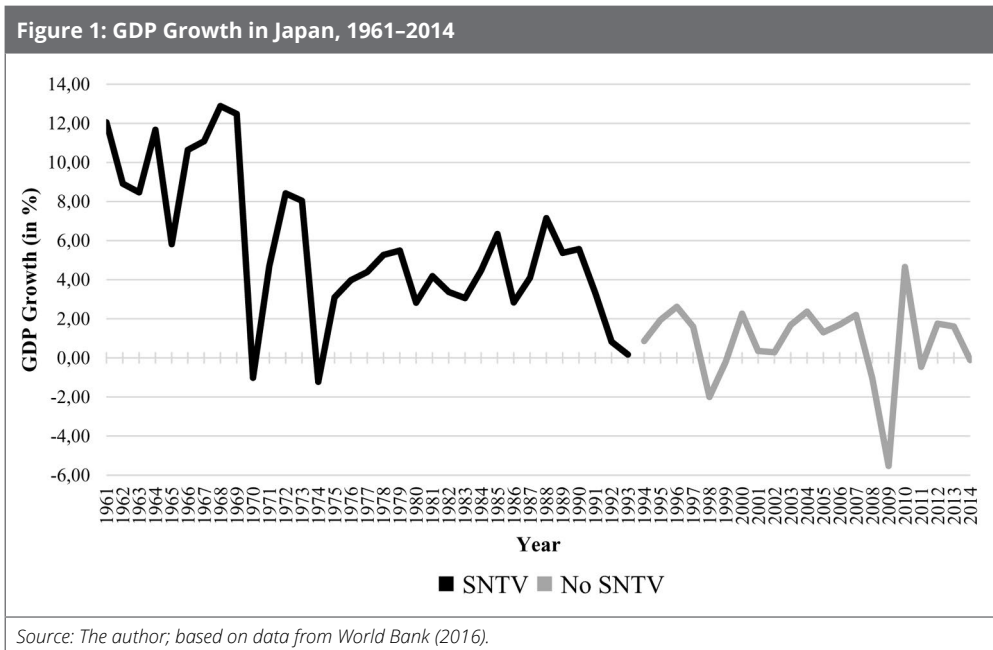
The key independent variable is the use of SNTV as the electoral institution. This is a dichotomous variable, coded as '0' if SNTV is not used and as '1' if SNTV is used. This variable is based on the information about the political history of Japan and South Korea. In the post-WWII era, Japan used SNTV to conduct its Lower Chamber elections between 1951 and 1993, inclusive. In South Korea, SNTV was used for parliamentary elections between 1973 and 1988, inclusive. In Figures 1 and 2, black is used to illustrate periods in which SNTV was used, and grey designates years when SNTV was not used.

Population growth needs to be controlled for because it determines the number of individuals that benefit from the economic growth. The faster the population of a state grows, the larger the GDP share a state must dedicate to absorbing this growth.⁵ At the same time, steady population growth, which supplies young workers to the workforce sufficient young workforce, is beneficial for economic development (Zaidan 1969; Bedia, Gupta 2013). I measure population growth as the annual percentage change in the size of the population versus the previous year. A measure of population growth originates from the WDI database.

The share of trade in GDP must be controlled for because of the positive relationship between the proportion of international trade and a country's economic growth, as has been established by most economists (see, e.g., Frankel, Romer 1999; Dollar, Kraay 2004). This positive relationship has been particularly strong in the East Asian countries, such as Japan and South Korea (Frankel et al. 1996). I measure trade as the percentage change in the volume of trade as a share of the country's GDP from the previous year's measurement. The measure of trade also originates from the WDI dataset. Regime type is also an important control variable. Stable states with quality institutions and the rule of law are better at generating economic growth (Olson 1993; Acemoglu et al. 2005; Acemoglu, Robinson 2012). These states are usually democracies (Moore 1966; Nooruddin 2011).

The type of regime in a country is measured using the Polity 2 score and it is coded on a scale between -10 and 10, where scores between -10 and -6 denote autocracies, -5 to 5 represent unstable and mixed regimes, and 6 to 10 represent democracies. Regarding the measure of regime type, it is important to mention that it will only be included in models containing data on South Korea. This is due to the lack of variation in the case of Japan, which is rated as a perfect democracy (10) for the entire duration of my dataset. South Korea, on the other hand, oscillates between -9 and 8. The Polity 2 measure comes from the Polity IV dataset. I also include the time-lagged version of my dependent variable as a control.

The rate of growth slows down as a country develops. This slowdown comes from the increased efficiency of the country's economy. Rather than mobilizing factors of production, which leads to rapid and extensive growth, the countries focus on making their economies more productive, which produces more modest changes in the GDP measures (Nishimizu, Page 1982; Krugman 1994; Prescott 1998; Irmen 2005). Therefore, my model must also incorporate a measure of economic productivity.



Nishimizu and Page (1982) and Irmen (2005) suggest that to account for the change from extensive to intensive growth, researchers must consider indicators such as the level of technological advancement and know-how. The cost of labor, especially the capital-labor

ratio, is also a useful measure of economic progress. The theory suggests that, as the economy becomes more developed, the cost of labor increases since the supply of workforce becomes more and more scarce (Irmen 2005: 1427). This, in turn, leads businesses to adopt more labor-effective modes of production (Irmen 2005: 1428). Hence, I use the measure of unit labor costs, provided by the OECD, as a measure of economic efficiency.

The OECD defines unit labor costs as the value of labor per unit of production (OECD 2016). OECD measures the variable as a scaled index, where 100 designates the baseline value in the year 2008. The lower values of the index indicate that the labor is cheaper (i.e., a less economically developed country), while higher values mean a more expensive workforce (i.e., a more economically advanced country). For Japan, the average value of the unit labor costs in the time-frame covered by my dataset equals 112.215 (std. dev. = 20.844), while for South Korea the mean value equals 62.089 (std. dev. = 34.002).

4. Results and Discussion

In this section, I review the results of my statistical analysis. Correlation coefficients suggest a positive relationship between economic growth and the presence of SNTV in both the complete dataset and in the separate datasets of Japan and South Korea. I then confirm the relationship by discussing the results of the time-series cross-sectional growth regressions.

Furthermore, I conduct tests for omitted variable bias, multicollinearity, and heteroscedasticity. The first two tests came out negative, and the tests of heteroscedasticity only returned near-significant results. Nevertheless, for the sake of certainty, and to ensure that the results do not suffer from non-constant error variance, I calculate robust standard errors using the HC3 method, which is suitable for smaller sample sizes (Long, Ervin 2000; Hayes, Cai 2007). Given the time-series nature of the data, I also include a lagged dependent variable in the model to account for temporal autocorrelation. Per convention, I also cluster on the country identification variable in the time-series cross-sectional model. Table 1 presents the results.

The output of the time-lagged growth regression analysis, presented in Table 1, suggests that there is a statistically significant positive relationship between SNTV and annual GDP growth, even after controlling for the lagged dependent variable, population growth, trade, cost of labor, and the measure of democracy. The results of time-series cross-sectional Model 1 of the complete sample, which combines data on both Japan and South Korea and clusters based on the country identifier, show high model fit and indicate that the presence of SNTV is a statistically significant positive predictor of GDP growth at the 0.10 level.⁶ The presence of SNTV is responsible for a 1.356 percentage point increase of GDP. However, these results do not indicate how the presence of SNTV affects economic growth in the two countries in the sample. To determine these effects, I disaggregated the datasets and ran separate analyses for each of the countries.

Table 1: Determinants of Annual Growth of GDP

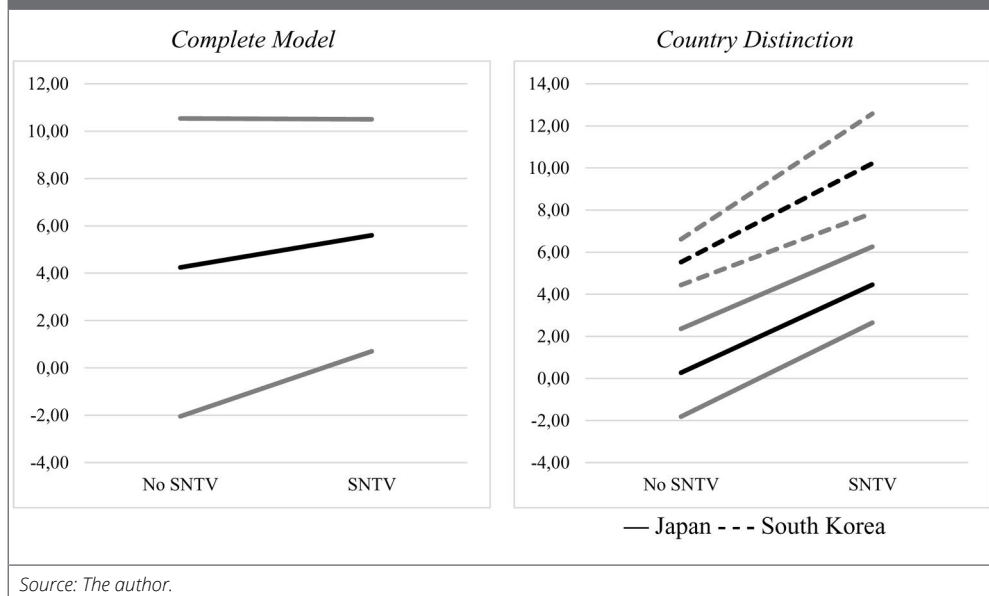
	Model 1.1 ^a (Complete)	Model 1.2 ^a (Complete)	Model 2.1 ^b (Japan)	Model 2.2 ^b (Japan)	Model 3.1 ^b (South Korea)	Model 3.2 ^b (South Korea)
SNTV	1.233** (0.049)	1.356* (0.110)	2.944*** (0.810)	4.183** (1.737)	2.627** (1.251)	4.691*** (1.371)
Lagged DV	0.502 (0.087)	0.086 (0.047)	0.343* (0.201)	-0.160 (0.261)	0.227 (0.173)	-0.146 (0.173)
Population Growth	-	0.872 (0.445)	-	-1.106 (2.178)	-	-0.762 (2.799)
Trade	-	0.019 (0.012)	-	-0.044 (0.090)	-	-0.069** (0.030)
Cost of Labor	-	-0.049 (0.062)	-	-0.019 (0.038)	-	-0.103* (0.060)
Regime Type	-	0.011 (0.297)	-	-	-	0.459*** (0.167)
Constant	2.134 (1.651)	6.540 (5.166)	0.553 (0.605)	4.441 (6.496)	4.935*** (1.471)	17.327** (6.438)
Number of Obs.	106	90	53	45	53	45
F-Score	-	-	19.17***	4.92***	4.45**	11.71***
R ²	0.313	0.477	0.431	0.355	0.180	0.498

Note: OLS regression estimates. N = Country-year in Model 1. N = Year in Models 2 and 3.
* $p < .10$, ** $p < .05$, *** $p < .01$
^a Clustered standard errors in parentheses. ^b Robust standard errors (hc3) in parentheses.

Source: The author.

The results of the complete models with all relevant controls (Models 2.2 and 3.2) show that SNTV is a statistically significant positive predictor of annual GDP growth in both Japan (at the 0.05 level) and South Korea (at the 0.01 level). Per Model 2.2, the predicted value of annual GDP growth in Japan when the SNTV system was not in operation is 0.270%. In contrast, with SNTV in use, the predicted value of annual GDP growth increases to 4.452%. Ergo, Japan experienced growth rates of more than 4 percentage points higher in SNTV electoral system years than it did in years without SNTV systems. In the case of South Korea, Model 3.2 predicts the annual growth of GDP during the SNTV era to be 10.217%. After the abolition of SNTV, the predicted annual GDP growth drops to 5.525%. Hence, the presence of SNTV in South Korea translates into a positive GDP change of 4.692 percentage points. The relationships are presented visually in Figure 3.

Figure 3: Predicted Values of Annual GDP Growth (with 95% confidence intervals)



Source: The author.

Before concluding, I offer some additional thoughts on the results presented in the previous paragraphs. First, the independent variables that other scholars suggest controlling for in growth regression models are not significant in the cross-sectional models (Models 1.1 and 1.2) or the Japan-specific models (Models 2.1 and 2.2). In the Korea-specific models (Models 3.1 and 3.2), the picture is more complicated. Regime type and cost of labor are significant in the expected direction. However, trade has a negative correlation with the annual GDP growth. This finding challenges the expectation that the rate of foreign trade should be positively related to GDP growth. Based on the consensus of the literature, I would expect that the relationship should be positive and at least moderately statistically significant. That said, since the models are sensitive to their specifications (Levine, Renelt 1992), I attribute this irregularity to the model composition.

Second, the results show that my current models explain a high amount of variation in the dependent variable, even though only the key independent variable is statistically significant. This occurrence can be attributed to the presence of a time-lagged dependent variable in the model. Indeed, high levels of temporal autocorrelation should result in the dependent variable at time $t-1$ explaining much of the variance in the dependent variable at time t . The fact that my key independent variable remains significant even in this dynamic model further signifies the robustness of the result.

In the previous paragraphs, I discussed the substantive effects of the observed coefficients. Still, what do the findings mean considering the theory proposed in this paper? The results support the hypothesized relationship between the presence of SNTV and faster economic growth. Conversely, once SNTV was replaced, Japan and South Korea developed considerably slower. Answering the query that I stated at the beginning of this paper, at least in the cases of Japan and South Korea, the type of electoral system appears to be one of the crucial variables that impact a country's economic growth. I also find support for my argument that SNTV is a key contributor in producing a stable policy-making environment, one that is more conducive to pursuing economic growth policies.

5. Conclusion

In this paper, I set out to answer the question of whether the choice of electoral system influences economic growth. To find the answer to the question above, I deploy a time-lagged cross-sectional growth regression model and a dataset constructed by combining data from the World Bank, the OECD, and Polity IV. Doing so allowed me to take advantage of a quasi-experiment in Japan and South Korea, as both countries changed their electoral systems over the course of the second half of the 20th century.

The results of my statistical analysis provide robust evidence in support of my theory that the SNTV electoral system was one of the key facilitators of economic growth in both Japan and South Korea. These findings hold even after including the recommended control variables in the model, which allows me to make some essential conclusions with regards to my proposed theory.

First, in both Japan and South Korea, economic growth was enhanced by the policy and political personnel stability that SNTV promotes. SNTV facilitated conditions that promoted the formation of close linkages between the government, bureaucracies, businesses, and voters. The personalist politics meant that, in exchange for their votes and financial support, voters could demand more concrete compensation for the negative externalities of economic growth, and businesses had better access to government-funded development projects. In return, politicians could pursue export-focused policies virtually unhindered. This finding is valuable, as the data confirms the common knowledge that many scholars of Japanese politics embrace.

Second, the reforms that abolished SNTV in both Japan and South Korea in the late 1980s and early 1990s led to more competition and limited the effects of personalist politics, making it harder to pursue export-focused policies through electoral supremacy and the

use of pork-barrel politics. Hence, formal political institutions, namely the electoral regime, have had a tangible effect on the economic growth of the two nations.

Given the results above, should the SNTV electoral system be recommended as a potential institutional solution for developing countries? The answer to this question is complicated. In this paper, I explain the effects of political institutions and the outcomes of electoral reform in two countries, Japan and South Korea. Admittedly, the SNTV electoral system is considered to promote stability in adopted policies and to limit violent swings in party majorities. These effects are beneficial, and both Japan and South Korea prospered under stable economic policies during the 1960s and 1970s. However, these findings, however strong and suggestive, may not carry beyond the confines of these two case studies. Instead, my findings help us further develop the theory on the effects of electoral institutions, specifically of the unique SNTV system, on the economic growth of countries.

While researchers continue to evaluate the full extent of SNTV's positive and negative effects, policymakers should carefully consider the specific conditions of their countries of interest. In fact, given the potential for promoting money politics and even cronyism, I contend that the implementation of the SNTV electoral system in developing countries might not be a preferred solution, especially if the countries suffer from ethnic heterogeneity or institutional weakness. Under such circumstances, I expect that the adverse effects of SNTV might become much more prevalent. Therefore, for developing countries, I suggest Lijphart's (2004; 2012) consociational democracy instead.

Footnotes:

1. Voters expected the candidates to provide various gifts and services, such as subsidized trips to hot springs resorts or to Tokyo, in exchange for support (Iga, Auerbach 1977; Bouissou 1999: 108; Fukui, Fukai 1999: 131; Hirano 2006: 58). Citizens also evaluated the politicians based on the number of public projects they brought into their districts (Bouissou 1999: 114). For example, Kaubei Tanaka, a veteran LDP politician, brought the bullet train to his home prefecture, ensuring that the train stopped in key areas of his district. This made the project extremely expensive and wasteful (Hirano 2006: 58).
2. Although the scope of this research is constrained only to two specific case-studies, this does not present any problems. The required time-related variation (see King et al. 1994: Chapter 6; Gerring 2004) exists within and between the cases both in terms of the scale of economic growth and in terms of the institutional reform. Furthermore, the value of this research is that it not only helps in generating hypotheses, it also allows for theory testing and confirmation (Lijphart 1971), especially on crucial cases (Eckstein 1975).
3. Furthermore, as Rodrik et al. (2004) point out, once institutions are included in the model, the influence of geographic conditions disappears.
4. Furthermore, utilizing alternative measures of growth, such as the Human Development Index or the GINI coefficient was not possible for the countries of interest. Neither WDI nor OECD collects data for the HDI and GINI in a time-frame that would allow me to conduct a meaningful analysis. However, as the data coverage for HDI and GINI improves, it may be possible to revisit this paper with new data.
5. India has been struggling to balance its economic and population growth for much of the late 20th and early 21st centuries (Bedia, Gupta 2013).
6. With a t-value of 12.39 and p-value of 0.051, this coefficient approaches the 0.05 level of significance.

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