

The Effects of Village Development Programs on Authoritarian and Democratic Elections*

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Abstract

The existing literature focuses primarily on the negative sides of resource distribution by dictators, such as low growth, corruption and clientelism. In this paper, we provide evidence that, even in an economically well-performing authoritarian regime, a dictator's resource allocations are not politically impartial, leading to favorable electoral outcomes for the incumbent in the short and long run. Using novel data on cash transfers from the government to villages in South Korea during the Park Chung-hee regime in the 1970s, under arguably the world's most successful rural development program, we show that the dictator allocated larger cash transfers to villages that supported the incumbent party in the previous election. In addition, villages that received relatively more benefits through the development program were more likely to support candidates from the authoritarian incumbent party in the following election. The effect of these discrete transfers is short-term; favorable transfers pay dividends to the incumbent party only when provided in the year prior to the election. More importantly, though, we provide empirical evidence that the political effects of an authoritarian developmental program could persist for long periods, even after the transition to democracy. We show that 40 years after Park Chung-hee's rural development program and 25 years after democratization in the country, villages that received more benefits from the program in the 1970s were more likely to vote for Park Geun-hye, the daughter of Park Chung-hee, in the 2012 presidential election.

Keywords: Development programs, Authoritarian Election, Authoritarian Legacy, Democratization, South Korea, Clientelism.

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1 Introduction

A large literature on clientelism has demonstrated that material benefits offered by incumbent rulers to voters in exchange for their electoral support leads not only to the political selection of less accountable, often authoritarian, candidates, but also to inefficient resource allocations, which can exacerbate corruption and inefficient economic performance (Schady 2000; Manacorda, Miguel and Vigorito 2011; De La O 2013; Calvo and Murillo 2004; Kitschelt and Kselman 2013; Harris and Posner 2019). Although this literature adds clarity to the causes of economic underdevelopment and political bottlenecks in numerous democratic countries, clientelism research that focuses specifically on the explicit exchange of material benefits for votes may limit our scope to fairly narrow types of distributive programs rather than a variety of policies through which governments can reach out to voters with various economic benefits.

This paper shifts the focus to a general development program targeting rural areas in a country with a relatively successful history of economic growth. How do clientelistic rural development programs shape voting decisions in the short and long terms in economically successful developing countries? Our study provides evidence that development programs under dictatorship, even in economically well-performing authoritarian regimes, can have short- and long-term political mobilization effects favoring the dictator who initiated the program. In doing so, the paper shows how a nationwide rural development program under dictatorship helps the incumbent ruler to gain electoral advantages in a politically critical period and leaves a political legacy that affects the country's voters long after democratization.

We collect novel micro-data on cash transfers to rural villages through a rural development program called “the New Village Movement (*Saemaeul Undong*)” in South Korea during the Park Chung-hee regime in the 1970s. This program has arguably been the world's most successful rural development program, having been decorated by the United Nations and adopted by many other underdeveloped countries in subsequent decades. While many developmental economists have analyzed the economic effects of such programs targeting rural areas in terms of agricultural production, public hygiene enhancement, and public goods provision (Ruttan

1984), few scholars have systematically studied their political implications. To examine the political effects of such a program in the short and long run, we collect and combine electoral outcomes data from authoritarian legislative elections in the 1970s and the 1980s, as well as the recent democratic presidential elections in 2007 and 2012.¹

Our analyses suggest various logics behind the rural development program and corresponding electoral support for the dictator. First, the dictator allocates larger benefits to villages that demonstrated greater support for the incumbent party in the previous election. Second, the townships² that received relatively larger benefits from the development program in the previous year, measured by the amount of government cash transfers per capita under the program, were more likely to support candidates from the authoritarian incumbent party in the next legislative election. In beneficiary villages, the vote share of the incumbent party increased, relative to the previous election held before the rural development program began. In addition, our analyses provide nuanced evidence that the pro-incumbent electoral effects of the rural development program are short-lived in authoritarian elections; we find that only the previous year's subsidy allocation significantly affects electoral outcomes, while resource distributions under the same program two to four years before an election do not provide electoral advantages to the dictator. Nevertheless, the increase in support from beneficiary rural areas was politically critical to President Park in the legislative elections. In the 1978 election, his party obtained fewer votes nationally than the opposition party, as the general public opposed his regime's widespread political repression and personalization of power.

To explain the legacy of the rural development program substantively, we further analyze the mechanism that led to long-term effects from the program, where we identify the demographic structure of villages as a key factor. Generally speaking, a relative lack of migration in beneficiary villages helps to explain the legacy effect. Large development inputs from the

¹Ideally, we would collect presidential election data from the 1970s and 1980s, as the developmental program was initiated by the dictatorial president and implemented by the administration, not by the party. Unfortunately, Park Chung-hee abolished presidential elections in 1972 with an auto-coup, and the next presidential election in the country was not held until after democratization, in 1987.

²All our analyses are at the township level, *eup-myun-dong* level in Korean. It is the third administrative layer. As of 2017, 3,503 townships exist in South Korea.

government helped rural townships to maintain their population size, most notably by keeping younger generations at home, whereas in other townships that failed to secure government transfers, much of the young generation migrated to urban areas in search of economic opportunities. We find that townships with larger development transfers at the time had a larger share of their populations above the age of 55 in 2010, who would have been 15-years-old in 1970. Our alternative analysis rejects the economic voting argument that beneficiary voters rewarded Park's daughter for the noteworthy economic development that their villages achieved from the program. We use luminosity data from night-time lights from various years (1992, 1996, 2001, 2006, 2011) to trace the development level of rural townships with larger transfers. We find consistent evidence over the years that the townships with larger benefits from the rural development program are actually less developed in later periods.

This study contributes to our knowledge on how authoritarian distributive policy with no explicit vote buying or clientelistic intentions can nevertheless influence citizens' political attitudes and behavior in favor of the incumbent dictator (and subsequent democratic candidates) in the long run. In doing so, we expand the scope of the literature on the political economy of authoritarianism to various public policies over which dictators have broad discretion without democratic checks and balances or electoral constraints, yet which also create incentives for manipulation that may be at odds with the public's gain. Our study also speaks to the authoritarian elections literature, which has focused on coercion, manipulation, and vote buying as the main mechanisms of incumbent advantage in elections. To the best of our knowledge, we offer the first micro-level empirical evidence showing how a development program benefits the authoritarian ruler without an explicit vote-exchange arrangement. The paper also represents a first attempt to examine how a specific authoritarian policy may create a long-lasting shadow on the politics of a consolidated democracy in the long run.

2 Clientelism and Rural Development Program

How do authoritarian leaders distribute material benefits? Most literature relevant to this question focus on clientelistic exchange. Clientelism is frequently cited as a prevalent phenomenon in the developing world. Despite a large literature on clientelism, however, [Hicken \(2011\)](#) notes that, surprisingly, no generally accepted definition of the concept exists in the field. From the vast literature, [Hicken \(2011\)](#) inductively traced the key conceptual elements as an iterated patron-client relationship between politicians and voters, in many cases through brokers or networks, with contingent and reciprocal exchanges of economic benefits and votes ([Hicken 2011](#), p.290). [Hicken \(2011, pp.291-294\)](#) also explores whether collective clientelism — such as cash transfers to a township, as distinct from material benefits targeted to individuals — is possible. The author concludes that “contingency on voting” constitutes the difference between collective clientelism and pork-barrel or programmatic redistribution. Although this difference is conceptually and theoretically clear, it is challenging to demonstrate the contingency of collective clientelism empirically. A more recent study that defines and analyses clientelism is [Stokes et al. \(2013\)](#). Here, the authors define clientelism as non-programmatic material benefits offered by a political party only on the condition of political support (e.g., votes). The key distinction between clientelism and pork-barrel politics in this conceptualization is the “conditionality,” the notion that voters suffer a punishment, or at least are credibly threatened with potential punishment. The authors argue that if this conditionality holds, it does not matter whether the material distribution is collective or individual, or public or private [Stokes et al. \(2013, pp.12-13\)](#). The authors also emphasize the role of brokers as information collectors, local network hubs, rent-extractors, and resource distributors ([Stokes et al. 2013, pp.96-98](#)).

Given the definitions in previous studies, we argue that our South Korean case qualifies both as pork-barrel politics and clientelism.³ We suggest that rural development programs

³Distinguishing between pork-barrel distribution and clientelistic distribution in empirical cases is not straightforward. As the cases in [Stokes et al. \(2013, pp.15-17\)](#) show, numerous programs evaluated in the existing literature have features of both clientelism and pork-barrel distribution.

have clientelistic features for the following reasons. First, the beneficiary unit, the village, is a collective entity but small enough to detect electoral outcomes at the unit level, despite a secret voting system. In many cases, a village would have had one polling station, making it even easier to evaluate electoral support at the village level at the time. The case is similar to the example of the Housing Improvement Program in Singapore, where anecdotal evidence indicates that the government provided the program to supportive estates but not to others (Stokes et al. 2013, pp.4-5). Second, village leaders who execute the development program funding are also those often involved in political campaigns. In many cases, they can work as a broker to potentially bridge the collective benefits from the program to individuals, depending on the information on political support they are able to gather from within the village.

Our study expands the literature in two ways. First, we extend the scope of clientelistic material allocations to broader public programs. We argue that development programs, because of their “selective” and “distributive” nature, can be effectively evaluated through the theory of (collective) clientelism. One issue here is that development programs are often assumed to be representative of programmatic distribution, a rule- and efficiency-based type of resource allocation (Kitschelt and Wilkinson 2007).

Second, we explore a long-term effect of clientelistic material distribution by looking at elections four decades after a program’s implementation, even long after the democratization of the country. In doing so, while many studies have investigated regime-specific clientelistic traits by analyzing democracies and non-democracies separately, our study evaluates long-term effects that cut cross regime type. The political survival and success of so-called authoritarian successor parties is not uncommon worldwide. Even so, the conservative party that inherited the former authoritarian incumbent party in South Korea has been exceptionally successful after democratization. For 32 years since democratization, the conservative party has lost presidential elections only three times (1997, 2002, 2017) and legislative elections only twice (2004, 2016). Cheng and Huang (2018, p.96-97) argues that one reason why the authoritarian successor party has performed so well is that it inherited the dictatorship’s clientelist network,

especially in the Southeast and Central regions of the country, where the previous dictators and their family members were born. Another advantage has been the party's credentials regarding economic development, as it carries the legacy of successful economic policy that goes back to the developmental dictators (Cheng and Huang 2018, pp.93-94).

3 The New Village Movement and Elections in Korea

3.1 The New Village Movement

The New Village Movement (NVM henceforth), or Saemaeul Undong, is the largest rural development program in the history of South Korea. The Park Chung-hee regime launched NVM in the early 1970s with the principal objective of improving village environment and boosting farmers' incomes.

Under NVM, each village was encouraged to identify village projects deemed important for village members themselves. For example, some villages made common laundry facilities. Others widened village roads or created water drainage systems along the roads to prevent flooding during the monsoon season.

The government facilitated village projects by providing cash transfers and resources such as cement bags or steel rods. Village members decided which project to work on and supplied the labor for common projects. With encouragement from the presidential office, local civil servants were also mobilized to push villages to successfully complete, and to undertake more, village projects. Each civil servant in a township office was responsible for a designated village, and often, his or her promotion was influenced in part by the village's performance.

Some critics have argued that resource transfers through NVM were intended to bolster the political support of rural voters. As discussed in more detail in the next subsection, Park staged an auto-coup in the early 1970s. To assuage discontents and reinforce favor from the rural electorate, it is alleged, Park handed out cash and other materials.

While the institution of NVM still survives today, the large scale resource transfer under

NVM rapidly declined after the assassination of Park in 1979.

3.2 Authoritarian and Democratic Elections in Korea

Another key contextual aspect of this research is the legislative elections under two authoritarian regimes and elections after democratization in Korea. After Park Chung-hee came to power in 1961 in a military coup, he had himself elected as civilian president in the 1963 election. In 1967, Park was re-elected as president. In 1971, he was re-elected a third time after changing the constitution to allow for third term presidents. In October 1972, facing rising discontent in society, Park launched an auto-coup, called Yushin, to abolish presidential term limits and give himself the authority to appoint one-third of the assembly members through an indirect election. The Yushin Constitution also ended direct election of the president, which was restored in 1987 after democratization.

Our study employs three legislative elections after the 1972 auto-coup, held in 1973, 1978, and 1981. All three elections were conducted under multi-member district systems, and the incumbent party won the largest share in each. The first two elections were held under the Park regime, while the 1981 election took place during the Chun Doo-hwan regime, who came to power through a military coup in December 1979 after the assassination of Park in October of that year. The 1973 election was held before the widespread launch of *Saemaeul Undong*, which serves as our reference in the analyses. In the 1973 election, the incumbent party (the Democratic Republican Party, DRP) won 73 out of 146 elected seats with 38.7% of the total vote share, while the opposition party won 32.5%. In the next election held in 1978, the incumbent party won 68 out of 154 seats with 31.7% of votes, whereas the opposition party obtained 61 seats with 32.8% of votes. This election marked the first election in which Park's party lost the plurality of the total vote. In the 1981 election, 151 candidates from the new ruler's party (the Democratic Justice Party, DJP) were elected, out of 276 seats, with 35.6% of the vote. Given the competitive nature of authoritarian legislative elections in Korea, we use the vote share difference between the incumbent party and the opposition party as the

primary dependent variable.

We employ the two recent democratic elections in Korea in which the conservative party's candidate for president was elected in order to examine the long-term effects of the development program. The 2007 election was won by Lee Myung-bak of the Grand National Party, with Lee taking power after 10 years of progressive party rule. With 48.7% of total votes, Lee defeated other nominees such as Chung Dong-Young from the progressive party (26.1%) and independent Lee Hoi-chang (15.1%) by the largest margin since democratization. The 2012 election was won by Park Guen-hye, the leader of the Saenuri Party (renamed from the Grand National Party), with 51.6% of votes, with Park defeating Moon Jae-in of the Democratic United Party (48.0%). Media and Korea observers noticed that one of the themes of Park Guen-hye's campaign was nostalgia for Park Chung-hee. Supporters often brought photographs of Park Chung-hee and his wife to campaigns and shouted their names. At the same time, Park Guen-hye's stance on her father's coup in 1961 and the auto-coup in 1972, and fabricated political scandals aimed at repressing the opposition, such as the People's Revolutionary Party Incident, served as heated topics of debate during the electoral campaign.

4 Data and Empirical Strategy

4.1 Data

We construct various data sets to evaluate the relationships in question. For the amount of cash transfers received by villages, we use the *Statistics Year Book of Saemaeul*, which is available yearly from 1974 to 1979. The data set was originally digitized by Kim et al. (2018). The *Statistics Year Book of Saemaeul* is a yearly government publication that records the amount of cash transfers to villages during NVM. We aggregate the number of villages and the amount of cash transfers received at the township level, our main unit of analysis.

Election data come from the National Election Commission in South Korea⁴. The raw

⁴The data are available at <http://www.nec.go.kr>

data for election outcomes are available from their website. Since the data are recorded at the polling place level, we aggregate them at the township level.

One challenge in creating a panel data set spanning more than three decades is tracking changes in administrative boundaries. We use 1975 as the base year for administrative boundaries at township level in order to form constant geographic boundaries over time. If a township splits into two after 1975, we combine the fragments as one unit to prevent treating those data as missing. To accurately track administrative changes, we use various methods, including GIS data sets of township-level boundaries produced by Statistics Korea’s Statistics Geographic Information Service website.⁵ Additionally, we utilize provincial-level *Statistical Yearbooks*, which contain the history of administrative changes.

4.2 Empirical Strategy

First we present a cross-sectional model using township (EMD)-level data of two consecutive authoritarian legislative elections in 1973 and 1978.

$$\Delta IncumbentVoteshare_{i,1978-1973} = \beta_1 CashTransfer_{i,t} + X_{i,t}\eta + \tau_i + \varepsilon_{i,t}. \quad (1)$$

Our dependent variable, $IncumbentVoteshare_{i,t}$, captures changes in the incumbent party’s vote share in township i between years 1973 and 1978. The key independent variable, $CashTransfer_{i,t}$, is the logarithm of cash transfer amounts per voter to villages in township i in years prior to an election. We investigate different time spans to determine whether the timing of cash transfers affects their impact on electoral outcomes. Therefore, year t ranges from 1974 to 1977, as we use various time lags of program subsidies. $X_{i,t}$ include control variables that allow us to address population size and the number of households within a township. We first control for Area in 1975 (km²), the number of electorates in 1978, and

⁵The data can be accessed at <https://sgis.kostat.go.kr>

whether the township is a main town (Eup) in a county. We then expand the controls to account for a township’s development level before the beginning of the NVM program, including total population in 1966, the female share of the population in 1966, the illiterate share of the population in 1966, and population change between 1966 and 1970. We also include county (τ_i) fixed effects (*si-gun-gu* in Korean terms), which is one layer above the township level, to address all time-invariant omitted variables at the county level. In all analyses, we clustered the standard errors ($\varepsilon_{i,t}$) at the county level.

In subsequent analyses, we use the same model to estimate the effects of past cash transfers under the dictatorial regime’s rural development program on democratic elections.

$$\Delta IncumbentVoteshare_{i,2012-2007} = \beta_1 CashTransfer_{i,1970s} + X_{i,t}\eta + \tau_i + \varepsilon_{i,t}. \quad (2)$$

We use the difference in vote shares cast for conservative party candidates between the 2007 presidential election and the 2012 election. If any detected support for the political party is a function of support inherited from the authoritarian incumbent party, the candidates in 2007 and 2012 benefit from the legacy in the same manner. In turn, if the legacy is conferred only to a specific person connected to the dictator who launched the program, support will be greater in the 2012 election for the candidate’s direct connection to Park Chung-hee. Table presents the descriptive statistics of our data.

5 Empirical Findings

5.1 Allocation of rural development cash transfers

Before we analyze electoral outcomes related to the rural development program, we consider whether the election results before the launch of the program affected the allocation of the

Table 1: Descriptive Statistics

Variable	Obs	Mean	S.D.	Min.	Max .
- Outcome variable					
$\Delta incum_share$	1,339	-0.04	0.21	-0.75	0.64
- Explanatory variable					
NVM transfer 1977	1,370	0.48	0.18	0.00	1.38
NVM transfer 1974-1978	1,370	1.17	0.26	0.16	2.34
- Controls 1					
Area in 1975 (km ²)	1,459	66.20	47.11	6.85	471.68
Num. electorate	1,370	6,140	3,846	1009	57,999
Eup dummy	1,459	0.08	0.28	0	1
- Controls 2					
Total pop. 1966	1,454	13,165	6,493	0	86,605
Pop female share 1966	1,452	0.49	0.02	0.00	0.55
Pop age 15+ share 1966	1,452	0.55	0.02	0.49	1.00
Pop share illiterate 1966	1,454	0.42	0.09	0.22	1.12
Pop change 1966-1970	1,452	-0.06	0.13	-0.89	3.35

government’s cash transfers to villages. The implication from the clientelism literature has been somewhat inconclusive on this matter. Theoretically, the reciprocal nature of clientelistic exchanges indicates that supportive voters and supporting townships will benefit more from the incumbent party. [Stokes et al. \(2013\)](#) also point out that benefits go primarily to loyal supporters. In contrast, studies on Latin American countries, including Peru ([Schady 2000](#)), Argentina ([Stokes 2005](#)), and Mexico ([Magaloni 2006](#)), show that incumbent parties or regimes tend to target material benefits to swing voters. [Hong and Park \(2016\)](#) also show that industrial policy is targeted to townships where the incumbent party was initially less electorally popular. In [Table 2](#), we examine whether the vote share difference between the incumbent party and the other parties in 1973 affected rural development cash transfers in 1974, the first year of extensive cash transfers under the rural development program. The cross-sectional analysis shows that villages in townships where the incumbent party received more electoral support received more generous cash subsidies in the following years. This implies that the government distributes more extensive benefits to support its bases in an election. In [Model \(1\)](#), we apply the simplest model with robust standard errors. [Model \(2\)](#) clusters the standard

errors at the county level. Models (3) and (4) include sets of control variables. Model (4) with full controls indicates that a 1 percent larger vote share for the incumbent party in 1973 leads to on average 0.15% ($=[\exp(0.137)-1]/100$) larger cash transfers per voter for the next five years compared to other townships. In Model (5), we address the hypothesis outlined in [Horiuchi and Lee \(2008\)](#). Using county-level data after democratization, the authors find that government subsidies have a U-shaped relationship with votes, meaning that opposition counties and supporting counties enjoy larger subsidies while swing counties are neglected.⁶ Our township-level data under dictatorship reveal a different pattern in the government's subsidy distribution, as the quadratic form specification does not produce a significant finding.

Table 2: The Allocation of Rural Development Cash Transfers

Dependent variable: Cash transfer per voter (1974 - 1978)					
(mean 1.17, s.d. 0.26)					
	(1)	(2)	(3)	(4)	(5)
<i>incumbent vote share</i>	0.183***	0.501***	0.180**	0.137*	0.038
<i>in 1973</i>	(0.037)	(0.113)	(0.073)	(0.078)	(0.242)
<i>incumbent vote share²</i>					0.115
<i>in 1973</i>					(0.264)
controls 1	N	N	Y	Y	Y
controls 2	N	N	N	Y	Y
county FE	N	Y	Y	Y	Y
No. of counties	131	131	131	131	131
Adjusted R ²	0.017	0.118	0.507	0.538	0.537
Observations	1370	1370	1370	1368	1368

Notes. Robust standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

5.2 The short-term effects on authoritarian elections

From [Table 3](#), we use cash transfers in the previous year (1977) as the independent variable and the incumbent party's vote share change at the township level as the dependent variable (1973-1978). We find that the cash transfers under the rural development program did help

⁶Another study by [Kwon \(2005\)](#) finds an inverse relationship between votes and national subsidies: lower supports leads to larger subsidies, using province-level data after democratization.

the incumbent leader by boosting support in the legislative election; the previous year's subsidy amount is positively related to the township's support for the incumbent party in the election. A 1 percent increase in cash transfers per voter is associated with a 4 percentage point increase in the incumbent vote share, compared to the election held just prior to the launch of the rural development program (see Model (4)).

Table 3: Cash transfer and voting (NVM Year: 1977)

Dependent variable: Δ <i>incum_share</i> btw 1978 - 1973 (mean -0.04, s.d. 0.21)				
	(1)	(2)	(3)	(4)
<i>log(transfer+1) per voter</i> (year: 1977)	0.08*** (0.03)	0.03** (0.01)	0.04** (0.02)	0.04** (0.02)
controls 1	N	N	Y	Y
controls 2	N	N	N	Y
county FE	N	Y	Y	Y
No. of counties	129	129	129	129
R ²	0.01	0.85	0.85	0.85
Observations	1,339	1,339	1,339	1,337

Notes. Robust standard errors in parenthesis. Standard errors clustered at county level when county fixed effects are used. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

We examine various lags to understand the logic of citizens' voting behavior in authoritarian elections. The process of the NVM cash transfers was based on year-to-year evaluations by the Ministry of Home Affairs. This meant that the subsidy amounts to each village varied year by year depending on the government's evaluation of the village's progress in the past year. Specific evaluation criteria did exist, but there was ample room for discretion at the central and local government levels. How did the year-to-year variation in cash transfers affect voters' support for the incumbent party candidates? Table 4 presents the results with different time gaps between the transfer year and the 1978 election. In the first model, we use the first cash transfer after the 1973 election. The next model uses the transfer amount from the subsequent year (1974), with subsequent tests of the following years (1975, 1976, 1978).

Interestingly, we find that cash transfers only in the year before the election have an effect. Other years, including the year of the election, have no significant impact on the election outcome in 1978. These results imply that voters in rural townships at the time reacted to year-to-year changes in cash transfer size, not to the overall material benefits from the government over those years. These results are consistent with the findings of previous studies of pork-barrel politics in non-democratic settings, where the effects of material benefits on voting are found to be myopic (Costa-i Font, Rodriguez-Oreggia and Lunapla 2003; Hong and Park 2016).

Table 4: Cash transfer and voting (NVM Years: 1974-1978)

Dependent variable: Δ <i>incum_share</i> btw 1978 - 1973 (mean -0.04, s.d. 0.21)					
	(1)	(2)	(3)	(4)	(5)
	1974	1975	1976	1977	1978
<i>log(transfer+1)</i> <i>per voter</i>	0.02 (0.02)	-0.02 (0.02)	0.01 (0.02)	0.04** (0.02)	0.01 (0.02)
controls 1	Y	Y	Y	Y	Y
controls 2	Y	Y	Y	Y	Y
county FE	Y	Y	Y	Y	Y
No. of counties	129	129	129	129	129
R ²	0.85	0.85	0.85	0.85	0.85
Observations	1,337	1,337	1,337	1,337	1,337

Notes. Robust standard errors in parenthesis. Standard errors clustered at county level when county fixed effects are used. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Additionally, we conduct several robustness checks by varying our measures of the independent variable. Instead of the amount of cash transfers to villages as shown in Table 3 and Table 4, we count the number of beneficiary villages among townships. Second, instead of the number of voters, we use census population data. Third, we add the total amount of cash transfers from 1974 to 1978 to estimate the cumulative effects of NVM funding. Finally, we use the difference between the incumbent's vote share and all opposition parties' vote shares,

instead of the incumbent party's vote share. In all cases, the empirical results remain similar to those in Table 3 and Table 4. A detailed presentation of robustness checks is available in the online appendix.

5.3 The long-term effects on democratic elections

How do cash transfers under the authoritarian development program targeting rural areas affect electoral outcomes after democratization? On the one hand, given that Korean voters under authoritarianism rewarded the incumbent party only when the government provided sufficient transfers in the year before the election, democratization may have further diluted the positive effects of government subsidies during the dictatorship. On the other hand, rural voters may have re-evaluated the overall impact of the NVM program after having experienced sustained development over time. In this subsection, we examine the potential long-term political effects of the rural development program under authoritarian regimes.

In 1987, toward the end of Chun Doo-hwan's first term since seizing power in 1981, he faced rapidly growing pressure from popular protests, starting with a students' movement and spreading to the broader population, including office workers and urban residents. Preparing for the 1988 Summer Olympics in Seoul, Chun could not use a military option to repress the popular uprising. This circumstance pressured the dictatorial regime to commit to political reform, leading to the introduction of direct presidential elections via a constitutional reform. After the June democratization movement in 1987, democracy was gradually consolidated in South Korea.⁷ In 1998, the year of the first alternation in political power to the opposition party, Park Geun-hye, the elder daughter of Park Chung-hee, entered politics through a legislative by-election after remaining politically inactive for 20 years following her father's death. From that point, Park played a vital role in the major conservative party, which inherited the former authoritarian party, until she was elected as the 18th president of South

⁷According to Polity IV data, unlike its volatile past, South Korea went through a stable and gradual democratic consolidation process after 1987. In 1987, the Polity IV score moved from -5 to 6. In 1998, when the president from the opposition party came to power, the Polity IV score increased to 8.

Korea in 2012 as the candidate of the leading conservative party. Her presidential election campaign largely appealed to her father’s legacy, and several key campaign mottos recalled the developmental period under her father’s regime. The opposition party and its candidate also used negative campaigning tactics to attack her connection and her stance toward the country’s authoritarian past, especially regarding her political perspective on symbolic political suppression cases under her father’s rule.

Under these political circumstances, if the rural development program contributed to a lasting, positive image of the authoritarian ruler who initiated the policy, the legacy effect would be more significant in beneficiary rural townships. We examine this possibility in Table 5. We set the comparison between the electoral outcomes in the 2007 and 2012 elections, both of which elected the conservative candidate from the same party as the president. The results in Table 5 demonstrate the positive effects across different specifications.

Table 5: Cash Transfer and Democratic Election (NVM Year: 1975-1978)

Dependent variable: $\Delta consv_share$ (2012-2007) (mean 0.13, s.d. 0.12)				
	(1)	(2)	(3)	(4)
<i>log(transfer + 1) per voter</i> (1975 – 1978 combined)	-0.03** (0.01)	0.03*** (0.01)	0.02** (0.01)	0.02* (0.01)
controls 1	N	N	Y	Y
controls 2	N	N	N	Y
county FE	N	Y	Y	Y
No. of counties	131	131	131	131
R ²	0.00	0.80	0.80	0.80
Observations	1,302	1,302	1,302	1,300

Notes. Robust standard errors in parenthesis. Standard errors clustered at county level when county fixed effects are used. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

The overall positive finding of a long-term effect from NVM transfers is noticeable in many aspects. First, primarily due to rapid urbanization since the 1970s, many formerly rural townships became urban districts, and home to a large share of the domestic migrant popu-

lation. In particular, many districts in the Gyeonggi area have urbanized and become dense in population with migrants seeking economic opportunity around the capital. Secondly, due to political regionalism, particularly after the Gwangju Massacre in 1980 by Chun Doo-hwan, which occurred after the main treatment of this study, Honam region (two Southwestern provinces) became a strong support political base for the opposition party, where candidates from the former authoritarian party receive a notably small share of votes. For instance, Lee Myung-bak received 9% of the vote in 2007, and Park Guen-hye obtained 10.3% in the region. In contrast, in Youngnam region (two Southeastern provinces), which represent the birth provinces of former authoritarian leaders, a strong support base for the conservative party emerged. Given these structural features of democratic elections in South Korea, the overall positive and statistically significant results in Table 5 indicate a clear legacy of the rural development program at the grassroots level. The size of the effect is also significant: a 1-percent increase in cash transfer amounts per voter during the 1975-1978 period leads to a 2-percentage point increase in the vote share of Park in 2012, in comparison to Lee's share in 2007.

Table 6: The Effect of Rural Development Cash Transfers on Elections in 2007 and 2012 by Region

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Honam	Youngnam	Chungcheong	Gyeonggi	Gangwon
<i>log(transfer +1) per voter</i> (1975 – 1978 combined)	0.02* (0.01)	0.03* (0.01)	0.03* (0.02)	-0.03 (0.02)	0.07* (0.04)	0.01 (0.04)
controls 1	Y	Y	Y	Y	Y	Y
controls 2	Y	Y	Y	Y	Y	Y
county FE	Y	Y	Y	Y	Y	Y
No. of counties	131	35	40	25	14	15
Observations	1300	373	419	262	134	99
Adjusted R^2	0.776	0.369	0.361	0.655	0.351	0.095

Notes. Robust standard errors in parenthesis. Standard errors clustered at county level when county fixed effects are used. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

In the subsequent Table 6, we find nuanced results across different regions. A strong effect is found in two most rural regions today, Honam and Youngnam. Our first interpretation of

this finding is that these two regions are relatively less urbanized, compared to other regions, so that the residents have stronger memories of having been the beneficiaries of the rural development program. Particularly, Youngnam, the birth province of Park Chung-hee, is the region where scholars argue that the conservative party, i.e., the authoritarian successor party, inherited the clientelist network because of the strong personal ties the dictators had in the area (Cheng and Huang 2018).

5.4 Mechanism Analyses

How did a program in the 1970s affect electoral results in the 2010s, approximately four decades later? We conduct various tests of mechanisms to understand the long-term legacy effects found in the previous section.

The first mechanism we discuss is an economic voting channel. The classic economic voting theory suggests a reward-punishment model where citizens vote in response to their economic situation (Tufte 1978). When economic conditions are good, voters cast votes for the incumbent party as a reward. When the economy is bad, voters do not vote for the ruling party, as a form of punishment. Scholars have debated various theoretical perspectives regarding the underpinnings of this logic: whether voters are concerned mainly about the national economy (sociotropic voting) or their personal economic condition (pocketbook voting); whether voters' reference point for economic conditions is the past (retrospective voting) or an expectation about the future (prospective voting); and how myopic or long-term voters are when evaluating past economic performance (Duch 2008; Fiorina 1981; Lewis-Beck and Stegmaier 2007).

We consider the possibility that retrospective economic voting may explain why villages with more NVM funding provided greater electoral support for Park Geun-hye in 2012. In the 1970s, villages that received more NVM funding successfully improved their economic conditions.⁸ If the economic achievement induced by the NVM program has persisted since

⁸After the New Village Beautification Project (Maeul Gaggugi Saeob), a preliminary project of the NVM program in 1971, was completed, the NVM funding distribution became merit-based in the sense that villages

then, voters in these villages may be crediting the development of their village to Park Chung-hee and voting for his daughter Park Geun-hye as a reward for the economic development initiated by Park Chung-hee's NVM program.

To examine whether this retrospective economic reward voting story holds empirically, we analyze whether villages with more NVM funding have been economically better off since the 1970s. Since no regional GDP data at the township level exists, we use night-time lights data from satellite observations as a proxy for township-level economic development in 1992, 1996, 2002 and 2011. Satellite images are produced by the National Oceanic and Atmospheric Administration (NOAA). These images are publicly available for the entire earth annually from 1993 to 2013.⁹ Each night-time image is geocoded and consists of 1-square-kilometer pixels. Each pixel contains light intensity integer values ranging from 0 to 63. We use the 1975 administrative boundary GIS data and GIS software to average the night-time light intensity values for each township.¹⁰ Night-time luminosity data are considered a reasonable proxy for economic activity. For example, [Henderson, Storeygard and Weil \(2012\)](#) demonstrates that night-time luminosity has strong linear correlation with GDP.

Table 7 displays a regression analysis in which the log amount of accumulated NVM transfers from 1975 to 1978 is negatively related to the intensity of night-time lights. In all models of Table 7, villages with larger NVM funding are actually worse off economically since 1992. This implies that relatively more beneficiary villages under the NVM program in the 1970s became less developed, compared to non-beneficiary villages, since the 1990s.

This seemingly surprising result is likely a reflection of the ups and downs of rural downtown development in Korea. The downtown parts of villages during the 1970s have suffered from severe economic decline, with some becoming rural slums today. This has led to the urban planning and reconstruction of old rural downtowns as one of the most politically critical issues

that proved their economic performance under certain quantitative criteria (household income, housing environment, paved roads and more) could receive a larger NVM funding in the following year ([Ministry 1983](#)). Thus, it is not far-fetched to assume that villages that received more NVM funding were economically better off at that time.

⁹The data can be downloaded at <http://ngdc.noaa.gov/eog/dmsp.html>.

¹⁰We use QGIS 3.10 and its "zonal statistics" command for averaging pixel values.

Table 7: The Effect of Rural Development Cash Transfers on the nighttime luminosity

Dependent variable: $\log(\text{night_light} + 1)$					
	(1)	(2)	(3)	(4)	(5)
	1992	1996	2001	2006	2011
$\log(\text{transfer}+1)$ per voter (1975 – 1978 combined)	-0.20*** (0.07)	-0.20*** (0.07)	-0.18*** (0.06)	-0.19*** (0.07)	-0.16*** (0.07)
controls 1	Y	Y	Y	Y	Y
controls 2	Y	Y	Y	Y	Y
county FE	Y	Y	Y	Y	Y
No. of counties	131	131	131	131	131
R ²	0.79	0.79	0.80	0.78	0.79
Observations	1,368	1,368	1,368	1,368	1,368

Notes. Robust standard errors in parenthesis. Standard errors clustered at county level when county fixed effects are used. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

in South Korea since the 1990s. Given this background, the empirical results from Table 5 and Table 7 indicates that beneficiary villages in the NVM program in the 1970s became worse off in the long run as the agricultural sector, which the rural economy depended on heavily, lost its competitiveness during nationwide industrialization and urbanization. This outcome suggests that voters in beneficiary villages may have expected that Park Geun-Hye, whose father had made them better off, would reinvigorate economic development for them.

To test whether this interpretation of “prospective” voting behavior is empirically plausible, we further investigate patterns in rural residents’ migration. One of our assumptions behind our interpretation of the results in Table 7 is that voters in beneficiary villages stay in the same village, reminisce about the NVM program, and rely on their memory in making voting decisions in recent elections. While it is impossible to empirically test voters’ memories, we alternatively test the rural population’s migration patterns as an indirect test of this prospective voting logic.

We use the share of the population who directly experienced the NVM program as a proxy for migration. This measure is valid given the population influx from rural to urban areas in South Korea since the 1960s, which has occurred as a function of rapid industrialization

and urbanization. A large, poor population in the rural areas moved to urban or newly industrialized areas seeking economic opportunities, whereas the reverse flow seldom occurred. As a result, the share of the rural population decreased from 14.4 million (44.7 per cent of the total population) in 1970 to 10.8 million (28.4 per cent) in 1980. While a large rural population moved to newly emerging urban or suburban districts, larger benefits through the NVM program may have dissuaded the residents, especially young residents, from moving out of the rural townships.

Table 8 shows the relationship between the log amount of accumulated government transfers under the NVM program from 1975 to 1978 and the share of the population over 55 in rural townships in 2010. Given that the migration pattern has been predominantly one-directional, from rural townships to urban districts, the positive correlation indicates a lack of emigration from the beneficiary townships.¹¹ The results consistently show that the residents of beneficiary villages from the NVM program were less motivated to move out in search of opportunities related to industrialization. The size of the effect is notable. Our findings suggest that the residents of beneficiary villages were more likely stay in their hometown, to reminisce about NVM benefits from the government and the resulting income boost they enjoyed, and to vote for Park Geun-hye, expecting her to follow her father's economic development program.

¹¹An alternative explanation may be that a large number of young people moved into rural townships with smaller NVM transfers. We can reject this hypothesis based on the overall migration patterns in South Korea since 1945, whereby the young population has continuously moved from rural areas to urban districts.

Table 8: The Effect of Cash Transfers on the Share of 55+ Population in 2010

Dependent variable: share of township population with age 55+ in 2010 (mean 0.47, s.d. 0.16)				
	(1)	(2)	(3)	(4)
<i>log(transfer + 1) per voter</i> (1975 – 1978 combined)	0.17*** (0.02)	0.19*** (0.02)	0.09*** (0.02)	0.07*** (0.02)
controls 1	N	N	Y	Y
controls 2	N	N	N	Y
county FE	N	Y	Y	Y
No. of counties	131	131	131	131
R ²	0.08	0.57	0.63	0.65
Observations	1,307	1,307	1,307	1,307

Notes. Robust standard errors in parenthesis. Standard errors clustered at county level when county fixed effects are used. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

6 Conclusion

Regardless of whether a regime is democratic or authoritarian, economic development represents a key mission for political leaders in developing and less-developed countries, contributing importantly to the legitimacy of their rule and often their political survival. However, for authoritarian leaders, whose political survival does not directly depend on public support despite the discretion they hold over resource allocation, it is not straightforward to understand why and how they distribute economic resources across the population. In this paper, we examine the short-term and long-term electoral effects of a rural development program targeting economically less privileged rural areas during the period of industrialization and urbanization.

Relying on the NVM program in South Korea, arguably the most successful rural development program worldwide in recent decades, our analysis reveals several critical logics linking the allocation of government subsidies and electoral outcomes under authoritarianism. While the government rewarded core supporting townships with larger cash transfers in subsequent years in the name of village development, rural voters appear to reward the authoritarian

government and its ruling party in a nuanced way. In a critical election for the dictator's legitimacy, rural voters showed increased support for the authoritarian ruling party only when they received a significant increase in government transfers in the year prior to the election. In contrast to the myopic reaction during the authoritarian period, however, we find a long-lasting legacy effect in the democratic elections held more than thirty years later. In a presidential election in which the daughter of the dictator ran as the candidate of the conservative party that succeeded the authoritarian party, the rural townships that benefited relatively more from the development program during the 1970s cast more votes for her in comparison to the previous president from the same conservative party. In subsequent mechanism analyses, we find that this support for the dictator's daughter is not a function of economic voting for better development outcomes, but is instead due to demographic structure, as a larger share of the population in those areas had experience with the NVM program.

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