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Political dynasties and poverty: Resolving the "chicken or the egg" question

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Abstract

Political dynasties—members of the same family occupying elected positions sequentially for the same position or simultaneously across different positions—have become a common feature in many developing countries with democratic political systems. In the Philippines, for instance, political dynasties are prevalent in poorer regions, which lead to the following query: *does poverty bring about political dynasties, or do political dynasties engender poverty?* Using an instrumental variable technique to analyze metrics on political dynasties, we find strong evidence that poverty entrenches political dynasties but weak evidence that political dynasties reduce or exacerbate poverty.

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1. Introduction

"Political dynasty" refers to the situation wherein members of the same family are occupying elected positions sequentially for the same position or simultaneously across different positions. Industrial countries also have their political dynasties; however, the phenomenon seems most prevalent in still developing and fairly "younger" democracies.

Many politicians in the developing areas have since taken over the reins of power from their fathers, husbands, or brothers. For instance, Thailand's PM Yingluck Shinawatra is a sister of former PM Thaksin Shinawatra. The Philippines' former President Gloria Macapagal Arroyo is a daughter of former President Diosdado Macapagal; and President Benigno Simeon Aquino III is the son of former President Corazon Aquino. Malaysia's PM Najib Razak is son of former PM Abdul Razak. South Korea's President Park Geun-hye is daughter of former President Park Chung-hee.[1]

The political science literature maintains that political dynasties, notably at the local government level, contribute to the deterioration of political competition and, consequently, contribute to poor socioeconomic outcomes. And there are several reasons that back up such a conclusion. For instance, political dynasties can be effective in preventing the people from communicating their real needs to their government. Political dynasties can weaken existing governance and

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[1] Other examples include India's Jawaharlala Nehru, daughter Indira Gandhi, her son Rajiv and daughter-in-law Sonia; Sri Lanka's Solomon and wife Sirimavo Bandaranaike and daughter Chandrika Kumaratunga; Bangladesh's Mujibur Rahman and daughter Sheikh Hasina, as well as Ziaur Rahman and wife Khaleda Zia; Pakistan's Zulfikar Bhutto, daughter Benazir and her husband Asif Ali Zardari; and Argentina's Cristina Fernandez, wife of Nestor Kirchner.

accountability mechanisms to secure their positions. More specifically, they can take advantage of state power for self-serving interests without fear of replacement or administrative sanctions. They can also use state power to influence the selection of political leaders, thereby favoring individuals (who are often relatives) with political influence and preventing the best and the brightest from serving in the government, as well as biasing policies in favor of certain elite groups. Finally, the concentration of power is tantamount to a non-competitive political system, which development and political analysts view as a major obstacle hindering growth- and equity-enhancing as well as poverty-reducing reforms.[2]

However, recent economic development literature also notes that political dynasties imply extended time horizons for socio-economic reforms and enable adequate planning and implementation of policies with long-term goals. Politicians with short and/or tenuous tenures tend to shun the difficult but necessary reforms that pay-off in the future, instead yielding to populist demands in order to improve their chances of re-election. The extended time horizons of political dynasties—notably in the local government and in a highly decentralized governance context—afford them the longer reform runways necessary to pursue policies and programs that are critical to sustained, robust, and inclusive economic growth (c.f., Acemoglu and Robinson 2006; Rodrik 2007). It is also possible that legacy-related goals linked to their political jurisdictions drive the behavior of dynastic politicians. Thus, the longer their tenure is, the more they tend to care about long term outcomes.

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[2] See, for example, Lacey (1993), Cullinane (1994), McCoy (1994a; 1994b), Sidel (1997), Coronel (1998; 2007), Hutchcroft (1998), Hutchcroft and Rocamora (2003), Manacsa and Tan (2005), Teehankee (2007), Curato (2012), Mendoza (2012), and David (2013).

Given both sets of arguments above, the net impact of political dynasties on social and economic outcomes remains an empirical question. Do political dynasties exacerbate poverty, or does poverty escalate political dynasties? So which one is the "chicken," and which one is the "egg"? This paper develops a pioneering dataset in the Philippines in order to analyze the links between political dynasties and poverty. It presents perhaps the first, and to our knowledge most comprehensive, data gathering effort to map the landscape of political dynasties at the local government (i.e. province) level in the Philippines.[3] Even if this study covers a specific country, the findings are still relevant to other developing countries that are similarly experiencing decentralization in the context of a developing democracy.

Our results provide strong evidence that poverty lead to more political dynasties. It is possible that poor economic conditions and the lack of viable economic opportunities reinforce existing systems of patronage politics. The poor, in essence, exchange their political capital for economic favors. Similarly, high levels of income and political inequality could prevent the majority of the population from posing any genuine competition to incumbent dynasties. Moreover, non-dynasties may not be offering viable alternatives for reform, an interpretation that is consistent with anecdotal evidence that the existing political "rules of the game" are in part perpetuating traditional patron-client relationships, thus, ensuring the survival of existing political dynasties and encouraging the emergence of new political dynasties. On the other hand, the empirical findings herein also suggest that political dynasties, on average, do not seem to increase or decrease poverty.

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[3] Other empirical studies in the Philippines have not yet reflected the full mapping of political dynasties at the level of the local government (i.e. province). See, for example, Balisacan and Fuwa (2004), Querrubin (2010; 2011), and Mendoza et al (2012) that look at political dynasties in the country at the aggregate level.

The rest of the paper has four sections. Following the introduction, Section 2 presents a brief review of the literature on the relationship between political dynasties and socioeconomic outcomes. Section 3 describes the methodology and the data used in the analysis. Section 4 elaborates on the findings. The last section presents the implications of the findings and then concludes the discussion.

2. Review of Related Literature

There is an extensive literature on political dynasties per se. However, few studies examine the impact of political dynasties on socio-economic outcomes. The bottom line questions pertain to causality: Are political dynasties responsible for persistent poverty (i.e., perpetuating the status quo, weakening democratic competition and accountability, and undermining meritocracy and competitiveness); or, does poverty generate political dynasties (i.e., strengthening patron-client relations defined by a dependence of the poor on political patrons and preventing the emergence of new leaders with possibly better skills)? In this section, we briefly discuss three sets of literature, covering political self-perpetuation, the links between political dynasties and socioeconomic outcomes, and the role played by education and media in politics. Taken together, these studies piece together a framework on how to tackle the questions posed earlier.

2.1 Self-perpetuation

Political dynasties exist in many democracies, and there appears to be strong evidence on elected officials' ability to self perpetuate. Dal Bo et al. (2009) examine data on the Congress of the United States since its establishment in 1789 to uncover the forces that bring about political

dynasties. They hypothesize that (1) political dynasties emerge because some families possess certain characteristics (like political ambition and acuity), giving them persistent advantages in the political arena and; (2) political dynasties emerge because it is possible to accumulate and bequeath political capital and influence to family members. Their study shows a large decline in political dynasties in the US Congress over time: from 12 percent of legislators that were dynastic between 1789 and 1858 to six percent after 1966. Using regression discontinuity as an identification strategy, they find a causal link between longer tenures in the US Congress and the likelihood that relatives also successfully enter the Congress.[4] This finding suggests that a politician's time in office could help build a strong image or trusted "brand" that further contributes to the success of family members who might later also run for office.

Dal Bo et al. (2009) also find an inverse relationship between the presence of a political dynasty and the degree of political competition within their jurisdictions. One explanation, they posit, is that under intense political competition, political parties end up fielding non-dynastic and more talented candidates over dynastic candidates. If longer Congressional tenure increases the probability of an official establishing a dynasty, then the transmission of the office to another member of the family may be due not so much to the newer officials' personal qualities valued by voters (such as experience or human capital) but more due to connections with a stronger party machinery. This setup is therefore a possible explanation why dynasties prevail in states where political competition is weaker.

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[4] The authors compared legislators who barely won and barely lost their electoral campaigns: those who barely won their first re-election were more likely to have a relative entered Congress than those who barely lost their first re-election.

In addition, Rossi (2009) examines the persistence of political dynasties using data on both houses of the Argentine Congress. He turns to a dummy variable to proxy for a political dynasty, taking a value of one if the legislator had a relative who also served in the Argentine Senate. In order to deal with the endogeneity issue (i.e. of tenure and elected official's characteristics), Rossi leverages a natural experimental setting in Argentina in 1983 when shorter and longer tenures in the Senate (as mandated by the new constitution) were randomly assigned.[5] Similar to Dal Bo et al. (2009), this study by Rossi (2009) in Argentina also finds evidence that a longer tenure in office is positively associated with having a relative serving in the same office in the future. Longer tenure increases the probability of a relative in a future Congress. Name recognition is an important asset in the perpetuation of a political dynasty and, in fact, a common surname dominates the advantage of a longer tenure in raising the probability of establishing a dynasty.

Furthermore, Asako et al. (2010) develop a theoretical model of the behavior of dynastic politicians with inherited political advantages. They predict that, first, dynastic candidates possess an electoral advantage over non-dynastic candidates and, second, dynastic politicians pursue distributional programs but do not promote sustained growth because spending on redistribution programs tend to be small.[6] These authors attempt to validate their theoretical

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[5] Previously, Argentine Senators had nine-year terms. The Argentine Constitution required the renewal of a third of the chamber every three years. In order to accomplish this, they randomly allocated one third of the senators elected in 1983 to three-year terms and another one third to six- year terms. This exogenous assignment of terms is not associated with the characteristics of the Senators, hence serving as a viable identification strategy.

[6] These results are consistent Solon et al. (2009), who studied the public education and health spending of Philippine Governors elected in 1992, 1995 and 1998. Solon et al. (2009) found evidence that incumbent governors improve their re-election chances with higher spending on economic development services. Yet this increase in spending does not necessarily mean that total human capital investments are adequate compared to the scale of need.

model using data on the National Diet of Japan. To deal with the endogeneity problem, Asako et al. use the number of male children of previous lawmakers as an instrumental variable for dynastic rule, since Japanese lawmakers passed on their political seat primarily to their male children.[7] Their results indicate that districts electing dynastic legislators tend to enjoy larger intergovernmental transfers, yet they display weaker economic performance. The authors argue that this pattern is largely due to the type of spending these leaders prefer, which typically focus on much smaller groups, even as they tend to bring more transfers to their districts.

Recent empirical analyses on political dynasties in the Philippine Congress arrive at similar results on self-perpetuation. Defining dynasties in a similar way as the earlier studies above, Querubin (2010a) finds that over 50 percent of legislators in the Philippine Congress and governors have a relative who was also in Congress or served as governor in the previous 20 years. He estimates that the capacity for self-perpetuation of Filipino legislators is three times higher than that of legislators in the United States (i.e. Dal Bo et al. 2009). Furthermore, Mendoza, et al. (2012) uncovers evidence that political dynasties in the 15th Congress won by much larger margins of victory, and tended to be wealthier. Nevertheless, they also find that Philippine provinces with higher levels of political dynasties also display higher levels of poverty and weaker indicators of human development. That study sheds light on the correlation between political dynasties and poverty while not yet ascertaining the direction of causality.

Like Dal Bo et al. (2009) and Rossi (2006), Solon et al. (2009) estimates the probability of re-

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[7] During the period between 1996 and 2007, over 90 percent of Japanese politicians are male. Daughters are unlikely to form part of political dynasties. Of over 120 Japanese politicians described as dynastic, only 3 are women (Asako et al. 2010).

election, and in this case using a logit framework and panel data on Philippine governors for 1992-1998. Their results suggest that an increase in development-oriented projects (specifically expenditures on health care and public works) would tend to increase the probability of re-election, especially in the lower income provinces.[8] Interestingly, provincial per capita income tends to grow less in the provinces with weaker political competition, whether among rival dynasties, or between dynastic and non-dynastic candidates. This latter conclusion seems to confirm a result of Dal Bo et al. (2009) mentioned earlier.

Schaffer (2002) also studies the practice of vote buying in the Philippines, and his analysis reveals how low-income voters tend to prefer candidates and political groups that show respect and a degree of compassion to the low-income population. Thus, the advocacies of middle class groups and stakeholders that have used advertisements and leaflets to advocate against vote-selling are often regarded as patronizing by low income voters. Indeed, as Schaffer (2002) argues, these voters do not see themselves as selling their votes. It is possible that political dynasties successfully establish themselves as the patrons to poor and vulnerable communities, while still showing a measure of respect and compassion that low-income voters appreciate. And so the manner in which a candidate interacts with voters has strong influence on the outcome of an election. In other words, political dynasties have succeeded in developing, or even perfecting, the means to cultivate familiarity, or even dependence, among voters. This view is in sharp

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[8] Similarly, Capuno et al. (2012) analyze a panel dataset of municipalities and cities in three election years in the Philippines. They find evidence that yardstick competition in social insurance provision (i.e. more subsidized insurance coverage for the poor in neighbouring local governments) leads to an increase in coverage offered by incumbent politicians. They interpret the situation as a strategy to secure political support during elections. Analysts contend that the use of the so-called "pork barrel" funds help in increasing the chances of re-election and in perpetuating the hold on political office (e.g. Parreño 1998; Ravanilla 2012).

contrast to those of the non-dynastic and progressive groups, which typically advance the messages of empowerment, self-help, accountability, and voter responsibility.

More recently, Ravanilla (2012) finds evidence that political dynasties may use public funds to support allies and their clan members. His analysis of the disbursement of the constituent development fund (CDF) of legislators—the so-called "pork barrel"—tends to favor local patrons, particularly mayoral partisan allies in their districts. Such a skewed allocation of resources could also potentially weaken the chances to attain policy objectives such as poverty reduction, as argued by Mendoza, et al. (2012). Hence, self-perpetuation and (less robust) poverty reduction outcomes appear linked to each other, even as it appears that political patrons are trying to spend public funds in a "pro-poor" way.

2.2 Political dynasties and poverty

There are few rigorous empirical studies on the causal links between political dynasties and poverty as well as other socio-economic outcomes (e.g., Asako et al. 2010; Balisacan and Fuwa 2004). In the Philippines, Balisacan and Fuwa (2004) study economic growth and poverty reduction in the provinces between 1988 and 1997, examining a number of possible factors behind this, which includes the prevalence of political dynasties at the provincial level. They interpret political dynasties (measured as the proportion of provincial officials related to each other by blood or affinity) as a proxy for political competition, i.e. there is lack of political competitiveness if there are more dynasties. Among the initial economic conditions in their regression framework, they find a negative association between the initial level of human capital stock (as measured by the child mortality rate) and provincial consumption per capita.

Moreover, Balisacan and Fuwa (2004) also find a positive link between initial inequality and land distribution to income growth. Their political dynasty variable is associated with a statistically significant negative effect on subsequent per capita income growth. Their result, they argue, is in line with the literature on Philippine politics, asserting that the Philippines' uncompetitive political system has become one of the major factors behind poor policies and lackluster economic performance. However, these same authors find very little evidence of a link between political dynasties and poverty at the provincial level.[9] The authors note that there is much scope for improving on their empirical analysis, considering that the construction of their political dynasty variable relied on interviews rather than from actual identification of political dynasties using a clear-cut definition.

2.3 Education and media

The political science literature also helps shed light on some of the possible reasons behind these empirical results. Teehankee (2007), for example, argues that the emergence and persistence of political dynasties stems from the highly unequal socio-economic structure of Philippine society and the failure of the country to develop a truly democratic electoral and party system. Weak institutions and their associated outcomes—such as poor education attainment—also contribute in enhancing the political strength of small elite groups. The inability of the majority to contest the elite sets the stage for the emergence of numerous political dynasties.

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[9] There was minimal reduction in poverty levels in the 1960s and the 1970s. Poverty reduction was below international standard even when poverty reduction was at its highest pace in the 1980s and the 1990s. Poverty levels in the 2000s appear to be relatively stagnant.

The above view emphasizes how poverty and inequality operate to generate a demand for patrons. In an environment beset with aggregate economic shocks and crises, and absent a strong social safety net (e.g. unemployment insurance, health insurance, redistributive transfers), the poor have little recourse but to seek support from local patrons. This situation helps in entrenching personality-based politics and governance. Hence, political dynasties may be a manifestation of economic inequalities in the political sphere (Mendoza 2012).

Meanwhile, Coronel (2007) suggests that a combination of factors like wealth, popularity, political machinery, alliances, myth, and violence contribute to the formation of political dynasties.[10] In addition, Sidel (1997) notes that Philippine politicians have to spend an inordinate amount of money to have an effective campaign because of the need to combat and/or engage in vote buying, electoral fraud, and coercion.[11] In turn, access to elected office opens opportunities and resources to enable political dynasties to consolidate and expand their economic and power bases (McCoy 1994a, 1994b).[12] Coronel also argues that popularity often plays a prominent role in the establishment of political dynasties in the country, especially for national-level politics.

Media thus plays an important role in promoting certain "personalities", helping to solidify name recall among the electorate. Teehankee (2007) posits that the primacy of the media in elections has enabled a number of politicians to build the foundations of their dynasties upon their projected public images. Name recall and recognition serve to cultivate the image of a candidate,

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[10] The annex of this paper contains selected examples of Philippine political dynasties and a schematic mapping of one political clan.

[11] Querubin (2010) finds that dynastic incumbents were about 50 percent richer than non-dynastic ones.

[12] Filipino elite families succeeded in transforming their entrepreneurial success as political success in both the local and national level, or vice versa. See, for example, McCoy (1994a).

reinforce political viability, and facilitate the emergence of a political dynasty. Most analysts also concede that this has created strong incentives for politicians to promote name recognition through various means, including by seeking to "label" programs and projects like infrastructure (schools, health centers, and roads) and transportation (ambulances and utility vans).

Indeed, the work of Schaffer (2002) underscores the importance of understanding the perspective of the poor as regards to the role of elections and voting. In what seems to be an understudied phenomenon, Schaffer utilizes focused group discussions (FGDs) and interviews among low-income voters in a few communities and notes the disparity in attitudes and presuppositions between the poor and the reform-minded, generally non-dynastic political organizations like the *National Citizens' Movement for Free Elections* and the *Parish Pastoral Council for Responsible Voting* in the Philippines. He further observes that many of the information and advertising materials seem quite patronizing to the poor, many of whom claim to be offended by the presumption that the poor are willing to sell their votes. Indeed, the study participants insist that they would like a measure of respect and compassion shown to them, by way of the candidates' manner of dealing with voters, their political slogans and statements, and their demeanor toward the poor. Perhaps, these political interactions which are more agreeable to voters are more easily adopted and developed over time among the dynastic groups (who enjoy the benefit of extensive inter-generational political experience); and much less likely so for the non-dynastic groups. It is also likely, in our view, that reform-minded politicians will face challenges in changing mindsets as far as patron-client relationships are concerned. Indeed, attempts to correct these long-engrained relationships appear insensitive to the conditions of the poor (Clarke and Sison, 2003).

Sidel (1997) also notes that several dynasties owe their success to their close affiliation with

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more powerful political entities, while Coronel (2007) argues that political dynasties often consolidate their power through mergers. Further, the consolidation of power and influence is most apparent among political clans who seek to occupy several elected positions simultaneously. These strategies enable prospective political dynasties to draw upon larger pools of resources and broaden their political influence.[13] Take for instance the widely known boxer-turned-legislator, Emmanuel "Manny" Pacquiao, who ran unopposed as Congressman in the Philippines during the May 2013 elections, while his brother Rogelio also ran for Congressman (of another district), and his wife Jinkee ran for Vice-Governor of Sarangani Province. Similar actions of non-dynastic leaders lead to the same pattern of political consolidation.

3. Methodology and Data

In this paper, we juxtapose two regression models in order to examine the relationship between political dynasties and poverty with the Philippines as a case study. Briefly, the first model takes on a standard neoclassical growth setup and the other relies on the political science variables concerning the development and persistence of political dynasties. The juxtaposition of the two models enables us to do a more comprehensive test on the direction of causality between political dynasties and socio-economic outcomes.

Our analysis in particular leverages a particularly rich dataset at the sub-national level. We take this strategy in order to ensure comparability of income and poverty at the same level of aggregation, control for aspects of the political system like degree of competitiveness among

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[13] Gerring et al. (2005) examine the relationship of economic growth and democracy among several countries over a long period and argue that democracy is more of a stock variable rather than a flow variable.

political actors, and account for bias due to the correlation between initial income level and unobserved individual (province level) specific effects. This strategy indirectly also corrects for unobserved characteristics. Provincial-level data likewise controls for differences in geographic, and to some extent, cultural and ethnographic characteristics. Accordingly, we circumvent any heterogeneity brought about by, say, technology and preferences (c.f., Balisacan and Fuwa 2004).

3.1 Factors behind poverty, including indicators of political dynasties

The first regression model essentially follows the setup in Balisacan and Fuwa (2004). Thus,

$$POVERTY_i = a + b \log(PCEXPINITIAL_i) + \sum_k c_k X_{ik} + u_i \qquad (1)$$

where $POVERTY_i$ is the change in headcount poverty between 2003 and 2006 in province i with 2002 and/or 2003 as initial condition; $PCEXPINITIAL_i$ is the level of per capita expenditures for province i in 2003 as initial condition; X_{ik} is a set of determinants of the steady-state income level consisting of initial conditions and time-varying policy variables; and u_i is the error term. Moreover, X_{ik} includes measures of human capital (child mortality and literacy), institutions (agricultural area under irrigation, change in agricultural terms of trade, access to electricity, road density, and land covered by agrarian reform), and political dynasties (proportion of provincial officials related to each other by blood relations or affinity).

Specifically, the indicators of political dynasties are:

- DYNSHA: This builds on the dynasty indicator used in Balisacan and Fuwa (2004) by defining and encoding the actual number of dynasties (and not just the approximated share based on experts' opinions). For the analysis of the impact of political dynasties on outcomes, dynasties are defined as those elected officials in 2004 with relatives in 2004 and in 2001; and then the actual number of dynasties encumbering the top local government positions are more precisely measured, and covering the following positions: governor, vice-governor, mayor, vice-mayor, district based representatives and provincial board members. (Thus, the political dynasties variable covers the preceding period under examination.) DYNSHA measures the share of dynasties in all these positions for each province.

- DYNLAR: In order to account for the potentially large size of particular clans—or the presence of "fat" dynasties—DYNLAR indicates the number of positions encumbered by the largest political dynasty in each province. A simple thought experiment demonstrates the relevance of DYNLAR. Suppose in province A, for example, there are ten elected positions occupied by eight dynastic officials but each is not a relative to the other. That is, they are from eight distinct political clans, but they each have relatives in past elected positions in the province. In province B, also with ten elected positions available, there are eight dynastic officials and all are relatives. That is, they come from one political clan and they all have a family member serving in an elected position in the past. The DYNSHA indicator will be the same value of eight, for provinces A and B. However, the DYNLAR indicator will reflect the value one for province A and the value eight for province B. DYNLAR therefore captures the possible effect of

more concentrated political power even among political dynasties.

- DYNHERF: Another way to capture the presence of "fat" dynasties is to draw on the industrial regulation literature and use a variant of the Hirschman-Herfindahl index applied to political dynasties at the provincial level. Essentially, DYNHERF is the sum of squared shares of the total positions of each political clan in each province. Hence, if there are 10 elected positions in province A, and there are three political clans, with family members elected to three positions for clan-1, two positions for clan-2 and one position for clan-3, and the five other elected positions are non-dynasties, then DYNHERF will take the value 14—that is, $3^2+2^2+1^2$. DYNHERF is a more nuanced indicator of the concentration of political power because it puts greater weight on those political clans with larger shares of the total positions (while also considering the other "fat" dynasties in the province). In the Philippines, this nuance is important because some provinces are dominated by just one large clan, while in others, several medium-sized clans are present.

Table 1 is a summary of the variables, including their definitions and sources. The expected result from Equation 1 is as follows. First, political dynasties could have a strong positive association with poverty incidence. This expectation draws from the view that an increase in political dynasties implies a decrease in political competition, in turn reflecting a tendency for weaker accountability. On the other hand, political dynasties might also possess a long runway for reform, as well as legacy motivations, in turn suggesting a negative relationship with poverty. That is, due to their long runway for policy reforms, political dynasties could be more successful

in reducing poverty.

In addition, we expect the lagged measures of human capital to be negatively associated with poverty incidence. Higher levels of human capital are associated with better access to a wider array of socioeconomic opportunities and outcomes. Furthermore, higher scores on institutional variables translate into lower levels of poverty incidence.

[INSERT TABLE 1 HERE]

3.2 Factors behind political dynasties, including poverty

The second regression model identifies the possible factors that influence the prevalence of political dynasties as described in the economics and political science literature (refer again to Section 2). However, the possibility of endogeneity between poverty and political dynasties necessitates the use of instrumental variables in the regression analysis. Specifically, we use the average annual rainfall in each province and the distance of a province to the capital city, Manila, as instruments for poverty. In this case, the pattern of regional economic development in the Philippines reflects the positive correlation between rainfall and distance from the capital city, with poverty. More importantly, rainfall is a useful instrument for our analysis because it has no association whatsoever with election outcomes since Philippine elections take place in the middle of the dry season and voters would not be expected to attribute the average level of rainfall to incumbent officials. In addition, given that elections are held during the summer in the Philippines, voter turnout is not expected to be affected by inclement weather. While it can be argued that climatic shocks such as severe droughts and typhoons could dramatically decrease

agricultural output, aggravate poverty in agricultural communities, and consequently, reinforce patron-client relationships, the instrumental variable under consideration is the average rainfall and not the minimum or the maximum amount of rainfall. These instruments are thus not expected to be associated with dynastic prevalence in the country.[14] Furthermore, no statistically significant relationships were found upon regressing the dynasty variables against the chosen instruments.

Our regression model is thus:

$$DYNASTY_i = a + b\ FAMPOVINC09_i(INSTRUMENTS_i) + AMS_i + ARMM_i + \sum_k X + u_i \quad (2)$$

where the dynasty indicators include DYNSHA, DYNLAR, and DYNHERF and the right-hand side indicators represent factors that contribute to the prevalence of political dynasties.[15] The dynasty indicators under consideration in this section (as distinct from the previous regression model) were generated from official election data for the 2010 elections (c.f., Section 2.1). More specifically, dynastic officials refer to those officials elected in 2010 with relatives in 2010 and 2007—that is, we turn to a different period for the dynasty variable in order for it to cohere with the period of the explanatory variables being utilized in the analysis.

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[14] These instruments are common in the literature that examines poverty and income, as both tend to be endogenous with other contextual variables (e.g., Acemoglu and Robinson 2006).

[15] It is possible that for contiguous provinces a positive correlation in political competition exists (e.g., Capuno et al. 2012). We thus re-estimate Equation 2 with a contiguity matrix to control for common border effects. The findings, however, are not qualitatively different from those that excluded a continuity matrix. The results are available upon request.

FAMPOVINC09 refers to the estimates of family poverty incidence in 2009 at the provincial level generated from the first stage of the instrumental variable regression procedure. It is possible that more families mired in poverty in a province perpetuate the prevailing patron-client relationships that help to protect poor families from income shocks and poverty and thus keep political clans in power. AMS refers to the number of AM Radio Stations operating in each province. This indicator is a proxy variable to capture the relative strength of the media, which could help level the playing field by helping to temper excesses of those in power, as well as providing a platform for civil society and non-dynastic leaders to engage the public and electorate. Then ARMM is a dummy variable for the Autonomous Region of Muslim Mindanao. It takes a value of one for a province belonging in the ARMM and zero otherwise. The ARMM indicator seeks to capture the different leadership pattern in this area given its distinct historical and cultural background. (Christianity is the predominant religion in much of the Philippines, except in ARMM where there are many Muslim Filipinos.) Because contiguous provinces can exhibit higher levels of political competition (c.f., Capuno et al. 2012), we control for it by introducing a contiguity matrix in Equation 2.

We also introduce other controls to test the robustness of the poverty-dynasty relationship. They include a measure of human development (HDI1), education using primary and secondary student to teacher ratios (EDUC08), and average per capita income in 2006 (PCI06). Higher average income, human development and education could mean a reduced demand for protection and support from a patron and, as consequence, new leaders emerge, leading to the creation of a more competitive political environment.

Again, Table 1 presents a summary of the definition of variables and their sources. The expected

result from Equation 2 is as follows. Higher poverty incidence is likely to be associated with the prevalence of political dynasties. A greater proportion of the electorate living below the poverty line provides political dynasties more opportunities to engage in transactional politics, possibly exploiting the absence of a social safety net and the poor people's need for protection and support.

We also introduce a variable representing the number of AM Radio Stations in a province taking from the argument that a stronger media presence in a province helps in leveling the political playing field, which contributes to the decrease political dynasties. A stronger media would afford the electorate (1) more opportunities to promote transparency and (2) provide a viable means to hold errant officials accountable. The variable ARMM is a control for the socio-political structure and history that include hereditary and hierarchical leadership structures (e.g. sultanates) in southern Philippines. Finally, the measures of human development such as education, HDI, and per capita income can lead to a decline in political dynasties because they help weaken patron-client relationships and systems of transactional politics.

4. Results

4.1 Do political dynasties cause more poverty?

Tables 2 to 4 present the regression results for Equation 1. Similar to Balisacan and Fuwa (2004), we also find evidence that the initial per capita expenditure is positively associated with the change in average poverty headcount ($p < 0.05$). Notice, though, that the size of the coefficient on the initial per capita expenditure is increasing when there are additional variables in the

model. This pattern not only reveals a strong poverty hysteresis in the Philippines but also bolsters our findings on the reverse causality of political dynasty (below). As with Balisacan and Fuwa (2004), too, agrarian reform is positively associated with the change in average poverty headcount ($p < 0.01$). This result confirms the argument that land distribution is fundamental for poverty reduction in the country. The coefficient on agricultural terms of trade turns out to have no statistical effect on poverty reduction, a finding that diverges from Balisacan and Fuwa (2004).[16]

[INSERT TABLES 2 TO 4 HERE]

The results for DYNSHA, DYNLAR, and HYNHERF indicate no statistical significance at all, albeit the estimated coefficients all have negative signs. The results suggest that political dynasties and poverty are independent processes, especially when compared to non-dynasties. Conversely, the results also suggest that the non-dynasties are not offering a "better" alternative in terms of reducing poverty. Indeed, this interpretation coheres with the observation that most political parties in the Philippines are not strong platforms for promoting and sustaining policies that benefit the poor. Instead these parties are viewed by some analysts are more interested in introducing policies that entrench political dynasties. Even some non-traditional and non-dynastic politicians elected to office appear to be evolving as traditional politicians and forming their own political dynasties.[17]

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[16] This finding is possibly due to the slightly different period under analysis.

[17] See, among others, Coronel (1998; 2007), Manacsa and Tan (2005), McCoy (1994a; 1994b), and Teehankee (2007).

4.2 Does poverty create more dynasties?

Next, Tables 5 to 7 summarize the regression results for Equation 2. Columns 1 to 4 in each table represent the equations using per capita income as an additional right-hand-side variable with poverty. Columns 5 to 8 use the human development indicator per province. Then, Columns 9 to 12 use an education indicator.

[INSERT TABLES 5 TO 7 HERE]

The results indicate that both poverty incidence and per capita income are not determinants of DYNSHA (both p = n.s.) but they are determinants of DYNLAR and of DYNHERF (both $p <$ 0.05). These findings suggest that increased income poverty does not cause political dynasties to emerge; but, rather, it contributes to the expansion of the largest and strongest political dynasties. Given that the poor are vulnerable to political patronage and manipulation, worsening, if not unchanging, poverty can turn out to be beneficial to political dynasties. Since the largest political dynasties are generally those that have cultivated the most extensive networks of patronage, accumulated the most political and financial capital, and have the access to the better organized political machineries, they are therefore in the best position to exploit the vulnerable sectors.

Underpinning this patron-client relationship is a complex set of interactions that benefit dynastic politicians and their progeny. We thus surmise that political dynasties have mastered the art of interacting with voters in a respectful and compassionate manner as well as the art of displaying a facade of identification with the poor. In our own assessment, the next generation politicians actually learn this art from the older generations of politicians through exposure and participation

(with some starting at a very young age). In addition, a history of violence and intimidation help create an impression that patrons ensure peace and order in the locality, or prevent even more injustice and poverty from taking place. It is, of course, usual to see for voters in conflict-prone areas of the Philippines to favor "strongmen" and their progeny in order to prevent more "competitive" but potentially more violent elections from taking place (c.f., Sidel, 1994; Beckett 1994; Bentley 1994).

Arguably, then, improvements in the economic conditions of Filipinos do not necessarily lead to the dissolution of political dynasties or prevent the emergence of new political dynasties. Real economic improvement can nevertheless help weaken political dynasties in the long run by preventing them from further entrenching themselves in elective positions and subordinating government institutions to political agendas of their families.

While poverty incidence and per capita income explain DYNLAR and DYNHERF, the size of the coefficients is small to indicate significant impact. We thus argue that economic interventions have to generate dramatic increases in income in order to obtain meaningful decreases in the influence of the largest and strongest political dynasties. This view is consistent with the notion that the development interventions in the short run must also focus on improving political democracy—that is, strengthening democratic institutions and encouraging more active citizen participation in democratic processes—rather than just targeting poverty (even as the latter is important).

Moreover, we find the variable AM Radio Stations is a determinant of DYNSHA, DYNLAR, DYNHERF (at least $p < 0.10$ for all), with a positive coefficient on DYNSHA but negative on

both DYNLAR and DYNHERF. We argue that AM Radio Stations cultivate an environment that is conducive to the emergence of new political dynasties that represent alternatives to the larger and stronger political dynasties but nonetheless maintaining the political environment controlled by elites. Increases in the number of AM Radio Stations, therefore, promote political competition but only amongst the political dynasties. Still, we also argue that this situation may be an artifact of the poor development of political party system in the Philippines that political dynasties regardless of their size are able to exploit (c.f., Manacsa and Tan 2005; Teehankee 2007).

Education is significant but only in regressions that include AM Radio Stations ($p < 0.10$). The coefficients are positive involving DYNLAR and DYNHERF but negative involving DYNSHA. A possible explanation for this pattern involves the influence of political dynasties in the local public education system, which offers numerous opportunities to cultivate patronage through the granting of scholarships and infrastructure expenditure support. Indeed, as noted by Solon et al. (2009), the social spending in the Philippines has become a means for securing political support and votes. The dominant political dynasty can thus channel resources into education projects and programs that identify their members as politicians with only the interest of the locals in their hearts. (It is not uncommon in the Philippines for politicians to place their names prominently in physical infrastructure and public works projects.)

Likewise, Ravanilla (2012) finds evidence of such pattern—that is, legislators use their pork barrel to benefit political allies and to those that can readily assign credit to the source of funds. Given strong norms for reciprocity and personal indebtedness, the increased investments in the local public education system help strengthen further the dominant political dynasties. Indeed, this view runs counter to the position that an education program for the electorate can translate

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into more informed choices and less political dynasties elected into office.

Finally, the coefficients of ARMM are positive and significant across all the regressions ($p <$ 0.05). The findings are consistent with view that the distinct configuration of leadership and social dynamics within the region allows for the emergence and success of large and strong political dynasties (Beckett, 1994; Bentley, 1994).

5. Conclusion

Political dynasties co-exist with weak political competition, poor accountability, concentration of political power, and perpetuation of patron-client relations and traditional politics. Under such conditions, political dynasties contribute to persistent—or in some cases even worse—poverty conditions in a country. On the other hand, it is also true that poor people, who constitute large segments of the voting population, are likely to support political patrons who provide them support that seem difficult to obtain from government. This pattern takes place under conditions of poverty and extreme vulnerability, further exacerbated by the lack of a social safety net. The self-perpetuation of political dynasties is thus understandable when patron-client relationships characterize politics. This complex relationship suggests that political dynasties play a role in exacerbating poverty, or poverty itself enables the self-perpetuation of political dynasties.

In this paper, we construct metrics of political dynasties in the Philippines and analyze them using regression analysis. Our findings indicate strong evidence that severe poverty leads to the prevalence of political dynasties. We argue that patron-client relationships are the recourse of the poor and, in turn, reinforce the self-perpetuation of political dynasties. In fact, the evidence also

suggests that areas with more poor people tend to have many political dynasties as well.

Yet, we also find evidence that the presence of political dynasties per se may not necessarily be causing poverty. That is, political dynasties neither reduce nor increase poverty. We argue that this pattern is an indication that the non-dynasties are not offering a better alternative to political dynasties. In other words, it is difficult to recognize whether the approach of political dynasties to reform benefit the poor in the end. As such, given the choice between dynasties and non-dynasties, the poor choose the former because, at least, they receive very tangible support that government failed to provide. Indeed, anecdotal and other evidence indicate that the political "rules of the game" continue to perpetuate patron-client relationships (or at least fail to correct these with alternative models). The proliferation of new political dynasties thus takes place. It is also likely that reform-minded non-dynastic politicians are unable to make a dent on poverty considering that the political status quo remains unchanged. In this environment, it would not be surprising if the poor become less and less attracted to non-dynasties.

The empirical findings in this paper therefore suggest that comprehensive poverty reduction and social protection programs are crucial for building an inclusive democratic structure in the Philippines. Addressing the structural dependence of the electorate is a step toward changing the patron-client environment to one wherein voters are less dependent on patrons or political dynasties. Indeed, studies have shown that the share of dynastic leaders decline over time as a country reaches higher level of economic development (Dal Bo et al. 2009). Nevertheless, sub-national efforts to push reforms may produce highly uneven results, and may not necessarily be compatible with the incentives of political dynasties that seek to tighten their grip on local politics. These reforms must leverage the media to the extent that they contribute to leveling the

political playing field while, at the same time, promoting stronger accountability and better governance.

In addition to poverty reduction, political reforms are also very critical in helping families and communities break out of the dynasty-poverty trap. Alternative political candidates need the support of genuine political parties so they have a platform to convey their message of reform and non-traditional politics, built on empowerment, participation and accountability against patron-client relationships that thrive on poverty and inequality. Once elected, the same leaders also need genuine political parties in order to accomplish their reform agenda, if they are to win hearts and minds on lasting reform.

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TABLES

Table 1. Variables in the Regressions to Explain Poverty

VARIABLE DESCRIPTION	SOURCE OF DATA
Under Five Mortality Rate 2003	Compiled from National Demographic Health Survey (NDHS) 2003
Under Five Mortality Rate 2003	Computed from National Demographic Health Survey (NDHS) 2003
Literacy Rate 2003	Functional Literacy, Education, and Mass Media Survey (FLEMMS) 2003
Human Development Index	Human Development Network
Education Index 2008 (Derived from Primary and Secondary Student to Teacher Ratios, Classroom to Student Ratios)	National Statistics Coordination Board (NSCB)
Proportion of Irrigated Area 2002	Compiled from Census of Agriculture Data
AM Stations	Complied by authors based on data from media networks
Farm Area GINI Ratio 2002	Computed Census of Agriculture Data
Change in Agricultural Terms of Trade	Computed from National Statistics Coordination Board (NSCB) Data
Change in Amount of Land Covered by CARP-LAD Program from 2002 to 2004	Compiled from Dep. of Agrarian Reform Data
Change in Access to Electricity from 2002 to 2004	Computed from National Statistics Coordination Board (NSCB) Data
Change in Road Density to 2007 to 2008	Computed from Department of Public Works and Highways (DPWH) Data
Per Capita Expenditure 2003	Computed from National Statistics Coordination Board (NSCB) Data
Natural Logarithm of Per Capita Expenditure 2003	Computed from National Statistics Coordination Board (NSCB) Data
Per capita income 2006	National Statistics Coordination Board (NSCB)
Family Poverty Incidence 2009	National Statistics Coordination Board (NSCB)
Change in Poverty from 2003 to 2006	Computed from National Statistics Coordination Board (NSCB) Data
ARMM Indicator	Compiled by authors
Dynastic Share of Elective Posts 2004	Computed from Commission on Elections (COMELEC) Data
Share of Largest Dynastic Clan 2004	Computed from Commission on Elections (COMELEC) Data
Hirschman-Herfindahl Index for Dynastic Clans 2004	Computed from Commission on Elections (COMELEC) Data

Table 2. Focus on Dynastic Share
Dependent Variable: Change in Poverty Incidence from 2003 to 2006

VARIABLES	1	2	3	4	5	6	7	8	9	10
Dynastic Share 2004	0.47351	0.39194	0.26883	0.06162	-0.25305	-0.38059	-0.37884	-0.40236	-0.35122	-0.43290
	[0.85520]	[0.82968]	[0.83215]	[0.87391]	[0.92386]	[0.93565]	[0.93776]	[0.94060]	[0.93726]	[0.96541]
Natural Log of 2003 Per Capita Income		0.68870**	0.72863**	0.75961***	0.76809**	0.80679***	0.68537**	0.84530**	1.08881**	1.02778**
		[0.28251]	[0.28317]	[0.28652]	[0.29558]	[0.30184]	[0.33482]	[0.38743]	[0.43236]	[0.46101]
Change in Agricultural Terms of Trade 2002 to 2004			1.88082	1.81390	2.10606	2.34214	2.81929*	3.04939*	1.86843	1.88649
			[1.48728]	[1.49331]	[1.52413]	[1.54330]	[1.64633]	[1.67385]	[1.91695]	[1.93100]
Farm Area GINI Coefficient				-1.07434	-0.84935	-0.93525	-0.71789	-0.53170	-0.45691	-0.51885
				[1.35043]	[1.48593]	[1.50152]	[1.52667]	[1.54706]	[1.54127]	[1.55974]
Change in CARP Land Distribution 2002 to 2004					7.81649**	9.56154***	9.91928***	9.52095***	10.17369***	10.18409***
					[3.15862]	[3.40903]	[3.44278]	[3.48507]	[3.50870]	[3.53355]
Change in Access to Electricity 2002 to 2004						-1.04005	-1.11343	-1.42770	-1.75315	-1.65243
						[1.24214]	[1.24797]	[1.30764]	[1.32769]	[1.36023]
Proportion of Irrigated Land 2002							0.38148	0.48722	0.52267	0.52659
							[0.45074]	[0.46965]	[0.46840]	[0.47180]
Under Five Mortality Per 1000 Children 2003								7.85809	-0.16707	0.34935
								[9.50515]	[11.44592]	[11.59773]
Functional Literacy 2003									-3.08880	-2.79456
									[2.47866]	[2.60081]
Change in Road Density 2007 to 2008										0.16041
										[0.39818]
Constant	0.03279	-5.23993**	-5.54735**	-5.13904**	-5.54945**	-5.85913**	-5.23762**	-6.96752**	-5.90030*	-5.64265
	[0.21075]	[2.17255]	[2.17765]	[2.24252]	[2.29244]	[2.35928]	[2.47602]	[3.24663]	[3.34356]	[3.42735]
Observations	79	79	79	79	72	70	70	70	70	70
R-squared	0.00397	0.07620	0.09549	0.10316	0.17550	0.20046	0.20960	0.21835	0.23807	0.24016
Standard errors in brackets										
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$										

Table 3. Focus on Largest Dynasty
Dependent Variable: Change in Poverty Incidence from 2003 to 2006

VARIABLES	1	2	3	4	5	6	7	8	9	10
Largest Dynastic Share	-3.86399	-2.64403	-2.41456	-2.77440	-2.34180	-2.04221	-1.92682	-1.84647	-1.94401	-2.02685
	[2.99510]	[2.96713]	[2.96111]	[2.98548]	[3.12868]	[3.18393]	[3.19528]	[3.20632]	[3.19056]	[3.22217]
Natural Log of 2003 Per Capita Income		0.64783**	0.68973**	0.71496**	0.72634**	0.76337**	0.64777*	0.80267**	1.05157**	0.99587**
		[0.28598]	[0.28679]	[0.28808]	[0.29869]	[0.30660]	[0.33809]	[0.39088]	[0.43473]	[0.46441]
Change in Agricultural Terms of Trade 2002 to 2004			1.86331	1.72384	1.99030	2.20217	2.66865	2.88842*	1.68559	1.67890
			[1.47436]	[1.48196]	[1.51070]	[1.53080]	[1.63651]	[1.66437]	[1.90366]	[1.91771]
Farm Area GINI Coefficient				-1.25198	-0.97931	-1.00619	-0.78503	-0.59065	-0.54028	-0.58015
				[1.29167]	[1.47780]	[1.49884]	[1.52666]	[1.55050]	[1.54294]	[1.55818]
Change in CARP Land Distribution 2002 to 2004					7.65487**	9.29043***	9.64510***	9.25852***	9.94049***	9.92044***
					[3.13700]	[3.38936]	[3.42548]	[3.46972]	[3.49253]	[3.51858]
Change in Access to Electricity 2002 to 2004						-0.88740	-0.96493	-1.26924	-1.60364	-1.50272
						[1.24692]	[1.25372]	[1.31417]	[1.33317]	[1.37184]
Proportion of Irrigated Land 2002							0.36994	0.47223	0.50799	0.51070
							[0.45045]	[0.46968]	[0.46807]	[0.47156]
Under Five Mortality Per 1000 Children 2003								7.56310	-0.65424	-0.25725
								[9.49397]	[11.41882]	[11.55518]
Functional Literacy 2003									-3.16544	-2.91771
									[2.47225]	[2.58354]
Change in Road Density 2007 to 2008										0.14040
										[0.38966]
Constant	0.35370*	-4.69103**	-5.05376**	-4.52805*	-5.07477**	-5.44194**	-4.86817*	-6.55889*	-5.42874	-5.19227
	[0.18627]	[2.23435]	[2.24405]	[2.30955]	[2.38366]	[2.47765]	[2.58045]	[3.34703]	[3.44463]	[3.53141]
Observations	79	79	79	79	72	70	70	70	70	70
R-squared	0.02116	0.08307	0.10219	0.11344	0.18151	0.20357	0.21214	0.22025	0.24099	0.24265
Standard errors in brackets										
*** p < 0.01, ** p < 0.05, * p < 0.1										

Table 4. Focus on Dynastic Concentration Dependent Variable: Change in Poverty Incidence from 2003 to 2006										
VARIABLES	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Dynastic Herfindahl Index	-9.75255	-6.90226	-6.78473	-6.68864	-5.69336	-4.59936	-4.47789	-4.20368	-5.42048	-5.66820
	[6.70408]	[6.66205]	[6.63199]	[6.64573]	[6.78240]	[6.93246]	[6.95067]	[6.98113]	[6.99108]	[7.06999]
Natural Log of 2003 Per Capita Income		0.63716**	0.67710**	0.70531**	0.71610**	0.75666**	0.63823*	0.79201**	1.04654**	0.98636**
		[0.28605]	[0.28637]	[0.28886]	[0.29959]	[0.30820]	[0.33992]	[0.39335]	[0.43332]	[0.46317]
Change in Agricultural Terms of Trade 2002 to 2004			1.91665	1.80604	2.04469	2.24639	2.71724	2.93216*	1.64447	1.63540
			[1.46803]	[1.47668]	[1.50651]	[1.52775]	[1.63188]	[1.65976]	[1.90183]	[1.91558]
Farm Area GINI Coefficient				-1.08063	-0.81539	-0.85541	-0.64071	-0.45430	-0.40434	-0.44100
				[1.28055]	[1.45010]	[1.46930]	[1.49510]	[1.51849]	[1.50856]	[1.52228]
Change in CARP Land Distribution 2002 to 2004					7.57576**	9.16956***	9.52916***	9.15815**	9.82965***	9.80303***
					[3.13766]	[3.40328]	[3.43853]	[3.48156]	[3.49295]	[3.51861]
Change in Access to Electricity 2002 to 2004						-0.90907	-0.98387	-1.28454	-1.62052	-1.51270
						[1.24198]	[1.24819]	[1.30947]	[1.32386]	[1.36198]
Proportion of Irrigated Land 2002							0.37582	0.47644	0.51260	0.51573
							[0.44993]	[0.46922]	[0.46677]	[0.47018]
Under Five Mortality Per 1000 Children 2003								7.44858	-1.39051	-0.99686
								[9.49881]	[11.46262]	[11.58914]
Functional Literacy 2003									-3.37673	-3.11977
									[2.48738]	[2.59124]
Change in Road Density 2007 to 2008										0.15110
										[0.38945]
Constant	0.40842**	-4.56530**	-4.90430**	-4.51991*	-5.05723**	-5.45651**	-4.85712*	-6.53242*	-5.20499	-4.94033
	[0.20314]	[2.24168]	[2.24641]	[2.29637]	[2.36399]	[2.46156]	[2.56971]	[3.34799]	[3.46589]	[3.55671]
Observations	79	79	79	79	72	70	70	70	70	70
R-squared	0.02675	0.08639	0.10669	0.11521	0.18329	0.20393	0.21279	0.22064	0.24387	0.24579
Standard errors in brackets										
*** p < 0.01, ** p < 0.05, * p < 0.1										

Table 5. Focus on Poverty Incidence 2009
Dependent Variable: Dynastic Share

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12
Family Poverty Incidence 2009	0.00129	0.00031	0.00088	0.01187***	0.00091	-0.00067	0.00143	0.01623***	0.00154	0.00129	0.00052	0.0382
	[0.00304]	[0.00290]	[0.00277]	[0.00374]	[0.00358]	[0.00351]	[0.00368]	[0.00394]	[0.00195]	[0.00190]	[0.00190]	[0.02886]
Per capita income 2006	0	0	0	0.00001								
	[0.00001]	[0.00001]	[0.00001]	[0.00001]								
AM Stations		0.00681*	0.00682**	0.01706***		0.00749**	0.00640*	0.01695***		0.00512	0.00623*	0.03648*
		[0.00353]	[0.00339]	[0.00263]		[0.00366]	[0.00356]	[0.00296]		[0.00356]	[0.00350]	[0.01897]
ARMM			0.18371**	0.30227***			0.20506**	0.39629***			0.15506**	0.57977*
			[0.07730]	[0.06839]			[0.09571]	[0.09184]			[0.07157]	[0.30602]
Human Development Index-1					-0.10923	-0.37265	0.19909	0.90359*				
					[0.41759]	[0.41812]	[0.53751]	[0.47936]				
Education Index 2008									-0.00191**	-0.00165*	-0.00069	0.00869
									[0.00090]	[0.00091]	[0.00098]	[0.00744]
Constant	0.41715**	0.46157**	0.32925*	-0.21036	0.45465	0.61253*	0.22194	-0.71412**	0.59125***	0.54427***	0.44170***	-2.04028
	[0.19193]	[0.18412]	[0.19466]	[0.21381]	[0.32654]	[0.32178]	[0.39852]	[0.36163]	[0.11605]	[0.12276]	[0.12718]	[1.85785]
Observations	78	78	78	78	77	77	77	77	78	78	78	78
R-squared	0.01199	0.06282	0.1339	0.88861	0.01309	0.06188	0.14069	0.85711	0.0613	0.0872	0.13802	0.35428
Standard errors in brackets												
*** p < 0.01, ** p < 0.05, * p < 0.1												

Note: Regressions 4, 8 and 12 contain the contiguity matrix to accounts for provinces with contiguous borders. Details are available from the authors upon request.

Table 6. Focus on Poverty Incidence 2009
Dependent Variable: Largest Dynastic

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12
Family Poverty Incidence 2009	0.00130*	0.00162**	0.00156***	0.00218*	0.00106	0.00156*	0.00205**	0.00285**	0.00112**	0.00118***	0.00094**	0.01771
	[0.00069]	[0.00066]	[0.00058]	[0.00118]	[0.00081]	[0.00080]	[0.00081]	[0.00133]	[0.00046]	[0.00043]	[0.00041]	[0.01649]
Per capita income 2006	0	0	0.00000***	0.00001***								
	[0.00000]	[0.00000]	[0.00000]	[0.00000]								
AM Stations		-0.00230***	-0.00231***	-0.00470***		-0.00234***	-0.00271***	-0.00491***		-0.00207**	-0.00171**	0.008
		[0.00080]	[0.00071]	[0.00083]		[0.00084]	[0.00079]	[0.00100]		[0.00081]	[0.00075]	[0.01084]
ARMM			0.06907***	0.09593***			0.07917***	0.10408***			0.04999***	0.19592
			[0.01614]	[0.02157]			[0.02113]	[0.03092]			[0.01543]	[0.17481]
Human Development Index-1					0.00159	0.08523	0.27209**	0.68699***				
					[0.09451]	[0.09581]	[0.11869]	[0.16137]				
Education Index 2008									0.00015	0.00005	0.00036*	0.00536
									[0.00021]	[0.00021]	[0.00021]	[0.00425]
Constant	0.00664	-0.00781	-0.04138	-0.17597***	0.03558	-0.01491	-0.13788	-0.36020***	0.01666	0.03672	0.00331	-1.15217
	[0.04384]	[0.04192]	[0.04064]	[0.06743]	[0.07390]	[0.07373]	[0.08800]	[0.12174]	[0.02713]	[0.02807]	[0.02742]	[1.06125]
Observations	78	78	78	78	77	77	77	77	78	78	78	78
R-squared	0.00627	0.06342	0.27247	0.78648	0.02507	0.05002	0.192	0.68772	0.01108	0.08018	0.22768	
Standard errors in brackets												
*** p < 0.01, ** p < 0.05, * p < 0.1												

Note: Regressions 4, 8 and 12 contain the contiguity matrix to accounts for provinces with contiguous borders. Details are available from the authors upon request.

Table 7. Focus on Poverty Incidence 2009
Dependent Variable: Dynastic Concentration

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12
Family Poverty Incidence 2009	0.00033	0.00041**	0.00042**	0.00100***	0.00019	0.0003	0.00053**	0.00129***	0.00035**	0.00036***	0.00025**	0.00518
	[0.00021]	[0.00021]	[0.00017]	[0.00038]	[0.00024]	[0.00024]	[0.00023]	[0.00042]	[0.00014]	[0.00014]	[0.00012]	[0.00445]
Per capita income 2006	0	0	0.00000***	0.00000***								
	[0.00000]	[0.00000]	[0.00000]	[0.00000]								
AM Stations		-0.00056**	-0.00056***	-0.00080***		-0.00052**	-0.00066***	-0.00083***		-0.00056**	-0.00040*	0.00266
		[0.00025]	[0.00020]	[0.00027]		[0.00025]	[0.00022]	[0.00032]		[0.00025]	[0.00021]	[0.00292]
ARMM			0.02768***	0.03584***			0.02976***	0.03976***			0.02260***	0.06908
			[0.00462]	[0.00698]			[0.00599]	[0.00983]			[0.00439]	[0.04715]
Human Development Index-1					-0.02388	-0.00521	0.06983**	0.17593***				
					[0.02817]	[0.02882]	[0.03366]	[0.05129]				
Education Index 2008									-0.00001	-0.00004	0.00010*	0.00153
									[0.00007]	[0.00006]	[0.00006]	[0.00115]
Constant	0.0054	0.00194	-0.01394	-0.06099***	0.02456	0.01324	-0.03692	-0.11518***	0.00759	0.01317	-0.00186	-0.34013
	[0.01347]	[0.01306]	[0.01162]	[0.02183]	[0.02203]	[0.02218]	[0.02496]	[0.03869]	[0.00839]	[0.00875]	[0.00780]	[0.28625]
Observations	78	78	78	78	77	77	77	77	78	78	78	78
R-squared	0.01807	0.04835	0.37652	0.76557	0.09122	0.09868	0.31815	0.66914	0.00859	0.06361	0.34552	
Standard errors in brackets												
*** p < 0.01, ** p < 0.05, * p < 0.1												

Note: Regressions 4, 8 and 12 contain the contiguity matrix to accounts for provinces with contiguous borders. Details are available from the authors upon request.

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