

RESEARCH ARTICLE

# Federalism and Inclusion in Developing Economies

Raul V. Fabella

University of the Philippines-Diliman and National Academy of Science and Technology  
raulfabella@yahoo.com.ph

Sarah Lynne S. Daway-Ducanes

University of the Philippines-Diliman

Using two-step system-GMM on an unbalanced panel data of 105 economies over the period 1987–2016, we present formal statistical evidence that federalism is a strong predictor of greater income inequality in developing economies. Moreover, federalism does not predict lower poverty incidence and severity in countries on average, but it may predict higher poverty severity in developing economies. Thus, for a developing economy such as the Philippines, federalism might constitute a leap from the frying pan into the fire of even greater income inequality and poverty incidence.

**Keywords:** federalism, poverty, inequality

**JEL Classification:** D3, I3, O1

The federalism debate is in full swing with the release of the version by the Consultative Commission headed by former Chief Justice Reynato Puno. The debate has since focused largely on various modalities of federalism: Should there be 17 regions as the Puno Commission version or four as in the Center for Integrative and Development Studies version? Should there be four supreme courts or just one? How many additional layers of bureaucracy should be created in each region and whether this version will break the bank?

It appears that the debate has put the horse before the cart. The prior question of whether federalism will be good or bad for the Philippines is given a short shrift.

The level of debate hardly departs from gratuitous claims and counterclaims. The most prominent argument in favor of federalism seems to have this tenor: The Philippines under the current centralized presidential arrangement is poor, corrupt, and suffers from high poverty incidence; many rich countries like the U.S.A. and Germany are federalist, so federalism must be the key for the Philippines to becoming rich. By similar reasoning, the high incidence of poverty in the country must be due to the prevailing centralized presidential system.

Typical of the proponents' argument is Ochave's (2016): "Let us take note at how America empowered its people and become the most powerful country in

the world through federalism” (par. 19). The message is that federalism caused America’s power. Typical, likewise, is the claim that “A federal republic will provide better policies and implementation that will enable the people to raise their standard of living” (Ochave, 2016, par. 13). Again, federalism will cause better governance, thereby resulting in higher standards of living. Well and good except that no evidence is adduced in support. Ochave also claimed, “Constitutional experts contend that our unitary system’s centralized form is the culprit for poverty in the country” (2016, par. 2). Chief federalism advocate and Chair of the Consultative Commission Puno is reported to have claimed that “the antidote is federalism” to all the problems in the country (Pabico, 2018, par. 2#). Federalism through decentralization of power and resources will reverse the rut despite the Philippines’ dismal record with past decentralization and devolution effort (Decentralization Act of 1967, year; Local Government Code, 1991). There are, of course, skeptics.

Punongbayan (2016) called the federalization in the Philippines a *motion in reverse* because countries that are currently successful federalists like Germany and the U.S.A. started with regions and principalities that were effectively predecessor states with their own separate governments, fiscal autonomy, and institutions and later brought under one flag. Their federalism was a “coming together” (Linz & Stepan, 2000) but what is contemplated in the Philippines would be a “coming apart.” Punongbayan claimed that the resources needed to make this motion in reverse productive could be prohibitive; thus, the title of his article: “Federalism is not a solution.”

Gatdula (2018) argued that the Philippines is already very decentralized; that “Imperial Manila” as a symbol is overblown given the regional origins of past presidents. Opponents also contend in contrast that Venezuela and Sudan are federal and yet are massive failures. The People’s Republic of China is not federal and yet is a massive success.

But Germany and the U.S.A. on the one hand and Venezuela and Sudan on the other are isolated cases that may not generalize. Although the burden of evidence is always greater on proponents, opponents of the shift to federalism will do well if they also base their stances on hard evidence. The provision of hard evidence has, however, been sorely lacking on both sides of the aisle.

The Makati Business Club’s (2017) report serves as an informative primer to federalism from a business perspective. It gives the usual features of federalism (autonomy, subsidiarity, and solidarity) and the known types (e.g., cooperative vs. competitive federalism). The usual virtues are also enumerated: the capacity to experiment, better address of local problems, raising stakeholder engagement, among others. On the whole, however, it does the honest thing: without evidence, it does not stake a position on whether federalism will be good or bad for the country. It just asks the question, “Is federalism the key to inclusive growth?”

A nation cannot embark on a massive regime shift based only on unsupported claims and counterclaims. Are we jumping from the frying pan to the fire or some healing still waters?

This paper seeks to shed light on this critical black hole in the conversation. What needs to be shown is that federalism either accords a developing economy a better chance of improvement in generally accepted indices of economic welfare like poverty reduction and income inequality.

The rest of the paper is organized as follows. Section 2 is a brief review of the literature on the theoretical arguments for and against federalism and decentralization. Section 3 discusses the methodology and data. Section 4 presents the results. Finally, Section 5 concludes.

## Review of Literature

At the core of the federalism debate is decentralization, both fiscal and constitutional. The dominant paradigm here, the Tiebout-Oates model, identifies the main tradeoff in fiscal decentralization as that between the national government’s responsiveness to subnational preferences and the national government’s ability to address externalities to achieve economies of scale (for a good review of the issues, see Hankla, 2008). Tiebout (1956) introduced “voting with one’s feet” and inferred its consequence to be that the efficiency of public goods can be improved if public goods reflected local preferences better. Subnational entities, it is assumed, can better match local public goods with local preferences. Oates (1972) argued that there is, in each case, an efficient level of fiscal decentralization where public goods diversity does not sacrifice scale economies. The Tiebout-Oates paradigm bats for most public services

to be sub-nationally determined and provided as it would notionally be under federalism.

The Tiebout-Oates consensus has, however, frayed over time. Where citizen immobility is difficult, citizens cannot sort themselves out geographically by tax and spending preferences (Bardhan, 2002). Others doubt the assumption that the central government, with its local listening posts and the capacities it can afford, is incapable of accommodating the diverse preferences of its citizens (Treisman, 1999, 2000). Defenders of the Tiebout-Oates consensus argue that central governments, which respond to national preferences even if better informed, will not have the incentives to respond to local preferences through targeted policies. Doubters counter that though subnational bodies may indeed be closer to local residents and their demand for local public goods, the proximity will not matter if the structures of accountability are weak and local governance is beholden to the local power elites whose preferences may be at odds with the preferences of the public (Bardhan, 2002). This view is especially salient in most developing countries. In such situations, it is more difficult to force adherence to a hard budget constraint, which is crucial for any sustainable governance (see Rodden, Ekelund, & Litvack, 2003). The summary by Litvack, Ahmad, and Bird (1998) on the state of the debate on fiscal decentralization is still apropos: "The paper highlights the fact that decentralization is neither good nor bad for efficiency, equity or macro-economic stability; but rather that its effects depend on the institution-specific design" (p. vii). Again, the role of institutions is pivotal, which can be said of all governance regimes and not just of federalism.

Federalism is so much more than fiscal decentralization. Experts make a sharp distinction between "constitutional federalism" (the very one being contemplated in the Philippines) and "fiscal decentralization." Indeed, the result on local economic performance such as corruption may be very different and contradictory (Freile, Haque, & Kneller, 2008). Federalism involves additional powers to the local elected government and additional layers of bureaucracy that may increase or reduce accountability. Where institutions are weak, most people believe that the additional layers of bureaucracy from federalism may erode accountability, and may thus enable more opportunities for corruption (Fan, Lin, & Treisman, 2008). The preferences of local potentates may trump

those of the local public, and soft budget constraints may become the rule when local jurisdictions are bailed out by the Federal government. Likewise, overcoming externalities to exploit scale of economies especially important in low-income countries may be hampered.

The message from individual country studies is not encouraging for federalism in this regard. Adefeso (2017) claimed that Nigerian federalism lifted a zero number of people out of multidimensional poverty. This goes against the widely-held belief that fiscal federalism is negatively correlated with poverty. Mushieka (2018) studied the effect of federalism on Nigeria and Sudan, two of the four federalist states in the African continent. He found that Nigeria and Sudan have been unable to implement sustainable and significant solutions to extreme poverty; the two federal countries are ineffective in the management of the national economy.

This is true even of the U.S.A. Somin (2017), focusing on the US Federal experience, went against the widespread perception that states in the U.S. Federal system have been backward-looking or have been bulwarks of discrimination against the poor and minorities. He contended that by allowing "voting with their feet" (par. 1) it can be and was a force for minorities and the poor. Voting with one's feet allows marginalized groups to escape to more embracing jurisdictions. But voting with one's feet is not a prerogative of federalist states alone. Gunn (2016) ruminated on how the federal system in the U.S.A. can become more pro-poor, which means it has not yet. Republicans want more money in block grants, but tempered by the realization that the block grants program of 1996 has not worked as well as expected. The fact that the issue still pesters in 2016 means that the U.S. federal system has yet to prove itself on the question of inclusion, it being the one perhaps the single most important goal for decentralization.

Despite its possible virtues for efficiency, Linz and Stepan (2000) argued that the balance of forces under federalism would tilt towards inequality-enhancing. Stepan and Linz (2011), in a review essay, noted that the U.S.A. "is now the most unequal long-standing democracy in a developed country in the world" (p. 841). Careras (2015), in a comparative study of European countries, showed that overall political decentralization in Europe does not predict well overall income inequality (using Gini). In contrast, countries

with higher fiscal autonomy among its regions are associated with higher net income inequality.

The point being made here is that the question about whether federalism is good or bad in practice cannot be resolved in theory; it must be resolved empirically. We limit our scope of this paper to the relationship between federalism and inclusion. Specifically, we limit the scope to the widely accepted indices of inclusion, namely, the different measures of poverty incidence and severity and income inequality. The literature here is much thinner than with other indices of performance, say corruption. Although, Bardhan (2002), discussing the relative importance of the goals of decentralization, namely, efficiency and poverty alleviation, stated that “targeting success in poverty alleviation programs is a more important criterion than the efficiency of regional resource allocation” (p. 188).

### ***The Proof of the Pie***

Our approach is, thus, purely empirical. We used panel data for 105 economies going back three decades, cut up into five-year averages to reduce the noise from short-run fluctuations. Federalism enters as a dummy variable in a two-step system-GMM regression procedure with the usual set of controls like real GDP growth rate, growth rate-squared, quality of governance, financial institutions access index, developing economies dummy, trade openness index, region, and period dummies.

Following the federalist classification of countries by the CIA Factbook, we test the claim that federalism reduces both income inequality and poverty. Indeed, if federalism is inclusive, the federalism dummy will exhibit a negative and significant association with income Gini, and a negative and significant association with the poverty headcount and poverty gap ratios.

### **Model and Data**

We estimate the dynamic panel data equation below:

$$y_{it} = y_{it-1} + \alpha Federal_i + \beta Federal_i * Developing\ economy_i + \gamma_X X_{it} + \gamma_Z Z_{it} + \delta_{it},$$

where  $y_{it}$  is the measure of inequality or poverty for country  $i$  at time  $t$ ;  $Federal_i$  is a dummy variable, which takes a value of 1 if country  $i$  has a federal system of government, and 0 otherwise;  $Federal_i * Developing\ economy_i$  is the interaction between the

federal dummy and *Developing economy*, which is a dummy variable that takes a value of 1 if country is a developing economy (to be further defined below), and 0 otherwise;  $X_{it}$  is a vector of predetermined and endogenous regressors;  $Z_{it}$  is a vector of strictly exogenous regressors; and  $\delta_{it}$  is the error term, which includes the fixed individual effects.

The dependent variable is alternatively defined as follows:

- As a measure of inequality, the Gini coefficient is used because this is readily available across countries. The higher the Gini coefficient, the more unequal the income distribution of a given country at a given time.
- As measures of poverty, we use the poverty gap ratios at the US\$1.9/day and US\$3.2/day poverty lines and the poverty headcount ratios at the US\$1.9/day and US\$3.2/day poverty lines. The poverty gap ratio is the average shortfall of the total population from the poverty line (expressed as a percentage of the poverty line) and reflects both the severity and incidence of poverty. The poverty headcount ratio is the percentage of the total population that lives below the poverty line, and is a measure of the incidence of poverty.

The  $X$  vector consists of the following determinants:

- Real GDP growth rate and its squared value to verify if a Kuznets relationship exists for both inequality and poverty, in line with Dawson (1997) and Barro (2000, 2008);
- Developing economy dummy, which takes the value of 1 if country has a real GNI per capita of not more than US\$10,000 in 1992;
- Trade openness, which is computed as the percentage of the sum of exports and imports in GDP. This is included to verify the hypothesis that greater trade openness may raise income inequality (Barro, 2000; 2008), but has a poverty-alleviating effect (Winters, McCulloch, & McKay, 2004);
- Financial institutional access index of the International Monetary Fund, which is defined as bank branches per 100,000 adults and ATMs per 100,000 adults. A higher financial institutional access (FIA)

index is expected to associate negatively with Gini inequality. This is in contrast with Jauch and Watzka (2016) who found an increasing and significant effect of the usual financial development measure (i.e., credit-to-GDP ratio) on income inequality on an unbalanced panel data set of 138 countries for the period 1960–2008. The FIA-poverty nexus is, however, subject to more ambiguity (see, for instance, Jalilian & Kirkpatrick, 2002; Honohan, 2004; Beck et al., 2007; Jeanneney & Kpodar, 2011; Donou-Adonsou & Sylwester, 2016); and

- Inter-Country Risk Guide (ICRG) index as a measure of institutional quality.

The  $Z$  vector consists of regional dummies in accordance with World Bank definitions (i.e., Central Asia, East Asia and the Pacific, Latin America and the Caribbean, Middle East and North Africa, South Asia, and Sub-Saharan Africa) and period dummies to account for common shocks to trend. As is the practice in the literature, we split the 30-year period into six five-year averages to limit the effect of business cycles on the estimates.

To estimate the dynamic equation above, we use Blundell and Bond's (1998) and Windmeijer's (2005) two-step system-GMM (SGMM) procedure. This procedure has the following advantages: (1) It allows us to account for endogeneity, employing instruments that include the lagged values of the regressand and regressors; (2) Two-step SGMM is also more suitable (i) for correcting the Nickell bias in large  $n$  (cross-section length) and small  $t$  (number of periods) panels; (ii) in the absence of good instrumental variables, which is often the case when dealing with cross-country data; (iii) for series that follow or almost follow a "random" walk, which is usually the case involving macroeconomic data; and (3) Windmeijer's (2005) two-step correction procedure produces more consistent and efficient estimates, mitigating the finite-sample bias.

For every SGMM regression, we first estimate the OLS and fixed-effects (FE) models and use the OLS and fixed-effects (FE) estimates for (i.e., the coefficient the lagged dependent variable in the equation above), to place an upper and lower bound, respectively, on the coefficient estimate of the lagged dependent variable of the SGMM model. This is done since the presence of endogeneity, biases the OLS estimate upwards (given

a positive correlation between the lagged dependent variable and the error term), and the FE estimate downwards (Roodman, 2009). A statistically significant (up to the 10% level of significance) provides evidence for the dynamic nature of  $y_{it}$ . Moreover, a value of that lies within the unit circle implies dynamic stability. The post-estimation diagnostics include the following<sup>1</sup>:

- The Hansen J test statistic (from a two-step estimation procedure), which is a test of overidentifying restrictions or alternatively, a test of the exogeneity of the instruments used. The joint null hypothesis is that the instruments used are uncorrelated with the error term, and that the instruments not used are appropriate excluded. The Hansen test provides a more robust (than the Sargan test) test statistic, but may be weakened by the use of many instruments. As an added measure against overidentification, we ensure that the number of instruments does not exceed the number of countries  $n$ .
- The Arellano-Bond test of serial autocorrelation of order two or AR(2) in first differences, with a null hypothesis of no AR(2). Statistical significance of the corresponding test statistic implies that the second lags of are not appropriate instruments for the current values of the endogenous variables. The inclusion of time dummies also increase the likelihood that the autocorrelation test and the robust estimates of the coefficient standard errors are not correlated across individuals in the idiosyncratic disturbances.
- The Arellano-Bond test of AR(1), with a null hypothesis of no AR(1). Statistical significance of the corresponding test statistic is expected by construction.

The F test instead of the Wald chi-squared test, which is used for overall fit to account for a finite (or "small") sample.

Except for ICRG, the variables are lifted from the World Development Indicators (2017). The data set is an unbalanced panel, consisting of 105 countries spanning 30 years of five-year averages from 1987 to 2016.

Table 1 presents the summary statistics of the variables used. Thirteen percent of the countries in the estimation sample (i.e., 13 countries) have federal

Table 1. *Summary Statistics*

Variable	Obs.	Mean	Std. Dev.	Min	Max
Gini	300	40.16	9.35	17.25	64.80
Poverty gap (at \$1.9/day pov. line)	261	3.99	6.55	0.00	46.10
Poverty gap (at \$3.2/day pov. line)	261	8.94	11.75	0.00	64.80
Poverty headcount ratio (at \$1.9/day pov. line)	261	10.86	15.85	0.00	86.00
Poverty headcount ratio (at \$3.2/day pov. line)	261	21.14	23.17	0.00	96.20
Federal dummy	300	0.13	0.34	0.00	1.00
Real GDP growth rate	300	3.67	2.56	-3.19	18.58
Developing economy	300	0.78	0.41	0.00	1.00
Trade openness	300	80.51	43.52	18.07	382.24
Financial institutions access index	300	0.36	0.29	0.01	1.00
ICRG	300	68.99	7.77	47.90	90.83
Central Asia	300	0.03	0.18	0.00	1.00
East Asia and the Pacific	300	0.08	0.27	0.00	1.00
Latin America and the Caribbean	300	0.27	0.44	0.00	1.00
Middle East and North Africa	300	0.08	0.27	0.00	1.00
South Africa	300	0.04	0.20	0.00	1.00
Sub-Saharan Africa	300	0.17	0.38	0.00	1.00
1992-1996	300	0.11	0.32	0.00	1.00
1997-2001	300	0.14	0.35	0.00	1.00
2002-2006	300	0.18	0.38	0.00	1.00
2007-2011	300	0.30	0.46	0.00	1.00
2012-2016	300	0.26	0.44	0.00	1.00

systems of government; 78% of the countries are developing economies.<sup>2</sup> The average poverty gap and headcount ratios at US\$3.2/day poverty line are about twice as much as the ratios at the US\$1.9/day poverty line. In terms of the Gini coefficient, its average of 40.16 is quite close to its median of 39.85.

## Results

### *Income Inequality*

Table 2 presents the system-GMM results with the Gini coefficient as the dependent variable. The estimated model passes the required diagnostic tests, i.e., the Arellano-Bond test of AR(2), the Hansen J test of overidentifying restrictions, and the F test of overall fit. The number of instruments used (90) is less than the number of countries.<sup>3</sup> Moreover, the two-step SGMM coefficient of lagged Gini, 0.62, is significant at the <1% level of significance and falls

between the OLS and FE estimates. The OLS estimate for the lagged Gini coefficient is 0.73 while the FE estimate is 0.15.

The federal government dummy has a negative and significant (at the < 1% level of significance) coefficient, indicating that, on average, federalism is negatively associated with income inequality. However, the interaction term between the federal government dummy and the developing economy dummy has a positive and significant (at the < 1% level of significance) coefficient, indicating that federalism has an inequality-increasing effect in developing economies. Thus, the total marginal effect of federalism on Gini inequality (i.e., the sum of the two coefficients) is 5.16, which is significant at the < 1% level of significance. These results are in line with the arguments and results in Careras (2015), specific to European economies.

**Table 2. Inequality and Federalism**

Dependent variable: Gini coefficient

Determinant	Coefficient	Std. error	p-value	95% conf. interval	
Gini coefficient (-1)	0.62	0.01	0.00	0.60	0.64
Federal government dummy	-4.44	0.72	0.00	-5.86	-3.02
Federal*Developing economy	9.60	1.01	0.00	7.60	11.61
GDP growth	0.64	0.08	0.00	0.49	0.80
GDP growth-squared	-0.07	0.01	0.00	-0.09	-0.06
Developing economy	0.82	0.51	0.11	-0.20	1.84
Trade openness	-0.02	0.00	0.00	-0.02	-0.01
Financial institutional access index	-2.48	0.55	0.00	-3.57	-1.38
ICRG	0.24	0.01	0.00	0.23	0.26
<i>Regional dummies</i>					
Central Asia	-0.57	0.61	0.36	-1.79	0.65
East Asia and the Pacific	-0.78	0.39	0.05	-1.55	0.00
Latin America and the Caribbean	4.46	0.39	0.00	3.68	5.24
Middle East and North Africa	-0.03	0.80	0.97	-1.61	1.55
South Asia	-2.12	0.55	0.00	-3.22	-1.02
Sub-Saharan Africa	2.78	0.47	0.00	1.85	3.71
<i>Period dummies</i>					
1992-1996	-2.48	0.20	0.00	-2.87	-2.09
1997-2001	-2.13	0.18	0.00	-2.48	-1.77
2002-2006	-2.70	0.23	0.00	-3.16	-2.24
2007-2011	-3.47	0.29	0.00	-4.05	-2.90
2012-2016	-3.26	0.34	0.00	-3.93	-2.58
Number of observations	300		Arellano-Bond AR(2) test		0.74
Number of countries	105		Hansen test p-value		0.35
Number of instruments	90				

The following control variables perform well against canonical expectations. The real GDP growth has a positive, but tapering effect on Gini inequality (significant at the < 1% level of significance), in line with the Kuznets hypothesis. Evaluated at the mean, a percentage-point increase in the real GDP growth rate translates into a 0.06-point increase in Gini inequality. However, evaluated at the 75<sup>th</sup> percentile rate, GDP growth rate (= 5.02), a percentage-point increase in the real GDP growth rate, results in a -0.13-point decrease in Gini inequality. Developing economy status is associated with higher income inequality. As expected, greater financial institutional access is associated with lower income inequality, suggesting that particular

aspects of financial development may improve income inequality, in contrast with Jauch and Watzka (2016).

Unexpected and yet not unexplainable are the signs of trade openness and ICRG. Greater trade openness is associated with lower income inequality. This result is in line with Silva (2007), who found an income inequality-decreasing effect of trade in Northern Mozambique. A higher ICRG index, indicating less overall political risk, is associated with a worsening of income inequality, as is in line with Perera and Lee (2013) who found the same for improvements in corruption, democratic accountability, and bureaucratic quality in nine developing Asian economies.

**Table 3.** *Poverty Measures and Federalism*

Dependent variable: Poverty headcount ratio or poverty gap

Determinant	Poverty headcount ratio		Poverty gap	
	(1) \$1.9/day pov. line	(2) \$3.2/day pov. line	(3) \$1.9/day pov. line	(4) \$3.2/day pov. line
Poverty headcount ratio (-1)	0.03 [0.01]***	0.06 [0.02]***	0.03 [0.01]***	0.04 [0.01]***
Federal government dummy	3.32 [2.39]	2.54 [4.05]	0.44 [0.65]	2.04 [1.88]
Federal*Developing economy	-1.42 [4.42]	3.44 [7.85]	3.62 [2.13]*	-0.08 [3.65]
GDP growth	1.66 [0.09]***	2.11 [0.19]***	0.65 [0.03]***	1.16 [0.73]***
GDP growth-squared	-0.03 [0.00]***	-0.04 [0.01]***	-0.01 [0.00]***	-0.02 [0.00]***
Developing economy	8.96 [1.19]***	5.50 [2.28]***	4.77 [0.58]***	6.81 [0.85]***
Trade openness	0.03 [0.01]***	0.02 [0.01]**	0.01 [0.00]***	0.02 [0.00]***
Financial institutional access index	20.80 [2.38]***	28.55 [6.41]***	8.31 [0.88]***	14.11 [2.64]***
ICRG	-0.19 [0.03]***	-0.14 [0.06]**	-0.08 [0.01]***	-0.12 [0.02]***
<i>Regional dummies</i>				
Central Asia	-3.09 [4.90]	0.19 [9.11]	-1.80 [2.03]	-4.40 [4.39]
East Asia and the Pacific	-1.32 [1.40]	1.91 [2.72]	-1.79 [0.37]***	-1.12 [1.14]
Latin America and the Caribbean	1.41 [1.30]	5.94 [3.58]	-0.94 [0.53]*	0.11 [1.21]
Middle East and North Africa	0.68 [0.96]	2.42 [1.95]	-0.62 [0.35]*	0.03 [0.91]
South Asia	-0.67 [2.39]	-2.33 [4.26]	-3.36 [1.34]*	-1.38 [1.55]
Sub-Saharan Africa	0.65 [1.31]	7.00 [4.51]	-1.11 [0.65]*	-0.60 [1.44]
Period dummies	Yes	Yes	Yes	Yes
Number of observations	261	261	261	261
Number of countries	91	91	91	91
Number of instruments	90	90	90	90
Arellano-Bond AR(2) test	0.23	0.30	0.30	0.23
Hansen test p-value	0.64	0.53	0.60	0.57

Standard errors in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%



### **Poverty Incidence**

Table 3 presents the estimation results for the alternative measures of poverty. Columns 1 and 2 are for the poverty headcount ratios at the US\$1.9/day and US\$3.2/day poverty line, respectively. Columns 3 and 4 are for the poverty gap measures at the US\$1.9/day and US\$3.2/day poverty line, respectively. The estimated models pass the diagnostic tests.<sup>4</sup> Moreover, the two-step SGMM coefficients of the lagged poverty measures range from 0.03 to 0.06 and are statistically significant at the 1% level of significance. These values fall within the FE-OLS range.<sup>5</sup>

In each regression, the federal government dummy is not statistically significant, implying that, on average, there is no significant difference in either poverty incidence or poverty intensity in Federal and Non-federal states. Moreover, the interaction term between the federal government dummy and the development economy dummy, is not significant in all but one regression: The poverty gap index (defined in terms of the \$1.90/day poverty line) tends to be higher in Federal, developing economies (Column 3). The total marginal effects for developing economies are as follows:

- Federalism is associated with a 1.90-point increase ( $= 3.32 - 1.07$ ) in the poverty headcount ratio (at the US\$1.9/day poverty line). However, this total marginal effect is not significant;
- Federalism is associated with a 5.98-point increase ( $= 2.54 + 3.44$ ) in the poverty headcount ratio (at the US\$3.2/day poverty line). However, this total marginal effect is again not significant;
- Federalism is associated with a 4.06-point increase ( $= 0.44 + 3.62$ ) in the poverty gap (at the US\$1.9/day poverty line). This total marginal effect is significant at the 5% level of significance; and
- Federalism is associated with a 1.96-point increase ( $= 2.04 - 0.08$ ) in the poverty gap (at the US\$3.2/day poverty line). However, this total marginal effect is not significant.

In sum, either federalism has either no effect or a poverty-raising effect. Federalism thus appears to be on the wrong side of inclusion in terms of both poverty reduction and greater income equality.

The nexus between real GDP growth and each of the poverty measure again exhibits a Kuznets-type relationship: Real GDP growth rate is associated positively and significantly (at the 1% level of significance), but at a decreasing rate. Evaluated at the mean level of real GDP growth ( $= 3.67$ ), the total marginal effect of real GDP growth on each poverty measure is 1.44 in column 1; 1.81 in column 2; 0.59 in column 3, and 1.00 in column 4. These positive total marginal effects of real GDP growth hold even at the maximum GDP growth rate level.

Being a developing economy is also positively (and significantly, at the 1% level of significance) associated with poverty. This result is robust for all alternative measures of poverty.

Better institutional quality, as measured by a higher ICRG index, is associated negatively (and significantly, at the 1% level of significance) with poverty. This is in line with Perera and Lee (2013) who found that better government stability and law and order result in reduced poverty, using system-GMM on nine developing Asian economies for the period 1985–2009.

Interestingly, both the trade openness and financial institutional access measures associate positively (and significantly, at the 1% level of significance) with each poverty measure.

### **Conclusion**

The pro-federalism position claims that federalism will cause poverty to fall and the distribution of income to be more equal. Our regression results bear neither of these claims. On the contrary, federalism strongly predicts greater income inequality in developing countries. Our results also show that federalism does not predict reduced poverty incidence and severity on average; it does not reduce poverty incidence and may increase poverty severity in developing economies.

Although it is true that cross-country ensemble results may not apply to a particular individual country in the sample because the results pertain to the average, one has to establish that the country in question is exceptional—in this case, in a good sense. Case in point: the successful miracle economies in East Asia come under the rubric of “East Asian exceptionalism.” But, as is widely recognized, the Philippines is “the exception” to the “East Asian exceptionalism.” It is East Asian only in geography but not in performance, especially in the last 30 years.

On the debate whether we should shift to federalism, if inclusion is the criterion, our research results find no support in favor of such despite the claims of proponents. Indeed, the results show that poverty incidence and income inequality could become worse. The contemplated shift appears to be a jump from the frying pan to the fire.

## Acknowledgment

We thank Karl Robert Jandoc (PhD, Hawaii and UPSE), Laurence Go (PhD candidate, University of Pennsylvania), and Dean Dulay (PhD candidate, Duke University) for a lively discussion of the issues in the paper. We also thank Irene Arzadon (PhD candidate, UP School of Economics) for her able research assistance. Errors are the authors' alone.

## Notes

<sup>1</sup> See Roodman (2009) for a more detailed and technical discussion.

<sup>2</sup> See Tables A1 and A2 in the Appendix for a list of countries included in the regressions and for the list of countries that are tagged as Federal and developing, respectively.

<sup>3</sup> As GMM-style instruments, we used the 2nd to 4th lags of Gini and the 2nd to 3rd lags of the rest of the deemed endogenous variables, i.e., GDP growth, trade openness, the financial institutional access index, the developing economy dummy and ICRG. As IV-style instruments, we used the period dummies and the federalism dummy. The instrument subsets pass the Hansen tests.

<sup>4</sup> As GMM-style instruments, we used the 2nd to 4th lags of the relevant poverty measure and the 2nd to 3rd lags of the rest of the deemed endogenous variables, i.e., GDP growth, trade openness, the financial institutional access index, the developing economy dummy and ICRG. As IV-style instruments, we used the period dummies and the federalism dummy. All the instrument subsets pass the Hansen tests.

<sup>5</sup> For the poverty headcount ratio at the \$1.90/day poverty line equations, the upper and lower bounds of the system GMM coefficient estimate are as follows, respectively: OLS estimate of 0.12, and fixed-effects (FE) estimate of -0.10. For the poverty headcount ratio at the \$3.20/day poverty line equation, the OLS estimate is 0.17, while the FE estimate is -0.10. For the poverty gap index at the \$1.90/day poverty line equation, the OLS coefficient estimate of the lagged dependent variable is 0.10, while the fixed-effects (FE) coefficient estimate is -0.10. For the poverty gap index at the \$3.20/day poverty line, the OLS estimate is 0.14, while the FE estimate is -0.09.

## References

- Adefeso, H. (2017). Fiscal federalism and multidimensional poverty reduction in Nigeria: A cross section analysis. *International Journal of Politics and Good Governance*, 8, 976–1195.
- Bardhan, P. (2002). Decentralization of governance and development. *Journal of Economic Perspectives*, 16(4), 185–205.
- Barro, R. J. (2000). Inequality and growth in a panel of countries. *Journal of Economic Growth*, 5, 5–32.
- Barro, R. J. (2008). *Inequality and growth revisited* (Working Paper No. 11). Retrieved from: <https://www.adb.org/sites/default/files/publication/28468/wp11-inequality-growth-revisited.pdf>
- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality and the poor. *Journal of Economic Growth*, 12(1), 27–49.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87, 115–143.
- Carreras, Y. I. (2015). *Federalism, governance and inequality: A comparative study in Europe and the case of Germany*. Paper presented at the EUSA 14TH Biennial Conference. Retrieved from <http://aei.pitt.edu/78902/1/Carreras.pdf>
- Dawson, P. J. (1997). On testing Kuznets' economic growth hypothesis. *Applied Economics Letters*, 4(7), 409–410.
- Donou-Adonsou, F., & Sylwester, K. (2016). Financial development and poverty reduction in developing countries: New evidence from banks and microfinance institutions. *Review of Development Finance*, 6(1), 82–90.
- Fan, S., Lin, C., & Treisman, D. (2008). Political decentralization and corruption: Evidence from around the world. *Journal of Public Economics*, 93(1-2), 14-34.
- Freile, S, Haque, M., & Kneller, R. (2008). Federalism, decentralisation and corruption (MPRA Paper No. 27535).. Retrieved from the Munich Personal RePEC Archives <https://ideas.repec.org/p/pramprapa/27535.html>
- Gatdula, J. (2018, August 23). Saying no to federalism. *Business World*. Retrieved from <https://www.bworldonline.com/saying-no-to-federalism/>
- Gunn, D. (2016, January 12). Is federalism really the answer to poverty and inequality in America? *Pacific Standard*. Retrieved from <http://psmag.com>
- Hankla, C. (2008). When is fiscal decentralization good for governance? *Publius: The Journal of Federalism*, 39, 632–650.
- Honohan, P. (2004). Financial development, growth and poverty: How close are the links (World Bank Policy Research Working Paper No. 3203). Retrieved

- from <https://openknowledge.worldbank.org/handle/10986/14439>
- Jalilian, H., & Kirkpatrick, C. (2002). Financial development and poverty reduction in developing economies. *International Journal of Financial Economics*, 7(2), 97–108.
- Jauch, S., & Watzka, S. (2016). Financial development and income inequality: A panel data approach. *Empirical Economics*, 51(1), 291–314.
- Jeanneney, S.G., & Kpodar, K. (2011). Financial development and poverty reduction: Can there be a benefit without a cost? *Journal of Development Studies*, 47(1), 143–163.
- Linz, J., & Stepan, A. (2000). Inequality-inducing and inequality reducing federalism with social emphasis to the ‘classic outlier’ the USA. Paper presented at the XVIII World Congress of the International Political Science Association, held on Aug 1-5, in Quebec, Canada.
- Litvack, J., Ahmad, B., & Bird, R. (1998). *Rethinking decentralization in developing countries* (Sector Studies Series). Washington, D.C.: The World Bank. Retrieved from <http://www1.worldbank.org/publicsector/decentralization/Rethinking%20Decentralization.pdf>
- Makati Business Club. (2017, February). *Is federalism the key to inclusive growth?* (Makati Business Club Research Report No. 122). Retrieved from <https://mbc.com.ph/wp-content/uploads/MBCRR-122.pdf>
- Mushieka, H. (2018). Federalism and poverty reduction in Nigeria and Sudan: Politics of local, state and federal relations. *International Journal of Business and Management Inventions*, 7(3), 1–14.
- Oates, W. (1972). *Fiscal federalism*. New York, New York: Harcourt Brace Jovanovich.
- Ochave, J. (2016, July 6). Is federalism pro-poor? *The Manila Times*. Retrieved from <https://www.manilatimes.net/is-federalism-pro-poor/272135/>
- Pabico, G. (2018, June 21). Puno: Federalism will solve PH poverty, overcentralization. *Inquirer*. Retrieved from <http://inquirer.net>
- Perera, L. D. H., & Lee, G. H. Y. (2013). Have economic growth and institutional quality contributed to poverty and inequality reduction in Asia? *Journal of Asian Economics*, 27, 71–86.
- Punongbayan, B. (2016, August 1). Federalism is not a solution. *The Manila Times*. Retrieved from [www.manilatimes.net/federalism-is-not-a-solution/277376/](http://www.manilatimes.net/federalism-is-not-a-solution/277376/)
- Decentralization Act of 1967, Republic Act 5185 (1967). Local Government Code, Republic Act 7162 (1991).
- Rodden, J., Ekelund, G., & Litvack, J. (2003). *Fiscal decentralization and the challenge of hard budget constraints*. London: The MIT Press.
- Silva, J. (2007). Trade and income inequality in a less developed country: The case of Mozambique. *Economic Geography*, 83(2), 111–136.
- Somin, I. (2017, May 10). How federalism can help the poor and minorities. *Spotlight*. Retrieved from <https://spotlightonpoverty.org/spotlight-exclusives/federalism-can-help-poor-minorities/>
- Stepan, A., & Linz, J. (2011). Comparative perspectives on Inequality and the quality of democracy in the United States. *Perspectives in Politics*, 9(4), 841–856.
- Tiebout, C. (1956). A pure theory of local public goods. *Journal of Political Economy*, 64(5), 416–224.
- Treisman, D. (1999). Political decentralization and economic reform: A game theoretic analysis. *American Journal of Political Science*, 43(2), 488–517.
- Treisman, D. (2000). *Why are federal countries perceived to be more corrupt?* Atlanta, GA: American Political Science Association.
- Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics*, 126, 25–51.
- Winters, L. A., McCulloch, N., & McKay, A. (2004). Trade liberalization and poverty: The evidence so far. *Journal of Economic Literature*, 42(1), 72–115.
- World Bank. (2017). *World Development Indicators*. Retrieved from <https://databank.worldbank.org/source/world-development-indicators>

## Appendix

Table A1. *Countries Included in the Regressions*

Inequality regression				Poverty regressions			
Country	Freq.	Country	Freq.	Country	Freq.	Country	Freq.
Albania	2	Korea, Rep.	2	Austria*	1	Namibia	1
Algeria	1	Latvia	2	Bolivia	1	Netherlands*	3
Argentina	5	Liberia	1	Burkina Faso	1	Nicaragua	1
Armenia	3	Lithuania	2	Canada*	1	Niger	2
Australia*	4	Luxembourg*	2	China	1	Norway*	1
Austria*	2	Madagascar	4	Colombia	2	Pakistan	2
Azerbaijan	3	Malawi	2	Congo, Dem. Rep.	1	Papua New Guinea	1
Bangladesh	4	Malaysia	4	Congo, Rep.	1	Paraguay	3
Belarus	3	Mali	3	Cote d'Ivoire	1	Poland	5
Belgium*	2	Mexico	4	Cyprus*	2	Qatar*	3
Bolivia	3	Moldova	3	Czech Republic*	1	Russian Federation	2
Botswana	1	Mongolia	4	Denmark*	1	Saudi Arabia*	1
Brazil	5	Morocco	1	Ecuador	2	Senegal	2
Bulgaria	2	Mozambique	1	Egypt, Arab Rep.	2	Serbia	3
Burkina Faso	4	Namibia	1	Gabon*	1	Sierra Leone	3
Cameroon	2	Netherlands*	2	Gambia, The	2	Singapore*	3
Canada*	5	Nicaragua	4	Germany*	3	Slovak Republic*	3
Chile	5	Niger	2	Ghana	2	Slovenia*	2
China	1	Nigeria	1	Greece*	1	South Africa	5
Colombia	4	Norway*	2	Guatemala	5	Spain*	4
Congo, Rep.	1	Pakistan	5	Guinea	3	Sri Lanka	2
Costa Rica	5	Panama	5	Guinea-Bissau	1	Sudan	1
Cote d'Ivoire	5	Paraguay	5	Guyana	5	Suriname	4
Croatia	1	Peru	3	Haiti	1	Sweden*	4
Cyprus*	2	Poland	4	Honduras	5	Switzerland*	5
Czech Republic*	3	Portugal*	2	Hong Kong SAR, China*	5	Tanzania	5
Denmark*	2	Romania	3	Hungary	4	Thailand	2
Dominican Republic	5	Russian Federation	4	Iceland*	5	Togo	3
Ecuador	5	Senegal	4	India	4	Trinidad and Tobago	5
Egypt, Arab Rep.	5	Serbia	2	Indonesia	1	Tunisia	5
El Salvador	5	Sierra Leone	1	Iran, Islamic Rep.	2	Turkey	3
Estonia	2	Slovak Republic*	3	Ireland*	5	Uganda	5
Ethiopia	1	Slovenia*	2	Israel*	3	Ukraine	3
Finland*	2	South Africa	3	Italy*	3	United Arab Emirates*	3
France*	2	Spain*	2	Jamaica	5	United Kingdom*	3
Gambia, The	1	Sri Lanka	3	Japan*	5	United States*	5
Germany*	2	Sweden*	2	Jordan	3	Uruguay	2
Ghana	1	Switzerland*	1	Kazakhstan	4	Venezuela, RB*	1
Greece*	2	Thailand	5	Kenya	5	Vietnam	1
Guatemala	3	Togo	2	Korea, Rep.	5		
Guinea	3	Trinidad and Tobago	1	Kuwait*	5		
Guinea-Bissau	1	Tunisia	4	Latvia	2		
Honduras	5	Turkey	3	Lebanon	3		
Hungary	3	Uganda	5	Liberia	4		
Iceland*	2	Ukraine	2	Lithuania	1		
Iran, Islamic Rep.	5	United Kingdom*	2	Luxembourg*	5		
Ireland*	2	United States*	5	Madagascar	5		
Israel*	4	Uruguay	2	Malawi	5		
Italy*	2	Venezuela, RB*	3	Malaysia	4		
Jamaica	3	Vietnam	4	Mali	4		
Jordan	3	Yemen, Rep.	1	Malta*	4		
Kazakhstan	4	Zambia	5	Myanmar	1		
Kenya	2						
Total number of observations: 300				Total number of observations: 261			

\*With real GNI per capita of more than \$10,000 in 1992

**Table A2.** *Countries With a Federal Form of Government*

Inequality regression		Poverty regressions	
Country	Frequency	Country	Frequency
Austria*	2	Austria*	1
Belgium*	2	Canada*	1
Brazil	5	Germany*	3
Canada*	5	India	4
Ethiopia	1	Malaysia	4
Germany*	2	Pakistan	2
Malaysia	4	Switzerland*	5
Mexico	4	United Arab Emirates*	3
Nigeria	1	United States*	5
Pakistan	5	Venezuela, RB*	1
Switzerland*	1	<b>Total</b>	<b>29</b>
United States*	5		
Venezuela*	3		
<b>Total</b>	<b>40</b>		

\*With real GNI per capita of more than \$10,000 in 1992