Devolution of health services, fiscal decentralization and antenatal care in the Philippines

MICHAEL R.M. ABRIGO, & DANICA A.P. ORTIZ
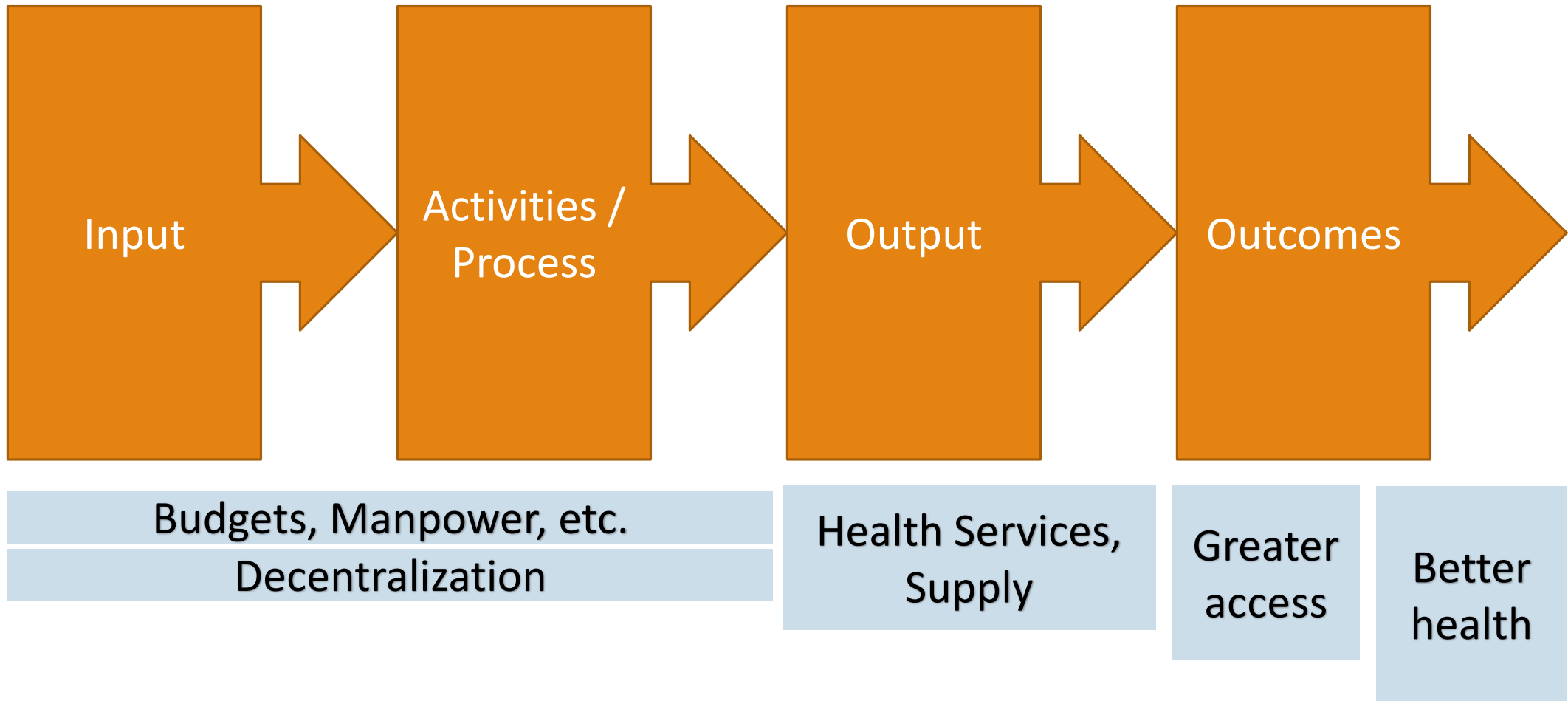PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

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"[T]he existing scholarship on the impact of decentralization on health in the country is characteristically thin and with varying degree of methodological rigor."

Abrigo, et. al. (2017)

Results Chain

Input → Activities / Process → Output → Outcomes →

Budgets, Manpower, etc.
Decentralization

Health Services, Supply
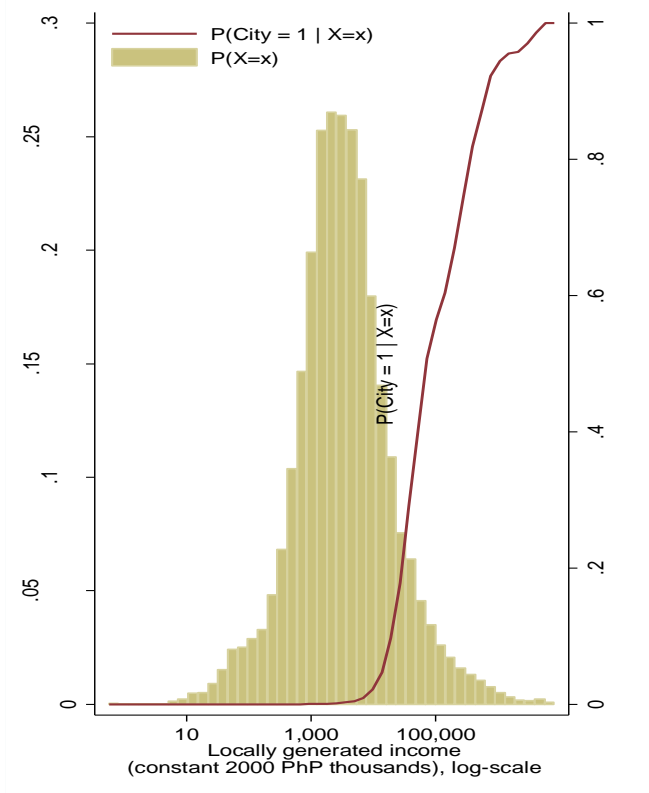
Greater access

Better health

Does decentralization of health services lead to greater access to health care services?

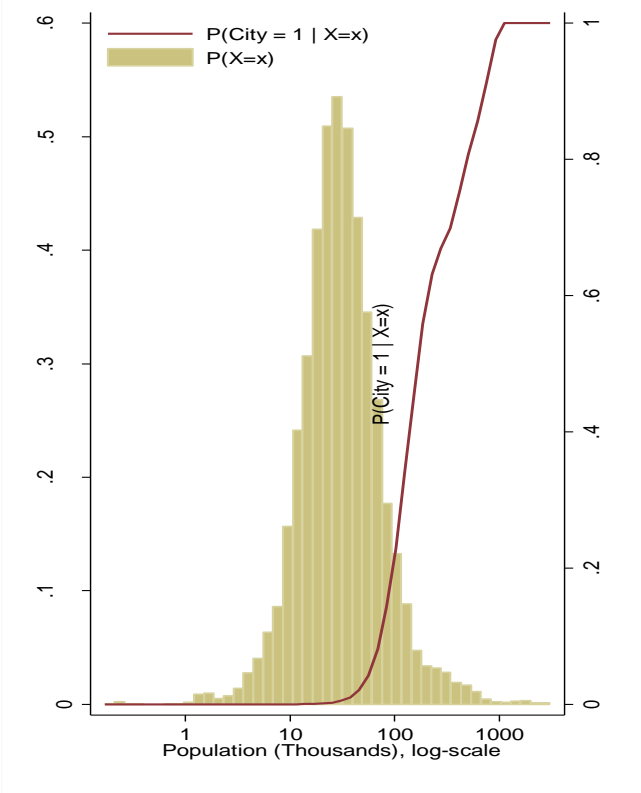~~Does decentralization of health services lead to greater access to health care services~~?

Does greater local government income in a decentralized setting result in greater access to health care services?
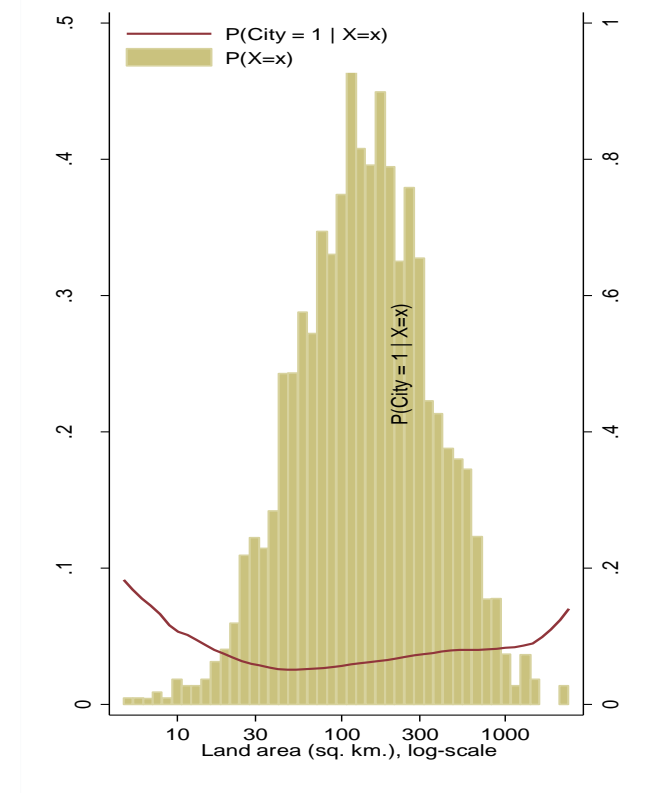
City ratification as natural experiment

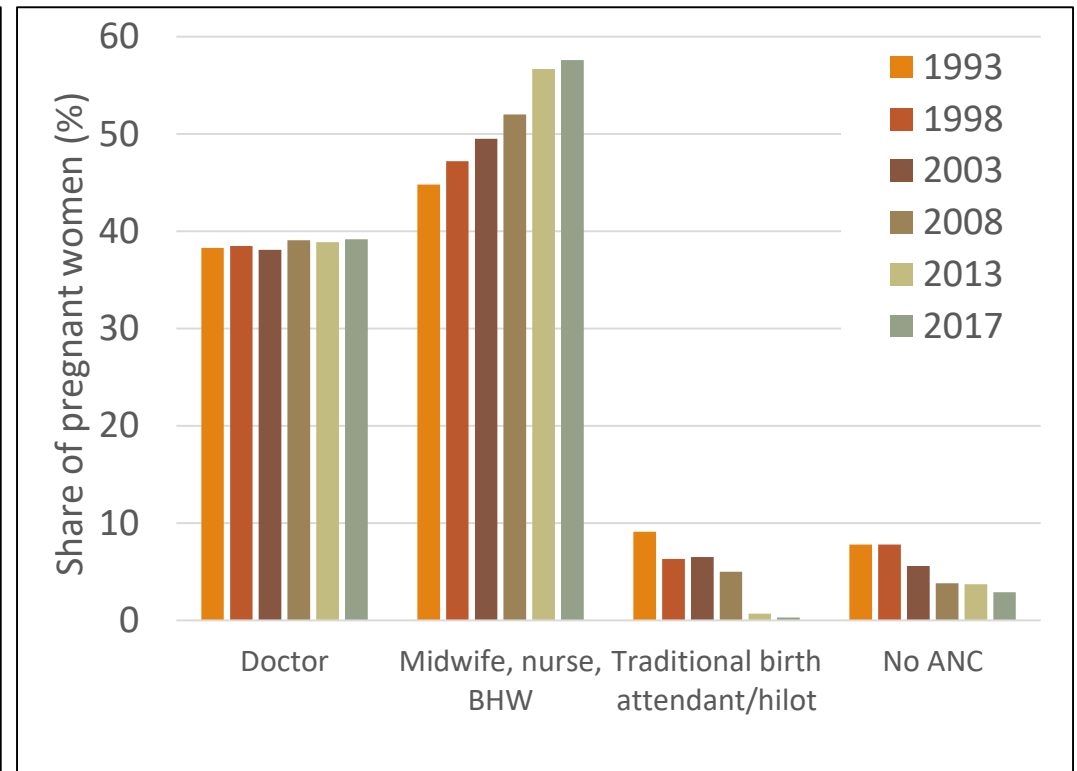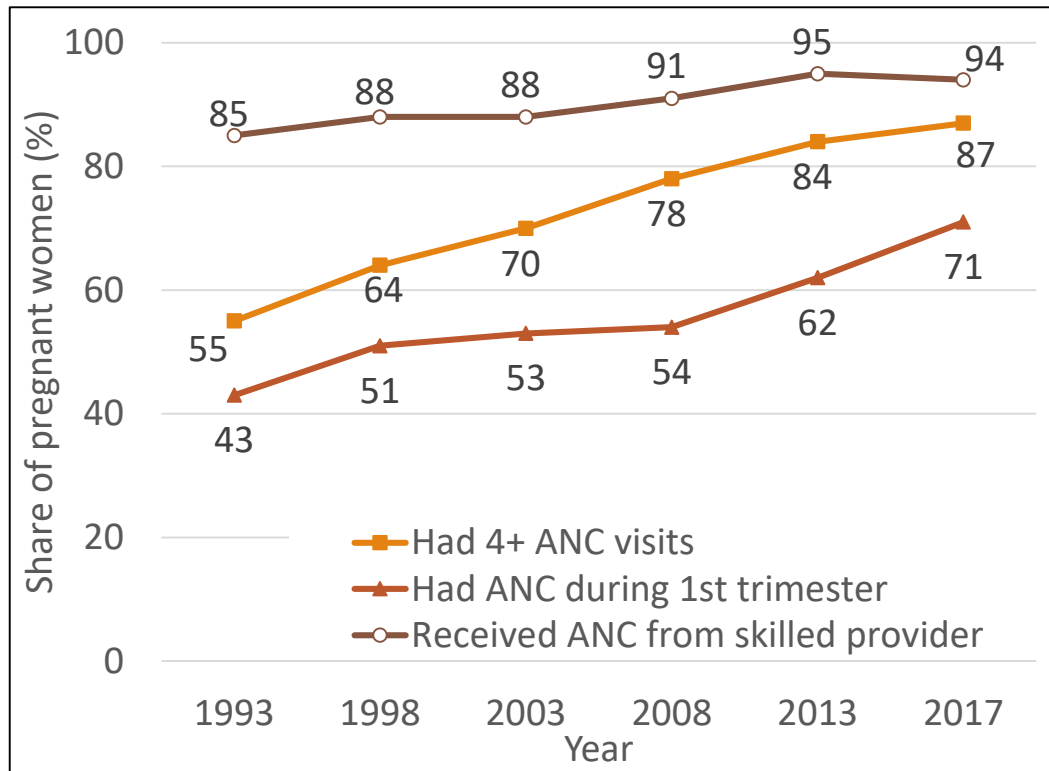Locally sourced income — Population — Land area

Authors' calculations based on BLGF and PSA data.

Why antenatal care?

Trends in Antenatal care

Increasing access to skilled antenatal care provider…

Source: NDHS, various years. NSO, PSA, ICF Macro

Trends in Antenatal care

... at varying levels by wealth, education, residence, and birth order…

Source: NDHS, various years. NSO, PSA, ICF Macro

Background Characteristic	Doctors			Nurses, Midwives and BHWs			Traditional skilled birth attendant/hilot			No ANC		
	1993	2003	2017	1993	2003	2017	1993	2003	2017	1993	2003	2017
Wealth Quintile												
Lowest	-	8.6	9.6	-	63.8	81.7	-	16.2	0.7	-	11.2	7.9
Second	-	22.8	23.9	-	65.3	73.8	-	6.0	0.1	-	5.4	2.2
Middle	-	38.9	39.6	-	51.8	58.9	-	4.2	0.3	-	4.7	1.3
Fourth	-	58.5	61.1	-	37.7	38.5	-	1.5	-	-	2.1	0.3
Highest	-	79.9	84.5	-	16.7	13.9	-	1.0	-	-	2.1	0.9
Education						-						
No education	10.7	6.7	8.3	22.8	26.5	65.0	41.3	38.6	2.4	25.1	27.5	24.3
Grades 1-6	19.5	13.0	12.3	54.6	62.6	77.8	14.5	12.9	0.8	11.4	11.3	9.2
Secondary	42.7	34.2	32.1	46.5	58.0	65.9	5.1	4.1	0.1	5.7	3.4	1.8
College	72.0	71.1	68.0	25.4	25.0	31.2	1.8	1.9	0.1	1.8	1.8	0.7
Residence						-						
Urban	53.9	53.0	48.1	34.4	38.2	49.1	5.7	3.7	0.2	6.1	4.7	2.5
Rural	23.5	22.5	31.8	54.7	61.3	64.6	12.4	9.4	0.3	9.5	6.5	3.2
Birth Order						-						
1	53.4	52.0	48.5	35.7	40.9	49.9	5.8	4.0	0.2	5.1	2.9	1.3
2-3	42.0	42.8	41.4	44.2	48.6	55.8	7.9	4.3	0.3	6.0	4.2	2.5
4-5	31.7	27.9	28.8	50.1	57.8	66.8	9.9	7.6	0.2	8.3	6.3	4.1
6+	21.2	17.3	14.7	50.8	55.3	66.8	14.3	14.4	0.4	13.7	12.3	8.0

Trends in Antenatal Care

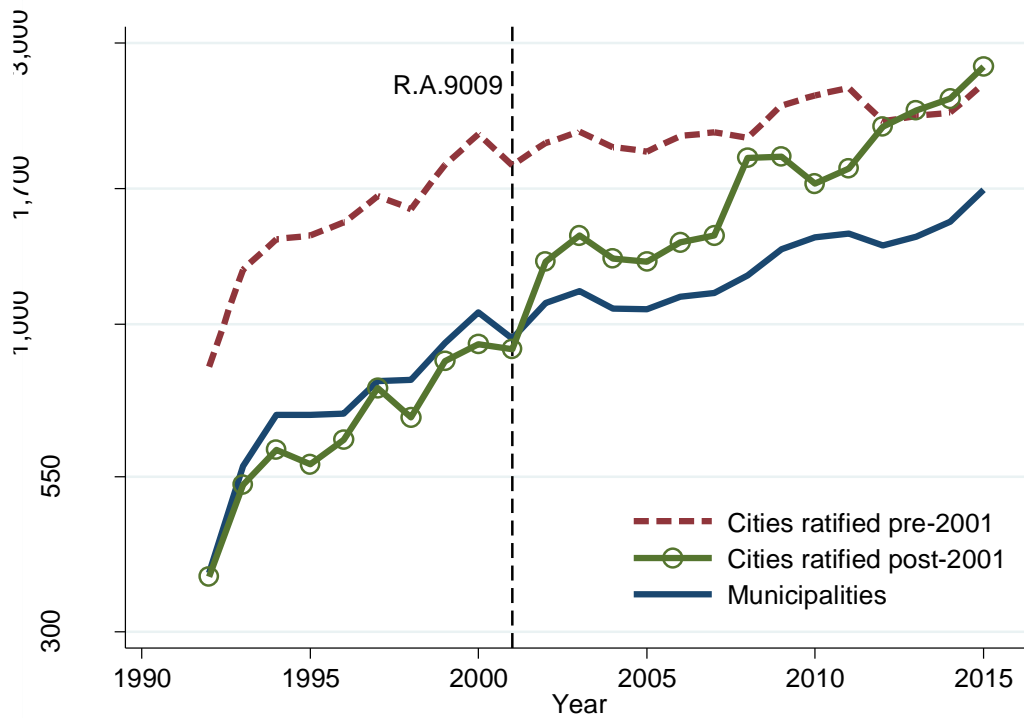## … and at varying service quality
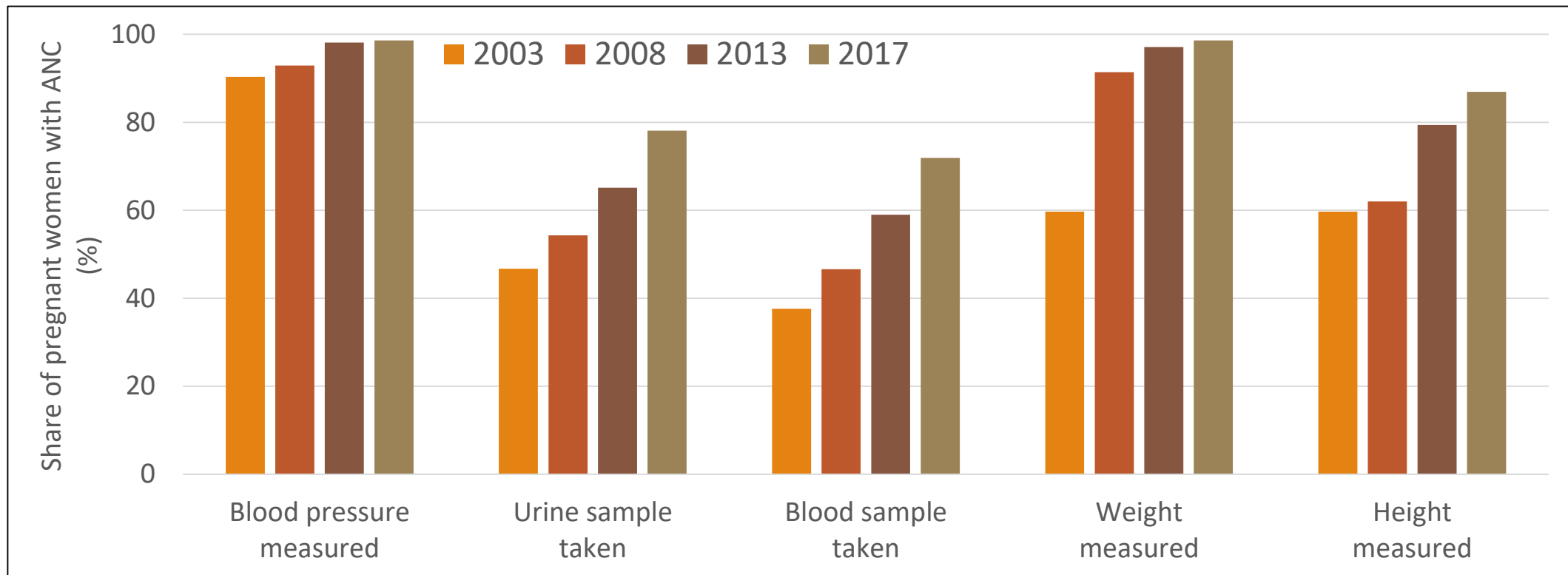
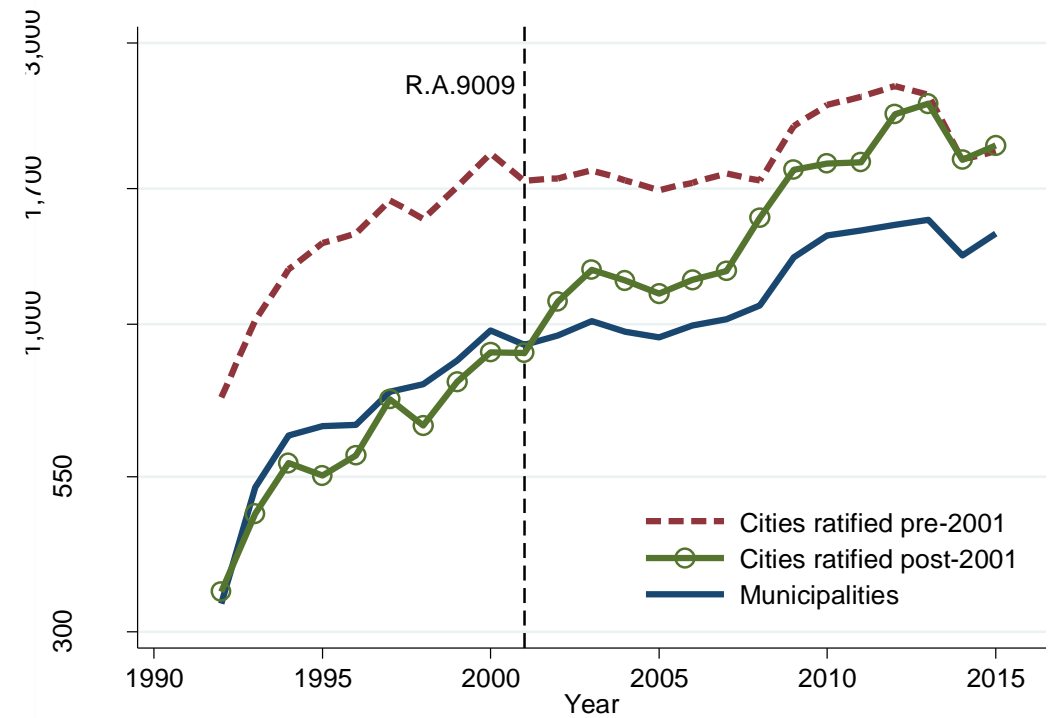Source: NDHS, various years. NSO, PSA, ICF Macro

Does city ratification lead to greater local government incomes and expenditures?

Catch-up to older cities

Per capita income from *local* sources

Per capita expenditure

Authors' calculations based on BLGF and PSA data.

Does greater local government income translate to greater access to antenatal care services?

Antenatal care visit by skilled professional and local government income by source

(/) National Transfers

(+) Locally sourced

(*) Inter-local spillovers

	Base model (OLS)	Correction for endogeneity (IV-2SLS)	Correction for spatial interaction (SDM IV-2SLS)
A. Had antenatal care by skilled professional			
Own-LGU			
National transfers, ln	-0.011	-0.030 ***	-0.008
	(0.011)	(0.008)	(0.010)
Local Income (t-1), ln	0.051 ***	0.053 ***	0.033 ***
	(0.005)	(0.004)	(0.004)
Population (t-1), ln	-0.071 ***	-0.056 ***	-0.045 ***
	(0.014)	(0.008)	(0.009)
Neighbor-LGU average			
National transfers, ln			-0.097 ***
			(0.022)
Local Income (t-1), ln			0.067 ***
			(0.006)
Population (t-1), ln			-0.047 ***
			(0.016)
Observations	13,598	13,598	13,341
Weak identification F		10,392	1,412
Underidentification F		3,011	2,095
Adjusted R-sq.	0.166	0.163	0.172

Antenatal care visit in first trimester and local government income by source

(/) National Transfers

(+) Locally sourced

(*) Inter-local spillovers

	Base model (OLS)	Correction for endogeneity (IV-2SLS)	Correction for spatial interaction (SDM IV-2SLS)
B. Had antenatal visit in first trimester of pregnancy			
Own-LGU			
National transfers, ln	-0.011	-0.053 ***	-0.022
	(0.012)	(0.015)	(0.018)
Local Income (t-1), ln	0.034 ***	0.037 ***	0.023 ***
	(0.005)	(0.005)	(0.006)
Population (t-1), ln	-0.029 **	0.003	-0.014
	(0.013)	(0.014)	(0.017)
Neighbor-LGU average			
National transfers, ln			-0.096 **
			(0.043)
Local Income (t-1), ln			0.038 ***
			(0.009)
Population (t-1), ln			0.032
			(0.032)
Observations	12,959	12,959	12,713
Weak identification F		9,904	1,315
Underidentification F		2,882	1,974
Adjusted R-sq.	0.100	0.096	0.096

Antenatal care visit frequency and local government income by source

(/) National Transfers

(+) Locally sourced

(*) Inter-local spillovers

	Base model (OLS)	Correction for endogeneity (IV-2SLS)	Correction for spatial interaction (SDM IV-2SLS)
C. Had at least eight (8) antenatal care visits			
Own-LGU			
National transfers, ln	-0.042 ***	-0.041 ***	-0.023
	(0.012)	(0.014)	(0.016)
Local Income (t-1), ln	0.024 ***	0.024 ***	0.010 **
	(0.004)	(0.004)	(0.004)
Population (t-1), ln	0.022 **	0.021 *	0.012
	(0.010)	(0.013)	(0.015)
Neighbor-LGU average			
National transfers, ln			-0.013
			(0.040)
Local Income (t-1), ln			0.025 ***
			(0.007)
Population (t-1), ln			0.004
			(0.029)
Observations	13,564	13,564	13,312
Weak identification F		10,362	1,408
Underidentification F		3,004	2,094
Adjusted R-sq.	0.149	0.145	0.15

Delivery by skilled birth attendant and local government income by source

(/) National Transfers

(+) Locally sourced

(*) Inter-local spillovers

	Base model (OLS)	Correction for endogeneity (IV-2SLS)	Correction for spatial interaction (SDM IV-2SLS)
D. Delivery by skilled birth attendant			
Own-LGU			
National transfers, ln	-0.064 ***	-0.032 ***	-0.007
	(0.016)	(0.011)	(0.012)
Local Income (t-1), ln	0.06 ***	0.058 ***	0.037 ***
	(0.006)	(0.003)	(0.004)
Population (t-1), ln	-0.012	-0.037 ***	-0.038 ***
	(0.018)	(0.010)	(0.012)
Neighbor-LGU average			
National transfers, ln			-0.044
			(0.028)
Local Income (t-1), ln			0.052 ***
			(0.006)
Population (t-1), ln			-0.032
			(0.021)
Observations	19,233	19,233	18,867
Weak identification F		14,465	1,942
Underidentification F		4,271	2,976
Adjusted R-sq.	0.312	0.309	0.316

What does the average local government do with windfall transfers from national government post-city ratification?

Follow the money…

Mainly to general public services, education, and economic services

	Per Capita Income	Per Capita Expenditure	Per Capita Expenditure by Type					
			General Public Services	Education	Health, Nutrition and Population	Labor and Employment	Social Services and Welfare	Economic Services
City (= 1)	0.407 ***	0.369 **	0.346 ***	0.265 *	0.085	0.074	0.146	0.406 ***
	(0.119)	(0.146)	(0.095)	(0.134)	(0.158)	(0.187)	(0.344)	(0.150)
Local Income (t-1), ln	-0.003	0.027 ***	-0.001	0.087 ***	0.005	-0.002	0.02	0.015
	(0.008)	(0.010)	(0.006)	(0.032)	(0.022)	(0.011)	(0.049)	(0.020)
Population (t-1), ln	-1.099 ***	-1.148 ***	-1.182 ***	-0.660 *	-1.034 **	-0.036	-1.419 **	-1.041 **
	(0.269)	(0.259)	(0.217)	(0.354)	(0.439)	(0.135)	(0.610)	(0.437)
Observations	11,124	11,124	11,124	11,123	11,124	11,125	11,124	11,124
Adjusted R-sq.	0.215	0.114	0.074	0.016	0.025	0.019	0.071	0.019

Beggar thy neighbor?

City ratification of neighboring municipalities may negatively affect local own-income, and, thereby, own-expenditure

Why?

	Per capita income	Per capita expenditure
Own-LGU		
City (= 1)	0.611 ***	0.555 ***
	(0.046)	(0.046)
Local Income (t-1), ln	0.068 ***	0.072 ***
	(0.009)	(0.010)
Population (t-1), ln	-0.713 ***	-0.749 ***
	(0.079)	(0.073)
Neighbor-LGU average		
City (= 1)	-0.449 ***	-0.511 ***
	(0.092)	(0.109)
Local Income (t-1), ln	-0.009	-0.007
	(0.016)	(0.018)
Population (t-1), ln	0.054	0.048
	(0.048)	(0.047)
Observations	32,370	32,370
Adjusted R-sq.	0.667	0.567

Bottom-line

City ratification may have limited impact on own-supply of health facilities and manpower, but may be detrimental to neighboring government units

	Share of barangays with BHS		HRH per thousand population, log		Night lights		Poverty incidence (%)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Own-LGU								
City (= 1)	-0.005	0.000	0.016	0.006	0.003	-0.018	1.717	1.630
	(0.026)	(0.025)	(0.043)	(0.043)	(0.027)	(0.022)	(1.091)	(1.097)
Local Income (t-1), ln		-0.005		0.015		0.018 ***		0.037
		(0.008)		(0.043)		(0.005)		(0.308)
Population (t-1), ln		-0.043		0.172		-0.03		2.765
		(0.055)		(0.193)		(0.043)		(3.019)
Neighbor-LGU average								
City (= 1)	-0.292 **	-0.303 **	0.322	0.379	-0.254 *	-0.235	-11.804	-12.820
	(0.129)	(0.130)	(0.364)	(0.345)	(0.148)	(0.147)	(13.971)	(14.088)
Local Income (t-1), ln		0.090 ***		-0.144		0.017		1.600
		(0.030)		(0.104)		(0.023)		(2.293)
Population (t-1), ln		-0.101		0.044		-0.215 **		1.072
		(0.080)		(0.274)		(0.105)		(8.478)
Observations	3,120	3,096	3,121	3,097	34,561	28,946	7,907	7,760
Adjusted R-sq.	0.100	0.110	0.035	0.037	0.28	0.184	0.384	0.395

Key take-aways

❖Women from more vibrant local economies – i.e., with greater government income from local sources – have greater access to antenatal care services
  ❖Robust estimate even after factoring in household characteristics
  ❖Positive spillovers among neighboring local government units

❖Greater national-to-local transfers (in response to city ratification) does not necessarily translate to better health outcomes
  ❖No statistically discernable impact on access to antenatal care services
  ❖Windfall transfers do not go to health spending on average – not necessarily bad
  ❖"Beggar-thy-neighbor" effect – important and needs further analyses

❖Has decentralization (of health services) failed?

Moving forward

❖Local development is the way to go

❖Strengthen inter-local partnerships
  ❖To "internalize" spatial spillovers
  ❖May be easier said than done: inter-local health zones, etc.

❖What is it for UHC/Federalism?
  ❖Need to recognize incentives: Why do past efforts ~~fail~~ not sustained?
  ❖Need to consolidate efforts: Decentralized at what level?

References

Abrigo, M.R.M., and D.A.P. Ortiz (2018). Devolution of health services, fiscal decentralization, and antenatal care in the Philippines. PIDS Discussion Paper 2018-42.

Abrigo, M.R.M., Z.C. Tam, and D.A.P. Ortiz (2017). Decentralization and health in the Philippines: A systematic review of empirical evidences. PIDS Discussion Paper 2017-58.

Thank you

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http://www.pids.gov.ph

EMAIL: mabrigo@mail.pids.gov.ph

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