

Resource Windfall and Corruption: Evidence from Peru

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1. Research Question

- Main research question:

How corruption (approached by the demand of bribes by public officials) is affected by changes in local government revenues?

First caveat: one particular type of corruption

- Empirical problems:
 - **Omitted bias**: E.g. cultural and institutional differences across countries and regions (Fisman and Miguel 2007)
 - **Measurement error**: corruption measures based on surveys of leaders opinion (Mauro 1995 and 93.7% of the current literature)
 - **Reverse causality**: feedback effects between corruption and local revenues

Theoretical framework (ongoing work!)

- Extension of Becker and Stigler (1974):
 - Corruption=f(wage, probability of being audited)
 - Prediction: Higher salaries help to deter corruption
 - Basic equation:

$$E(y) = [1 - P(c)][b + w_g] + P(c)[w_p - f]$$

- Key characteristic of public service in LDC:
Highly dependent on political power (51% of local public officials with temporary contracts in Peru)
- Addition to the model: $\lambda(.)$ prob. of loosing your job

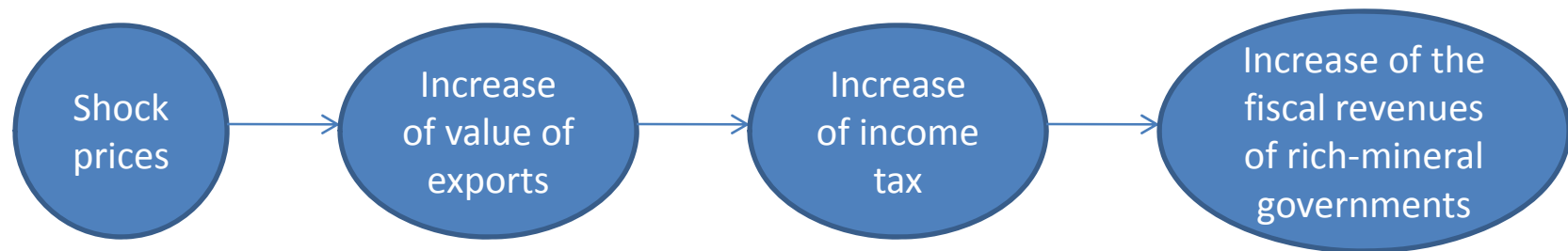
- Including rents R in the model:
 - Wage: $w_g = w_g^+(R)$
 - Prob.of loosing job: $\lambda = \lambda^-(IA(R), PC^+(R))$
- Effect of R in λ is ambiguous depending on which mechanism dominates

2. Research design

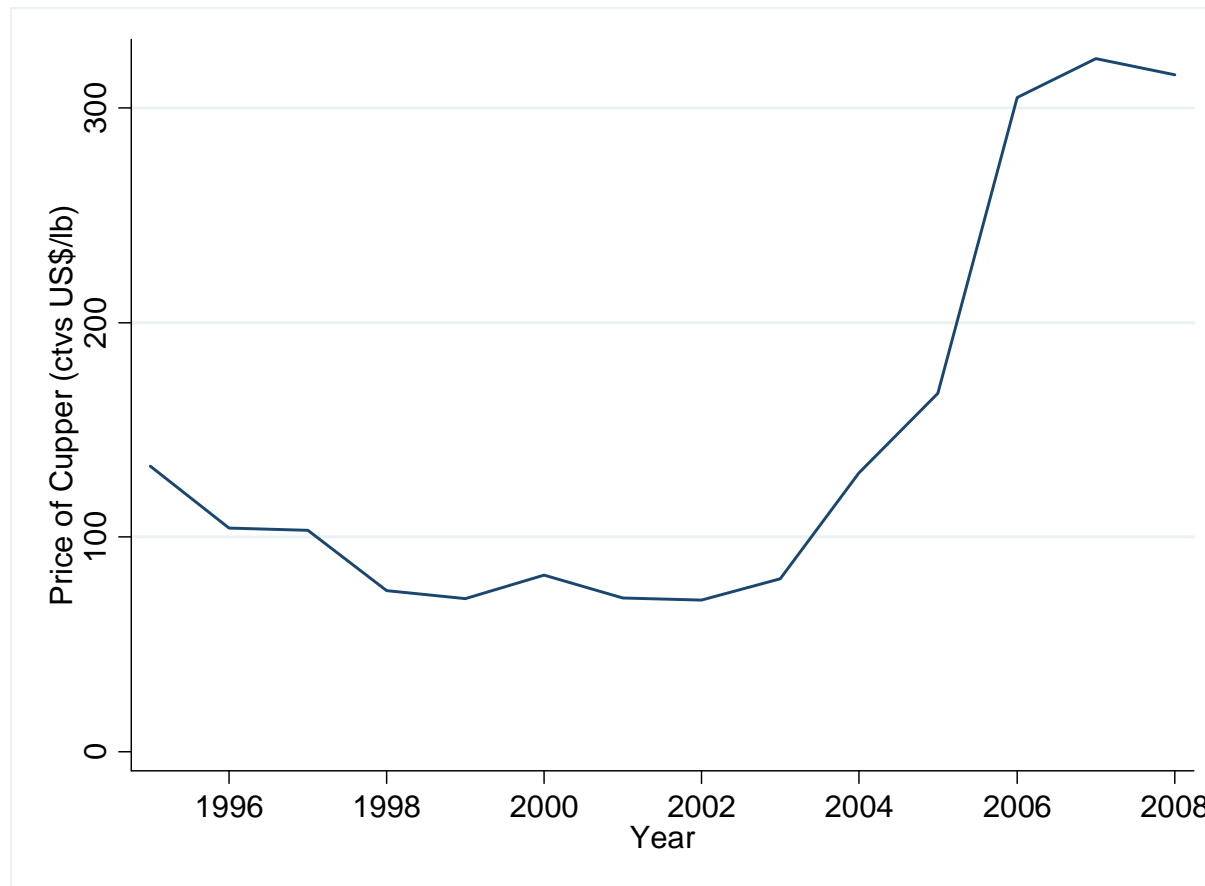
- Exploit an interaction between a fiscal rule ([Canon Law](#)) and a positive shock in international prices of mineral resources:
 - ***Cross-sectional variation:***
Various minerals across districts (districts with and without minerals/districts with different minerals).
 - ***Time variation:***
Movement of international prices of different minerals over time.
- Identification:
Compare the bribery behavior of public servants from mineral-rich and non mineral-rich local governments, before and after the rise of transfers

Mining Canon (Law 27506, 2001)

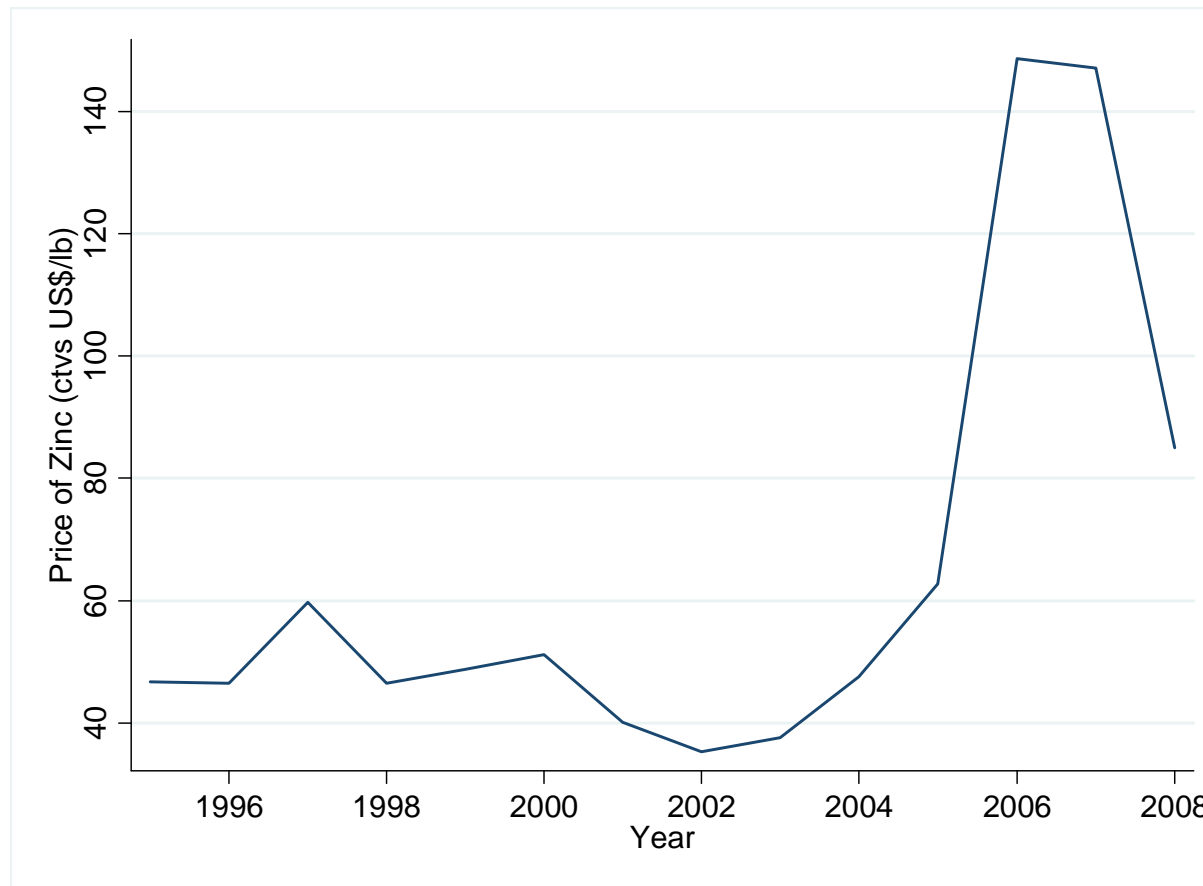
- States that the 50% of income tax paid by mining companies have to be transferred to the regional and local governments located in the area where the minerals are extracted
- This amount is distributed between:
 - The regional government (20%)
 - The municipality of the district (10%)
 - The municipalities located in the province (25%)
 - The municipalities located in the region (40%)
 - In addition, a 5% is allocated to the public universities of the region



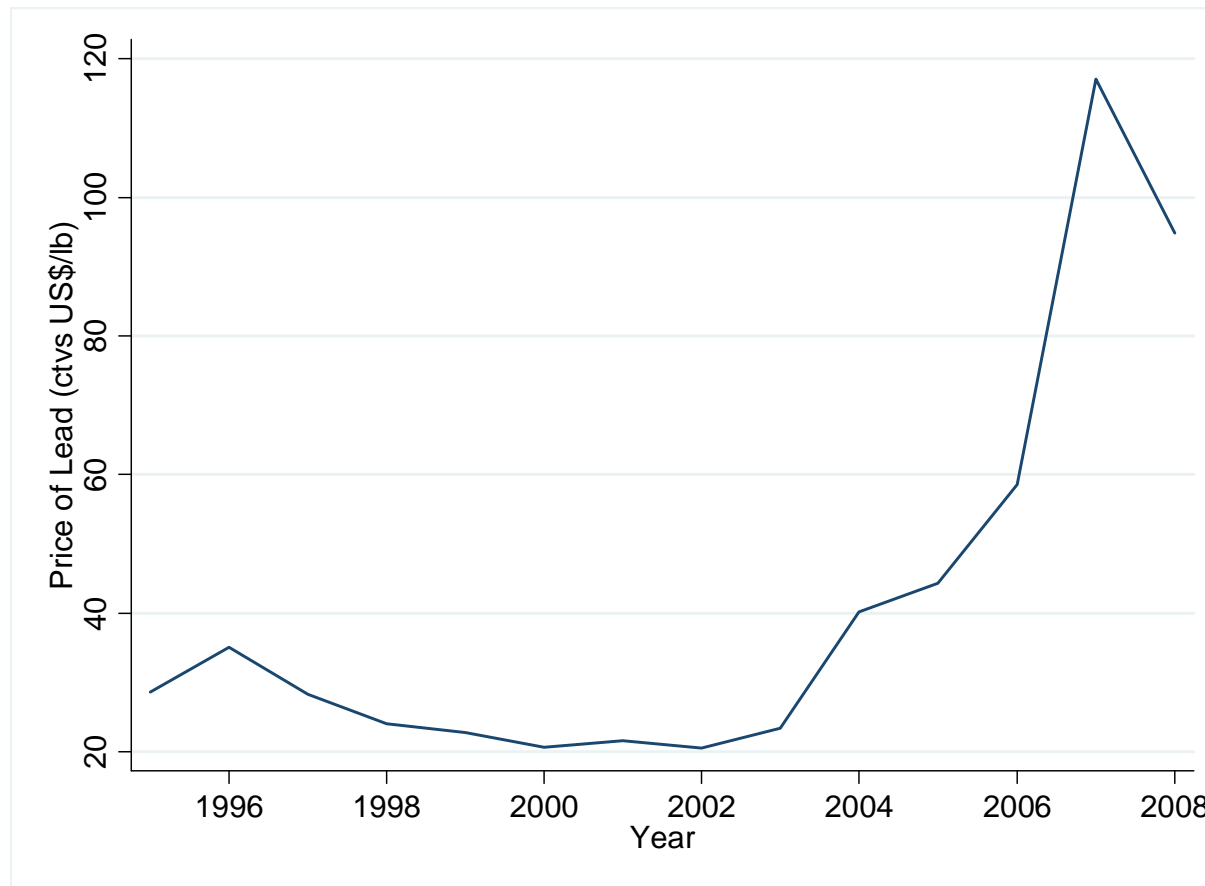
Evolution of international prices of mineral resources: Copper



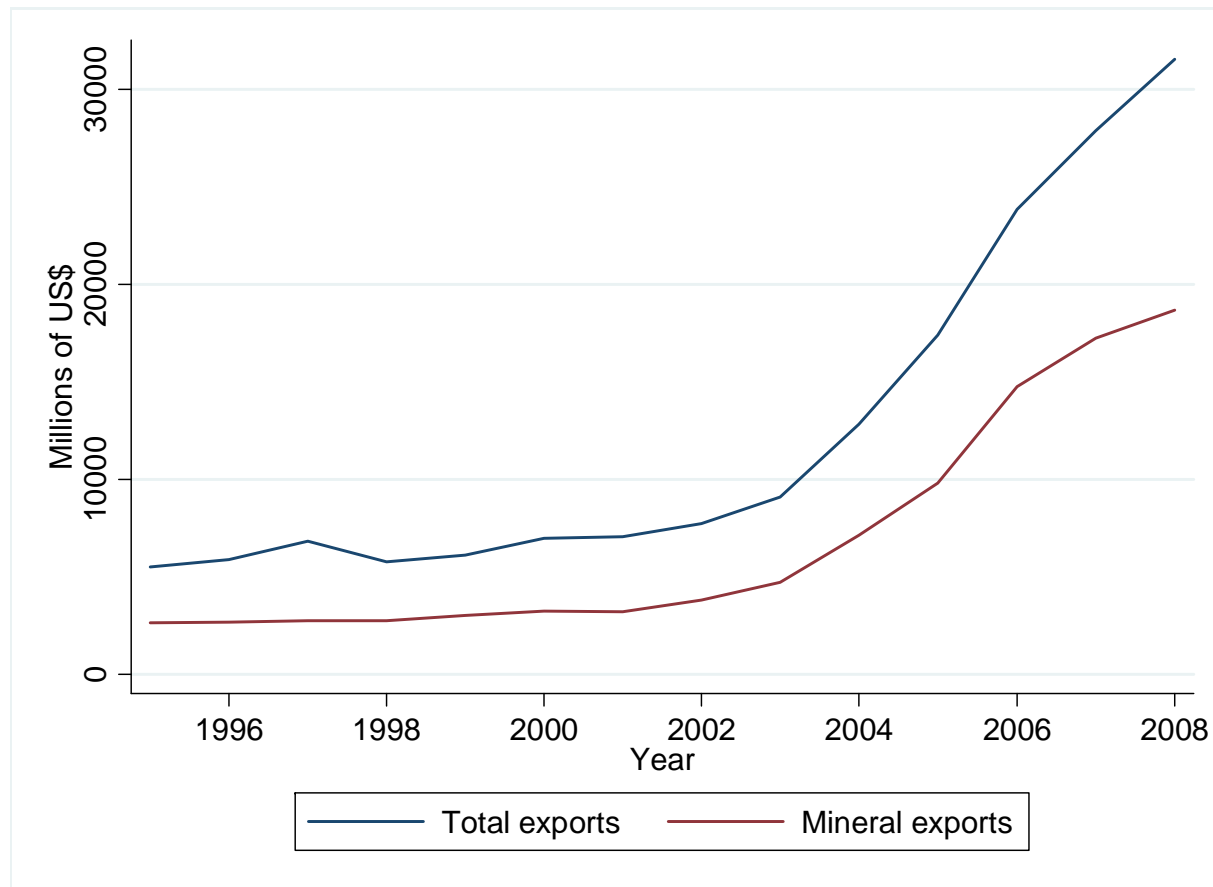
Evolution of international prices of mineral resources: Zinc



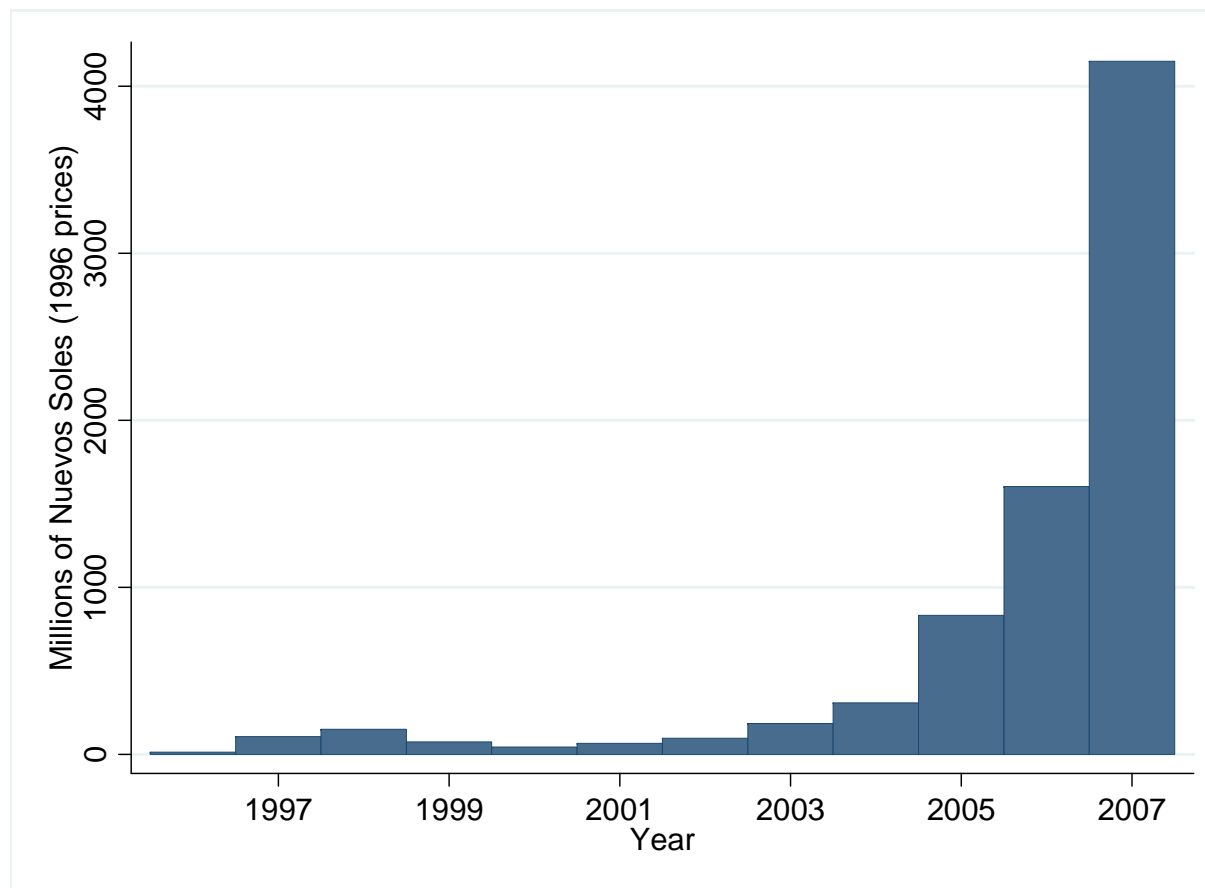
Evolution of international prices of mineral resources: Lead



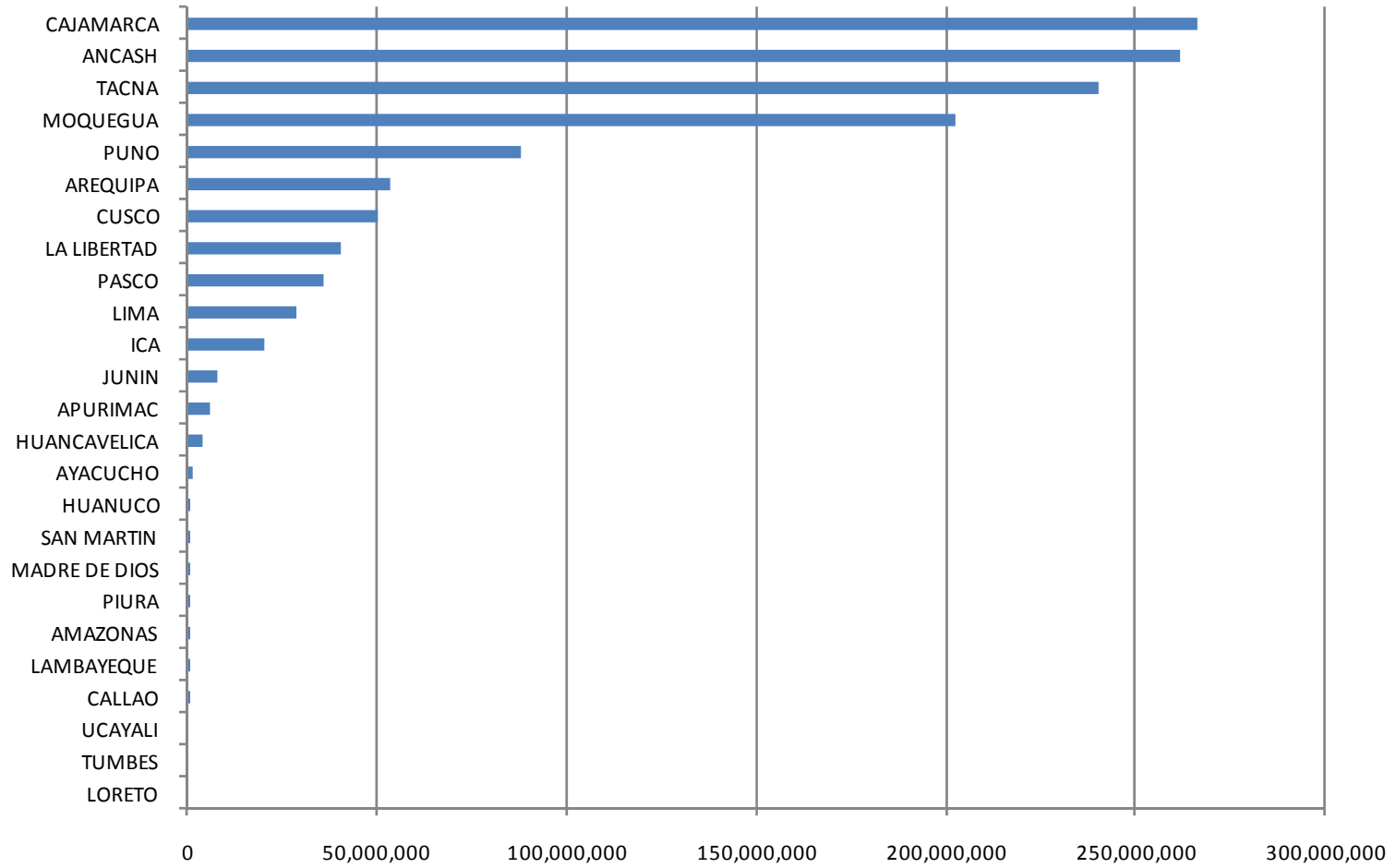
Evolution of total exports and mineral exports



Evolution of transfers to mineral-rich regional and local governments



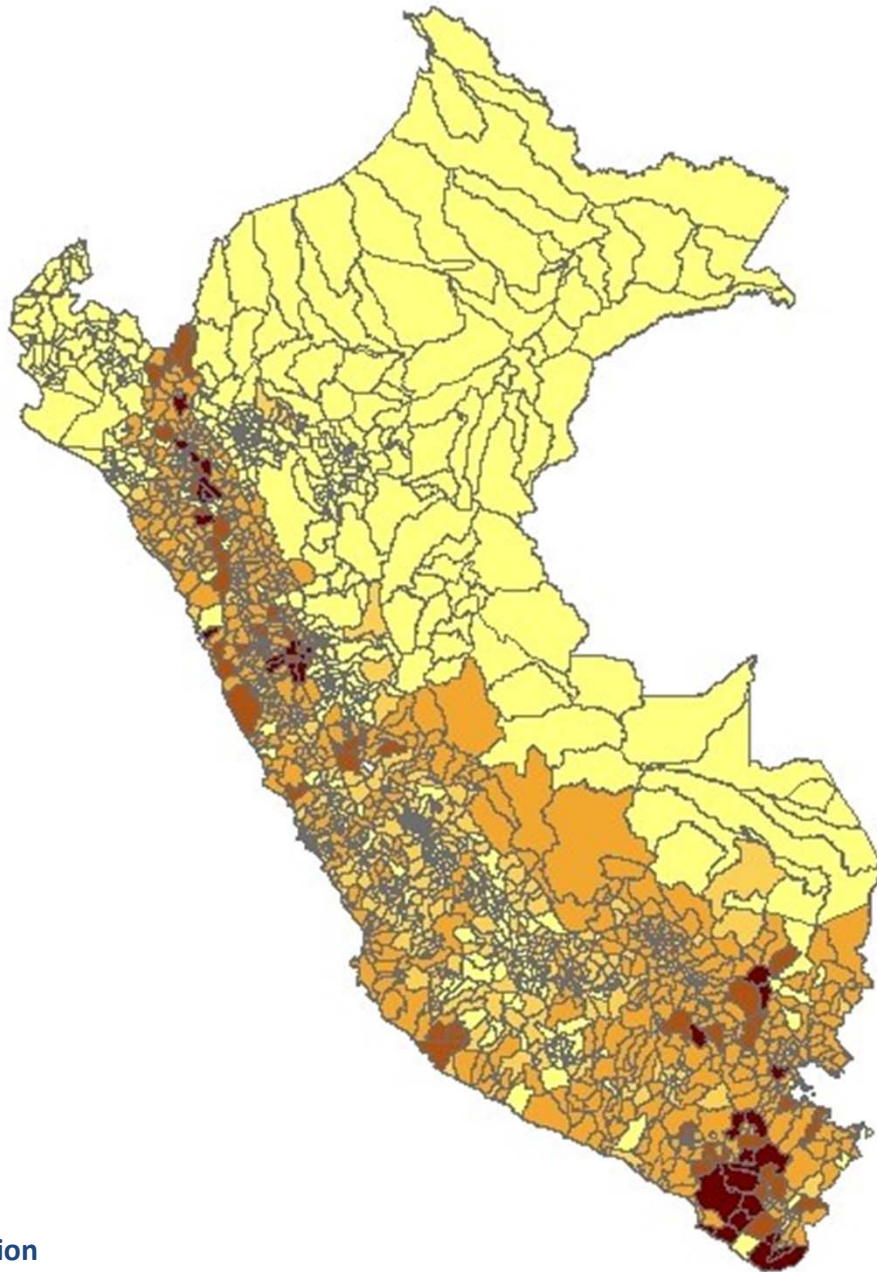
Regional mining canon transfers allocation



Source: MEF

Mining canon transfers allocation in 2006

Research design



Resource windfall and corruption

Threats to identification

- Peru is one of the most important producers of minerals in the world (2nd producer of silver; 3rd of zinc, copper and tin; 4th of lead and molybdenum and 5th of gold):

Endogeneity of prices

- Ex: Past corruption-> production -> international prices
 - Unlikely: Experts suggest that increase was due to China's industrialization (Roubini 2006) and fall of interest rates (Frenkel 2008)
- Increase in prices may have affected production decisions in unobservable ways that may be correlated to treatment:

Endogeneity of Mining canon revenues/production levels

- Examples:
 - Local governments making investments in institutional quality to attract mining production and get rents
 - Mining companies investing more due to higher prices
- Solution: Check evolution of quantities produced and robustness check for districts in which production increased over the period

3. Data

- Annual repeated cross-section of household survey (The Encuesta Nacional de Hogares -ENAHO): 2002-2006.
 - Includes a detailed [module](#) on payment of bribes by households.
- Annual data about local revenues and transfers from central to local governments (Ministry of Finance): 1998-2006 .
- Annual data on mineral production and prices (Ministry of Energy and Mines): 1998-2008.

Questions from ENAHO

- Q6: *“In the past 12 months, did you or any member of the household use services from the following institutions?”* (18 institutions including municipality, police, judiciary, teachers, etc)
- Q 11: *“Were you required to, feel obligated to or voluntarily pay a bribe?”*
 - Yes, I was required to pay
 - Yes, I felt obligated to pay
 - Yes, I voluntarily paid (results robust to dropping this category)
 - No
- Concerns:
 - **Under-reporting due to shame or fear of prosecution:** Unlikely (Hunt 2007)
 - **Endogenous non-response:** only 2 observations did not answer Q11 conditional to Q6

Table I: Summary Statistics

	Recipients	Producers	Non-recipients
Transfers			
Mining Canon (per-capita)	43.11	122.68	-
p10	0.11	2.53	-
p25	0.92	8.37	-
p50	7.04	44.28	-
p75	39.13	82.14	-
p90	94.18	134.06	-
p99	414.64	1,725.65	-
Municipality Revenues (per-capita)	363.45	487.20	397.45
Net Municipality Revenues (per-capita)	320.34	364.52	397.45
Share of Mining Canon (%)	9.63	16.79	0.00
Other Canon Sources (per-capita)			
Oil Canon	5.79	0.00	93.26
Hydropower Canon	9.95	10.41	0.00
Forestal Canon	0.07	0.18	0.55
Fishing Canon	1.52	2.46	0.08
Gas Canon	6.37	0.46	0.43
FOCAM Canon	1.81	1.22	5.45
District Characteristics: Census 1993			
Population	12,339	10,788	22,618
% Rural Population	57.76	55.32	59.08
% Children (0-15 years old)	40.68	40.58	45.14
Malnutrition rates for Children	55.61	53.02	55.64
% Population without wastepipe-latrine	41.81	41.60	53.91
% Population without water	51.20	49.84	67.13
% Population without electricity	74.16	65.27	68.55
Female illiteracy rate	33.60	29.39	23.90
Altitude	2,326	2,720	498

4. Empirical model and results: Differences-in-differences

- The DD empirical specification:

$$y_{ijt} = \alpha_j + \lambda_t + \beta(Canon_{jt} \cdot HighP_t) + X'_{ijt} \delta + \varepsilon_{ijt}$$

Where:

- y_{ijt} : Outcome of interest for household i in district j .
- $Canon_{jt}$: Treated districts (Mining Canon beneficiaries /Mineral Producers).
- $HighP_t$: Dummy =1 for high mineral prices period.
- X_{ijt} : Household and district level characteristics in period t .
- β recovers causal effect of interest under standard DD assumptions.

- Generalization of standard 2 periods-2 groups DD approach (see Bertrand et al 2004 and Hansen 2007)
- Two specifications of treatment variable:
 - Any HH located in a benefited districts (70%)
 - Any HH located in producer districts (15%)
- Standard errors were clustered at district level using the generalization of the White's robust covariance matrix developed by Liang and Zeager (1986)

- The extended DD empirical specification (heterogeneous effects):

$$y_{ijt} = \alpha_j + \lambda_t + \beta(Canon_{jt}.HighP_t) + \delta_1(Canon_{jt}.MostBen_j) + \delta_2(MostBen_j.HighP) + \delta_3(Canon_{jt}.HighP.MostBen_j) + X'_{ijt}\gamma + \varepsilon_{ijt}$$

Where:

$MostBen_j$: Dummy =1 for most benefited areas (Ancash, Cajamarca, Moquegua and Tacna).

- δ_3 recovers causal effect for the most benefited areas.

Empirical Results: DD for mineral producers

Table III: Impact of Mining Canon Transfers in the Probability of a Bribery Episode in Local Governments (Producer Districts)

	Difference in Differences Estimates							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: 1=If bribery episode in the municipal government							
Treatment (1= Producer district after increase of prices)	-0.020*	-0.020*	-0.020*	-0.020*	-0.027**	-0.028**	-0.027**	-0.027**
	(0.012)	(0.011)	(0.011)	(0.011)	(0.012)	(0.011)	(0.011)	(0.011)
Mineral producer*After increase prices *Most Benefited Area					0.047**	0.045***	0.045***	0.043**
					(0.019)	(0.017)	(0.017)	(0.017)
Constant	0.065***	0.414**	0.411**	0.380**	0.065***	0.384**	0.381**	0.350**
	(0.005)	(0.167)	(0.167)	(0.167)	(0.005)	(0.166)	(0.166)	(0.166)
Transfers controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Urbanization control	No	No	Yes	Yes	No	No	Yes	Yes
Household level controls	No	No	No	Yes	No	No	No	Yes
Mean dependent variable	0.03							
Observations	23,662	22,580	22,580	22,484	22,484	22,580	22,580	22,484
R-Squared	0.011	0.012	0.012	0.013	0.014	0.012	0.012	0.014

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Huber-White standard errors clustered at the district level. Controls includes a dummy for whether the household is an urban area, assets possession (car, bike, etc.), household consumption, number of earners, and a dummy for whether the dwelling was obtained through occupation. See Appendix 1 for details.

5. Robustness

- Placebo tests:
 - Basic idea: only public officials working for the treated municipalities should be affected by the treatment
 - No effect on public officials whose wages are decided by central government (police, judiciary, teachers, etc) working in the treated areas should be expected.
- Validity of exclusion restriction:
 - Mining canon transfers should affect corruption only through its effect on local revenues
 - No direct effect of Mining canon transfers on incomes should be expected.

Placebo test: Judiciary workers

Table VI: Placebo Test

Impact of Mining Canon Transfers in the Probability of a Bribery Episode in the Judiciary (Producer Districts)

	Difference in Differences Estimates							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: 1=If bribery episode in the Judiciary							
Treatment (1= Producer district after increase of prices)	-0.010 (0.053)	-0.005 (0.054)	-0.004 (0.055)	-0.007 (0.055)	-0.018 (0.060)	-0.007 (0.062)	-0.006 (0.063)	-0.010 (0.063)
Mineral producer*After increase prices*Most Benefited Area					0.024 (0.145)	0.010 (0.157)	0.008 (0.158)	0.008 (0.156)
Constant	0.168*** (0.012)	0.535 (0.659)	0.567 (0.655)	0.506 (0.690)	0.168*** (0.011)	0.590 (0.654)	0.621 (0.652)	0.563 (0.688)
Transfer controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Urbanization control	No	No	Yes	Yes	No	No	Yes	Yes
Household level controls	No	No	No	Yes	No	No	No	Yes
Mean dependent variable	0.12							
Observations	3,322	3,215	3,215	3,198	3,322	3,215	3,215	3,198
R-Squared	0.021	0.024	0.025	0.027	0.022	0.025	0.026	0.028

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Huber-White standard errors clustered at the district level. Controls includes a dummy for whether the household is an urban area, assets possession (car, bike, etc.), household consumption, number of earners, and a dummy for whether the dwelling was obtained through occupation. See Appendix 1 for details.

Placebo test: Police

Table VII: Placebo Test

Impact of Mining Canon Transfers in the Probability of a Bribery Episode in the Police Station (Producer Districts)

	Difference in Differences Estimates							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: 1=If bribery episode in the Police Station							
Treatment (1= Producer district after increase of prices)	-0.011 (0.045)	0.000 (0.044)	0.000 (0.044)	0.003 (0.046)	-0.019 (0.051)	-0.010 (0.052)	-0.010 (0.052)	-0.005 (0.054)
Mineral producer*After increase prices*Most Benefited Area					0.025 (0.085)	0.062 (0.069)	0.064 (0.069)	0.049 (0.083)
Constant	0.320*** (0.016)	0.650 (0.994)	0.675 (0.992)	0.826 (0.999)	0.318*** (0.016)	0.743 (0.986)	0.765 (0.984)	0.919 (0.989)
Transfer controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Urbanization control	No	No	Yes	Yes	No	No	Yes	Yes
Household level controls	No	No	No	Yes	No	No	No	Yes
Mean dependent variable	0.34							
Observations	4,437	4,298	4,298	4,269	4,437	4,298	4,298	4,269
R-Squared	0.006	0.010	0.010	0.032	0.007	0.010	0.011	0.033

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Huber-White standard errors clustered at the district level. Controls includes a dummy for whether the household is an urban area, assets possession (car, bike, etc.), household consumption, number of earners, and a dummy for whether the dwelling was obtained through occupation. See Appendix 1 for details.

Placebo test: Pre-trends assumption

Table VIII: Placebo Test

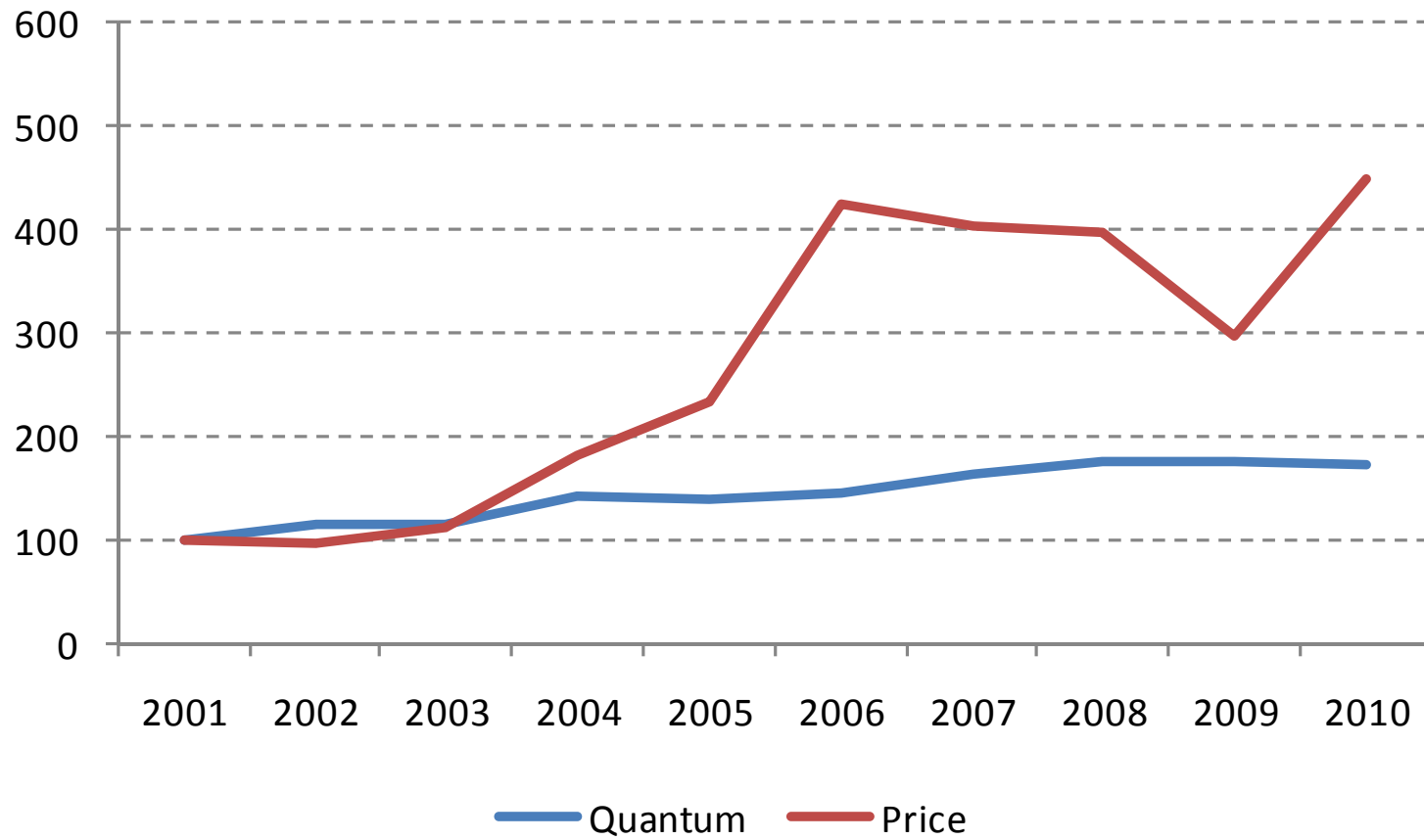
Impact of Mining Canon Transfers on the Probability of a Bribery Episode in Local Governments (Producer Districts)

	Difference in Differences Estimates							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable: 1=If bribery episode in the municipal government								
Placebo Treatment (1= Producer district after increase of prices)	0.016 (0.013)	0.013 (0.014)	0.013 (0.014)	0.013 (0.014)	0.002 (0.022)	-0.003 (0.023)	-0.003 (0.023)	-0.004 (0.023)
Mineral producer*After increase prices*Most Benefited Area					0.012 (0.025)	0.013 (0.027)	0.013 (0.027)	0.017 (0.026)
Constant	0.031*** (0.001)	0.847*** (0.139)	0.844*** (0.140)	0.855*** (0.139)	0.065*** (0.005)	0.413 (0.367)	0.413 (0.367)	0.370 (0.362)
Transfers controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Urbanization control	No	No	Yes	Yes	No	No	Yes	Yes
Household level controls	No	No	No	Yes	No	No	No	Yes
Mean dependent variable	0.04							
Observations	23,662	22,580	22,580	22,484	12,855	12,214	12,214	12,161
R-Squared	0.001	0.010	0.010	0.011	0.009	0.009	0.009	0.011

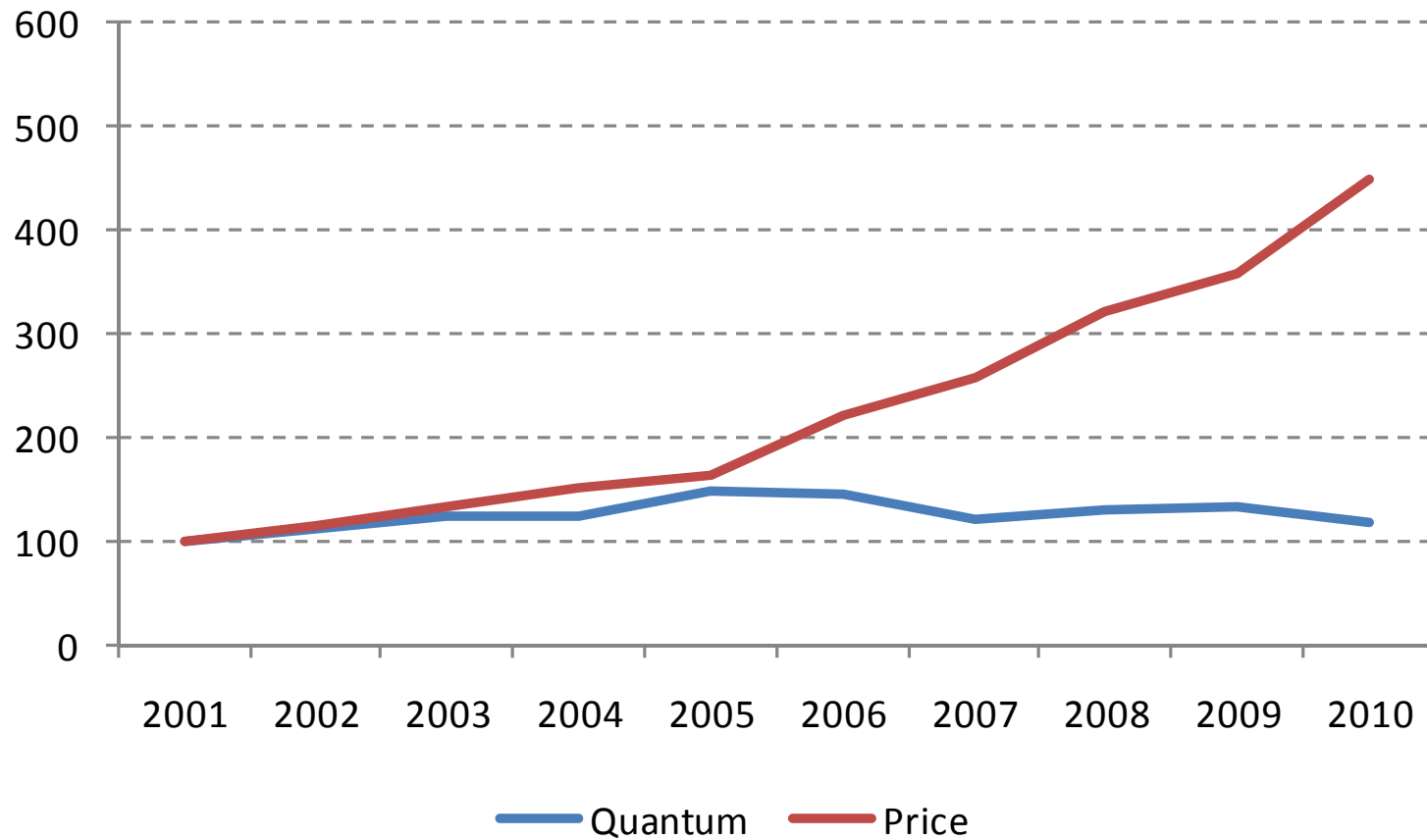
Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Huber-White standard errors clustered at the district level. Controls includes a dummy for whether the household is an urban area, assets possession (car, bike, etc.), number of earners, and a dummy for whether the dwelling was obtained through occupation. See Appendix 1 for details.

- Validity of exclusion restriction:
 - Mining canon transfers only affect the corruption measure through its effect on local revenues.
 - The change of prices affected basically fiscal revenues and not production levels.
 - Mining lacks of linkages with other sectors of the economy and only employs 1% of the labor force.

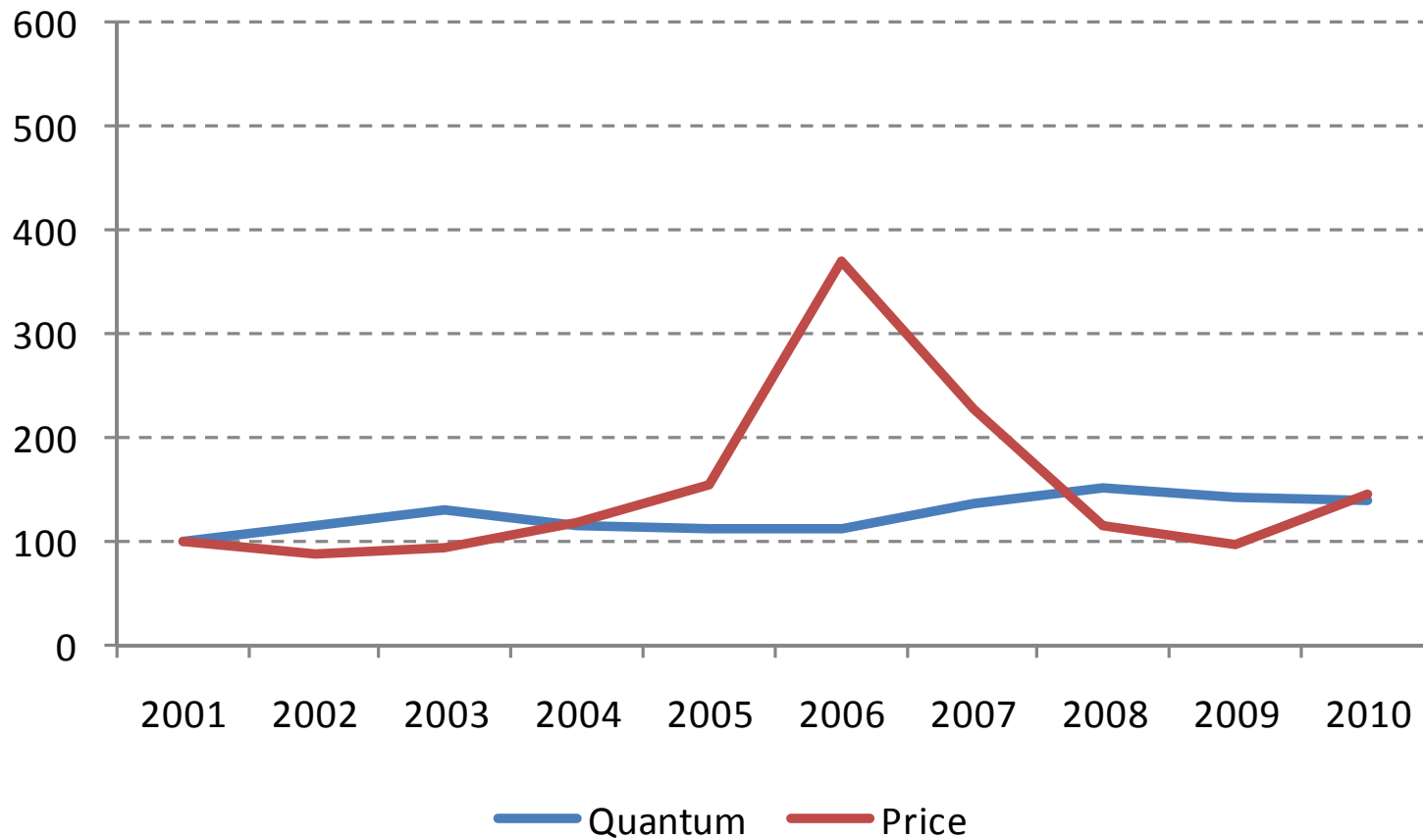
Evolution of quantum and prices of copper



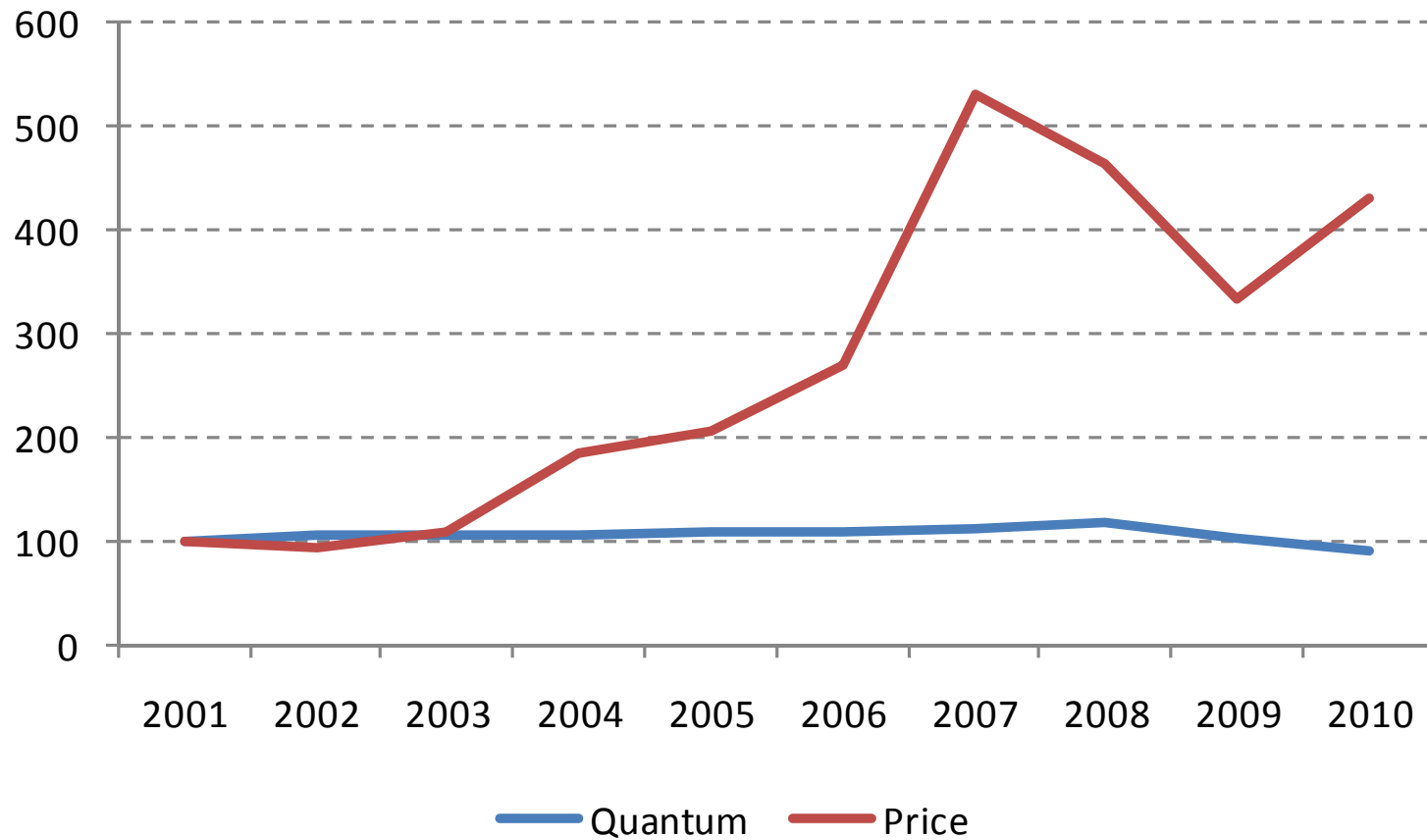
Evolution of quantum and prices of gold



Evolution of quantum and prices of zinc



Evolution of quantum and prices of lead



Exclusion restriction: Impact on incomes

Table IX: Validity of the Exclusion Restriction

Impact of Mining Canon Transfers in Household Per-capita Incomes (Producer Districts)

	Difference in Differences Estimates							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: Household Per-capita Incomes							
Treatment (1= Producer district after increase of prices)	28.150 (19.337)	21.896 (21.084)	23.651 (22.033)	14.029 (21.912)	32.726 (22.252)	23.772 (24.802)	26.398 (25.870)	14.998 (25.985)
Mineral producer*After increase prices*Most Benefited Area					-24.659 (53.120)	-6.684 (53.038)	-11.123 (54.453)	-3.099 (55.316)
Constant	310.226*** (3.734)	113.521 (300.970)	-19.280 (300.952)	119.301 (266.638)	310.454*** (3.662)	87.489 (301.391)	-42.921 (301.356)	100.713 (267.284)
Transfer controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Urbanization control	No	No	Yes	Yes	No	No	Yes	Yes
Household level controls	No	No	No	Yes	No	No	No	Yes
Mean dependent variable	342.00							
Observations	91,150	86,539	86,539	84,534	91,150	86,539	86,539	84,534
R-Squared	0.008	0.008	0.013	0.065	0.008	0.008	0.013	0.065

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Huber-White standard errors clustered at the district level.

Controls includes a dummy for whether the household is an urban area, assets possession (car, bike, etc.), number of earners, and a dummy for whether the dwelling was obtained through occupation. See Appendix 1 for details.

- Results consistent with previous literature:
 - Caselli and Micheals (2010) for Brazil: Oil windfalls contribute little (if something) to the improvement of living standards.
 - Aragon and Rud (2010) for Yanacocha mine for Cajamarca (Peru): Some evidence on increase of real income and welfare due to market conditions but no effect of fiscal revenues windfalls on measures of welfare
- Where the money goes?

Exclusion restriction: Validity check

Table X: Impact of Mining Canon Transfers in the Probability of a Bribery Episode in Local Governments (Excluding Copper Producer Districts)

	Difference in Differences Estimates							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: 1=If bribery episode in the municipal government							
Treatment (1= Producer district after increase of prices)	-0.026** (0.013)	-0.023* (0.012)	-0.023* (0.012)	-0.024* (0.012)	-0.032*** (0.012)	-0.030** (0.012)	-0.030** (0.012)	-0.030*** (0.012)
Mineral producer*After increase prices*Most Benefited Area					0.036*** (0.014)	0.036*** (0.013)	0.036*** (0.013)	0.034*** (0.013)
Constant	0.066*** (0.005)	0.338** (0.170)	0.335** (0.171)	0.305* (0.170)	0.066*** (0.005)	0.323* (0.171)	0.320* (0.171)	0.289* (0.170)
Transfers controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Urbanization control	No	No	Yes	Yes	No	No	Yes	Yes
Household level controls	No	No	No	Yes	No	No	No	Yes
Mean dependent variable	0.03							
Observations	23,072	22,015	22,015	21,919	23,072	22,015	22,015	21,919
R-Squared	0.011	0.012	0.012	0.014	0.012	0.012	0.012	0.014

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Huber-White standard errors clustered at the district level. Controls includes a dummy for whether the household is an urban area, assets possession (car, bike, etc.), household consumption, number of earners, and a dummy for whether the dwelling was obtained through occupation. See Appendix 1 for details.

- Other concerns/to do:
 - **Endogenous migration:** Unlikely to drive the results due to short time (only 2 years after increase of prices) but part of work in progress
- Discussion about channels:
 - No evidence in increase in wages but strong evidence of increase in public employment (patronage)
 - Not evidence of incumbent advantage (weak results in probability of re-election)

6. Conclusion

- Significant effect of revenues on bribery-based corruption in Peru
- IV results consistent with DD approach.
- Results suggest that the transfers have differential effects depending on the magnitude of the shock.
- Tentative explanation: political economy may explain non-linear effects

Next steps

- Still a work in progress.
- Explore potential causal channels using alternative datasets.

Empirical model and results: Instrumental variables

- The empirical IV specification:

$$y_{ijt} = \alpha_j + \lambda_t + \beta \log R_{jt} + X'_{ijt} \delta + \varepsilon_{ijt}$$

Where:

y_{ijt} : outcome of interest for individual/household i in district j .

α_j : district fixed-effects.

λ_t : time fixed-effects.

R_{jt} : measure of revenues allocated to the district j in period t .

X_{ijt} : individual/household and district level characteristics in period t .

- IV approach: R_{jt} is instrumented with C_{jt} (in logs)

Empirical Results (IV: First Stage)

Table IV: The Impact of Mining Canon Transfers on Local Government Revenues

	First Stage				
	(1)	(2)	(3)	(4)	(5)
	Log of Total Revenues per-capita (Thousand of New Soles)				
Log of Mining Canon per-capita (Thousand of New Soles)	1.205***	1.224***	1.224***	1.224***	1.224***
	(0.026)	(0.025)	(0.025)	(0.025)	(0.025)
F-value	579.35	251.63	238.48	170.43	155.98
Transfers controls	No	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Urbanization control	No	No	Yes	Yes	Yes
Household level controls	No	No	No	Yes	Yes
Household's head controls	No	No	No	No	Yes
Observations	22,526	22,526	22,546	22,430	22,405
R-Squared	0.851	0.865	0.865	0.865	0.865

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Huber-White standard errors clustered at the district level. Controls includes a dummy for whether the household is an urban area, assets possession (car, bike, etc.), household consumption, number of earners, a dummy for whether the dwelling was obtained through occupation, and characteristics of the household head (age, gender, education and civil status). See Appendix 1 for details.

Empirical Results (IV and Reduced Form)

Table V: The Impact of Local Government Revenues on Corruption

	IV-2SLS				Reduced Form			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Bribery episode in the municipal government				Bribery episode in the municipal			
Log of Total revenues per-capita (Thousand of New Soles)	0.023*** (0.009)	0.023*** (0.009)	0.023*** (0.009)	0.024*** (0.009)				
Log of Mining Canon per-capita (Thousand of New Soles)					0.028*** (0.011)	0.028*** (0.011)	0.029*** (0.011)	0.030*** (0.011)
Constant					0.389** (0.168)	0.386** (0.168)	0.355** (0.169)	0.366** (0.169)
Transfer controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Urbanization control	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Household level controls	No	No	Yes	Yes	No	No	Yes	Yes
Household's head controls	No	No	No	Yes	No	No	No	Yes
Mean dependent variable					0.03			
Observations	22,526	22,526	22,430	22,405	22,560	22,560	22,464	22,439
R-Squared	0.012	0.012	0.013	0.015	0.011	0.012	0.013	0.015

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Huber-White standard errors clustered at the district level.

Controls includes a dummy for whether the household is an urban area, assets possession (car, bike, etc.), household consumption, number of earners, a dummy for whether the dwelling was obtained through occupation, and characteristics of the household head (age, gender, education and civil status). See Appendix 1 for details.

Table 1. Distribution of the mining canon

June 2002-May 2004		July 2004-December 2004		From December 2004	
Receiver	%	Receiver	%	Receiver	%
Regional government ¹	20	Regional government + 5% for public universities in the region	25	Regional government + 5% for public universities in the region	25
Municipalities of the province where the mineral is extracted ²	20	Distrital municipality where the mineral is extracted	10	Distrital municipality where the mineral is extracted	10
		Municipalities of the province where the mineral is extracted, excluding the producing district ³	25	Municipalities of the province where the mineral is extracted, excluding the producing district ³	25
Municipalities of the department where the mineral is extracted	60	Municipalities of the department where the mineral is extracted excluding the producing province ³	40	Municipalities of the department where the mineral is extracted excluding the producing province ³	40

(1) Ministerial Resolution N 261-202-EF/15, priority is given to rural population by weighting the rural district for two (2) and the urban population by one (1).

(2) Established by the Canon Law (Law No. 27,506), according to population density (Habitante/Km2)

(3) According to Population and Poverty linked to basic infrastructural needs.

Questions about bribes in the ENAHO survey

GOBERNABILIDAD (Persona de 18 años y más de edad)																		
6. En los últimos 12 meses, Ud. o algún miembro del hogar ha hecho uso de los servicios, tales como:			7. Encontró inmediatamente al personal en la oficina de		8. ¿Cuántas veces acudió para realizar el		9. Considera que el..... ¿Le ocasionó pérdida de tiempo y/o gasto significativo en transporte u otros?		10. ¿Cómo calificaría el servicio de		11. ¿Le solicitaron, se sintió obligado o dio voluntariamente retribuciones como: regalos, propinas, sobornos, coimas, etc.?		12. ¿Cuánto fue el monto total gastado en regalos, propinas, sobornos, coimas, etc. en		13. Cuando le solicitaron o dio voluntariamente los regalos, propinas, sobornos, coimas, etc. ¿Denunció ante las autoridades pertinentes?		14. ¿Por qué no denunció?	
Servicios	SI	NO	SI	NO	Nº Veces	¿Concluyó?		SI	NO	CÓDIGO	CODIGO	MONTO SI.	SI	NO	CODIGO			
						SI	NO											
1. ¿Trámites en la Municipalidad (Partida de nacimiento, apertura de establecimiento, licencia de construcción, etc.)?.....	1	2	1	2		1	2	1	2				1	2				
2. ¿Trámites en ESSALUD?	1	2	1	2		1	2	1	2				1	2				
3. ¿Trámites en bancos del estado (Banco de la Nación, Banco de Materiales, Banco Agrario)?.....	1	2	1	2		1	2	1	2				1	2				
4. ¿Trámites en el Poder Judicial (Juzgado de Paz)?.....	1	2	1	2		1	2	1	2				1	2				

Si todas las alternativas tienen circulado el código 2 (NO) Pase a 15

Pase al sgte. ítem

Pase a 13

Pase al sgte. ítem

(Productos en especie, valores en prelo de mercado minorista)

Otro 6 (Especifique)

Table I: Descriptive Statistics

Variable	Obs.	Full Sample		Receiver of mining canon				Mineral producer			
		Mean	S.d.	No		Yes		No		Yes	
				Mean	S.d.	Mean	S.d.	Mean	S.d.	Mean	S.d.
Corruption measures											
<i>Used an official of :</i>											
The municipal government	85907	0.27	0.44	0.28	0.45	0.27	0.45	0.27	0.44	0.27	0.45
The judicial system	85911	0.04	0.19	0.03	0.18	0.04	0.20	0.04	0.19	0.03	0.18
The PNP police station	85911	0.05	0.23	0.04	0.20	0.06	0.23	0.05	0.23	0.06	0.24
<i>Bribery episode in:</i>											
The municipal government	23662	0.03	0.17	0.03	0.18	0.03	0.16	0.03	0.17	0.02	0.14
The judicial system	3322	0.12	0.32	0.14	0.35	0.11	0.31	0.12	0.32	0.11	0.31
The PNP police station	4437	0.34	0.47	0.27	0.45	0.35	0.48	0.33	0.47	0.45	0.50

Inter-governmental transfers in Peru

- Some basic characteristics
 - Highly centralized country: 97% taxes collected by central government (Polastri and Rojas 2007)
 - Local government highly dependent from [central government transfers](#): Transfers from central government represent 57% of total local government revenues
- Intergovernmental transfers system in Peru
 - Universal versus targeted transfers
 - Universal: FONCOMUN (56% of IGT) and Glass of Milk (10% of IGT)
 - Targeted: Canon (mining, oil, hydro power, fishing, forest and gas), Royalties, Camisea (FOCAM), etc.
 - Canon represents 91% of targeted transfers (Mining canon: 79% of canon transfers)

Table 1. Current revenue of local governments (In percent of GDP)

	2000	2001	2002	2003	2004	2005
Total	1.95	1.96	2.07	2.19	2.29	2.53
Tax Revenues	0.25	0.25	0.27	0.28	0.29	0.29
Other own income	0.59	0.63	0.69	0.67	0.69	0.67
Transfers from the						
Central Government	1.11	1.08	1.11	1.24	1.31	1.57
FONCOMUN	0.77	0.74	0.73	0.76	0.77	0.79
Canon	0.12	0.12	0.15	0.25	0.32	0.51
Other	0.22	0.23	0.23	0.23	0.23	0.27

Sources: BCRP and MEF

Table 2. Transfers to local governments, 2001-08 (In thousands of new soles)

	2001	2002	2003	2004	2005	2006	2007	2008
Municipal Compensation Fund	1 369 570	1 430 842	1 597 053	1 793 654	2 031 674	2 389 113	2 805 832	3 263 288
Mining Canon	81 279	116 270	228 661	346 167	666 105	1 309 784	3 867 751	3 326 756
Glass of milk	332 883	340 616	356 000	360 001	363 001	362 990	363 000	363 000
Customs Revenue	23 893	23 606	23 444	101 908	122 719	126 221	140 451	173 588
HydroPower Canon	0	41 117	67 469	83 921	84 464	95 723	156 785	109 737
Fishing Canon	-	0	14 182	30 127	21 773	37 139	35 250	52 603
Oil Canon and SobreCanon	-	140 741	181 607	225 657	304 036	381 933	404 033	580 704
Forest Canon	-	424	778	658	668	3 792	5 473	3 709
Gas Field Canon	-	-	-	-	226 448	295 403	452 218	548 947
Camisea Development Fund	-	-	-	0	37 687	76 160	77 641	112 691
Mining royalties	-	-	-	-	167 343	309 124	403 299	399 487
Regular Resources	-	-	-	-	148 676	126 613	395 065	557 368
Total	1 811 182	2 093 617	2 469 194	2 942 093	4 174 595	5 513 994	9 106 797	10 612 550

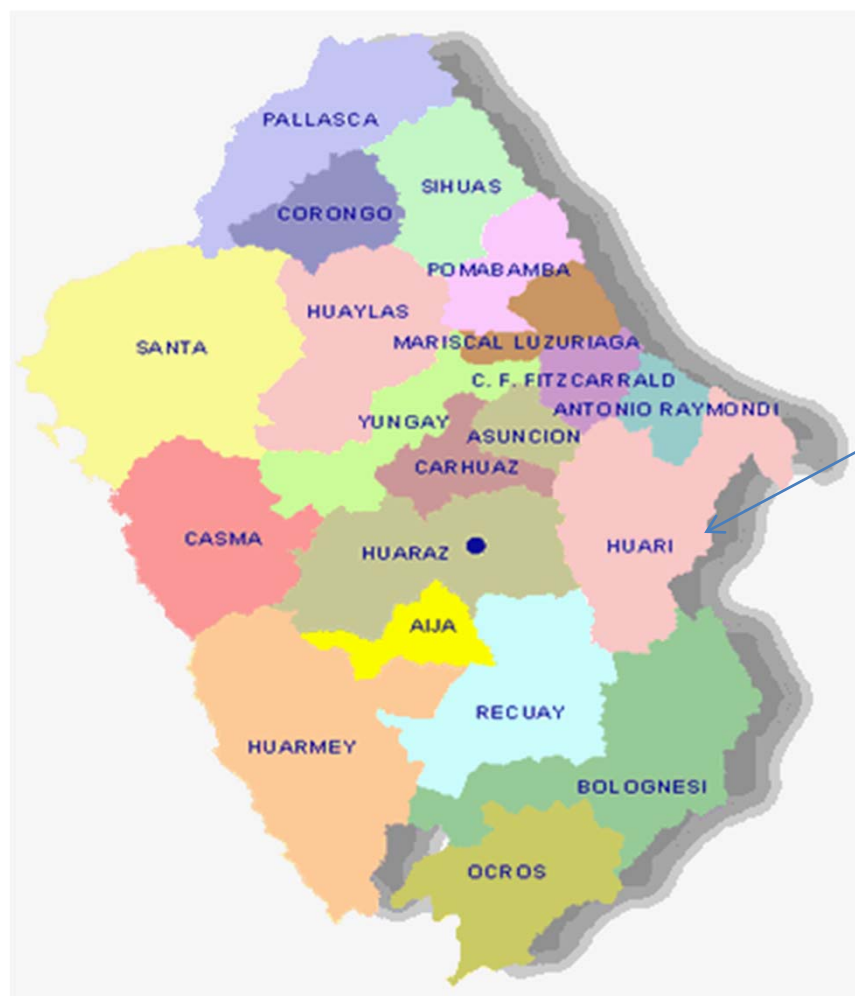
Source: MEF.

Region Ancash

Total distributed in 2006:
S/.261,548,143

20 provinces

166 districts



*San Marcos:
Antamina*

Distribution rule:

- San Marcos:
S/.26,154,814
- A district of Huari (16):
S/.4,086,689
- A district of Ancash:
S/.630,236