A Appendix

A1 Equations

The estimating equation for regressions that use the the IFLS data are:

$$Y_{ijt} = \beta_0 + \beta_1 M_{kjt} * log(Price)_{kt} + \beta_2 M_{kjt} + \beta_3 log(Price)_{kt} + \alpha_t + \alpha_j + \alpha_i + u_{ijt} \quad \text{(A1)}$$

where the outcome Y is defined for individual i in district j and year t. M_{kjt} is the number of active mines of the most important mineral k in district j and year t, $log(Price)_{kt}$ represents the world price of mineral k in year t. The α_i are individual fixed effects, and substitute individual variables such as age and education in the the Sakernas data. Similar to the estimations with the Sakernas data, the α_t are year fixed effects and the α_j are district fixed effects.

A2 Figures
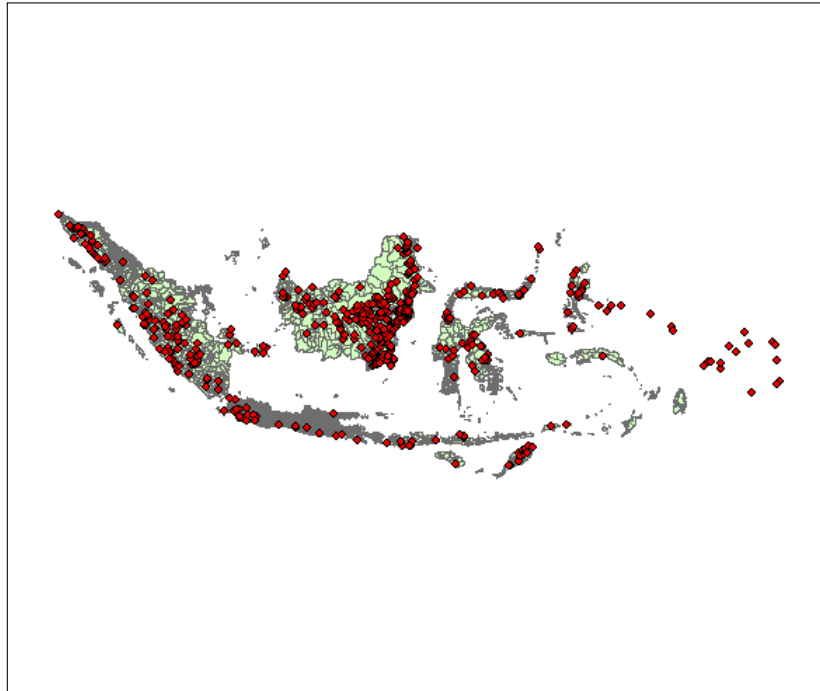
Figure A1. The distribution of mines across Indonesian districts.

Notes: The figure shows a map of active and inactive mines across Indonesia. Red circles represent the latitude and longitude of mines, created using the SNL data, 1998-2011.
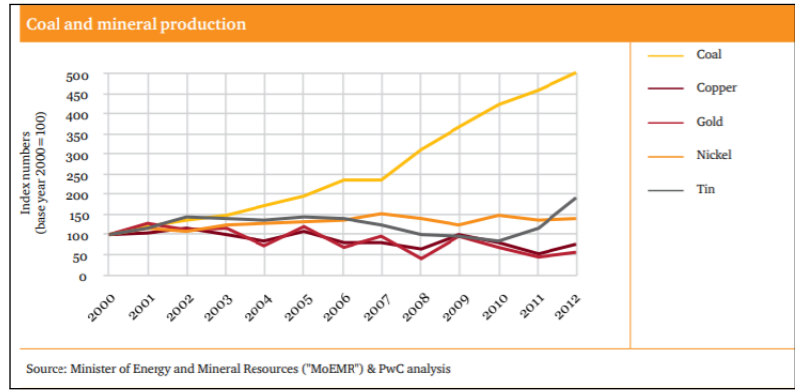
Figure A2. Growth in mineral production in Indonesia.

Note: The graph depicts trends in the production of major minerals Indonesia relative to baseline production levels in 2000.
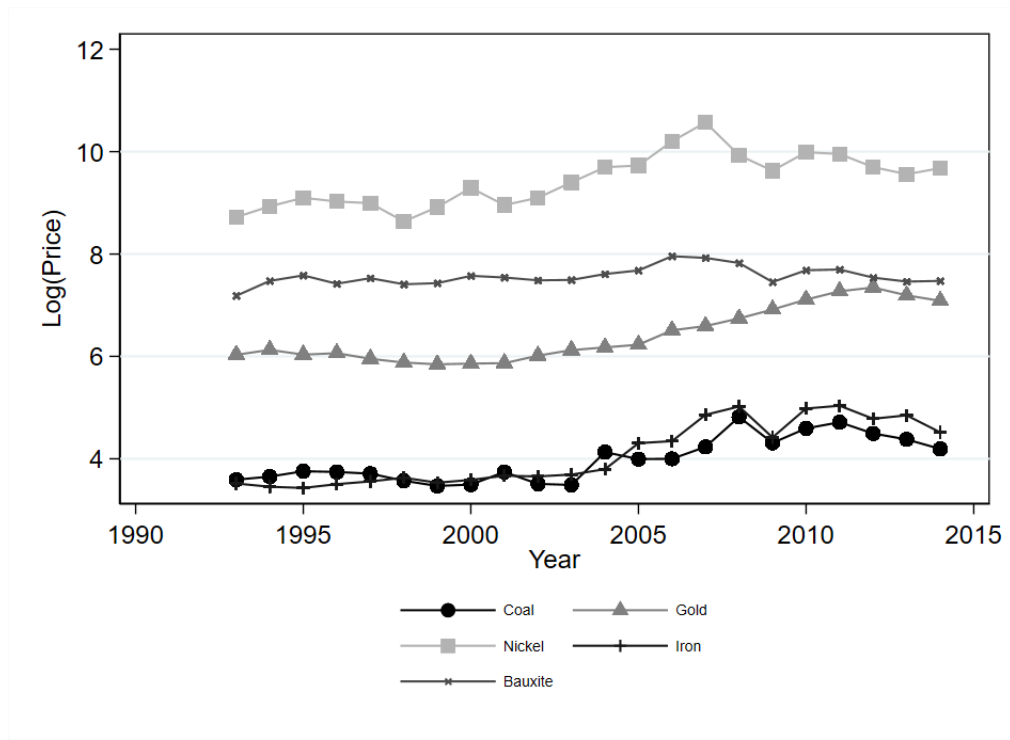
Figure A3. Growth in price of main minerals.

Notes: The graph shows growth over time in the world price of minerals. Data are from the World Bank (2018) commodities price data. Prices are in nominal US$ per unit, where the unit is metric ton for coal, nickel, iron and bauxite and troy ounces for gold.

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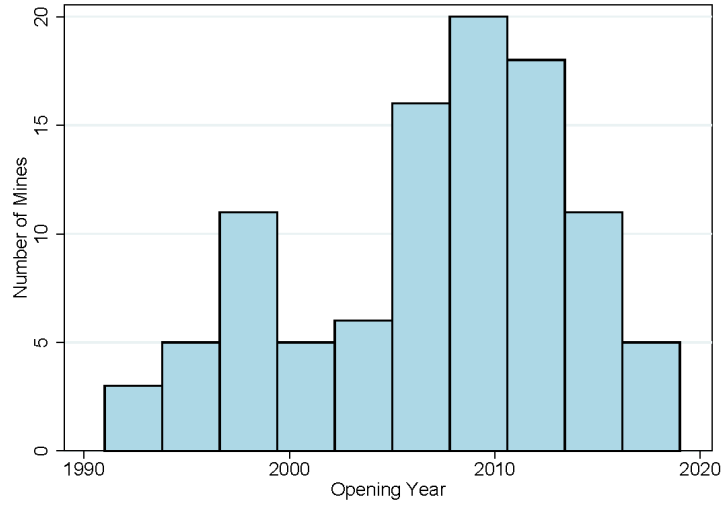
Figure A4. Mine openings since 1990.

Notes: The graph shows the number of mine openings in Indonesia between 1990 and 2015.
Data are from the SNL Metals and Mining data.
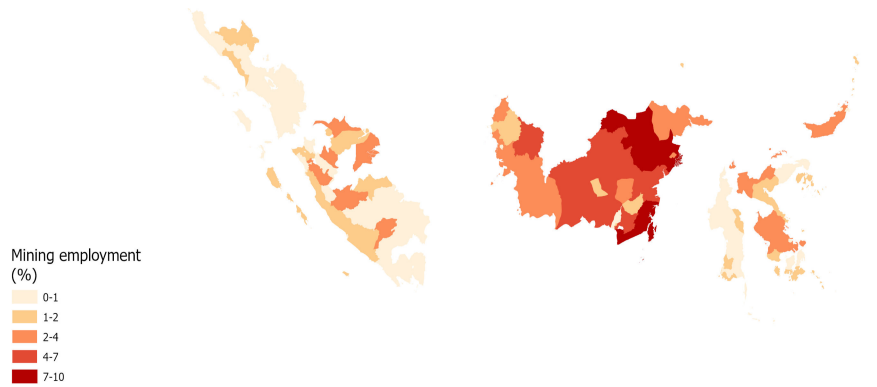
Figure A5. Average share of the district's labor force in mining.

Notes: The map depicts employment in mining, by district. The map is created using
data from the Sakernas, 1998-2011.

Log (Income)
- 12.9-13.2
- 13.2-13.7
- 13.7-14.0
- 14.0-14.3
- 14.3-14.9
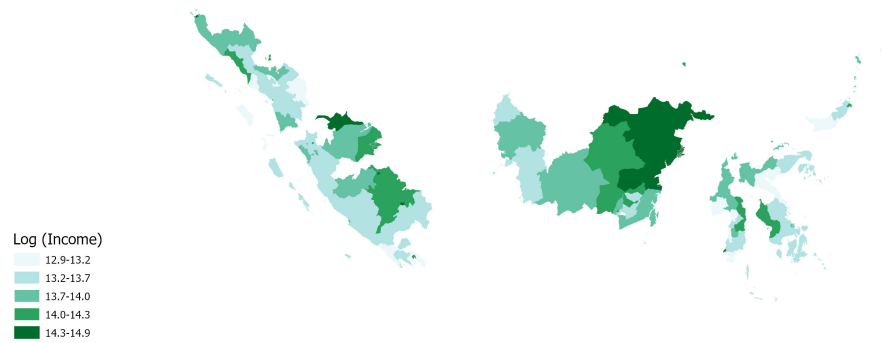
Figure A6. Average income of miners, by district.

Notes: The map depicts the log of monthly income for miners, by district. The map is created using data from the Sakernas, 1998-2011.
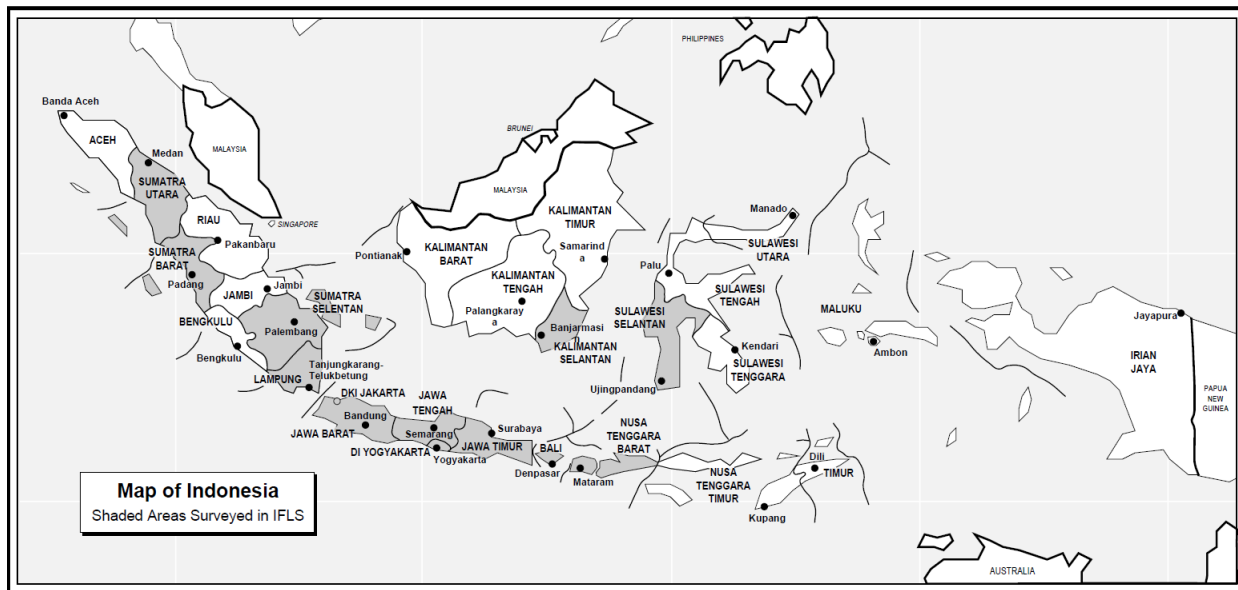
Figure A7. Provinces in the IFLS Survey sample.

Note: The map depicts the areas covered in the the IFLS initial survey sample of 1993, obtained from their user guide.
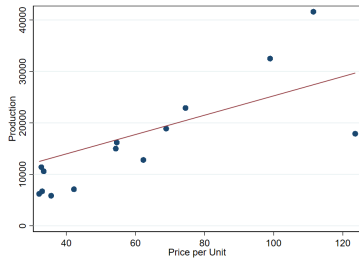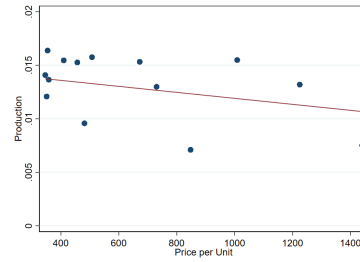
(a) Coal   (b) Gold
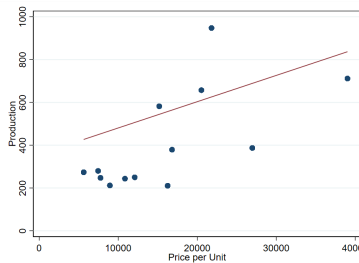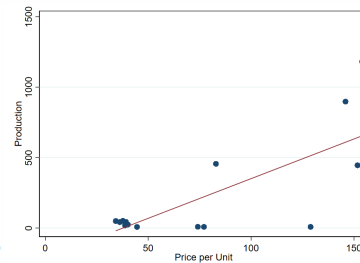
(c) Nickel   (d) Iron
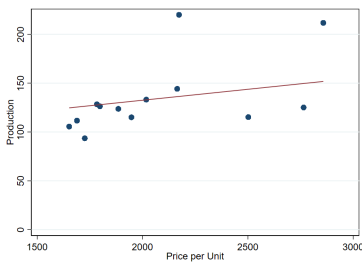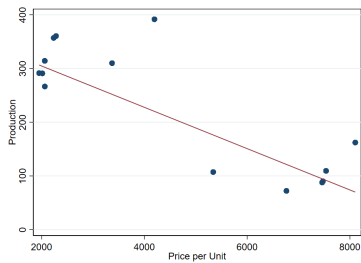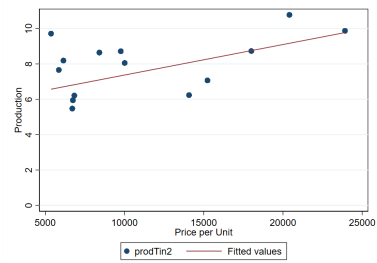
(e) Bauxite   (f) Copper   (g) Tin

Figure A8. The relationship between mineral price and production.

Note: The graphs represent the correlation between mineral prices and their production (when available) in the SNL Metals and Mining data.
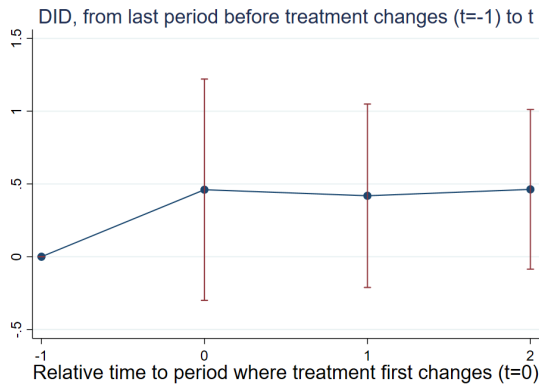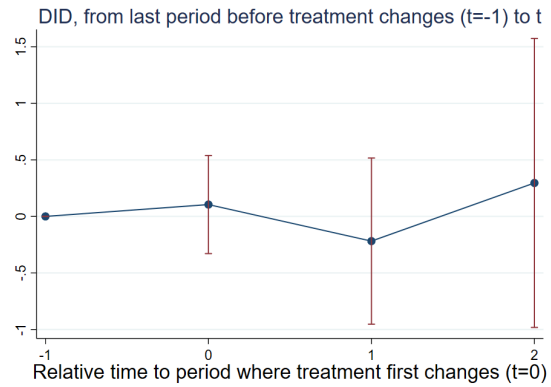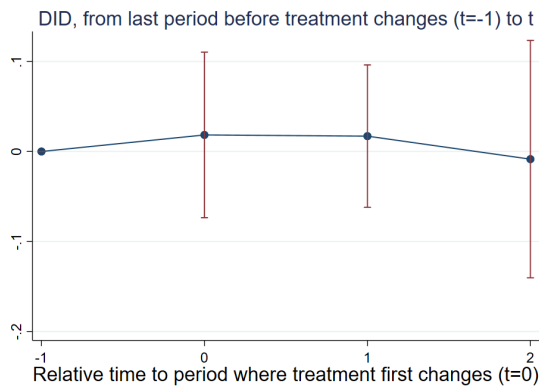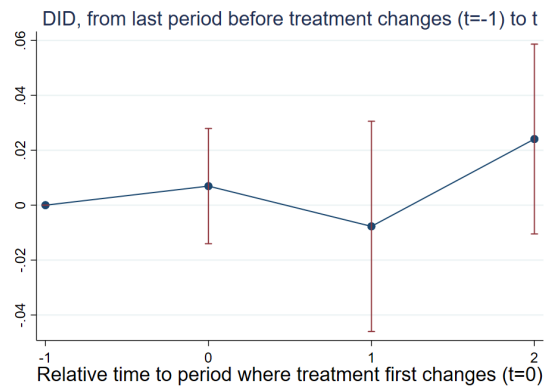
Figure A9. Labor market effects using de Chaisemartin and D'Haultfoeuille estimators.

Notes: The graphs represent the labor market effects using the de Chaisemartin and D'Haultfoeuille estimators for regressions involving two-way fixed effects. Standard errors are clustered at the district level. Log(Monthly Income) is the logarithm of last month's income. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. All regressions include year and district fixed effects. Additional controls could not be estimated in Stata due to the size of the data. The Sakernas data sample extends from 1998 to 2011.

A3 Tables

A3.1 Summary statistics

Table A1. Additional summary statistics

	Mean	Standard deviation	Obs.	Min	Max
Sakernas					
Mining Districts					
Main Mineral # Mines (M_{kt})	0.50	1.14	169,065,0	0	14
Log(Price)$_{kt}$ of Main Mineral	5.99	1.70	169,065,0	3.50	10.6
IFLS					
Mining Districts					
Main Mineral # Mines (M_{kt})	0.43	0.89	62,100	0	17
Log(Price)$_{kt}$ of Main Mineral	5.50	1.94	62,100	3.46	10.6

Notes: The table presents summary statistics for the variables used in the paper. The top panel represents information data from the repeated cross sections of the Sakernas, 1998-2011. The bottom panel presents information from the IFLS using the waves from 1997, 2000, 2007 and 2014. M_{kt} is the number of mines of the most important mineral in district k and year t, and Log(Price)$_{kt}$ is the logarithm of its price.

Table A2. Price and active mines

	Number of active mines			
	Coal	Gold	Nickel	Iron
	(1)	(2)	(3)	(4)
Log(Price)	0.012***	0.000***	0.000***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	681258	634528	146461	110594
R^2	0.92	0.90	0.62	0.11
F	3089.3	1858.8	2664.7	.
Year FE	Y	Y	Y	Y
District FE	Y	Y	Y	N

Notes: The table reports estimates from first stage regressions between the number of active mines and the lagged price of the mineral. Regressions control for year and district fixed effects, except for column (4) because of fewer observations at the district level. Robust standard errors are in parentheses. * p<.10, ** p<.05, *** p<.01. The remaining minerals are omitted due to small sample sizes to estimate the large number of fixed effects. Data are from the Sakernas, between 1998 and 2011.

Table A3. Balance tables: high and low mining value districts

	$\mu_{HighMining}$	$\mu_{LowMining}$	β	SE	$N_{HighMining}$	$N_{LowMining}$
All						
Log (Income)	5.625	5.718	0.093***	0.0272	232615	81896
Pr(Male)	0.511	0.507	-0.005***	0.0017	338249	120361
Pr(Work)	0.580	0.549	-0.030***	0.0017	338255	120372
Pr(Unpaid Work)	0.293	0.264	-0.029***	0.0020	195124	65924
Pr(Agriculture)	0.560	0.490	-0.070***	0.0023	193013	64316
Pr(Urban)	0.239	0.356	0.117***	0.0015	338249	120361
Men						
Log (Income)	8.525	8.328	-0.197***	0.0386	112370	40635
Pr(Work)	0.742	0.694	-0.048***	0.0021	172974	60969
Pr(Unpaid Work)	0.181	0.156	-0.025***	0.0021	127865	42208
Pr(Agriculture)	0.569	0.490	-0.078***	0.0028	126476	41203
Pr(Urban)	0.235	0.354	0.119***	0.0021	172974	60969
Women						
Log (Income)	2.915	3.148	0.233***	0.0317	120245	41261
Pr(Work)	0.410	0.401	-0.009***	0.0024	165275	59392
Pr(Unpaid Work)	0.506	0.456	-0.050***	0.0038	67259	23716
Pr(Agriculture)	0.544	0.488	-0.056***	0.0038	66537	23113
Pr(Urban)	0.242	0.358	0.115***	0.0021	165275	59392

Notes: The table reports T-tests of demographic characteristics by district mining value. The sample is restricted to districts that have had an active or inactive mine at some point during the study period. Districts were divided into high mining value if mining value was above the mean mining value, and into low mining value otherwise. Mining value is determined using the number of active mines of all minerals interacted with the world price of that mineral. Data are from the akernas between 1998 and 2011.

A3.2 Labor market effects

Table A4. Controlling for district mines

	Log(Monthly Wage)		Probability(Work)	
	(1)	(2)	(3)	(4)
	Male	Female	Male	Female
Mining Districts				
# Active Mines x Log(Price)	0.015	0.081**	0.001	0.004
	(0.016)	(0.032)	(0.001)	(0.003)
# Active Mines	-0.199*	-0.450*	-0.011**	-0.012
	(0.105)	(0.240)	(0.004)	(0.022)
Total # Active Mines	0.103**	-0.012	0.007***	-0.011
	(0.048)	(0.101)	(0.002)	(0.009)
Observations	251,772	257,798	436,177	406,306
R^2	0.14	0.20	0.10	0.10
District FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Mean DV	12.17	4.67	0.93	0.55

Notes: The table reports the effect of an increase in mining value on the logarithm of monthly income and the probability of work, estimated using the main estimating equation, with the additional control of the total number of mines ("Total # Active Mines") in a district. Standard errors are in parentheses, clustered at the district level. * p<.10, ** p<.05, *** p<.01. Log(Monthly Income) is the logarithm of last month's income. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. All regressions include year and district fixed effects, and controls for age, age^2, indicators for education level and being married. The Sakernas data sample extends from 1998 to 2011.

Table A5. The relative effect of mining value on men and women

	Log (Monthly Income)		Probability (Work)	
	All Districts	Mining Districts	All Districts	Mining Districts
Male	6.68***	7.62***	0.39***	0.42***
	(0.10)	(0.39)	(0.01)	(0.04)
# Active Mines x Log(Price)	0.00	-0.02	0.00	-0.00
	(0.04)	(0.04)	(0.00)	(0.00)
# Active Mines x Log(Price) x Male	0.08	0.17**	0.00	0.01
	(0.06)	(0.07)	(0.01)	(0.01)
# Active Mines	-0.17	-0.08	-0.02	-0.01
	(0.19)	(0.21)	(0.02)	(0.02)
Log (Price)	0.03	-0.06	-0.00	0.00
	(0.05)	(0.06)	(0.00)	(0.01)
Observations	2,044,932	529,860	3,006,562	842,483
R^2	0.34	0.38	0.24	0.24
Year FE	Y	Y	Y	Y
District FE	Y	Y	Y	Y
Mean DV	8.37	8.37	0.71	0.71

Notes: The table reports the effect of an increase in mining value interacted with gender on the logarithm of monthly income and probability of work. The regressions are a modified version of the main estimating equation, where the main interaction term is further interacted with gender (a triple difference term). Standard errors are in parentheses, clustered at the district level. Log(Monthly Income) is the logarithm of last month's income. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. The Sakernas data sample extends from 1998 to 2011. All individual and interaction terms are included in the regression and omitted from the outcome for brevity. * p<.10, ** p<.05, *** p<.01.

Table A6. The effect of mining activity on monthly wage - Sakernas

	Log(Monthly Wage)							
	All Districts			Mining Districts			Active Mine Districts	
	All	Males	Females	All	Males	Females	Males	Females
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
# Active Mines x Log(Price)	0.0176	-0.0136	0.0451**	0.0409*	0.0322	0.0588**	0.0322	0.0588**
	(0.0259)	(0.0439)	(0.0183)	(0.0231)	(0.0296)	(0.0252)	(0.0296)	(0.0252)
# Active Mines	-0.1080	0.0537	-0.2190**	-0.3208*	-0.3358	-0.3319**	-0.3358	-0.3319**
	(0.1340)	(0.2123)	(0.1020)	(0.1710)	(0.2275)	(0.1474)	(0.2275)	(0.1474)
Log (Price)	0.1710**	0.3135***	0.0087	-0.1053	-0.1179	-0.1112*	-0.1179	-0.1112*
	(0.0730)	(0.1058)	(0.0553)	(0.0908)	(0.1434)	(0.0575)	(0.1434)	(0.0575)
Observations	2,866,626	1,486,411	1,380,215	807,464	174,833	157,661	174,833	157,661
R^2	0.11	0.13	0.17	0.12	0.10	0.19	0.10	0.19
District FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mean DV	8.37	11.90	4.88	8.37	12.17	4.67	12.35	4.43

Notes: The table reports the effect of an increase in mining value on the logarithm of monthly income estimated using the main estimating equation, where the outcome includes individuals who reported a 0 income. Standard errors are in parentheses, clustered at the district level. * p<.10, ** p<.05, *** p<.01. Log(Monthly Income) is the logarithm of last month's income. All regressions include year and district fixed effects, and controls for age, age², indicators for education level and being married. The Sakernas data sample extends from 1998 to 2011. Columns (1)-(3) examine effects across all districts, columns (4)-(6) across mining districts, and columns (7)-(8) across districts with active mines over the study period.

	All (1)	Males (2)	Females (3)	All (4)	Males (5)	Females (6)	All (7)	Males (8)	Females (9)
				Log(Monthly Wage)					
Total Income= Salary + Business Income									
# Active Mines x Log(Price)	0.32*	0.37*	0.18	-0.02	0.02	-0.24	-0.20	-0.14	-0.30
	(0.16)	(0.19)	(0.23)	(0.20)	(0.23)	(0.20)	(0.30)	(0.29)	(0.44)
# Active Mines	-0.94	-1.09	-0.43	0.22	0.14	0.92	0.84	0.67	1.13
	(0.70)	(0.82)	(1.00)	(0.89)	(0.99)	(0.92)	(1.30)	(1.21)	(1.93)
Log(Price)	0.01	0.05	-0.05	0.94	1.04	0.67	0.75	1.05	0.00
	(0.08)	(0.08)	(0.07)	(0.71)	(0.73)	(0.85)	(0.91)	(1.01)	(1.52)
Observations	6,383	4,303	2,080	6,383	4,303	2,080	8,168	5,445	2,723
R^2	0.07	0.07	0.08	0.16	0.17	0.17	0.64	0.60	0.74
Salary									
# Active Mines x Log(Price)	0.27*	0.30*	0.23	0.29**	0.26**	0.42*	0.10	0.04	0.29
	(0.15)	(0.17)	(0.18)	(0.12)	(0.13)	(0.25)	(0.22)	(0.20)	(0.39)
# Active Mines	-0.83	-0.92	-0.67	-1.28**	-1.20**	-1.77	-0.43	-0.22	-1.02
	(0.68)	(0.76)	(0.78)	(0.55)	(0.56)	(1.14)	(0.95)	(0.88)	(1.54)
Log(Price)	0.08	0.08	0.10	-0.13	-0.31	0.01	-0.82	-0.76	-0.86
	(0.08)	(0.09)	(0.08)	(0.36)	(0.45)	(0.59)	(0.95)	(0.62)	(2.51)
Observations	3,081	2,183	898	3,081	2,183	898	3,806	2,672	1,134
R^2	0.08	0.06	0.13	0.16	0.15	0.25	0.83	0.80	0.90
Business Income									
# Active Mines x Log(Price)	0.30	0.37	0.17	-0.30	-0.13	-0.61**	-0.52	-0.23	-0.68**
	(0.18)	(0.24)	(0.30)	(0.27)	(0.31)	(0.25)	(0.48)	(0.51)	(0.33)
# Active Mines	-0.86	-1.23	-0.25	1.56	1.03	2.28*	2.25	1.22	2.48*
	(0.87)	(1.15)	(1.26)	(1.31)	(1.50)	(1.29)	(2.05)	(2.30)	(1.39)
Log(Price)	0.02	0.06	-0.08	1.73	2.11**	0.81	1.33	1.99	-0.62
	(0.11)	(0.12)	(0.09)	(1.07)	(1.03)	(1.37)	(1.66)	(1.46)	(2.57)
Observations	4,070	2,769	1,301	4,070	2,769	1,301	5,301	3,561	1,740
R^2	0.02	0.02	0.03	0.12	0.13	0.13	0.66	0.63	0.76
Year FE	N	N	N	Y	Y	Y	Y	Y	Y
District FE	N	N	N	Y	Y	Y	Y	Y	Y
Individual FE	N	N	N	N	N	N	Y	Y	Y
Mean DV	11.76	11.92	11.44	11.76	11.92	11.44	11.76	11.92	11.44

Notes: The table reports the effect of an increase in mining value on the logarithm of monthly income estimated using the main estimating equation. Standard errors are in parentheses, clustered at the district level. * p<.10, ** p<.05, *** p<.01. Log(Monthly Income) is the logarithm of last month's income. Regressions in columns (1)-(3) are without additional fixed effects and controls, columns (4)-(6) include year and district fixed effects, and columns (7)-(9) further include individual fixed effects. The sample is of individuals aged 22 to 60 from all districts. Data are from the the IFLS, using the waves 1997, 2000, 2007 and 2014, for mining districts.

Table A8. Labor market effects by the direction of price change

	Log(Monthly Income)				Probability(Employed)			
	Price Increase		Price Decrease		Price Increase		Price Decrease	
	Female	Male	Female	Male	Female	Male	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
# Active Mines x Log(Price)	0.116***	-0.028	-0.055	0.024	0.009**	-0.001	-0.008**	-0.000
	(0.035)	(0.027)	(0.047)	(0.038)	(0.004)	(0.001)	(0.004)	(0.002)
# Active Mines	-0.622***	0.118	0.145	-0.260	-0.048**	0.005	0.030	-0.005
	(0.205)	(0.172)	(0.245)	(0.186)	(0.022)	(0.007)	(0.022)	(0.008)
Observations	211,103	202,443	46,695	49,329	319,893	341,152	86,413	95,025
R^2	0.19	0.15	0.22	0.12	0.11	0.10	0.09	0.09
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
District FE	Y	Y	Y	Y	Y	Y	Y	Y
Mean DV	4.67	12.17	4.67	12.17	0.55	0.93	0.55	0.93

Notes: The table reports mining value effects separated by the direction of world price change. All regressions are estimated using the main estimating equation. Standard errors are in parentheses, clustered at the district level. * p<.10, ** p<.05, *** p<.01. Log(Monthly Income) is the logarithm of last month's income. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. All regressions include year and district fixed effects, and controls for age, age^2, indicators for education level and being married. The Sakernas data sample extends from 1998 to 2011.

Table A9. Heterogeneous effects by education

	Log(Monthly Income)		Probability(Employed)	
	Female	Male	Female	Male
	(1)	(2)	(3)	(4)
Less than College				
# Active mines x log(price)	0.08**	-0.01	0.00	0.00
	(0.03)	(0.02)	(0.00)	(0.00)
# Active mines	-0.44***	0.04	-0.02	-0.00
	(0.16)	(0.11)	(0.02)	(0.00)
Observations	903424	902100	1324869	1415479
R^2	0.12	0.14	0.10	0.11
F	829.4	300.7	340.9	132.9
College and Above				
# Active mines x log(price)	0.13	0.04	0.01	0.00
	(0.15)	(0.05)	(0.01)	(0.00)
# Active mines	-0.64	-0.16	-0.06	-0.01
	(0.72)	(0.26)	(0.04)	(0.00)
Observations	121442	117966	132132	1382568
R^2	0.08	0.16	0.06	0.12
F	205.0	223.0	129.1	182.3
District FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Mean DV	4.67	12.17	0.55	0.93

Notes: The table reports mining value effects for individuals with less than a college education and those with college and higher levels of education. All regressions are estimated using the main estimating equation. Standard errors are in parentheses, clustered at the district level. * $p<.10$, ** $p<.05$, *** $p<.01$. Log(Monthly Income) is the logarithm of last month's income. Probability(Employed)= 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. All regressions include year and district fixed effects, and controls for age, age^2, indicators for education level and being married. The the Sakernas data sample extends from 1998 to 2011.

Table A10. Hours worked

	Overall	Male	Female
	(1)	(2)	(3)
# Active Mines x Log(Price)	0.12	0.10	0.21
	(0.22)	(0.23)	(0.23)
# Active Mines	-0.81	-0.60	-1.53
	(1.16)	(1.18)	(1.18)
Log(Price)	-0.81***	-0.82***	-0.88**
	(0.30)	(0.31)	(0.35)
Observations	2,190,036	1,413,423	776,613
R^2	0.07	0.07	0.11
District FE	Y	Y	Y
Year FE	Y	Y	Y
Mean DV	41	44	37

Notes: The table reports the effect of an increase in mining value on hours per week worked estimated using the main estimating equation. Standard errors are in parentheses clustered at the district level. * p<.10, ** p<.05, *** p<.01. The outcome in each column is the hours worked in the past week. All regressions include year and district fixed effects, controls for age, age^2, indicators for education level and being married. The Sakernas data sample extends from 1998 to 2011.

Table A11. The effect of mining activity on employment - IFLS

	Probability(Employed)								
	All	Males	Females	All	Males	Females	All	Males	Females
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
# Active Mines x Log(Price)	-0.004	0.004	-0.010	-0.007	-0.004	-0.009	0.010	0.018	-0.000
	(0.008)	(0.009)	(0.018)	(0.008)	(0.011)	(0.007)	(0.008)	(0.013)	(0.006)
# Active Mines	0.020	-0.010	0.036	0.040	0.035	0.045	-0.044	-0.093	0.021
	(0.039)	(0.041)	(0.085)	(0.038)	(0.056)	(0.032)	(0.035)	(0.064)	(0.028)
Log(Price)	0.009	0.004	0.018	0.017	0.020	0.014	0.007	-0.005	0.021
	(0.008)	(0.004)	(0.012)	(0.036)	(0.061)	(0.035)	(0.019)	(0.017)	(0.034)
Observations	19,294	10,237	9,057	19,294	9,057	10,237	45,145	23,925	21,220
R^2	0.08	0.12	0.08	0.12	0.14	0.16	0.51	0.46	0.51
Year FE	N	N	N	Y	Y	Y	Y	Y	Y
District FE	N	N	N	Y	Y	Y	Y	Y	Y
Individual FE	N	N	N	N	N	N	Y	Y	Y
Mean DV	0.76	0.90	0.62	0.76	0.90	0.62	0.76	0.90	0.62

Notes: The table reports the effect of an increase in mining value on the likelihood of employment estimated using the main estimating equation. Standard errors are in parentheses, clustered at the district level. * p<.10, ** p<.05, *** p<.01. Probability(Employed) = 1 if an individual reported working last week, has a job but temporarily did not work, or runs a business. Regressions in columns (1)-(3) are without additional fixed effects and controls, columns (4)-(6) include year and district fixed effects, and columns (7)-(9) further include individual fixed effects. The sample is of individuals aged 22 to 60 from all districts. Data are from the the IFLS, transformed using retrospective information into a yearly data set from 1999 to 2014, for mining districts.

Table A12. Heterogeneity by mine type

	Gold			Coal		
	Males	Females	Female	Males	Females	Females
	(1)	(2)	(3)	(4)	(5)	(6)
Log(Monthly Income)						
# Active Mines x Log(Price)	0.12	0.59**		-0.02	0.03	
	(0.08)	(0.23)		(0.04)	(0.09)	
Underground Active Mine x Log(Price)			-0.54**			-0.07
			(0.26)			(0.29)
Open Active Mine x Log(Price)			0.17***			0.00
			(0.04)			(0.02)
# Active Mines	-0.95*	-4.07**	0.30**	0.10	-0.18	-0.03
	(0.55)	(1.63)	(0.14)	(0.19)	(0.44)	(0.06)
Observations	98,477	103,090	103,090	113,416	110,428	110,428
R^2	0.16	0.21	0.21	0.12	0.19	0.19
Mean DV	13.5	13.2	13.2	13.5	13.2	13.2
Probability(Employed)						
# Active Mines x Log(Price)	-0.00	0.07		0.00	0.01	
	(0.01)	(0.05)		(0.00)	(0.01)	
Underground Active Mine x Log(Price)			-0.07**			0.05***
			(0.03)			(0.02)
Open Active Mine x Log(Price)			0.03**			-0.00
			(0.01)			(0.00)
# Active Mines	0.01	-0.48	0.03*	-0.00	-0.03	0.00
	(0.05)	(0.39)	(0.02)	(0.01)	(0.04)	(0.01)
Observations	166,175	157,574	157,574	181,541	164,695	164,695
R^2	0.11	0.12	0.13	0.08	0.09	0.09
Year FE	Y	Y	Y	Y	Y	Y
District FE	Y	Y	Y	Y	Y	Y
Mean DV	12.17	4.67	4.67	12.17	4.67	4.67

Notes: The table reports the effect of an increase in mining value on log monthly incomes (top panel) and on the likelihood of working (bottom panel) estimated using the main estimating equation. In columns (1)−(3) we restrict the sample to districts where the main mineral is gold, and in columns (4)−(6) districts where the main mineral is coal. In columns (3) and (6) we separate mine types into open pit mines and underground mines. Standard errors are in parentheses, clustered at the district level. *p<.10, **p<.05, ***p<.01. Log(Monthly Income) is the logarithm of last month's income. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. All regressions include year and district fixed effects, and controls for age, age^2, indicators for education level and being married. The Sakernas data sample extends from 1998 to 2011.

Table A13. Heterogeneity by urban and rural status

	Urban		Rural		High Herfindahl Index	
	Male	Female	Male	Female	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)
Probability(Work)						
# Active Mines x Log(Price)	0.003	-0.001	0.000	0.005	0.000	0.005
	(0.002)	(0.005)	(0.001)	(0.003)	(0.001)	(0.004)
# Active Mines	-0.014	0.001	-0.000	-0.024	-0.000	-0.025
	(0.012)	(0.024)	(0.004)	(0.018)	(0.005)	(0.022)
Observations	699,998	675,473	849,563	781,528	736,653	686,133
R^2	0.13	0.11	0.09	0.12	0.09	0.10
Log(Monthly Income)						
# Active Mines x Log(Price)	0.024	-0.003	-0.006	0.101***	-0.006	0.097***
	(0.032)	(0.064)	(0.033)	(0.026)	(0.032)	(0.030)
# Active Mines	-0.074	-0.008	0.039	-0.510***	0.028	-0.484**
	(0.147)	(0.310)	(0.164)	(0.165)	(0.174)	(0.236)
Observations	558,802	551,048	461,264	473,818	402,990	418,895
R^2	0.16	0.17	0.14	0.18	0.15	0.20
Probability(Agriculture)						
# Active Mines x Log(Price)	-0.0005	-0.0037	-0.0071*	-0.0100***	-0.0076*	-0.0097***
	(0.0044)	(0.0045)	(0.0039)	(0.0020)	(0.0043)	(0.0030)
# Active Mines	-0.0001	0.0320	0.0506**	0.0639***	0.0492**	0.0586***
	(0.0209)	(0.0241)	(0.0252)	(0.0149)	(0.0211)	(0.0189)
Observations	111,295	57,760	276,880	154,214	660,790	375,800
R^2	0.10	0.16	0.16	0.27	0.18	0.27
Probability(Retail)						
# Active Mines x Log(Price)	-0.0024	0.0032	0.0022***	0.0038	0.0021**	0.0047*
	(0.0038)	(0.0060)	(0.0007)	(0.0023)	(0.0010)	(0.0024)
# Active Mines	0.0166	-0.0316	-0.0117**	-0.0242*	-0.0099	-0.0287*
	(0.0196)	(0.0325)	(0.0050)	(0.0123)	(0.0065)	(0.0172)
Observations	111,295	57,760	276,880	154,214	660,790	375,800
R^2	0.03	0.15	0.02	0.06	0.03	0.07
Probability(Unpaid/informal)						
# Active Mines x Log(Price)	0.002	-0.001	0.004**	-0.006	0.003**	-0.007*
	(0.003)	(0.006)	(0.001)	(0.003)	(0.001)	(0.004)
# Active Mines	-0.014	0.001	-0.030***	0.022	-0.019	0.041*
	(0.015)	(0.030)	(0.011)	(0.021)	(0.012)	(0.023)
Observations	612,164	319,739	798,490	442,221	691,320	391,910
R^2	0.07	0.11	0.14	0.18	0.15	0.20
District FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Notes: The table reports the effect of an increase in mining value on the main results based on the main estimating equation, separately examining urban and rural areas. Standard errors are in parentheses clustered at the district level. * p<.10, ** p<.05, *** p<.01. All regressions include year and district fixed effects, and controls for age, age^2, indicators for education level and being married. The Sakernas data sample extends from 1998 to 2011.

Table A14. Population change and urbanization

	Total	Male Population	Female	Urban	Agricultural Employment
	(1)	(2)	(3)	(4)	(5)
Open Mines					
# Open Mines x Log(Price)	22.23	11.20	11.03	-0.02***	0.00
	(60.80)	(30.52)	(30.28)	(0.01)	(0.00)
# Open Mines	129.02	64.94	64.08	0.11***	0.00
	(282.24)	(141.69)	(140.56)	(0.04)	(0.01)
Observations	1,667,485	1,667,485	1,667,485	1,667,485	906,740
R^2	0.88	0.87	0.87	0.10	0.11
Underground Mines					
# UG Mines x Log(Price)	-363.74	-182.41	-181.33	0.03	-0.03
	(571.50)	(285.95)	(285.55)	(0.05)	(0.04)
# UG Mines	1668.67	834.93	833.74	-0.10	0.12
	(2798.42)	(1401.18)	(1397.26)	(0.26)	(0.17)
Observations	1,667,485	1,667,485	1,667,485	1,667,485	906,740
R^2	0.88	0.87	0.87	0.02	0.11
Open x Gold Mines					
# Open Gold Mines x Log(Price)	489.912***	244.939***	244.973***	0.011	-0.016*
	(118.694)	(59.421)	(59.273)	(0.011)	(0.009)
Underground x Gold Mines					
# UG Gold Mines x Log(Price)	-525.44	-263.34	-262.10	-0.02	-0.05
	(461.84)	(230.94)	(230.90)	(0.06)	(0.04)
Observations	399,354	399,354	399,354	399,354	294,460
R^2	0.88	0.88	0.88	0.10	0.12
Open x Coal Mines					
# Open Coal Mines x Log(Price)	21.862	11.061	10.801	-0.001	0.000
	(41.584)	(20.936)	(20.648)	(0.005)	(0.001)
Underground x Coal Mines					
# UG Coal Mines x Log(Price)	-773.50***	-387.46***	-386.04***	0.04	0.08**
	(267.58)	(133.96)	(133.62)	(0.04)	(0.04)
Observations	436,660	436,660	436,660	436,660	323,722
R^2	0.91	0.90	0.90	0.00	0.13
Year FE	Y	Y	Y	Y	Y
District FE	Y	Y	Y	Y	Y

Notes: The table reports how population (columns (1)-(3)), urbanization (column 4) and the share of individuals employed in agriculture (column (5)) change during mine booms. "UG" refers to underground mines, and "Open" to open pit mines. Since urbanity is determined at the village level, the outcome "Urban" is calculated as the share of a district that is urban. All estimations use the main estimating equation. Standard errors are in parentheses, clustered at the origin district level. * p<.10, ** p<.05, *** p<.01. The Sakernas data sample extends from 1998 to 2011.

A3.3 Robustness

Table A15. Main robustness checks

	Log(Income)		Probability(Employed)	
	Female	Male	Female	Male
	(1)	(2)	(3)	(4)
Placebo Price				
# Active Mines x Log(Price)	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
# Active Mines	-0.08	-0.04	-0.02**	-0.00
	(0.08)	(0.04)	(0.01)	(0.00)
Observations	1,024,866	1,020,066	1,457,001	1,549,561
R^2	0.18	0.15	0.11	0.12
Placebo Gold Price				
# Active Mines x Log(Gold Price)	-0.000	0.000*	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
# Active Mines	-0.007	-0.162**	0.003	-0.008
	(0.157)	(0.070)	(0.016)	(0.005)
Observations	270,615	264,531	411,218	441,009
R^2	0.20	0.14	0.10	0.10
Inactive Mines				
# Inactive Mines x Log(Price)	-0.007	-0.005	0.000	-0.000
	(0.010)	(0.004)	(0.001)	(0.000)
# Inactive Mines	0.034	0.034*	-0.002	0.000
	(0.045)	(0.019)	(0.005)	(0.001)
Observations	1,024,866	1,020,066	1,457,001	1,549,561
R^2	0.18	0.15	0.11	0.12
Excluding Coal				
# Active Mines x Log(Price)	0.17**	0.08***	0.01	0.00***
	(0.07)	(0.01)	(0.01)	(0.00)
# Active Mines	-1.13**	-0.66***	-0.09	-0.03***
	(0.53)	(0.08)	(0.07)	(0.01)
Log(Price)	-0.15	-0.00	-0.01	0.00
	(0.10)	(0.06)	(0.01)	(0.00)
Observations	216,335	206,465	334,297	354,019
R^2	0.20	0.15	0.10	0.10
Randomization Inference p-values				
	0.00	0.29	0.14	0.60
District FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Mean DV	4.67	12.17	0.55	0.93

Notes: The table reports robustness checks from the Robustness section. Standard errors are in parentheses, clustered at the district level. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. Log(Monthly Income) is the logarithm of monthly income. All regressions control for district and year fixed effects, age, age^2, education and marital status. The Sakernas data extend from 1998 to 2011. * p<.10, ** p<.05, *** p<.01.

Table A16. Labor market effects using de Chaisemartin and D'Haultfoeuille estimators

	Log(Income)		Probability(Work)	
	Female	Male	Female	Male
	(1)	(2)	(3)	(4)
# Active Mines x Log(Price)	0.080	0.006	0.003	0.00
	0.040	0.037	0.006	0.002
District FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Mean DV	4.67	12.17	0.55	0.93

Notes: The table represent the labor market effects using the de Chaisemartin and D'Haultfoeuille estimators for regressions involving two-way fixed effects. Standard errors are clustered at the district level. Log(Monthly Income) is the logarithm of last month's income. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. All regressions include year and district fixed effects. Additional controls could not be estimated in Stata due to the size of the data. The Sakernas data sample extends from 1998 to 2011.

Table A17. Price lags and leads

	Log(Income)		Probability(Employed)	
	Female	Male	Female	Male
	(1)	(2)	(3)	(4)
Using Price$_{t-1,k}$				
# Active Mines x Log(Price)	0.05*	-0.02	-0.00	-0.00
	(0.03)	(0.03)	(0.00)	(0.00)
# Active Mines	-0.30**	0.04	0.00	0.00
	(0.15)	(0.16)	(0.02)	(0.01)
Observations	267,665	262,195	406,306	436,177
R^2	0.20	0.14	0.10	0.10
Using Price$_{t+1,k}$				
# Active Mines x Log(Price)	0.07***	-0.02	0.00	-0.00
	(0.02)	(0.04)	(0.00)	(0.00)
# Active Mines	-0.36***	0.04	-0.01	0.00
	(0.12)	(0.18)	(0.01)	(0.01)
Observations	267,665	262,195	406,306	436,177
R^2	0.20	0.14	0.10	0.10
District FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Mean DV	4.67	12.17	0.55	0.93

Note: The table reports results for the main outcomes using lagged and leading mineral prices. Standard errors are in parentheses, clustered at the district level. * p<.10, ** p<.05, *** p<.01. Cells contain coefficients from interaction terms from the main estimating equation. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week. Log(Monthly Income) is the logarithm of last month's income. In the first panel we use the price of the main mineral k lagged by one year, and in the second price of k one year in the future. All regressions control for district and year fixed effects, age, age^2, education and marital status. The coefficients on each of the own terms are included in the regression but not reported here. The Sakernas data sample extends from 1998 to 2011.

Table A18. Labor market effects - Total district mining value

	Probability(Employed)				Log(Income)			
	All Districts		Mining Districts		All Districts		Mining Districts	
	Males	Females	Males	Females	Males	Females	Males	Females
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
District Mining Value	-0.000	0.000	-0.000	0.001	0.003	0.037***	-0.004	0.029**
	(0.000)	(0.001)	(0.000)	(0.001)	(0.009)	(0.012)	(0.011)	(0.013)
Observations	1,554,393	1,461,913	441,009	411,218	1,022,402	1,027,816	264,531	270,615
R^2	0.12	0.11	0.10	0.10	0.15	0.18	0.14	0.20
District FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mean DV	0.93	0.55	0.93	0.55	12.17	4.67	12.17	4.67

Notes: The table reports the effect of an increase in mining value on the likelihood of working estimated using the main estimating equation. Mining value is defined using the number of mines and prices of all minerals in a district in a year. Standard errors are in parentheses, clustered at the district level. * p<.10, ** p<.05, *** p<.01. Probability(Employed) = 1 if an individual reported working last week, temporarily did not work but has a job, or started a business last week, and Log(Income) is monthly income. All regressions include year and district fixed effects, controls for age, age², indicators for education level and being married. The Sakernas data sample extends from 1998 to 2011.

A3.4 Mechanisms

Table A19. Industry - IFLS

	Agriculture	Mining	Manufacturing	Construction	Retail	Transport, Sto-rage, Communications	Finance	Social Services
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mining Districts								
Men								
# Active Mines x Log(Price)	0.046*	0.009	-0.028	-0.009	0.002	-0.006	0.018	-0.033***
	(0.026)	(0.014)	(0.021)	(0.011)	(0.012)	(0.005)	(0.017)	(0.008)
# Active Mines	-0.184	-0.054	0.112	0.048	-0.017	0.027	-0.071	0.151***
	(0.113)	(0.071)	(0.088)	(0.059)	(0.056)	(0.021)	(0.074)	(0.039)
Log(Price)	-0.024	-0.001	0.008	-0.002	0.000	-0.013	0.023	0.006
	(0.041)	(0.012)	(0.040)	(0.014)	(0.011)	(0.010)	(0.022)	(0.014)
Observations	21,651	21,651	21,651	21,651	21,651	21,651	21,651	21,651
R^2	0.77	0.76	0.70	0.65	0.81	0.76	0.73	0.71
Mean DV	0.41	0.05	0.18	0.03	0.09	0.04	0.08	0.09
Women								
# Active Mines x Log(Price)	0.054*	-0.004	-0.028	0.000	-0.017	0.010**	0.014	-0.041*
	(0.031)	(0.003)	(0.021)	(0.000)	(0.013)	(0.004)	(0.016)	(0.020)
# Active Mines	-0.241	0.016	0.112	0.000	0.116**	-0.052**	-0.076	0.187*
	(0.142)	(0.014)	(0.088)	(0.001)	(0.056)	(0.020)	(0.070)	(0.100)
Log(Price)	0.019	0.002	0.008	-0.000	-0.005	-0.001	0.022	0.013
	(0.050)	(0.007)	(0.040)	(0.000)	(0.017)	(0.004)	(0.017)	(0.023)
Observations	15,933	15,933	21,651	15,933	15,933	15,933	15,933	15,933
R^2	0.77	0.70	0.70	0.94	0.84	0.77	0.77	0.71
Mean DV	0.46	0.00	0.17	0.00	0.17	0.01	0.06	0.10
District FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Individual FE	Y	Y	Y	Y	Y	Y	Y	Y

Notes: The table reports the effect of an increase in mining value on the industry of work estimated using the main estimating equation. Standard errors are in parentheses clustered at the district level. * p<.10, ** p<.05, *** p<.01. The outcome in each column is an indicator for working in a given industry. The sample is of individuals aged 22 to 60 living in districts with active and inactive mines. All regressions include year, district and individual fixed effects. Data are from the the IFLS, transformed using retrospective information into a yearly data set from 1999 to 2014.

Table A20. Status - IFLS

	Self-Employed		Private Employee		Unpaid and/or informal Work		Casual Agriculture	
	Males	Females	Males	Females	Males	Females	Males	Females
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mining Districts								
# Active Mines x Log(Price)	-0.004	0.010	0.016	0.009	0.016**	-0.001	-0.025***	-0.003
	(0.013)	(0.013)	(0.016)	(0.007)	(0.006)	(0.017)	(0.008)	(0.004)
# Active Mines	0.023	-0.033	-0.106	-0.031	-0.076***	-0.006	0.129***	0.020
	(0.059)	(0.060)	(0.067)	(0.031)	(0.026)	(0.082)	(0.034)	(0.021)
Log(Price)	0.007	0.021	-0.017	-0.044**	0.016	0.051	0.005	0.001
	(0.028)	(0.028)	(0.024)	(0.016)	(0.016)	(0.036)	(0.012)	(0.008)
Observations	23,925	21,220	21,656	15,938	21,656	15,938	21,656	15,938
R^2	0.70	0.66	0.67	0.79	0.61	0.77	0.57	0.51
District FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Individual FE	Y	Y	Y	Y	Y	Y	Y	Y
Mean DV	0.44	0.22	0.27	0.17	0.06	0.39	0.06	0.01

Notes: The table reports the effect of an increase in mining value on the status of work estimated using the main estimating equation. Standard errors are in parentheses clustered at the district level. * p<.10, ** p<.05, *** p<.01. The outcome in each column is an indicator for working with a given job status. The sample is of individuals aged 22 to 60 living in districts with active and inactive mines. All regressions include year, district and individual fixed effects. Data are from the the IFLS transformed using retrospective information into a yearly data set from 1999 to 2014.

Table A21. Mine development stage and industry

	Agriculture			Mining			Retail		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pre-Operation	13007.829**			-2920.697**			-1815.478		
	(6075.602)			(1344.985)			(1732.366)		
Operation		-13726.675**			2410.620*			1226.095	
		(5546.511)			(1360.918)			(1585.224)	
Closed			-509.935			3861.283**			3919.677
			(16432.929)			(1788.127)			(3861.944)
Observations	5899	5899	5899	5899	5899	5899	5899	5899	5899
R^2	0.12	0.12	0.12	0.09	0.08	0.08	0.08	0.08	0.08
District FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Controls	N	N	N	N	N	N	N	N	N
Mean DV	0.5	0.5	0.5	0.023	0.023	0.023	0.16	0.16	0.16

Notes: The table reports estimates of the regression: $Employment_{ijt} = \alpha_0 + \alpha_1 MineStage_{kjt} + \alpha_t + u_{jt}$, where the outcome is employment in industry i in district j and year t, the main independent variable is the mining stage of mine k in district j and year t, and the α_t are year fixed effects. Mine stages are: pre-operation, operating and closed. Standard errors are in parentheses, clustered at the district level. * p<.10, ** p<.05, *** p<.01. The Sakernas data sample extends from 1998 to 2011, and is restricted to districts with mines over the study period.