Internal Migration and Labor Market Adjustments in the Presence of Nonwage Compensation

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Introduction

- Local labor markets adjust to supply shocks
- Predictions from canonical partial equilibrium models
  - Perfect competition: $\uparrow$ supply $\downarrow$ wages
  - Wage rigidity: $\uparrow$ supply $\downarrow$ employment
- Developing economies: competitive (informal) coexisting with more frictional (formal) markets
- Other margins: nonwage compensation
- This paper: Impacts of internal migration on native workers in a setting with wage rigidity, pervasive informality and nonwage compensation

Introduction

- Empirical challenges
  - Selection: migrants move to areas with better opportunities
  - Simultaneity: migrants supply labor but also demand goods and services
- Shift-share (Bartik) instrumental variable
  - Shift: Weather shocks at the origin in the Semiarid region
  - Share: Past settlement from the origin municipalities in destination

Some context

- From 1996-2010 over 3 million people left the Semiarid. Large area. Historical source of migrants
- Brazil: over 40% of workers in the informal sector
- Formal sector: 20% covered by health insurance; 40% receive food and transportation subsidies
- Nonwage benefits are not subject to payroll taxes and deductible from income tax

Estimation

- We want to estimate

$$\Delta y_{dt} = \alpha + \beta m_{dt} + \gamma \Delta X_{dt} + \psi_t + \epsilon_{dt} \tag{1}$$

- But the observed migration m_{dt} is endogenous!
- We construct the shift-share instrument

$$\widetilde{m}_{dt} = \frac{1}{P_d} \sum_{o=1}^{O} s_{od} \widehat{M}_{ot} \tag{2}$$

- To estimate the reduced form

$$\Delta y_{dt} = \alpha + \beta \widetilde{m}_{dt} + \gamma \Delta X_{dt} + \psi_t + \epsilon_{dt} \tag{3}$$

Main results

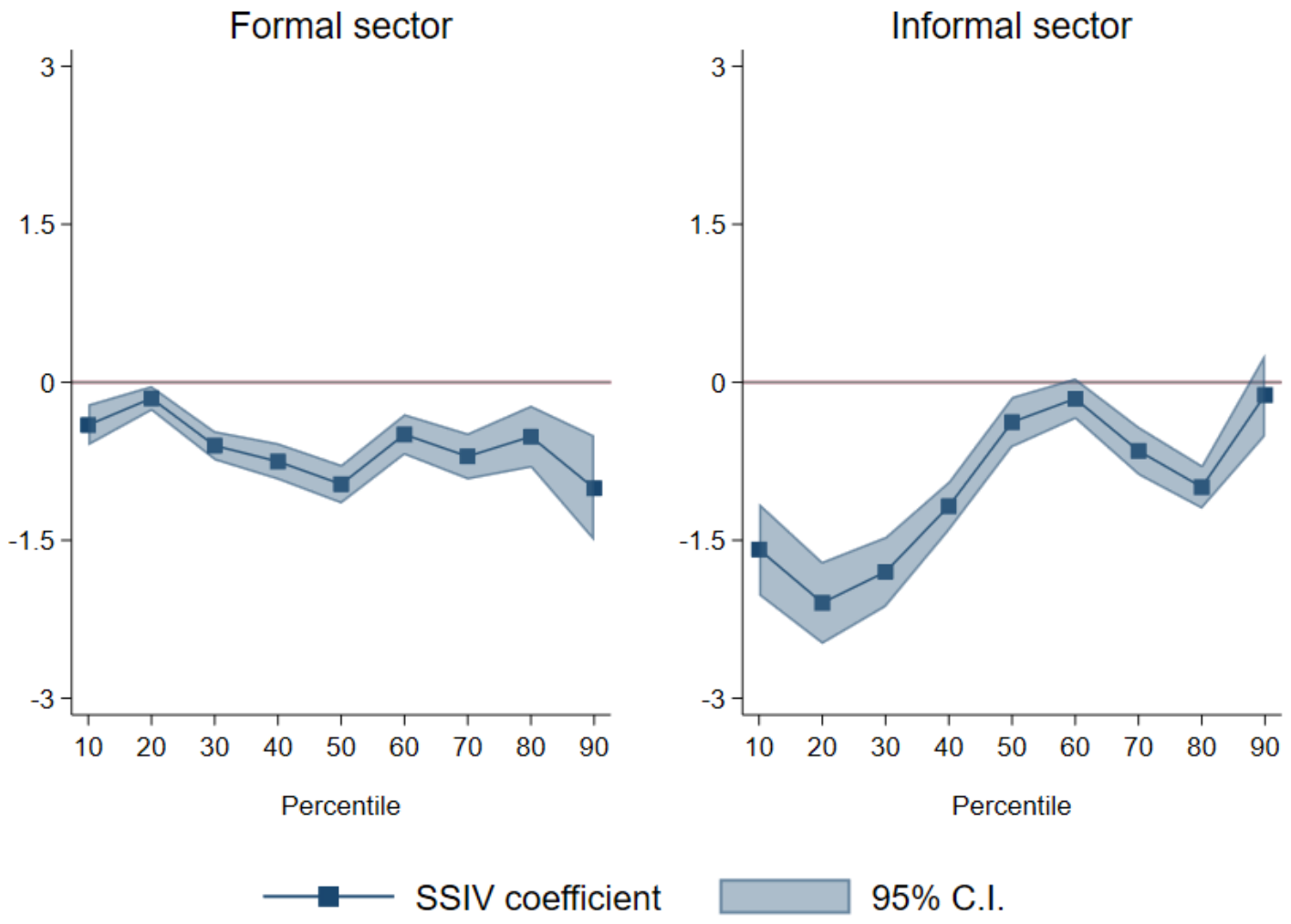
Table 1: **Labor market SSIV estimates**

	Overall	Formal	Informal
Δ log earnings	-0.869***	-0.593***	-0.746***
	(0.197)	(0.198)	(0.123)
Δ employment rate	-0.018	-0.126***	0.108***
	(0.034)	(0.037)	(0.034)
	Food	Transport	Health
Δ nonwage benefits	-0.687***	-0.372***	-0.315***
	(0.086)	(0.062)	(0.064)
Observations	11,460	11,460	11,460
Municipalities	955	955	955
Time dummies	✓	✓	✓
Baseline × time	✓	✓	✓

Notes: SSIV coefficients of labor market outcomes against the number of migrants from the Semiarid region in each destination municipality, measured as a fraction of the native working-age population in 1991. Each cell shows the coefficients from a specific regression. All regressions are weighted by the native working-age population in 1991. Origin municipality-level clustered standard errors in parentheses. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

Main results

Figure 1: Effects along the earnings distribution



Main results

Table 2: **Labor market SSIV estimates, by status in the household**

	(1) Employment	(2) Formal	(3) Informal	(4) Unemployment	(5) Out labor force
Head of household	-0.028*	-0.113***	0.085***	0.018*	0.032**
	(0.015)	(0.021)	(0.019)	(0.011)	(0.013)
Non-head	0.010	-0.013	0.024	0.076***	-0.108***
	(0.024)	(0.019)	(0.018)	(0.014)	(0.019)
Observations	11,460	11,460	11,460	11,460	11,460
Municipalities	955	955	955	955	955
Time dummies	✓	✓	✓	✓	✓
Baseline × time	✓	✓	✓	✓	✓

Notes: This table present SSIV coefficients of labor market outcomes against the number of migrants from the Semiarid region in each destination municipality, by status in the household. Each cell shows the coefficients from a specific regression. All regressions are weighted by the native working-age population in 1991. Origin municipality-level clustered standard errors in parentheses. *** Significant at 1%. ** Significant at 5%. * Significant at 10%.

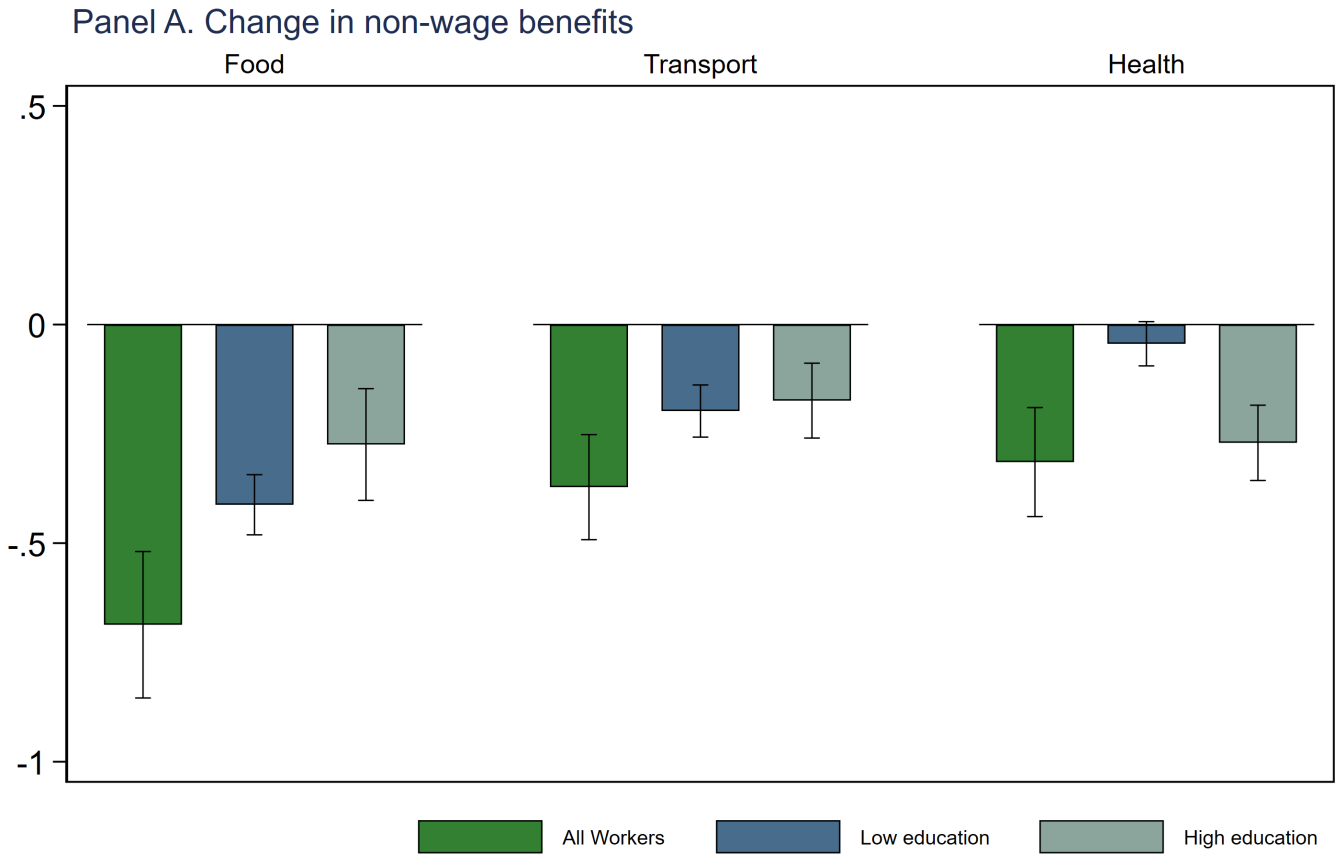
Heterogeneous effects

Figure 2: **Effects by education level**

Notes: Low education = up to 8 years of schooling. The capped lines show the 95% confidence intervals.

Heterogeneous effects

Figure 3: **Effects by education level**



Notes: Low education = up to 8 years of schooling. The capped lines show the 95% confidence intervals.

Conclusion

- An exogenous supply shock of low-educated workers reallocates native workers from the formal to informal sector
- It reduces earnings in both sectors, but further among informal workers. Stronger impacts at the bottom of informal earnings distribution, increasing inequality
- In the formal sector adjustment also on nonwage benefits
- Low-educated native workers are more affected