5. Who suffers the burden of adjustment? Returns to schooling and business cycle fluctuations

FROM LEDERMAN, MESSINA & MALONEY,
THE FALL OF WAGE FLEXIBILITY:
LABOR MARKETS AND BUSINESS CYCLES IN LAC SINCE THE 1990s

FORTHCOMING!

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Motivation

- Do business cycles affect unskilled workers proportionately more than skilled workers? Related to inequality, e.g. globalization
- Little on magnitude and determinants of cyclical RTS in LDCs
  - Contradictory predictions: e.g., Reder (1955 AER)'s counter-cyclical RTS due to compositional changes versus unions protecting unskilled labor (in HI!)
  - Many DC studies: Kniesner *et al.* 1978; King 1980; Kydland 1984; Gautier *et al.* 2002; Teulings and Koopmanschap 1989; Devereux 2004; Ammemuller *et al* 2009; Khalifa 2009
  - Few & contradictory on LDCs : Psacharopoulos *et al.* 1996 on Mex versus Fasih *et al.* 2010 on Mex, Arg, Ven. (NB: They use "Mincerian" estimates)
- Our hypotheses: cyclical component of RTS determined by the type of shock and rigidities attenuate effects

What We Do to Estimate Average Effects of Business Cycles on RTS

- First stage: Estimate permanent and cyclical components of RTS with Pseudo-Panels of Birth-Year cohorts for 12 LAC countries (with sufficient number of employment surveys)
  - Permanent component of RTS = Average RTS within cohorts + secular trend
  - Cyclical component = de-trended year dummies * schooling (i.e., deviations from trend RTS by country)
- Second stage: Estimate partial correlations between cyclical RTS and four types of shocks
  - Real & financial shocks; external & domestic

Pseudo-Panel Estimates of Cyclical RTS

$$ln(w_{ct}) = \omega + A\alpha + C\theta + Y\psi + s_{ct}\rho_1 + Ts_{ct}\rho_2 + \sum_{t=3}^{\tau} s_{c,t} d_t^* \rho_t + \varepsilon_{ct}$$

$$d_t^* = d_t - \left[(t-1)d_2 - (t-2)d_1\right]$$

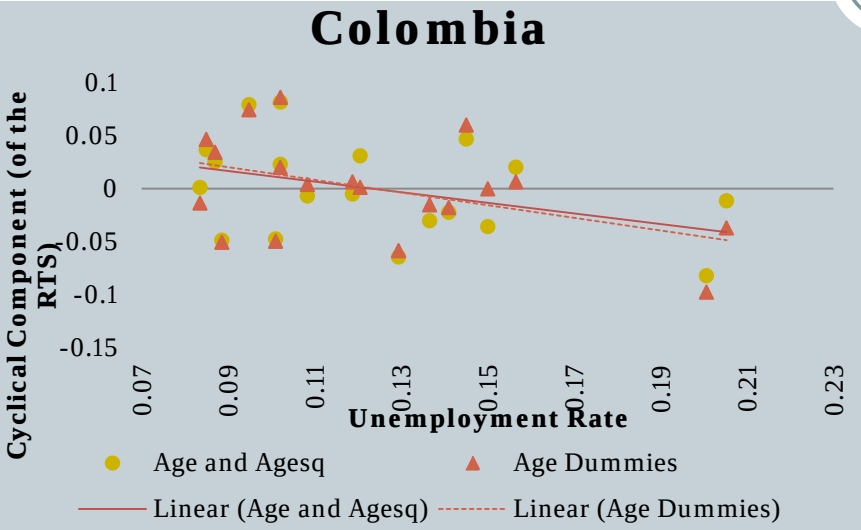
- Advantages
  - 12 countries with repeated cross sections of employment surveys
  - Wash out "ability bias" by averaging by birth cohorts
  - Control for cohort Fes
  - Control for deterministic trends in the RTS
- Disadvantages
  - Reduced number of observations by year
  - Sampling error

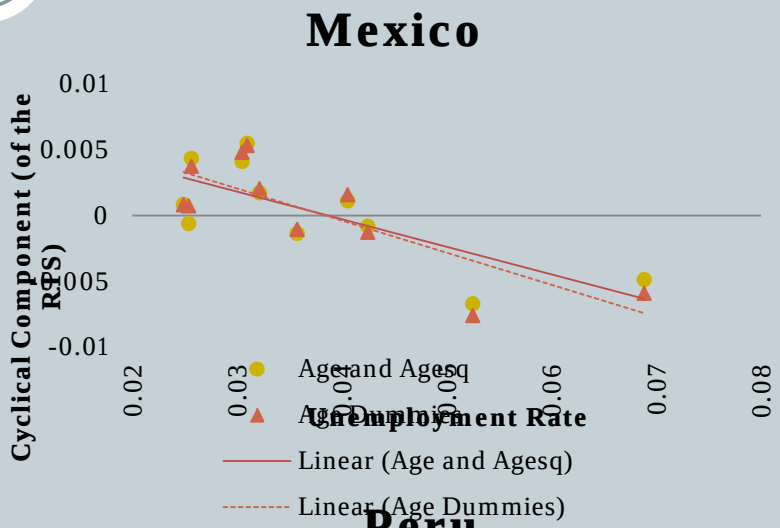
Returns to Schooling: Permanent, Trend and Cyclical Components

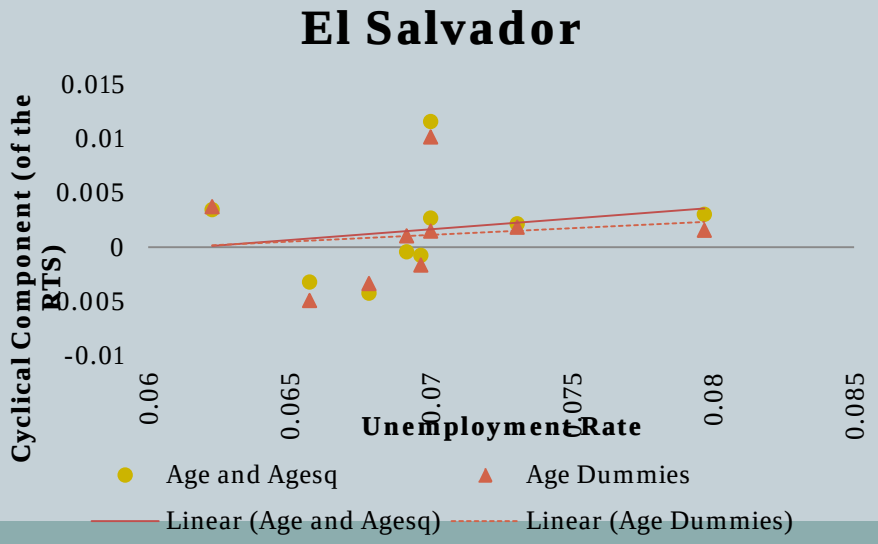
Components of the Returns to Schooling (Linear Trend)						
	Salaried Workers					
	Constant		*Trend*		*Cyclical (Average)*	
Country	*Coefficient*	*P-value*	*Coefficient*	*P-value*	*Coefficient (Mean)*	*P-value (F-test)*
Argentina	0.087	0.000	-0.005	0.036	-0.001	0.0002
Brazil	0.124	0.000	-0.001	0.414	0.001	0.0023
Chile	0.073	0.000	0.002	0.026	0.000	0.0000
Colombia	0.062	0.211	-0.003	0.398	0.000	0.1680
Costa Rica	0.066	0.000	0.002	0.006	0.000	0.0715
Ecuador	0.054	0.000	0.000	0.753	0.001	0.8377
Honduras	0.097	0.000	0.001	0.368	-0.001	0.4275
Mexico	0.105	0.000	-0.001	0.175	0.000	0.0411
Peru	0.022	0.044	0.007	0.000	0.001	0.1409
EL Salvador	0.057	0.000	0.000	0.675	0.001	0.8374
Uruguay	0.097	0.000	0.000	0.868	-0.001	0.0248
Venezuela	0.148	0.000	-0.004	0.000	0.000	0.0043

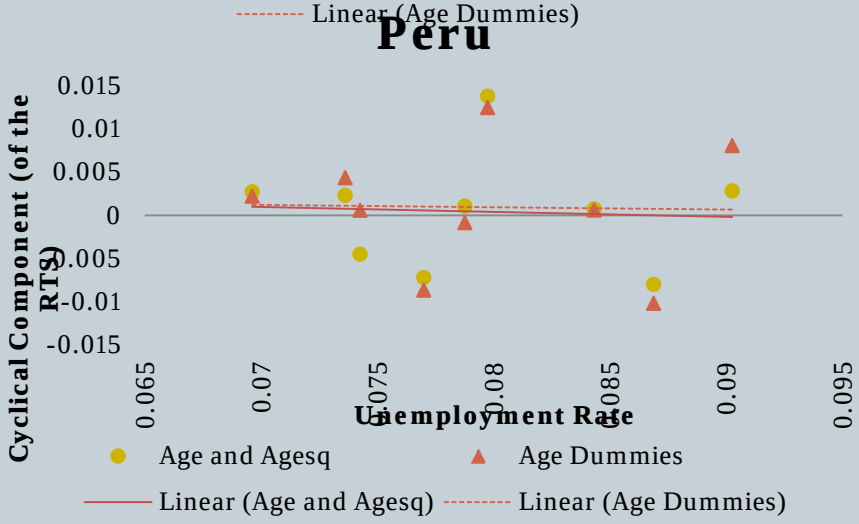
Source: Lederman & Rojas Alvarado (2011).

Some Pictures about the Cyclical Component of RTS and Aggregate Unemployment (alt. specifications)









Source: Lederman and Rojas (2011)

Definitions of Shocks, plus Other Controls

- Real Shocks (same de-trending as RTS)
  - External: growth of trading partners' (average) GDP motivated by gravity model (using model's estimated coefficient)
  - Domestic: CPI inflation
- Financial Shocks (same de-trending as RTS)
  - External: US lending r times D/y (t-1)
  - Domestic: Domestic lending r times private credit/y (t-1) [robustness: use alternative r's]
- Labor market rigidities
  - Time-invariant, country specific
    - Rigidity of hours (e.g., night work, etc) from DB
    - Difficulty of using redundancy as reason for firing from DB
    - Difficulty of using temporary hiring (i.e., fixed term contracts) from DB
    - Min wage/Median wage from national sources
  - Interacted with shocks

Determinants of Cyclical RTS (with Country and Year Fixed Effects)

	Cyclical RTS: Salaried Workers	Cyclical RTS: Salaried Workers	Cyclical RTS: Salaried & Unemployed
Exports	0.138**	0.181**	0.798**
External Fin.	-0.301***	-0.206**	-0.866
Domestic Fin.	-0.036	-0.016	-1.263*** (plus interactions...)
Inflation	0.009***	0.007**	0.029*
Exports*Hrs		-0.002**	-0.014***
Exports*Redun.		-0.002***	-0.009***
Exports*Min.W.		0.089	-0.702*
OBS	165	165	165
R-squared	0.22	0.31	0.42

Note: Robust to alternative specifications of the trend in the cohort-income models …

Source: Lederman and Rojas (2011)

Distributional Impacts: Conclusions

- *Temporary* export shocks affect the cyclical RTS
  - Consistent with exports being skill intensive relative to domestic sales within industries (Veerhogen 2008; Brambilla et al. 2011, 2010)
  - Consistent with quality adjustments (as in Reder 1955; Kaplan et al. 2011)
- *Temporary* inflation the other robust determinant (small)
- Labor-market "protection" attenuate effects
- A thought about Social Protection
  - Relative risk of skilled workers rises with trade …

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