

Inter-sectoral Labor Reallocation and Sectoral Wage Inequality

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Highlights

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- We find labor reallocation in Asia has mostly been associated with productivity growth while in Sub-Saharan Africa the converse is true.
- We also find the structural change component to be industrial-wage inequality reducing

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- To do this, we use non-parametric shift-share decomposition to extract the SCIP, following Mcmillan and Rodrik (2011)
- And exploit the within-country variation in the SCIP to identify its effect on industrial wage inequality

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- Laitner (2000) examines the effect of structural change through the lens of Engel's law.

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- Hillbom and Bolt (2015) find that increases in share of agricultural and manufacturing employment tend to reduce income inequality
- Wan et. al(2016) argues that changes in inequality could be linked to structural transformation resulting from technological, cultural and institutional changes

Research Question

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- Specifically, when labor increasingly move to low-productivity sectors, with low wages, inequality may arise.
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Shift-share decomposition

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 - ③ Country level covariates → World Bank Development Indicators (WDI) database

- 10 sectors: Agriculture, mining, manufacturing, public utilities, construction, wholesale and retail trade, transportation and communications, finance, insurance and real estate, community, social, personal and government services

- 10 sectors: Agriculture, mining, manufacturing, public utilities, construction, wholesale and retail trade, transportation and communications, finance, insurance and real estate, community, social, personal and government services
- 30 countries Asia, SSA, MENA , North America, Europe and LAC
- The UTIP- UNIDO computes the industrial pay-inequality measures for 151 countries from 1963-2015

Regression Framework

- From equation (1) the share of structural change in productivity is given by: $\frac{\sum_i^n y_i \Delta \delta_i}{\Delta Y}$
- The empirical specification then is given by:

Empirical Specification

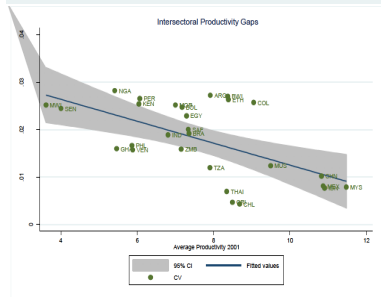
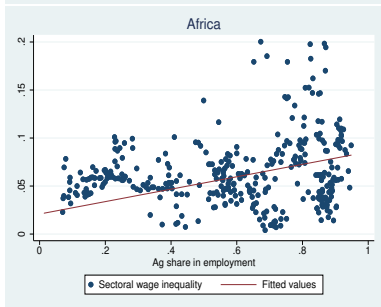
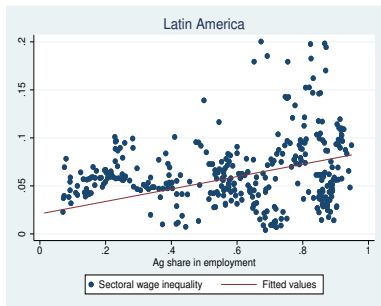
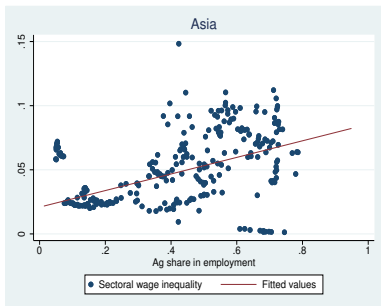
$$y_{it} = \alpha + \frac{\sum_i^n y_i \Delta \delta_i}{\Delta Y} \beta_1 + X_{it} \beta_2 + \gamma_i + \varepsilon_{it} \quad (2)$$

- y_{it} → industrial wage inequality
- X_{it} → $NT \times K$ matrix of macroeconomic covariates
- γ_i → unobserved time-invariant country-level heterogeneity

Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Inequality index	0.043	0.033	0.001	0.2	1071
Share of structural change	0.013	0.17	-2.469	1.844	1097
Structural - Technical Change	0.003	0.29	-2.57	6.043	1097
Inflation	17.195	129.245	-9.809	2947.733	1054
Globalization	56.694	34.392	6.32	220.407	1024
Ag share in employment	0.35	0.291	0.014	0.948	1097
Secondary school enrollment	66.407	34.213	2.654	156.551	829
Log income	9.159	1.261	6.244	10.84	529

Some Descriptives



- Identification explores country-level fixed effects to remove unobserved heterogeneity that may be correlated with the idiosyncratic error

Identification Strategy and Issues

- Identification explores country-level fixed effects to remove unobserved heterogeneity that may be correlated with the idiosyncratic error
- Sufficient if no omitted variables are correlated with the errors
- Still work in progress

Results: All Sample

	(1)	(2)	(3)	(4)	(5)
Sectoral Wage Inequality	Pooled	Fixed Effects	Margins	Random Effects	Margins
Share of structural change	-0.00016 (0.01296)	-0.01320*** (0.00187)	-0.15371 (0.21606)	-0.01201*** (0.00166)	-0.15530 (0.23958)
L.Share of structural change	0.00141 (0.00506)	-0.00228*** (0.00050)	-0.00228*** (0.00050)	-0.00109** (0.00034)	-0.00109** (0.00034)
2. EUR × Share of structural change	6.34630*** (1.27520)	0.15400 (0.46028)		0.18958 (0.60280)	
3. LAM × Share of structural change	-0.24525*** (0.05256)	0.15787*** (0.02874)		0.08765*** (0.02368)	
4. NAM × Share of structural change	-8.52240** (3.07265)	-7.36193*** (1.65915)		-8.63351*** (1.62314)	
5. SSA × Share of structural change	-0.06156 (0.28405)	0.46888** (0.17501)		0.65041*** (0.19238)	
Inflation	0.00001*** (0.00000)	-0.00001*** (0.00000)	-0.00001*** (0.00000)	-0.00001*** (0.00000)	-0.00001*** (0.00000)
Technical- Structural Change	0.00251 (0.00640)	-0.00360** (0.00106)	-0.00360*** (0.00106)	-0.00381*** (0.00095)	-0.00381*** (0.00095)
Inincome	-0.06044** (0.02979)	0.07402 (0.06538)	-0.00792 (0.00668)	0.02821 (0.05916)	-0.02159** (0.00969)
Inincome × Inincome	0.00178 (0.00147)	-0.00440 (0.00358)		-0.00267 (0.00313)	
Globalization	-0.00015*** (0.00002)	0.00008 (0.00010)	0.00008 (0.00010)	0.00009 (0.00009)	0.00009 (0.00009)
Ag share in employment	-0.03404 (0.02102)	-0.12184** (0.03337)	-0.12184*** (0.03337)	-0.08470* (0.04324)	-0.08470* (0.04324)
2. EUR			0.00172 (0.00514)		0.00212 (0.00674)
3. LAM			0.00176*** (0.00032)		0.00098*** (0.00026)
4. NAM			-0.08229*** (0.01855)		-0.09650*** (0.01814)
5. SSA			0.00524** (0.00196)		0.00727*** (0.00215)
Constant	0.47347** (0.15315)	-0.22752 (0.29457)		0.03635 (0.28860)	
N	458	458	458	458	458
Year FE	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

SSA Sub-sample

	(1)	(2)	(3)
Sectoral Wage Inequality	Pooled estimates	Fixed Effects	Random Effects
Structural change	-0.00268 (0.00175)	0.00247** (0.00102)	0.00270** (0.00116)
L.Structural change	-0.00143 (0.00146)	0.00416** (0.00127)	0.00430*** (0.00117)
Inflation	0.00011 (0.00024)	0.00031 (0.00018)	0.00029* (0.00017)
Technical- Structural Change	-0.05735 (0.19948)	-0.14909 (0.09687)	-0.20476** (0.09460)
Inincome	-0.40800*** (0.06217)	0.46461** (0.15201)	0.34328*** (0.08448)
Inincome × Inincome	0.02330*** (0.00376)	-0.02616** (0.00816)	-0.02000*** (0.00488)
Globalization	-0.00014** (0.00006)	-0.00013 (0.00012)	-0.00017* (0.00010)
Ag share in employment	-0.02830 (0.03526)	-0.11494** (0.02661)	-0.12357*** (0.02194)
Constant	1.85082*** (0.26371)	-1.88873** (0.69622)	-1.31342*** (0.35043)
N	131	131	131
Year FE	Yes	Yes	Yes

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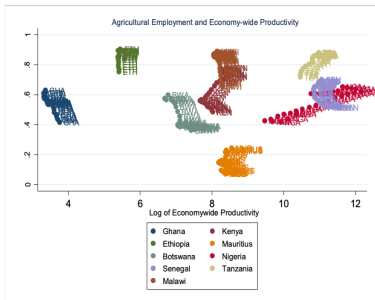
Asia Sub-sample

	(1)	(2)	(3)
Sectoral Wage Inequality	Pooled	Fixed Effects	Random Effects
Structural change	0.00762 (0.03670)	-0.01680 (0.04500)	0.00762 (0.04287)
L.Structural change	-0.01679** (0.00713)	-0.04115*** (0.00439)	-0.01679** (0.00836)
Inflation	0.00107*** (0.00021)	0.00076* (0.00031)	0.00107** (0.00046)
Technical- Structural Change	0.00165 (0.00225)	0.00240** (0.00092)	0.00165** (0.00075)
Inincome	-0.13022** (0.05864)	0.01006 (0.14357)	-0.13022 (0.11525)
Inincome \times Inincome	0.00708** (0.00320)	-0.00112 (0.00869)	0.00708 (0.00634)
Globalization	-0.00014*** (0.00003)	0.00005 (0.00009)	-0.00014** (0.00006)
Ag share in employment	0.02508 (0.02186)	-0.14519 (0.13132)	0.02508 (0.03237)
Constant	0.64560** (0.26556)	0.09969 (0.59242)	0.64560 (0.51326)
N	120	120	120
Year FE	Yes	Yes	Yes

Standard errors in parentheses

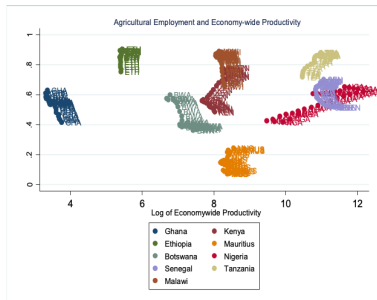
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Possible Mechanisms



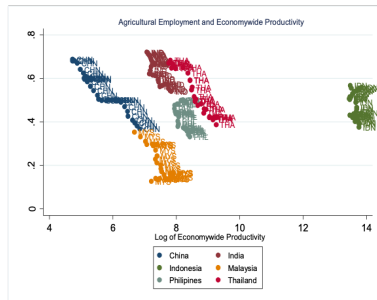
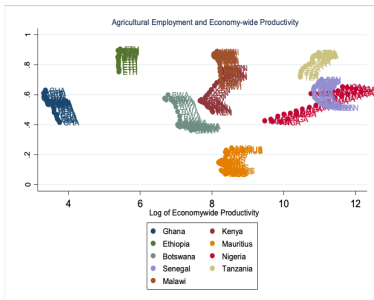
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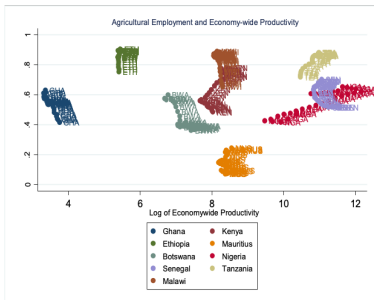
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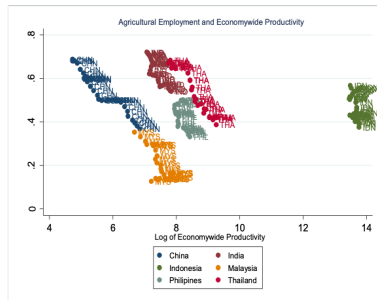


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- In SSA pre-mature deindustrialization has moved lots of labor to low-wage retail and services, further widening the wage gap.
- Institutions and labor market rigidity

Conclusion

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- We find structural change share in productivity growth to be sectoral wage inequality enhancing
- This is driven by the fact that structural change has not been growth enhancing in SSA
- Supports calls for policies targeted at enhanced re-industrialization of Africa, and providing 'good-wage' opportunities for all.