Poverty, Inequality and Jobs:

How does the sectoral composition of employment affect inequality?

Arief Yusuf, Padjadjaran University, Indonesia &
Andy Sumner, King's College London

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Introduction

- Traditional pathway to economic development and employment growth - industrialization – becoming **harder to sustain in 'GVC world'** (Felipe et al., 2014; Kaplinksky, 2014; Pahl & Timmer, 2018)

- Many middle income countries **deindustrializing or reaching peak manufacturing shares** (employment esp.) earlier and at lower levels (Dasgupta and Singh, 2006; [Felipe et al., 2014*]; Palma, 2005; Rodrik, 2015)

- **Inequality (and poverty) consequences of such trends in employment and value-added unclear** - Kuznets and those writing in Kuznets tradition focus on an industrialization process – what if different sectoral shift such as **deindustrialisation or tertiarisation?**

Employment shares vs GDP per capita in 25 developing countries, 1960-2011

Source: GGDC 10-Sector database & WDI.

Deindustrialization & developing countries

- **Much written on deindustrialisation in advanced countries** some years ago (e.g. Alderson 1999; Bacon and Eltis, 1976; Bazen and Thirlwall 1986; 1989; 1992; Blackaby 1978; Bluestone and Harrison 1982; Cairncross 1978; Groot 2000; Kucera and Milberg 2003; Rowthorn and Coutts 2004; Rowthorn and Ramaswamy 1997; Rowthorn and Wells 1987; Saeger 1997; Singh 1977, 1987; Thirlwall 1982)

- **…and more recently** (Fontagné and Harrison 2017; Linkon 2018; Wren 2013) but relevance to developing countries unclear?

- In developing countries: **small set of single-country studies** (e.g. for Malaysia, Mexico, Chile, Pakistan, Egypt, Brazil)

- **… and a relatively small set of cross-country papers** (e.g. Dasgupta and Singh, 2006; Felipe et al., 2014; Frenkel and Rapetti, 2012; Herrendorf, et al., 2013; Palma, 2005; 2008; Pieper, 2000; Rodrik, 2016; Szirmai and Verspagen, 2011; Treganna, 2009; 2014).

- Recent papers of note linking sectoral shifts and inequality: **Angeles (2010) and Baymul and Sen (2018).**

Angeles (2010)*

- 4000 observations of Gini coefficient from WIID, for most countries over 5 decades.

- Test the effect of change in non-agricultural employment shares on inequality with panel data analysis (percentage of labor employed in non-agriculture and share of urban-population).

- Mixed results. Support for Kuznets depend on country-groupings. Country-by-country analysis does not support Kuznets.

* Angeles, L. 'An alternative test of Kuznets' hypothesis.' The Journal of Economic Inequality 8.4 (2010): 463-473.

Baymul and Sen (2018)*

- Baymul & Sen use GGDC 10-Sector database and identify different paths of structural transformation:

  - **structurally under-developed** (agriculture is largest employment share in most recent period), **structurally developing** (services > agriculture > manuf) and **structurally developed** (manuf > agri).

- Baymul & Sen use the (forthcoming) Standardised WIID and find, in contrast to Kuznets that:

  - that the **movement of workers to manufacturing** unambiguously **decreases** income inequality
  - And… that the **movement of workers into services has no discernible overall impact** on inequality BUT… **increases inequality in structural developing countries** and **decreases inequality in structurally developed countries**.

Baymul, C. & Kunal, S. 'Was Kuznets Right? New Evidence on the Relationship between Structural Transformation and Inequality'. ESRC GPID Research Network Paper: London

What did Kuznets (1955) actually say?

- A two-sector model, and **the labour transition from rural to urban sectors would be accompanied by rising inequality** in the early stages of development **because the early benefits of growth go to those with capital and education but, as more people move out of the rural sector, real wages rise in the urban sector and inequality falls.**

- Inequality in the dual sector economy is an aggregation of (i) inequality in each sector (be that urban and rural or traditional and modern 'sectors'); (ii) the mean income of each sector; and (iii) the population shares in each sector. Thus, even the population shift itself could raise inequality as Kuznets himself noted. **So, although inequality may rise as a result of movement between sectors, that occurrence may be balanced or outweighed by what happens to the within-sector components and the shares of each sector. Initial inequality between and within sectors will also play a significant role.**

- Various papers in tradition: e.g. Acemoglu and Robinson (2002); Galbraith (2011), Roine and Waldenström (2014), Oyvat (2016), Willliamson (2001).

Research questions

How does the sectoral composition of employment (or changes in it) affect inequality?

Does the deindustrialization of employment increase or reduce inequality?

Why Indonesia?

- Indonesia has been **successful in the past at generating rapid employment growth** through industrialisation.

- **Indonesian been experiencing since late 1990s a deindustrialisation process & a rise in inequality** (which may have peaked?);

- Indonesia's **regional diversity**, means some regions within Indonesia share structural characteristics such as the dominance of agriculture and/or mining with poorer, low-income countries, whilst other parts of Indonesia share characteristics with better-off, upper-middle-income developing countries such as the dominance of manufacturing and/or services.

Why Indonesian districts?

- Districts represent the broader range of social landscape from rural to metropolis.

- Unlike cross-country studies, district inequality data of one country are directly comparable and legal, educational, and political institutions are shared by districts (Nielsen & Alderson, 1997).

- Income and inequality of the districts represent a good range of cross-country data (see next slide).

- We have assembled a dataset of almost 400 district over 15 years (n = 5,850). We can also control for district level heterogeneity (with district fixed effect).

Indonesian districts in the global context

What did we do?

We estimate the following model

$$I_{it} = \alpha + \sum_{j=1}^{J}\left(\beta_j s_{jit} + \gamma_j s_{jit}^2\right) + \sum_{k=1}^{K}\theta_k x_{kit} + \delta_i + \varepsilon_{it}$$

where I is inequality (Gini), s_i is the sector i's share in total employment and i is various non-agricultural sectors which include non-agriculture (aggregate), manufacturing, non-manufacturing industries, market services, non-market services; x is a vector of control variables (mean income, schooling years, commodity boom period); d is district fixed effect. Year dummies are included.

We look at different definition of services (separate finance, real estate & business services).

We changed s_i with value-added instead of employment share

We check how robust the results to different inequality measures (10 measures), different specification (fixed effect and random effect) and different periods of sample.

The New Dataset

- A new dataset of various indicators of inequality, sectoral shares of employment and education indicators of 390 districts in Indonesia from 2001-2016 (15 years) drawn from the nationally representative socio-economic survey (SUSENAS).

- We add sectoral value added data for each districts over the same period from BPS/World Bank [IndoDapoer for 2001-2013, and BPS for 2014-2016]

Mean income and inequality

Scatter plot with X-axis labeled "Mean expenditure per person (Million Rp/month)" ranging from 0 to 2.5, and Y-axis labeled "Gini coefficient of inequality" ranging from .1 to .5.
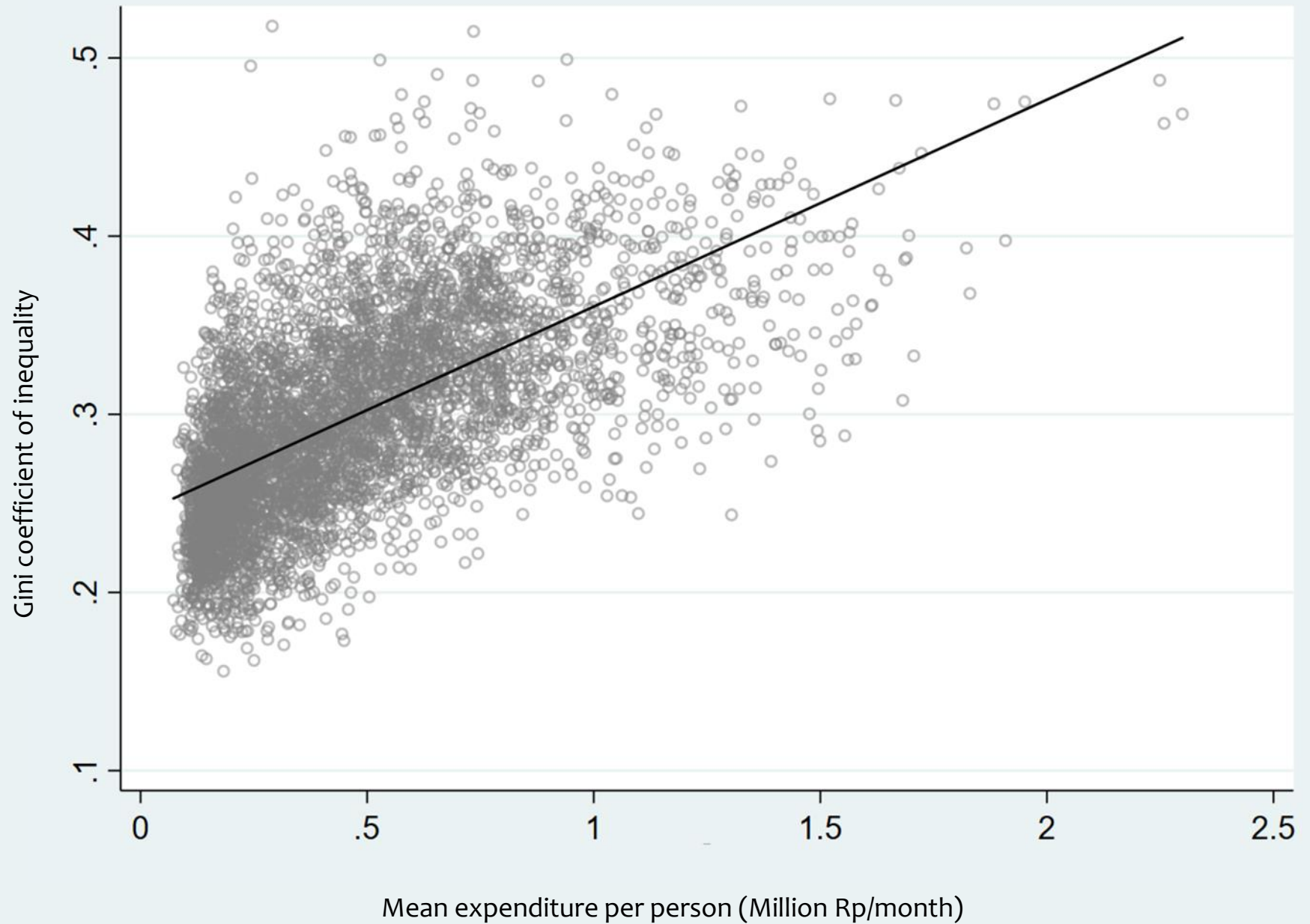
5 and 5+ sector classification & Indonesia's trend 2001-2016
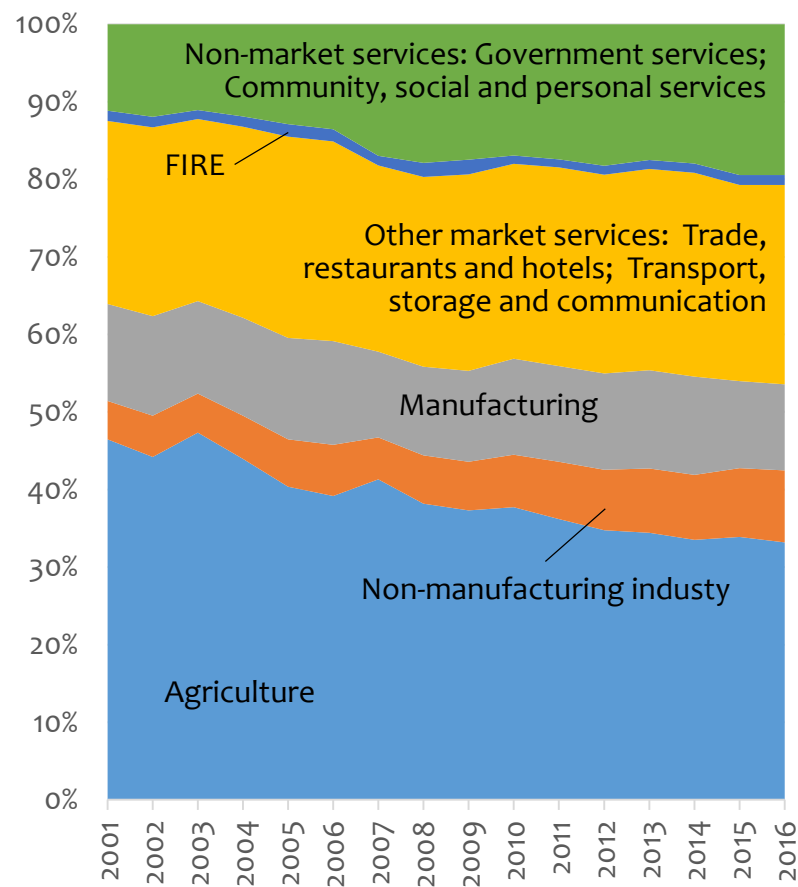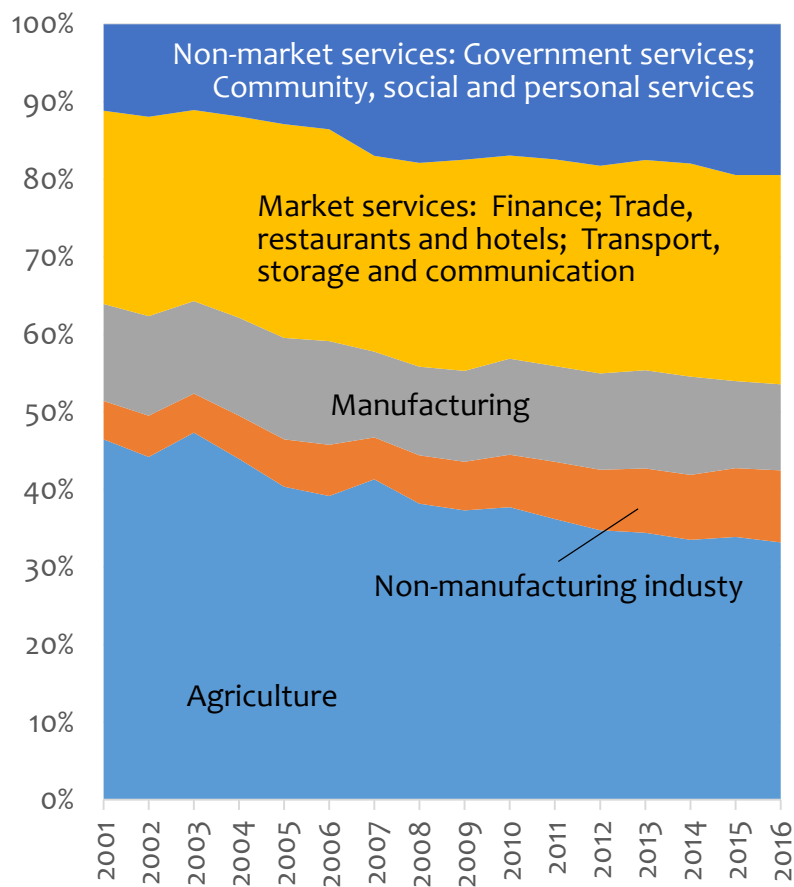
Correlation between inequality (Gini coefficient) and sectoral share of employment

Regression results (Sectoral share of employment, dep. var: Gini Coefficient)

	(1)	(2)	(3)	(4)	(5)	(6)
Mean expenditure per capita (log)	0.140 (0.008)**	0.140 (0.008)**	0.141 (0.008)**	0.145 (0.008)**	0.141 (0.008)**	0.145 (0.008)**
Mean years of schooling (log)	-0.040 (0.016)*	-0.039 (0.016)*	-0.039 (0.016)*	-0.044 (0.015)**	-0.042 (0.016)**	-0.048 (0.016)**
Commodity boom years (1 = yes)	0.165 (0.014)**	0.166 (0.014)**	0.168 (0.015)**	0.175 (0.015)**	0.167 (0.015)**	0.174 (0.015)**
SECTORAL EMPLOYMENT SHARE						
Non-agriculture	0.037 (0.014)*	0.048 (0.038)				
Non-agriculture [squared]		0.010 (0.034)				
Non-manufacture industry			0.081 (0.032)*	0.196 (0.062)**	0.083 (0.032)*	0.211 (0.061)**
Non-manufacture industry [sq.]				-0.600 (0.206)**		-0.652 (0.205)**
Manufacturing			0.070 (0.029)*	0.203 (0.041)**	0.070 (0.029)*	0.209 (0.041)**
Manufacturing [sq.]				-0.380 (0.087)**		-0.394 (0.083)**
Market services			-0.001 (0.021)	-0.070 (0.053)		
Market services [sq.]				0.054 (0.097)		
Non-market services			0.030 (0.025)	0.148 (0.046)**	0.032 (0.024)	0.149 (0.046)**
Non-market services [sq.]				-0.285 (0.103)**		-0.282 (0.103)**
Market: Trade/Transport					-0.008 (0.021)	-0.104 (0.055)
Market: Trade/Transport [sq.]						0.106 (0.105)
Market: Finance/business					0.131 (0.115)	0.467 (0.153)**
Market: Finance/business [sq.]						-4.978 (1.698)**
District Fixed Effect	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Constant	0.419 (0.033)**	0.410 (0.045)**	0.422 (0.033)**	0.425 (0.032)**	0.428 (0.033)**	0.433 (0.032)**
R²	0.66	0.66	0.66	0.67	0.66	0.67
N	4,953	4,953	4,953	4,953	4,953	4,953

* $p<0.05$; ** $p<0.01$, robust standard errors are in parentheses
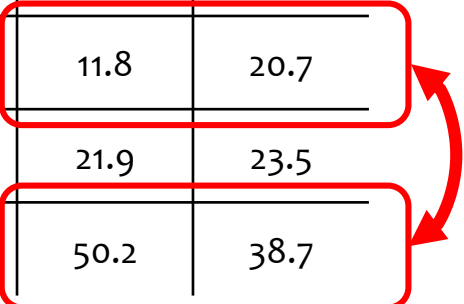
Highlights from regression results

- A reduction in the non-agriculture labour share increases inequality linearly

- …However, when disentangled all sectors (manufacture and non-manufacture industry and various services) except trade, transport, communication shows statistically significant inverted U curve, supporting Kuznets.

- Let's look at the turning points …

Majority of districts in the sample are below the turning point. This implies that structural change (less agriculture, more non-market services) in Indonesia 2001-2016 tends to increase inequality.

Share of employment at turning point, sample mean, and proportion below turning point

	Turning point (%)	Mean (%)	Mean (%) GGDC	Proportion below turning point (%)	Proportion below GGDC	Mean in 2001 (%)	Mean in 2016 (%)
Non-manufacture industry	16.2	6.8	7.2	92.6	88.2	5.0	8.8
Manufacturing	26.5	8.4	15.0	91.6	79.7	9.8	7.3
Market services: Finance/business	4.7	1.1	4.6	93.1	54.5	1.2	1.0
Non-market services	26.4	16.6	18.5	80.4	73.4	11.8	20.7
Market services: Others	-	22.7	19.6	-		21.9	23.5
Agricuture	-	44.4	35.1	-		50.2	38.7

Does deindustrialization increase or reduce inequality?

It depends on:

- the initial sectoral share of employment (before or after the turning point) and…

- The direction of the change of each sectoral employment share during the deindustrialization (e.g, to which other services)

Manufacturing

| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 |

unclear

Non-market services

Increase inequality

| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 |
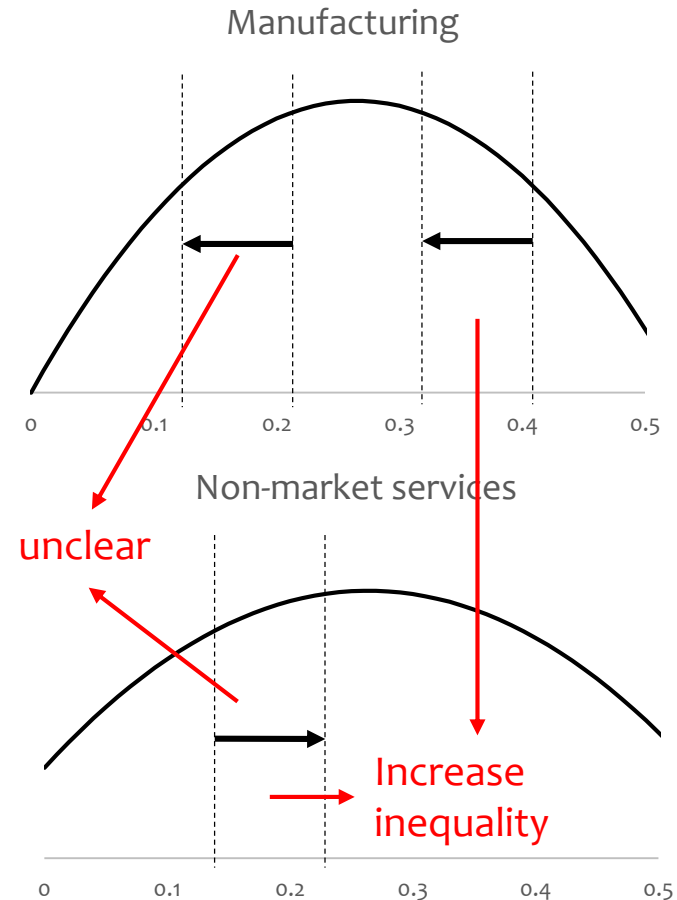
Regression results (Sectoral share of value-added, dep. var: Gini Coefficient)

|	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.142 (0.008)**	0.142 (0.008)**	0.143 (0.008)**	0.143 (0.008)**	0.143 (0.007)**	0.143 (0.008)**
Mean years of schooling (log)	-0.026 (0.016)	-0.028 (0.016)	-0.024 (0.015)	-0.025 (0.016)	-0.025 (0.016)	-0.022 (0.016)
Commodity boom years (1 = yes)	0.170 (0.014)**	0.169 (0.014)**	0.170 (0.015)**	0.173 (0.014)**	0.171 (0.014)**	0.169 (0.014)**
SECTORAL SHARE OF EMPLOYMENT						
Non-agriculture	0.017 (0.021)	-0.040 (0.057)				
Non-agriculture [squared]		-0.076 (0.078)				
Non-manufacture industry			0.052 (0.044)	0.071 (0.045)	0.013 (0.022)	-0.004 (0.020)
Non-manufacture industry [sq.]			-0.072 (0.049)	-0.083 (0.048)		
Manufacturing			-0.052 (0.042)	-0.033 (0.043)	0.017 (0.025)	-0.004 (0.020)
Manufacturing [sq.]			0.099 (0.063)	0.090 (0.060)		
Market services			0.140 (0.068)*			0.001 (0.022)
Market services [sq.]			-0.134 (0.061)*			
Non-market services			-0.207 (0.099)*	-0.030 (0.069)	-0.041 (0.034)	-0.068 (0.046)
Non-market services [sq.]			0.433 (0.242)	-0.052 (0.166)		
Market: Trade/Transport				0.113 (0.070)	0.048 (0.030)	
Market: Trade/Transport [sq.]				-0.106 (0.106)		
Market: Finance/business				0.069 (0.080)	0.040 (0.051)	
Market: Finance/business [sq.]				-0.106 (0.116)		
District Fixed Effect	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Constant	0.402 (0.035)**	0.454 (0.064)**	0.393 (0.034)**	0.386 (0.036)**	0.398 (0.035)**	0.415 (0.033)**
R^2	0.66	0.66	0.66	0.66	0.66	0.66
N	4,953	4,953	4,953	4,953	4,953	4,953

Unlike labour share, value added shares are not statistically associated with changes in inequality.
See next slide: value added and labour share is correlated but very weakly. Why?

* $p<0.05$; ** $p<0.01$, robust standard errors are in parentheses

Value added and employment share across districts is correlated but weakly except agriculture (due to varying productivity/capital intensity and capital spillover?)
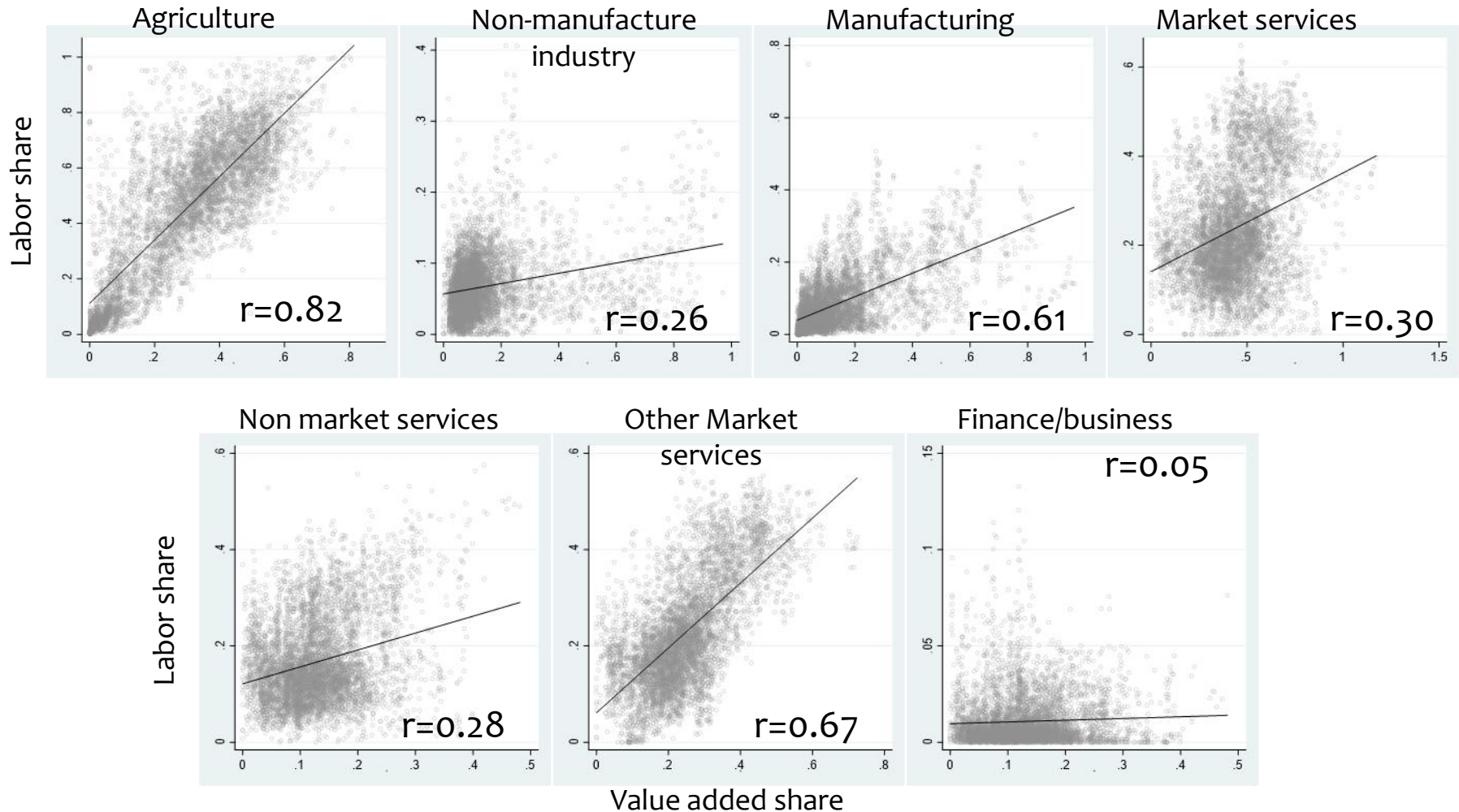
Robustness check

Results are robust to:

- variations in different inequality measures (10 inequality measures)

- To different model specifications (random effect)

- To sample variation (including/excluding certain years)

Conclusions (what would Kuznets say?)

How does the sectoral composition of employment (or changes in it) affect inequality?
- Inequality rises when the employment share of industry rises;
- Inequality rises when the employment share of SOME services rise with high turning points. Some services have lower turning points.
- The data **somewhat** supports Kuznets.

Does the deindustrialization of employment increase or reduce inequality?
- Implied from above it depends on the initial share before deindustrialization (lower/higher than turning points) & extent depends on to WHICH type of services employment change.
- Inequality will either rise or be steady given that (a) the agriculture employment share is generally declining in most developing countries, (b) the industry and service employment shares of most developing countries are below the turning points, deindustrialization is less likely to reduce inequality.

Appendix

Robustness checks

Employment share – Decile 10 share

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.172 (0.009)**	0.172 (0.009)**	0.178 (0.009)**	0.178 (0.009)**	0.173 (0.009)**	0.174 (0.009)**
Mean years of schooling (log)	-0.053 (0.019)**	-0.053 (0.019)**	-0.059 (0.019)**	-0.063 (0.019)**	-0.055 (0.019)**	-0.052 (0.019)**
Commodity boom years (1 = yes)	0.203 (0.017)**	0.203 (0.017)**	0.214 (0.017)**	0.213 (0.017)**	0.204 (0.017)**	0.206 (0.017)**
Non-agriculture	0.045 (0.018)*	0.041 (0.046)				
Non-agriculture [squared]		-0.003 (0.042)				
Non-manufacture industry			0.202 (0.075)**	0.218 (0.074)**	0.091 (0.039)*	0.089 (0.039)*
Non-manufacture industry [sq.]			-0.631 (0.248)*	-0.683 (0.246)**		
Manufacturing			0.243 (0.049)**	0.249 (0.049)**	0.086 (0.037)*	0.087 (0.037)*
Manufacturing [sq.]			-0.459 (0.098)**	-0.473 (0.095)**		
Market services			-0.063 (0.064)			0.001 (0.026)
Market services [sq.]			0.023 (0.117)			
Non-market services			0.200 (0.055)**	0.200 (0.056)**	0.039 (0.030)	0.037 (0.030)
Non-market services [sq.]			-0.404 (0.125)**	-0.399 (0.126)**		
Market: Trade/Transport				-0.097 (0.066)	-0.007 (0.026)	
Market: Trade/Transport [sq.]				0.072 (0.126)		
Market: Finance/business				0.486 (0.186)**	0.157 (0.138)	
Market: Finance/business [sq.]				-5.154 (2.018)*		
Constant	0.684 (0.040)**	0.687 (0.054)**	0.692 (0.039)**	0.700 (0.039)**	0.694 (0.040)**	0.687 (0.040)**
R^2	0.66	0.66	0.66	0.66	0.66	0.66
N	5,103	5,103	5,103	5,103	5,103	5,103

Employment share – Theil entropy

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.241 (0.016)**	0.241 (0.016)**	0.249 (0.016)**	0.249 (0.016)**	0.244 (0.016)**	0.244 (0.016)**
Mean years of schooling (log)	-0.057 (0.025)*	-0.056 (0.025)*	-0.055 (0.025)*	-0.057 (0.025)*	-0.055 (0.025)*	-0.054 (0.025)*
Commodity boom years (1 = yes)	0.339 (0.029)**	0.340 (0.029)**	0.353 (0.029)**	0.353 (0.030)**	0.342 (0.030)**	0.343 (0.029)**
Non-agriculture	0.008 (0.024)	0.074 (0.058)				
Non-agriculture [squared]		0.061 (0.053)				
Non-manufacture industry			0.313 (0.103)**	0.326 (0.102)**	0.100 (0.055)	0.099 (0.055)
Non-manufacture industry [sq.]			-1.000 (0.307)**	-1.050 (0.303)**		
Manufacturing			0.272 (0.067)**	0.278 (0.067)**	0.058 (0.050)	0.059 (0.050)
Manufacturing [sq.]			-0.579 (0.120)**	-0.592 (0.119)**		
Market services			-0.173 (0.080)*			-0.053 (0.035)
Market services [sq.]			0.149 (0.146)			
Non-market services			0.039 (0.075)	0.041 (0.076)	-0.021 (0.039)	-0.021 (0.039)
Non-market services [sq.]			-0.136 (0.158)	-0.143 (0.160)		
Market: Trade/Transport				-0.200 (0.084)*	-0.054 (0.035)	
Market: Trade/Transport [sq.]				0.198 (0.159)		
Market: Finance/business				0.376 (0.301)	-0.009 (0.190)	
Market: Finance/business [sq.]				-5.343 (3.681)		
Constant	0.366 (0.052)**	0.311 (0.069)**	0.364 (0.050)**	0.367 (0.051)**	0.371 (0.052)**	0.369 (0.052)**
R^2	0.51	0.51	0.52	0.52	0.51	0.51
N	4,953	4,953	4,953	4,953	4,953	4,953

Employment share – Theil Mean Log Deviation

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.161 (0.009)**	0.161 (0.009)**	0.166 (0.009)**	0.166 (0.009)**	0.162 (0.009)**	0.162 (0.009)**
Mean years of schooling (log)	-0.052 (0.017)**	-0.051 (0.017)**	-0.052 (0.016)**	-0.054 (0.017)**	-0.051 (0.017)**	-0.051 (0.017)**
Commodity boom years (1 = yes)	0.201 (0.017)**	0.202 (0.016)**	0.211 (0.017)**	0.211 (0.017)**	0.204 (0.017)**	0.205 (0.017)**
Non-agriculture	0.014 (0.015)	0.063 (0.040)				
Non-agriculture [squared]		0.046 (0.037)				
Non-manufacture industry			0.202 (0.067)**	0.217 (0.066)**	0.069 (0.035)*	0.069 (0.035)*
Non-manufacture industry [sq.]			-0.642 (0.212)**	-0.698 (0.211)**		
Manufacturing			0.193 (0.044)**	0.200 (0.044)**	0.047 (0.030)	0.047 (0.030)
Manufacturing [sq.]			-0.401 (0.093)**	-0.415 (0.090)**		
Market services			-0.100 (0.056)			-0.030 (0.023)
Market services [sq.]			0.076 (0.105)			
Non-market services			0.058 (0.049)	0.060 (0.049)	0.005 (0.025)	0.005 (0.026)
Non-market services [sq.]			-0.127 (0.111)	-0.131 (0.110)		
Market: Trade/Transport				-0.137 (0.058)*	-0.031 (0.023)	
Market: Trade/Transport [sq.]				0.141 (0.114)		
Market: Finance/business				0.435 (0.182)*	0.001 (0.138)	
Market: Finance/business [sq.]				-6.022 (2.200)**		
Constant	0.315 (0.035)**	0.273 (0.048)**	0.315 (0.034)**	0.319 (0.034)**	0.319 (0.035)**	0.318 (0.035)**
R^2	0.63	0.63	0.63	0.63	0.63	0.63
N	4,953	4,953	4,953	4,953	4,953	4,953

Employment share – Relative Mean Deviation

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.103 (0.006)**	0.103 (0.006)**	0.107 (0.006)**	0.107 (0.006)**	0.104 (0.006)**	0.104 (0.006)**
Mean years of schooling (log)	-0.027 (0.012)*	-0.027 (0.012)*	-0.030 (0.012)*	-0.033 (0.012)**	-0.029 (0.012)*	-0.026 (0.012)*
Commodity boom years (1 = yes)	0.121 (0.011)**	0.121 (0.011)**	0.129 (0.012)**	0.128 (0.012)**	0.122 (0.012)**	0.123 (0.011)**
Non-agriculture	0.026 (0.011)*	0.033 (0.029)				
Non-agriculture [squared]		0.006 (0.027)				
Non-manufacture industry			0.159 (0.048)**	0.172 (0.048)**	0.064 (0.025)*	0.063 (0.025)*
Non-manufacture industry [sq.]			-0.495 (0.165)**	-0.536 (0.164)**		
Manufacturing			0.151 (0.032)**	0.156 (0.031)**	0.049 (0.022)*	0.050 (0.022)*
Manufacturing [sq.]			-0.291 (0.067)**	-0.301 (0.064)**		
Market services			-0.056 (0.042)			-0.005 (0.017)
Market services [sq.]			0.040 (0.077)			
Non-market services			0.105 (0.035)**	0.105 (0.035)**	0.023 (0.019)	0.021 (0.019)
Non-market services [sq.]			-0.203 (0.080)*	-0.199 (0.080)*		
Market: Trade/Transport				-0.083 (0.043)	-0.010 (0.017)	
Market: Trade/Transport [sq.]				0.081 (0.082)		
Market: Finance/business				0.368 (0.118)**	0.114 (0.088)	
Market: Finance/business [sq.]				-3.746 (1.348)**		
Constant	0.300 (0.025)**	0.294 (0.035)**	0.304 (0.024)**	0.310 (0.024)**	0.307 (0.025)**	0.302 (0.025)**
R^2	0.65	0.65	0.66	0.66	0.65	0.65
N	4,953	4,953	4,953	4,953	4,953	4,953

Employment share – Coefficient of Variation

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.790 (0.063)**	0.790 (0.063)**	0.796 (0.064)**	0.791 (0.063)**	0.793 (0.063)**	0.793 (0.063)**
Mean years of schooling (log)	-0.138 (0.101)	-0.145 (0.102)	-0.103 (0.099)	-0.130 (0.099)	-0.124 (0.100)	-0.097 (0.100)
Commodity boom years (1 = yes)	1.224 (0.114)**	1.220 (0.114)**	1.236 (0.115)**	1.235 (0.113)**	1.236 (0.113)**	1.225 (0.114)**
Non-agriculture	0.113 (0.111)	-0.211 (0.284)				
Non-agriculture [squared]		-0.430 (0.382)				
Non-manufacture industry			0.175 (0.259)	0.273 (0.264)	0.073 (0.127)	-0.033 (0.118)
Non-manufacture industry [sq.]			-0.258 (0.278)	-0.302 (0.275)		
Manufacturing			-0.050 (0.213)	0.067 (0.213)	0.034 (0.128)	-0.115 (0.110)
Manufacturing [sq.]			-0.032 (0.318)	-0.062 (0.306)		
Market services			0.554 (0.348)			0.101 (0.125)
Market services [sq.]			-0.453 (0.328)			
Non-market services			-0.671 (0.493)	0.200 (0.348)	-0.092 (0.162)	-0.464 (0.256)
Non-market services [sq.]			0.857 (1.228)	-0.630 (0.767)		
Market: Trade/Transport				0.395 (0.360)	0.342 (0.152)*	
Market: Trade/Transport [sq.]				-0.066 (0.575)		
Market: Finance/business				0.007 (0.443)	0.602 (0.301)*	
Market: Finance/business [sq.]				1.774 (0.972)		
Constant	1.107 (0.217)**	1.405 (0.357)**	1.039 (0.213)**	1.022 (0.212)**	1.038 (0.212)**	1.147 (0.210)**
R^2	0.35	0.35	0.35	0.35	0.35	0.35
N	4,953	4,953	4,953	4,953	4,953	4,953

Employment share – Standard Deviation of Log

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.203 (0.011)**	0.203 (0.011)**	0.210 (0.011)**	0.210 (0.011)**	0.204 (0.011)**	0.205 (0.011)**
Mean years of schooling (log)	-0.069 (0.024)**	-0.068 (0.024)**	-0.075 (0.024)**	-0.080 (0.024)**	-0.071 (0.024)**	-0.069 (0.024)**
Commodity boom years (1 = yes)	0.218 (0.021)**	0.219 (0.021)**	0.232 (0.021)**	0.232 (0.021)**	0.221 (0.021)**	0.222 (0.021)**
Non-agriculture	0.060 (0.022)**	0.098 (0.058)				
Non-agriculture [squared]		0.035 (0.052)				
Non-manufacture industry			0.270 (0.098)**	0.299 (0.097)**	0.115 (0.047)*	0.113 (0.048)*
Non-manufacture industry [sq.]			-0.813 (0.362)*	-0.915 (0.363)*		
Manufacturing			0.295 (0.065)**	0.308 (0.064)**	0.105 (0.040)**	0.105 (0.040)**
Manufacturing [sq.]			-0.540 (0.149)**	-0.566 (0.141)**		
Market services			-0.101 (0.082)			0.001 (0.033)
Market services [sq.]			0.091 (0.152)			
Non-market services			0.223 (0.071)**	0.226 (0.071)**	0.066 (0.040)	0.064 (0.040)
Non-market services [sq.]			-0.382 (0.167)*	-0.381 (0.165)*		
Market: Trade/Transport				-0.173 (0.085)*	-0.005 (0.033)	
Market: Trade/Transport [sq.]				0.211 (0.164)		
Market: Finance/business				0.848 (0.215)**	0.130 (0.188)	
Market: Finance/business [sq.]				-10.220 (2.263)**		
Constant	0.714 (0.051)**	0.682 (0.070)**	0.724 (0.050)**	0.734 (0.050)**	0.725 (0.051)**	0.719 (0.051)**
R^2	0.66	0.66	0.67	0.67	0.67	0.67
N	4,953	4,953	4,953	4,953	4,953	4,953

Employment share – Mehran

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.156 (0.008)**	0.156 (0.008)**	0.162 (0.009)**	0.162 (0.008)**	0.157 (0.009)**	0.158 (0.009)**
Mean years of schooling (log)	-0.045 (0.018)*	-0.044 (0.018)*	-0.050 (0.018)**	-0.054 (0.018)**	-0.047 (0.018)**	-0.044 (0.018)*
Commodity boom years (1 = yes)	0.177 (0.016)**	0.177 (0.016)**	0.188 (0.016)**	0.187 (0.016)**	0.178 (0.016)**	0.180 (0.016)**
Non-agriculture	0.048 (0.016)**	0.068 (0.043)				
Non-agriculture [squared]		0.018 (0.040)				
Non-manufacture industry			0.222 (0.071)**	0.242 (0.071)**	0.097 (0.036)**	0.095 (0.036)**
Non-manufacture industry [sq.]			-0.660 (0.246)**	-0.729 (0.245)**		
Manufacturing			0.231 (0.048)**	0.240 (0.047)**	0.082 (0.031)**	0.083 (0.031)**
Manufacturing [sq.]			-0.425 (0.107)**	-0.443 (0.101)**		
Market services			-0.078 (0.061)			0.003 (0.024)
Market services [sq.]			0.071 (0.111)			
Non-market services			0.179 (0.053)**	0.180 (0.052)**	0.048 (0.028)	0.046 (0.029)
Non-market services [sq.]			-0.319 (0.120)**	-0.317 (0.120)**		
Market: Trade/Transport				-0.125 (0.063)*	-0.003 (0.024)	
Market: Trade/Transport [sq.]				0.145 (0.120)		
Market: Finance/business				0.600 (0.166)**	0.140 (0.133)	
Market: Finance/business [sq.]				-6.668 (1.756)**		
Constant	0.528 (0.038)**	0.512 (0.052)**	0.537 (0.037)**	0.545 (0.037)**	0.538 (0.038)**	0.532 (0.038)**
R^2	0.67	0.67	0.67	0.68	0.67	0.67
N	4,953	4,953	4,953	4,953	4,953	4,953

Employment share – Piesch

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.131 (0.007)**	0.131 (0.007)**	0.136 (0.007)**	0.136 (0.007)**	0.133 (0.007)**	0.133 (0.007)**
Mean years of schooling (log)	-0.037 (0.015)*	-0.037 (0.015)*	-0.041 (0.015)**	-0.044 (0.015)**	-0.039 (0.015)*	-0.036 (0.015)*
Commodity boom years (1 = yes)	0.160 (0.014)**	0.160 (0.014)**	0.169 (0.014)**	0.168 (0.014)**	0.161 (0.014)**	0.162 (0.014)**
Non-agriculture	0.032 (0.014)*	0.038 (0.035)				
Non-agriculture [squared]		0.005 (0.032)				
Non-manufacture industry			0.183 (0.058)**	0.196 (0.058)**	0.075 (0.030)*	0.073 (0.030)*
Non-manufacture industry [sq.]			-0.569 (0.191)**	-0.614 (0.189)**		
Manufacturing			0.188 (0.038)**	0.193 (0.038)**	0.064 (0.028)*	0.064 (0.028)*
Manufacturing [sq.]			-0.357 (0.078)**	-0.369 (0.075)**		
Market services			-0.065 (0.049)			-0.004 (0.020)
Market services [sq.]			0.046 (0.091)			
Non-market services			0.133 (0.043)**	0.133 (0.043)**	0.024 (0.023)	0.023 (0.023)
Non-market services [sq.]			-0.268 (0.095)**	-0.264 (0.095)**		
Market: Trade/Transport				-0.094 (0.051)	-0.010 (0.020)	
Market: Trade/Transport [sq.]				0.087 (0.098)		
Market: Finance/business				0.401 (0.149)**	0.127 (0.107)	
Market: Finance/business [sq.]				-4.133 (1.710)*		
Constant	0.364 (0.031)**	0.360 (0.042)**	0.370 (0.030)**	0.377 (0.030)**	0.373 (0.031)**	0.367 (0.031)**
R^2	0.65	0.65	0.65	0.65	0.65	0.65
N	4,953	4,953	4,953	4,953	4,953	4,953

Employment share – Kakwani

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.081 (0.005)**	0.081 (0.005)**	0.083 (0.005)**	0.083 (0.005)**	0.081 (0.005)**	0.082 (0.005)**
Mean years of schooling (log)	-0.025 (0.009)**	-0.025 (0.009)**	-0.026 (0.008)**	-0.027 (0.008)**	-0.025 (0.009)**	-0.024 (0.009)**
Commodity boom years (1 = yes)	0.101 (0.008)**	0.101 (0.008)**	0.106 (0.009)**	0.106 (0.009)**	0.102 (0.009)**	0.102 (0.009)**
Non-agriculture	0.011 (0.008)	0.029 (0.021)				
Non-agriculture [squared]		0.017 (0.019)				
Non-manufacture industry			0.106 (0.034)**	0.113 (0.034)**	0.039 (0.018)*	0.038 (0.018)*
Non-manufacture industry [sq.]			-0.333 (0.109)**	-0.360 (0.109)**		
Manufacturing			0.103 (0.023)**	0.106 (0.022)**	0.029 (0.016)	0.029 (0.016)
Manufacturing [sq.]			-0.207 (0.047)**	-0.214 (0.045)**		
Market services			-0.047 (0.028)			-0.011 (0.012)
Market services [sq.]			0.034 (0.054)			
Non-market services			0.045 (0.025)	0.046 (0.025)	0.005 (0.013)	0.005 (0.013)
Non-market services [sq.]			-0.097 (0.056)	-0.097 (0.056)		
Market: Trade/Transport				-0.064 (0.030)*	-0.013 (0.012)	
Market: Trade/Transport [sq.]				0.062 (0.058)		
Market: Finance/business				0.223 (0.092)*	0.026 (0.068)	
Market: Finance/business [sq.]				-2.804 (1.099)*		
Constant	0.162 (0.018)**	0.147 (0.024)**	0.163 (0.017)**	0.166 (0.017)**	0.165 (0.018)**	0.164 (0.018)**
R^2	0.63	0.63	0.64	0.64	0.63	0.63
N	4,953	4,953	4,953	4,953	4,953	4,953

Employment share – Palma Ratio

	(1)	(2)	(4)	(6)	(5)	(3)
Mean expenditure per capita (log)	0.750 (0.064)**	0.752 (0.064)**	0.775 (0.065)**	0.776 (0.065)**	0.765 (0.065)**	0.764 (0.065)**
Mean years of schooling (log)	-0.370 (0.138)**	-0.346 (0.137)*	-0.379 (0.141)**	-0.378 (0.142)**	-0.356 (0.141)*	-0.360 (0.140)*
Commodity boom years (1 = yes)	0.850 (0.118)**	0.866 (0.117)**	0.894 (0.120)**	0.896 (0.121)**	0.872 (0.120)**	0.869 (0.119)**
Non-agriculture	-0.332 (0.130)*	0.323 (0.326)				
Non-agriculture [squared]		0.591 (0.289)*				
Non-manufacture industry			0.761 (0.514)	0.801 (0.511)	-0.120 (0.286)	-0.115 (0.286)
Non-manufacture industry [sq.]			-4.202 (1.857)*	-4.361 (1.832)*		
Manufacturing			0.697 (0.341)*	0.732 (0.339)*	0.107 (0.213)	0.103 (0.214)
Manufacturing [sq.]			-1.877 (0.763)*	-1.935 (0.752)*		
Market services			-0.647 (0.413)			-0.641 (0.173)**
Market services [sq.]			-0.321 (0.745)			
Non-market services			0.055 (0.448)	0.069 (0.444)	-0.374 (0.214)	-0.372 (0.214)
Non-market services [sq.]			-1.157 (0.827)	-1.212 (0.817)		
Market: Trade/Transport				-0.800 (0.430)	-0.620 (0.170)**	
Market: Trade/Transport [sq.]				-0.029 (0.811)		
Market: Finance/business				1.877 (1.311)	-1.095 (0.969)	
Market: Finance/business [sq.]				-45.530 (15.923)**		
Constant	2.239 (0.270)**	1.666 (0.391)**	2.230 (0.274)**	2.223 (0.274)**	2.244 (0.273)**	2.253 (0.272)**
R^2	0.41	0.41	0.41	0.41	0.41	0.41
N	6,009	6,009	6,009	6,009	6,009	6,009

Employment share – Gini – Random Effect Model

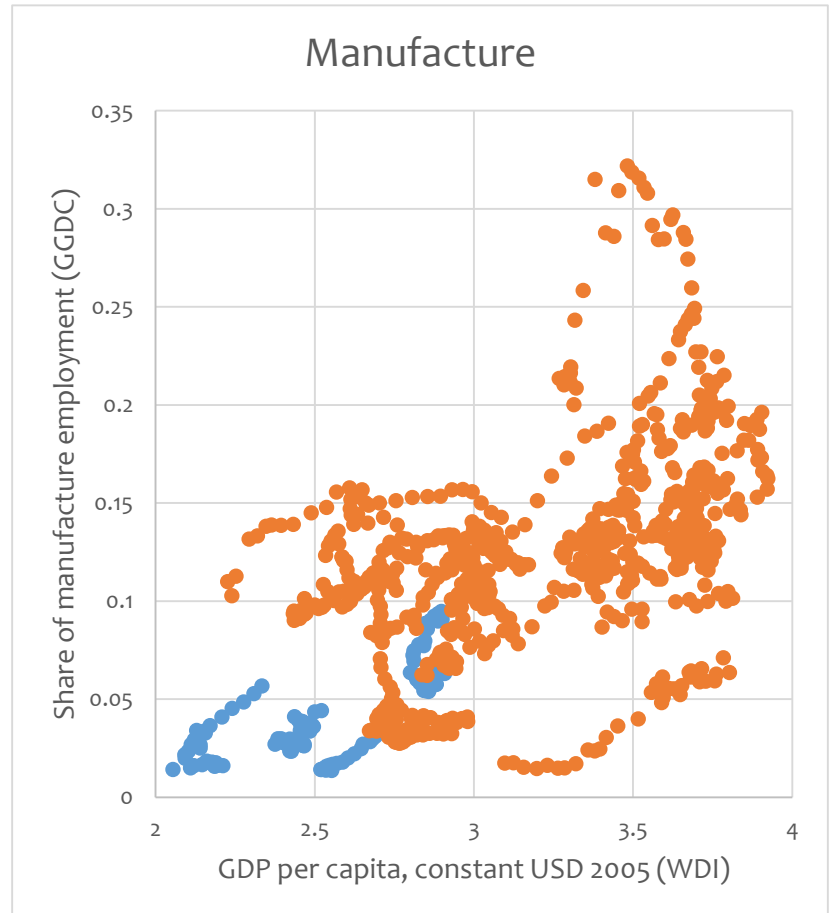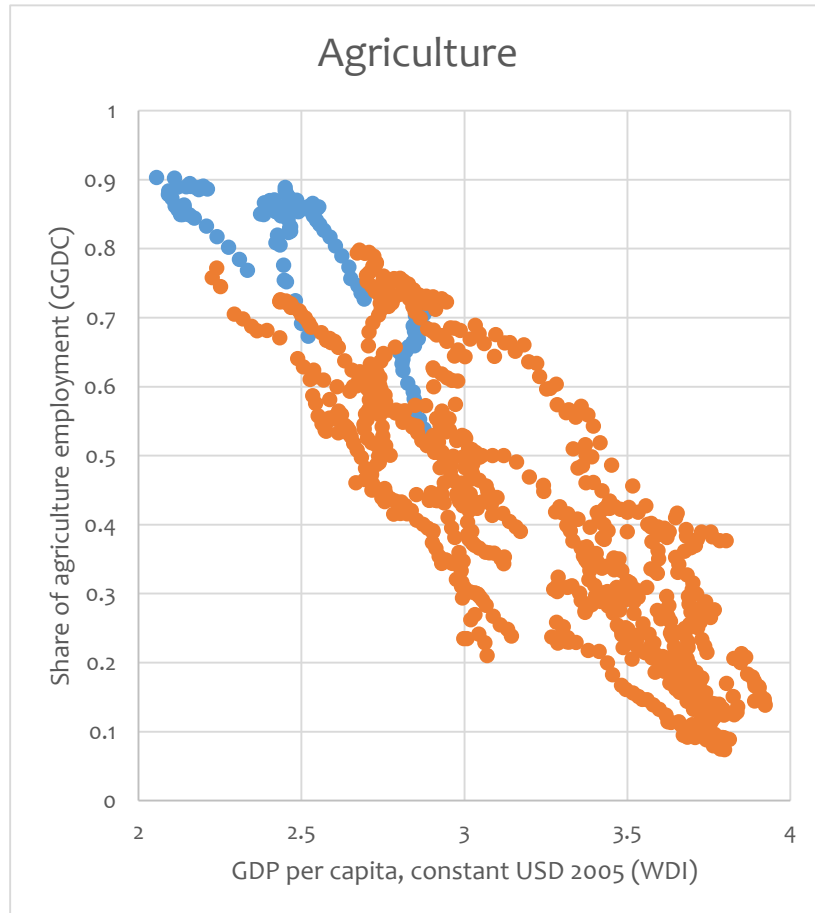|	(1)	(2)	(4)	(3)	(6)	(5)
Mean expenditure per capita (log)	0.104 (0.006)**	0.103 (0.006)**	0.107 (0.006)**	0.103 (0.006)**	0.099 (0.006)**	0.104 (0.006)**
Mean years of schooling (log)	-0.059 (0.011)**	-0.057 (0.011)**	-0.060 (0.011)**	-0.064 (0.011)**	-0.062 (0.011)**	-0.059 (0.011)**
Commodity boom years (1 = yes)	0.094 (0.011)**	0.093 (0.011)**	0.104 (0.011)**	0.095 (0.011)**	0.085 (0.011)**	0.094 (0.011)**
Non-agriculture	0.017 (0.007)*	0.006 (0.023)				
Non-agriculture [squared]		-0.012 (0.024)				
Non-manufacture industry			0.131 (0.053)*	0.135 (0.053)*	0.003 (0.027)	0.008 (0.027)
Non-manufacture industry [sq.]			-0.641 (0.192)**	-0.683 (0.191)**		
Manufacturing			0.163 (0.036)**	0.159 (0.036)**	0.042 (0.017)*	0.044 (0.017)**
Manufacturing [sq.]			-0.347 (0.094)**	-0.351 (0.091)**		
Market services			-0.113 (0.042)**			-0.010 (0.015)
Market services [sq.]			0.118 (0.070)			
Non-market services			0.214 (0.043)**	0.217 (0.043)**	0.047 (0.021)*	0.043 (0.021)*
Non-market services [sq.]			-0.368 (0.094)**	-0.380 (0.094)**		
Market: Trade/Transport				-0.138 (0.044)**	-0.018 (0.015)	
Market: Trade/Transport [sq.]				0.142 (0.077)		
Market: Finance/business				0.485 (0.147)**	0.179 (0.099)	
Market: Finance/business [sq.]				-4.579 (1.452)**		
Constant	0.469 (0.022)**	0.474 (0.026)**	0.461 (0.023)**	0.469 (0.023)**	0.474 (0.022)**	0.469 (0.022)**
N	4,953	4,953	4,953	4,953	4,953	4,953

* $p<0.05$, ** $p<0.01$

Employment share – Gini – Different sample years

	2001-2016	2002-2016	2003-2016	2004-2016	2001-2015	2001-2014	2001-2013
Mean expenditure per capita (log)	0.145	0.152	0.157	0.167	0.146	0.144	0.144
	(0.008)**	(0.008)**	(0.008)**	(0.009)**	(0.008)**	(0.008)**	(0.008)**
Mean years of schooling (log)	-0.048	-0.057	-0.061	-0.065	-0.041	-0.045	-0.048
	(0.016)**	(0.016)**	(0.017)**	(0.018)**	(0.016)*	(0.017)**	(0.016)**
Commodity boom years (1 = yes)	0.174	0.165	0.146	0.168	0.156	0.148	0.141
	(0.015)**	(0.013)**	(0.013)**	(0.013)**	(0.014)**	(0.013)**	(0.012)**
	(0.000)	(0.000)	(0.000)	(0.000)			
Non-manufacture industry	0.211	0.203	0.188	0.178	0.186	0.156	0.142
	(0.061)**	(0.067)**	(0.071)**	(0.077)*	(0.061)**	(0.060)**	(0.058)*
Non-manufacture industry [sq.]	-0.652	-0.651	-0.601	-0.533	-0.665	-0.581	-0.581
	(0.205)**	(0.264)*	(0.288)*	(0.323)	(0.186)**	(0.168)**	(0.155)**
Manufacturing	0.209	0.203	0.198	0.214	0.212	0.212	0.200
	(0.041)**	(0.042)**	(0.044)**	(0.048)**	(0.040)**	(0.040)**	(0.040)**
Manufacturing [sq.]	-0.394	-0.401	-0.401	-0.563	-0.389	-0.362	-0.326
	(0.083)**	(0.093)**	(0.094)**	(0.128)**	(0.079)**	(0.072)**	(0.069)**
Non-market services	0.149	0.161	0.155	0.135	0.145	0.189	0.213
	(0.046)**	(0.046)**	(0.050)**	(0.054)*	(0.047)**	(0.048)**	(0.047)**
Non-market services [sq.]	-0.282	-0.289	-0.284	-0.272	-0.250	-0.286	-0.312
	(0.103)**	(0.102)**	(0.108)**	(0.116)*	(0.103)*	(0.104)**	(0.104)**
Market: Trade/Transport	-0.104	-0.120	-0.132	-0.128	-0.102	-0.109	-0.096
	(0.055)	(0.057)*	(0.058)*	(0.061)*	(0.056)	(0.058)	(0.057)
Market: Trade/Transport [sq.]	0.106	0.125	0.139	0.115	0.105	0.124	0.113
	(0.105)	(0.109)	(0.111)	(0.115)	(0.107)	(0.106)	(0.105)
Market: Finance/business	0.467	0.493	0.499	0.451	0.452	0.357	0.339
	(0.153)**	(0.158)**	(0.161)**	(0.159)**	(0.153)**	(0.156)*	(0.146)*
Market: Finance/business [sq.]	-4.978	-5.288	-5.224	-5.080	-4.888	-4.024	-4.078
	(1.698)**	(1.737)**	(1.644)**	(1.683)**	(1.681)**	(1.743)*	(1.650)*
District Fixed Effect	YES	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES	YES
Constant	0.433	0.456	0.469	0.484	0.443	0.451	0.460
	(0.032)**	(0.034)**	(0.035)**	(0.038)**	(0.033)**	(0.033)**	(0.032)**
R^2	0.67	0.67	0.67	0.65	0.66	0.65	0.64
N	4,953	4,645	4,335	4,025	4,643	4,333	4,023

Employment shares vs GDP per capita in
25 developing countries, 1960-2011 (LICs – blue; MICs – orange)

Agriculture

Manufacture

Employment shares vs GDP per capita in
25 developing countries, 1960-2011 (LICs – blue; MICs – orange)