Functional positioning in Global Value Chains and inequality across and within countries

Andrea Coveri[§]
Elena Paglialunga[φ]
Antonello Zanfei[§]

[§] University of Urbino «Carlo Bo»
[φ] Roma Tre University

Background

- International fragmentation of production and rise of global value chains (GVCs)(Gereffi, 1999; Jones & Kierzkowski, 2001; Deardoff, 2001; Baldwin, 2006; World Bank, 2020)

- Economies increasingly specialize in relatively narrow value-adding activities – also called "tasks" or "value chain functions" – e.g. headquarter activities, R&D, fabrication and assembly, marketing, sales and after-sale services (Feenstra, 1998; Sturgeon and Gereffi, 2009; Bernard & Fort, 2015; Bernard et al., 2017)

- Finer international division of labour, with countries and industries assuming different positioning along GVCs (Baldwin, 2013)

- Distinction between (de Vries et al., 2021)

  - "product-level positioning", i.e., *where* a given country or industry is positioned w.r.t. to final demand (or primary production inputs) (Fally, 2012; Antràs et al., 2012; Antràs & Chor, 2013, 2019)

  - "functional positioning", i.e., *what* countries and industries actually do in terms of value chain functions (Timmer et al., 2019; Stollinger, 2021; Coveri & Zanfei, 2023; Bontadini et al., 2024)

- Previous contributions have mostly focused on the distributional consequences of "product-level positioning" of countries along GVCs (e.g., Rungi & Del Prete, 2018; Reshef & Santoni, 2023)

- Relatively few scholars have explored empirically how the "functional positioning" of economies affects income disparities across countries (Buckley et al., 2020; Stöllinger, 2021; Coveri & Zanfei, 2023) and within-country inequality (Coveri et al., 2024; Riccio et al., 2024)

Our contribution

- Compute an FDI-based indicator of functional specialization for several high- and low-income countries over 2003-2018

- Provide evidence on the functional division of labour and its evolution over time

- Explore the association between the functional positioning along GVCs and income inequality, both across and within countries

GVC and cross-country inequality: review

- **Theory:** smile curve hypothesis and intellectual monopoly capital (Shih, 1996; Mudambi, 2008; Durand & Milberg, 2020)

    - fiercer international competition among actors (mainly middle and low-income countries) specialized in fabrication and assembly activities, driving down the price of their output and lowering value capture opportunities (Baldwin & Evenett, 2015; Baldwin & Ito, 2021)

    - larger monopoly rents seized by actors (mainly MNCs based in high-income countries) specialized in the most intangible-intensive, pre- and post-production functions due to high economies of scale and greater protection of IPR (e.g., patents, trademark, copyrights, brands) (Pagano, 2014; Durand & Milberg, 2020; Buckley et al., 2020, 2022; Rikap, 2021)

- **Empirics**:

    - Case studies (e.g., Tempest, 1996; Dedrick et al., 2010; Xing & Huang, 2021)

    - Product-level (sectoral) positioning based on international input-output tables (e.g., Ito & Vézina, 2016; Rungi & Del Prete, 2018; Meng et al., 2020)

    - Functional positioning

        - Functional specialization in trade (Timmer et al., 2019; Buckley et al., 2020; Bontadini et al., 2024)

        - Functional specialization in FDI (Stollinger, 2021; Coveri & Zanfei, 2023)

GVC and within-country inequality: review

- **Theory:**
  - Heckscher-Ohlin model revisited (e.g., Baldwin & Evenett, 2015)
  - Heckscher-Ohlin-like models (e.g., Feenstra & Hanson, 1996, 1997; Zhu and Trefler, 2005; Grossman & Rossi-Hansberg, 2006, 2008)
  - Firms in GVCs are often more skilled-labor intensive and tend to adopt more capital-intensive techniques than comparable domestic firms (Antràs et al., 2006; Bernard et al., 2018; Antràs, 2020)
  - Bargaining power and "threat effect" (e.g., Rodrik, 1997; Harrison, 2005; Choi, 2006; Jeon & Kwon, 2018; Coveri & Pianta, 2022; Guschanski & Onaran, 2023).

- **Empirics**:
  - Impact of import penetration and production offshoring on domestic labour markets (e.g., Autor et al., 2013; Hummels et al., 2018; Cardoso et al., 2021)
  - Product-level (sectoral) GVC positioning based on international input-output tables and…
    - income inequality proxied by the Gini index (e.g., Carpa & Martinez-Zarzoso, 2022; Duarte et al., 2022; Coveri et al., 2024)
    - income inequality proxied by income percentile ratios (Duarte et al., 2022)
    - shares of labour income that remunerate workers performing different GVC functions (Reshef & Santoni, 2023)
  - Functional specialization in trade and shares of labour income remunerating workers performing different GVC functions (Riccio et al., 2024)
  - Functional specialization in FDI and income inequality proxied by the Gini index (Coveri et al., 2024).

Methodology

- Five-step procedure

    1. Measuring functional positioning in GVC by computing an FDI-based indicator of functional specialization

    2. Providing evidence on the smile curve hypothesis and the persistence of global hierarchies in GVCs

    3. Testing the association between functional positioning and cross-country disparities along GVCs

    4. Testing how functional positioning in GVCs affects income inequality within countries using the Gini index

    5. Testing how functional positioning in GVCs affects income inequality within countries using income percentile ratios
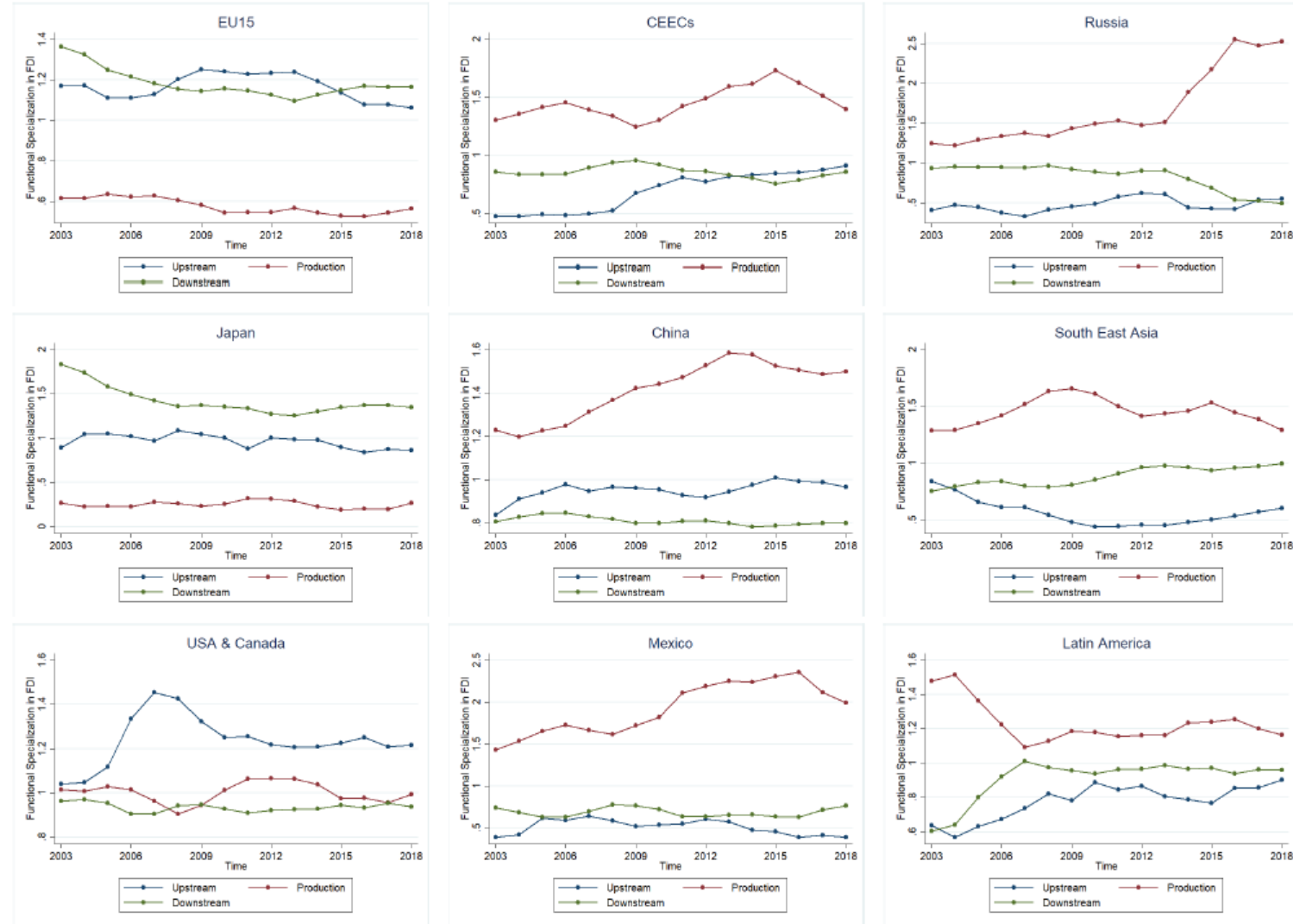
Measuring functional specialization in FDI

- We exploit the fDi Markets database, which shows the distinctive feature of reporting the main business activity – i.e., the value chain function like R&D, design and development, manufacturing, sales, marketing and support, etc. – each FDI project is aimed to perform

- We classify value-adding functions in the three canonical GVC stages, i.e., the upstream, production and downstream segment, based on the classification of business activities provided by Sturgeon (2008) and adapted from Crescenzi et al. (2014)

- Functional specialization in FDI (FS) is found by computing the Balassa's (1965) index of revealed comparative advantage, which captures for the i-th country in a given year the relative attractiveness of investments in the a-th value chain function

$$FS_i^a = \frac{\dfrac{FDI_i^a}{\sum_a FDI_i^a}}{\dfrac{\sum_i FDI_i^a}{\sum_i \sum_a FDI_i^a}}$$

- *Pros:* available for virtually all world economies from 2003 onwards; provides detailed information on value chain functions; FDIs play a significant role in shaping domestic capabilities and promoting knowledge flows across local firms (Branstetter, 2006; Castellani & Zanfei, 2006; Cadestin et al., 2019) reflecting at least partially the actual specialization of economies

- *Cons:* formally disregards domestic firms, and mostly captures GVCs featured by hierarchical type of governance, while neglecting outsourcing strategies that occur through arms' length relationships (Gereffi et al., 2005)

Functional specialization in FDI over time

Figure 1. Functional specialization in FDI by selected macro-regions over time, 2003-2018 (3-year moving average)

Source: Authors' elaboration based on FDI Markets data.

Functional positioning and cross-country inequality

- Several measures have been employed by the empirical literature to assess value capture in GVCs (e.g., Rungi & Del Prete, 2018; Jona-Lasinio et al., 2019; Pahl & Timmer, 2020; Stollinger, 2021). We follow Kowalski et al. (2015) and measure value capture in GVCs by using the domestic value added embodied in exports (DVA) per capita (Koopman et al., 2014), as detects the value added captured by domestic firms involved into country's export chains and data availability allows us to include several low-income countries

- The following regression equation has been estimated:

$$DVA\ per\ capita_{i,t} = \beta_0 + \beta_1(Functional\ spec.\ in\ FDI)_{i,t} + \beta_2 X_{i,t} + \beta_3(trade\ in\ GVC)_{i,t-1} + \beta_4(Institutions)_{i,t} + \gamma_i + \delta_t + \varepsilon_{i,t}$$

- We also compute a composite indicator which jointly accounts for the level of functional specialization of the economies in both upstream, production and downstream stages of the value chain, namely the Relative Functional Specialization (RFS) index:

$$RFS_{i,t} = \frac{FS_{i,t}^{production}}{FS_{i,t}^{upstream} + FS_{i,t}^{downstream}}$$

- Data sample: balanced panel dataset including 100 countries observed from 2003 to 2018 (we selected all countries which received at least one FDI each year, all years, and thus can be observed over the entire period)

Table 1. Functional specialization in FDI and cross-country value distribution in GVCs

Dep.Var.: DVA per capita (log)	(1)	(2)	(3)	(4)	(5)	(6)
Functional specialization in upstream FDI		0.016* (0.0084)		0.014* (0.008)		
Functional specialization in production FDI	-0.012 (0.0097)		-0.013* (0.0077)			
Functional specialization in downstream FDI		0.033 (0.021)		0.041** (0.018)		
Relative Functional specialization (RFS)					-0.011 (0.007)	-0.015*** (0.005)
Control variables						
Ln(total inward FDI)	-0.043*** (0.014)	-0.043*** (0.014)	-0.039*** (0.009)	-0.039*** (0.009)	-0.053*** (0.014)	-0.0425*** (0.010)
Ln(GDP per capita)	0.824*** (0.085)	0.813*** (0.084)	0.644*** (0.096)	0.637*** (0.0956)	0.785*** (0.087)	0.624*** (0.098)
Industry share (% of GDP)			0.009*** (0.003)	0.009*** (0.002)		0.008*** (0.002)
Fixed broadband subs (%)			0.006*** (0.002)	0.006*** (0.002)		0.006*** (0.002)
KOF Financial Glob. index			-0.002 (0.002)	-0.002 (0.002)		-0.001 (0.002)
Trade-based GVC position index (lagged)			1.088* (0.616)	1.085* (0.615)		1.149* (0.593)
Country FE	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES
Quality of institutions vars.	NO	NO	YES	YES	NO	YES
Observations	1,598	1,598	1,433	1,433	1,475	1,326
R-squared	0.887	0.888	0.884	0.885	0.889	0.887
Number of countries	100	100	100	100	100	100

Note: the dependent variable is the log of DVA per capita. A constant is included but not reported. Robust standard errors clustered at country level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Functional positioning and within-country inequality

- As a measure of within-country income inequality, we use the Gini index for household market income

- Data are retrieved from the Standardized World Income Inequality Database (SWIID) (Solt, 2020)

- The following regression equation has been estimated:

$$Gini_{i,t} = \beta_0 + \beta_1(Functional\ spec.\ in\ FDI)_{i,t} + \beta_2 X_{i,t} + \beta_3(trade\ in\ GVC)_{i,t} + \gamma_i + \delta_t + \varepsilon_{i,t}$$

- Data sample: includes the same 100 countries considered in the previous model, although observed from 2003 to 2015 only, as data for the Gini index are missing for several countries from 2016 onwards.

Table 2. Functional specialization in FDI and within-country income inequality (Gini index)

Dep.Var.: Gini index (log, market income)	(1)	(2)	(3)	(4)	(5)
Functional specialization in upstream FDI	-0.002* (0.001)			-0.00341*** (0.00126)	
Functional specialization in production FDI		0.000371 (0.00142)			
Functional specialization in downstream FDI			-0.00475** (0.00229)	-0.00700** (0.00268)	
Relative Functional specialization (RFS)					0.00317* (0.00164)

- *Countries*: 100

- *Time span*: 2003-2015

- *Observations*: 1239

- *Controls*: GDP per capita (linear, squared), total inward FDI, education, mobile cell. subs., GFCF, rural access to electricity (%), trade openess, Financial glob., trade-based GVC participation index, trade-based GVC position index, country FE and time FE.

- *Note*: the dependent variable is the natural log of the Gini index for market income. A constant is included but not reported. Robust standard errors clustered at country level in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Functional positioning and within-country inequality

- Lastly, since the Gini coefficient is relatively less sensitive to changes at the tails of income distribution, we consider the market income of the Top 10% and Bottom 10% of the distribution, as well as the 90/10 decile ratio

- Analytically, we estimate specifications of a model similar to that presented for the Gini index

- However, due to data limitations, the number of countries considered now drops to 61 (from the 100 previously included)

- Further, the time-span is still 2003-2015, but limited longitudinal data for some countries results in an *unbalanced* panel dataset

- Accordingly, we now exclude country fixed-effects from the models: estimates show how within-country income inequality (at the tails of the distribution) differs across economies characterized by different levels of functional specialization

Table 3. Functional specialization in FDI and Bottom 10% vs. Top 10% income distribution

(A) Dep.Var.: Income Bottom 10%

Functional specialization in upstream FDI	0.215* (0.117)			0.314*** (0.120)	
Functional specialization in production FDI		-0.395*** (0.115)			
Functional specialization in downstream FDI			0.588*** (0.209)	0.726*** (0.215)	
Relative Functional specialization (RFS)					-0.636*** (0.145)

(B) Dep.Var.: Income Top 10%

Functional specialization in upstream FDI	0.225* (0.124)			0.283** (0.128)	
Functional specialization in production FDI		-0.262** (0.122)			
Functional specialization in downstream FDI			0.291 (0.222)	0.417* (0.228)	
Relative Functional specialization (RFS)					-0.471*** (0.155)

(C) Dep.Var.: 90/10 decile ratio

Functional specialization in upstream FDI	-6.803** (2.644)			-9.696*** (2.694)	
Functional specialization in production FDI		12.37*** (2.578)			
Functional specialization in downstream FDI			-16.96*** (4.718)	-21.21*** (4.828)	
Relative Functional specialization (RFS)					16.50*** (3.277)

Time FE	YES	YES	YES	YES	YES
Observations	772	772	772	772	772

Take-home messages

- The amount of value captured domestically by countries in export chains is strongly associated with their position in the functional division of labour: persisting global hierarchies + unequal potential to capture value = major concerns about the upgrading opportunities for developing economies from GVC participation

- Higher specialization of economies in pre- and post-production functions is associated with lower income disparities *within countries*, while a larger engagement in production operations goes together with higher income inequality (both Gini and 90/10 perc. ratio)

- Findings are consistent with the idea that greater involvement in the most knowledge-intensive GVC stages is a key driver of structural change, with important effects on growth and income distribution

  - By increasingly engaging in more knowledge-intensive functions, countries are likely to benefit from the emergence of new productive activities, competencies, and institutions, leading to higher growth opportunities and the creation of better-paid jobs

  - Results suggest that the positive impact that these structural changes have on income distribution more than offsets other inequality-enhancing factors that could be associated with technological progress, e.g., skill-biased wage polarization and market concentration

- Although the attraction of FDIs in intangible-intensive functions provides opportunities to reduce within-country inequality, the involvement of low- and middle-income countries in these activities is on average far too small to determine substantial re-distributive effects in these economies.

Thank you very much
for your attention!

Andrea Coveri
University of Urbino

Visit my profile on
UniURB webpage
Google Scholar
ResearchGate

Table A1. List of countries included in the empirical models

1	Albania	*26*	Denmark	*51*	Kazakhstan	*76*	Poland
2	Algeria	*27*	*Dominican Republic*	*52*	Kenya	*77*	Portugal
3	Angola	*28*	*Ecuador*	*53*	*Laos*	*78*	Romania
4	*Argentina*	*29*	Egypt	*54*	Latvia	*79*	Russia
5	*Armenia*	*30*	*El Salvador*	*55*	Lebanon	*80*	Senegal
6	*Australia*	*31*	*Estonia*	*56*	Lithuania	*81*	*Singapore*
7	*Austria*	*32*	Finland	*57*	Luxembourg	*82*	Slovakia
8	*Azerbaijan*	*33*	France	*58*	Malaysia	*83*	Slovenia
9	*Bangladesh*	*34*	*Georgia*	*59*	Malta	*84*	South Africa
10	Belgium	*35*	Germany	*60*	*Mauritius*	*85*	*South Korea*
11	*Bolivia*	*36*	Ghana	*61*	*Mexico*	*86*	Spain
12	*Bosnia-Herzegovina*	*37*	Greece	*62*	*Mongolia*	*87*	*Sri Lanka*
13	*Brazil*	*38*	*Guatemala*	*63*	Morocco	*88*	Sweden
14	Bulgaria	*39*	*Honduras*	*64*	*Myanmar*	*89*	Switzerland
15	*Cambodia*	*40*	*Hong Kong*	*65*	Namibia	*90*	Tanzania
16	*Cameroon*	*41*	Hungary	*66*	Netherlands	*91*	Thailand
17	*Canada*	*42*	India	*67*	*New Zealand*	*92*	Tunisia
18	*Chile*	*43*	*Indonesia*	*68*	*Nicaragua*	*93*	Turkey
19	China	*44*	Iraq	*69*	Nigeria	*94*	Uganda
20	*Colombia*	*45*	Ireland	*70*	North Macedonia	*95*	UK
21	Congo (DRC)	*46*	*Israel*	*71*	Norway	*96*	*Ukraine*
22	*Costa Rica*	*47*	Italy	*72*	*Pakistan*	*97*	*USA*
23	Croatia	*48*	*Jamaica*	*73*	*Panama*	*98*	*Uruguay*
24	Cyprus	*49*	*Japan*	*74*	*Peru*	*99*	*Vietnam*
25	Czech Republic	*50*	Jordan	*75*	*Philippines*	*100*	Zambia

Note: countries reported in *italics* are *not* included in the estimations presented in Table 3.
Source: authors' elaboration.

Table A2. Functional specialization in FDI and Bottom 10% income

Dep.Var.: Bottom 10% income (log)	(1)	(2)	(3)	(4)	(5)
Log of GDP per capita (constant 2017 PPP$)	-2.998**	-2.241*	-3.012**	-2.090	-1.689
	(1.304)	(1.318)	(1.279)	(1.322)	(1.326)
Squared log of GDP per capita (constant 2017 PPP$)	0.185***	0.140**	0.182***	0.131*	0.109
	(0.0682)	(0.0693)	(0.0670)	(0.0696)	(0.0698)
Compulsory education duration (years)	-0.116***	-0.117***	-0.118***	-0.118***	-0.119***
	(0.0404)	(0.0402)	(0.0403)	(0.0401)	(0.0400)
Mobile cellular subscriptions (per 100 people)	-1.915***	-1.978***	-2.039***	-1.986***	-1.944***
	(0.325)	(0.322)	(0.324)	(0.323)	(0.321)
GFCF over GDP (%)	2.448**	2.319**	2.112*	2.288**	2.387**
	(1.173)	(1.163)	(1.168)	(1.166)	(1.158)
Trade (% of GDP)	-0.503***	-0.468***	-0.468***	-0.473***	-0.472***
	(0.169)	(0.168)	(0.168)	(0.168)	(0.167)
Access to electricity (% share of rural population)	-0.271	-0.317	-0.273	-0.311	-0.365
	(0.394)	(0.392)	(0.393)	(0.392)	(0.391)
KOF Financial Globalisation Index, *de facto*	0.239	-0.0251	0.0712	0.0109	-0.0820
	(0.633)	(0.634)	(0.634)	(0.632)	(0.631)
Ln(total inward FDI)	-0.387***	-0.328***	-0.311***	-0.339***	-0.336***
	(0.0511)	(0.0495)	(0.0518)	(0.0526)	(0.0487)
Trade-based GVC participation index (lagged)	2.238***	3.138***	2.811***	3.203***	3.428***
	(0.732)	(0.785)	(0.770)	(0.781)	(0.783)
Trade-based GVC position index (lagged)	0.972*	0.960*	0.796	1.035**	1.113**
	(0.527)	(0.518)	(0.517)	(0.523)	(0.518)
Functional specialization in upstream FDI	0.215*			0.314***	
	(0.117)			(0.120)	
Functional specialization in production FDI		-0.395***			
		(0.115)			
Functional specialization in downstream FDI			0.588***	0.726***	
			(0.209)	(0.215)	
Relative Functional specialization (RFS)					-0.636***
					(0.145)
Constant	15.90**	12.84**	15.39**	10.81*	9.738
	(6.309)	(6.329)	(6.227)	(6.445)	(6.404)
Time FE	YES	YES	YES	YES	YES
Observations	772	772	772	772	772
R-squared	0.238	0.247	0.243	0.250	0.254

Note: the dependent variable is the income levels of the Bottom 10% (10th percentile). Robust standard errors clustered at country level in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A3. Functional specialization in FDI and Top 10% income

Dep.Var.: Top 10% income (log)	(1)	(2)	(3)	(4)	(5)
Log of GDP per capita (constant 2017 PPP$)	-1.432	-1.124	-1.724	-0.896	-0.614
	(1.378)	(1.402)	(1.360)	(1.407)	(1.413)
Squared log of GDP per capita (constant 2017 PPP$)	0.0887	0.0698	0.103	0.0569	0.0410
	(0.0721)	(0.0737)	(0.0712)	(0.0740)	(0.0744)
Compulsory education duration (years)	-0.0699*	-0.0700*	-0.0702*	-0.0700*	-0.0712*
	(0.0421)	(0.0421)	(0.0422)	(0.0420)	(0.0420)
Mobile cellular subscriptions (per 100 people)	-2.087***	-2.147***	-2.174***	-2.128***	-2.123***
	(0.344)	(0.342)	(0.344)	(0.344)	(0.341)
GFCF over GDP (%)	1.520	1.373	1.268	1.428	1.427
	(1.243)	(1.238)	(1.243)	(1.242)	(1.235)
Trade (% of GDP)	-0.413**	-0.387**	-0.392**	-0.396**	-0.388**
	(0.179)	(0.179)	(0.179)	(0.179)	(0.178)
Access to electricity (% share of rural population)	-0.977**	-1.001**	-0.967**	-1.002**	-1.041**
	(0.418)	(0.418)	(0.419)	(0.418)	(0.417)
KOF Financial Globalisation Index, *de facto*	1.169*	1.007	1.104	1.045	0.945
	(0.668)	(0.672)	(0.671)	(0.670)	(0.670)
Ln(total inward FDI)	-0.224***	-0.175***	-0.172***	-0.197***	-0.178***
	(0.0541)	(0.0527)	(0.0550)	(0.0560)	(0.0520)
Trade-based GVC participation index (lagged)	-1.125	-0.589	-0.931	-0.573	-0.293
	(0.775)	(0.835)	(0.818)	(0.831)	(0.834)
Trade-based GVC position index (lagged)	2.326***	2.259***	2.154***	2.367***	2.385***
	(0.557)	(0.551)	(0.550)	(0.556)	(0.552)
Functional specialization in upstream FDI	0.225*			0.283**	
	(0.124)			(0.128)	
Functional specialization in production FDI		-0.262**			
		(0.122)			
Functional specialization in downstream FDI			0.291	0.417*	
			(0.222)	(0.228)	
Relative Functional specialization (RFS)					-0.471***
					(0.155)
Constant	14.24**	13.15*	15.36**	11.25	10.41
	(6.670)	(6.732)	(6.620)	(6.858)	(6.824)
Time FE	YES	YES	YES	YES	YES
Observations	772	772	772	772	772
R-squared	0.331	0.332	0.329	0.334	0.336

Note: the dependent variable is the income levels of the Top 10% (90th percentile). Robust standard errors clustered at country level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table A4. Functional specialization in FDI and 90/10 decile ratio

Dep.Var.: 90/10 decile ratio	(1)	(2)	(3)	(4)	(5)
Log of GDP per capita (constant 2017 PPP$)	79.26***	55.74*	81.19***	52.72*	48.42
	(29.43)	(29.60)	(28.86)	(29.70)	(29.88)
Squared log of GDP per capita (constant 2017 PPP$)	-3.769**	-2.385	-3.782**	-2.193	-1.981
	(1.540)	(1.557)	(1.511)	(1.563)	(1.574)
Compulsory education duration (years)	-1.614*	-1.576*	-1.546*	-1.565*	-1.533*
	(0.912)	(0.902)	(0.908)	(0.901)	(0.901)
Mobile cellular subscriptions (per 100 people)	-9.851	-7.862	-6.153	-7.771	-8.812
	(7.337)	(7.236)	(7.308)	(7.264)	(7.225)
GFCF over GDP (%)	-64.03**	-59.93**	-53.91**	-59.35**	-61.59**
	(26.48)	(26.13)	(26.35)	(26.18)	(26.10)
Trade (% of GDP)	5.218	4.105	4.188	4.324	4.359
	(3.811)	(3.773)	(3.800)	(3.770)	(3.765)
Access to electricity (% share of rural population)	-55.24***	-53.80***	-55.23***	-54.05***	-52.93***
	(8.905)	(8.817)	(8.866)	(8.802)	(8.813)
KOF Financial Globalisation Index, *de facto*	16.37	24.61*	21.16	23.02	24.61*
	(14.28)	(14.24)	(14.30)	(14.19)	(14.21)
Ln(total inward FDI)	9.233***	7.378***	6.978***	7.836***	7.753***
	(1.153)	(1.113)	(1.167)	(1.182)	(1.098)
Trade-based GVC participation index (lagged)	-131.5***	-159.6***	-147.6***	-159.7***	-161.5***
	(16.54)	(17.64)	(17.36)	(17.55)	(17.64)
Trade-based GVC position index (lagged)	53.39***	53.80***	58.91***	51.54***	50.65***
	(11.89)	(11.64)	(11.67)	(11.76)	(11.68)
Functional specialization in upstream FDI	-6.803**			-9.696***	
	(2.644)			(2.694)	
Functional specialization in production FDI		12.37***			
		(2.578)			
Functional specialization in downstream FDI			-16.96***	-21.21***	
			(4.718)	(4.828)	
Relative Functional specialization (RFS)					16.50***
					(3.277)
Constant	-257.1*	-162.4	-249.7*	-108.4	-112.4
	(142.5)	(142.2)	(140.5)	(144.8)	(144.3)
Time FE	YES	YES	YES	YES	YES
Observations	772	772	772	772	772
R-squared	0.370	0.383	0.375	0.386	0.385

Note: the dependent variable is the 90/10 decile ratio. The 90/10 decile ratio is computed as the ration between the income level of Top 10% vs. Bottom 10% of the distribution. Robust standard errors clustered at country level in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.