Gender Structural Change within Manufacturing

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Abstract

Women are generally under-represented in the manufacturing. However, certain manufacturing industries, such as textiles, are highly feminized. This paper analyses the causes behind gender segregation in manufacturing. We analyse whether and how productivity growth in manufacturing and economic development affect the crowding of women in specific industries. We build a panel dataset of 23 industries, 63 countries during 1990-2019 to compute country-level measures of gender segregation and specify fixed effects and instrumental variables econometric models. Increasing productivity growth rates is associated with reducing segregation. The estimates unveil a "gender segregation Kuznets curve" in manufacturing employment: initial levels of income per capita are associated with rising segregation within manufacturing industries, while higher levels of income per capita are associated with reducing trends in segregation. Finally, out of the macro-level controls, government expenditure arises as a significant factor of reducing segregation. The paper speaks to development and structural change in manufacturing, while at the same time discusses the measurement and interpretation of segregation.

Keywords: *gender sectoral segregation, gender Kuznets curve, manufacturing employment, structural change, economic development*

JEL Codes: *J16, L16, O14, O11*

1 Introduction

Women are generally under-represented in manufacturing jobs, partly because gender norms stigmatize women working in paid manual labor outside the home (Goldin, 1995; Dinkelman & Ngai, 2022). Despite these broad global patterns, women's under-representation in manufacturing employment varies both across countries and within countries. Important aspects of this variation are rooted in stage of economic development and industrial structure. For instance, based on the United Nations Industrial Development Organization (UNIDO) database,[1] women represent more than half of total manufacturing employment in Vietnam, Sri Lanka, and the Philippines, economies where traditional women- and labor-intensive industries like wearing apparel are extensive. Conversely, in the Middle East and North Africa (MENA), in countries such as Qatar, Saudi Arabia and Kuwait, where women's labor force participation is quite low and natural resource exports dominate industrial production, women account for less than 3% of total manufacturing employment. Other countries in the MENA region with more labor-intensive exporting activity have much higher shares of women in manufacturing, including Morocco where close to 1 out of 3 manufacturing jobs were taken up by women in 2019.[2] There is also a lot variation among women in higher income countries, Latin America, and the Sub-Saharan region, where women represent between 20% to 40% of total manufacturing jobs. Still, despite this variation, patterns of gender segregation within manufacturing across a broad spectrum of countries echo one another, pointing to the power of industrial structure to drive development in ways that both challenge and reinforce gender stereotypes.

Given these commonalities and contradictions, this paper explores the trajectory of gender segregation across 23 manufacturing industries for a set of 63 developed and developing countries over 1990-2019, focusing on how economic development (proxied by per capita GDP) and labor productivity growth within manufacturing influence gender segregation. One key finding is that we observe a kind of "gender segregation Kuznets curve," where lower levels of economic development are associated with rising gender segregation in manufacturing, and as economic development advances past a certain point, gender segregation in manufacturing begins to decline. We hypothesize that this

[1] As explained in Rodrik (2013), the UNIDO database is one of the most comprehensive data sources with industry-level information in manufacturing regarding output, value added, female employment, and other relevant industrial statistics. Nonetheless, as further explained in the Data section, this high level of data disaggregation comes at the cost of measurement errors. The statistics also refer to the formal part of the economy, and thus, the descriptive and econometric analysis here offered should be interpreted accordingly.

[2] Moroccan employment data taken from ILO modeled estimates.

has to do with an interaction between the changes in industrial structure that modern development typically brings – within and outside the manufacturing sector – and the gendered social norms that influence both the demand and supply sides of labor markets.

2 Background

A growing gender-aware macroeconomic literature demonstrates that macroeconomic policies and structures are not gender neutral.[3] The lines of causality run both ways: macroeconomic policies have differential effects on women and men, and prevailing gender systems affect macroeconomic outcomes like growth and exchange rates. For example, probably the earliest gender-aware macro literature focused on the gender differential impacts of structural adjustment programs implemented in the 1980s and 1990s, arguing that social welfare spending cuts and the economic models that rationalized them wrongly presumed effectively unlimited supplies of caring labor, most often provided by women and girls (Benería & Feldman, 1992; Elson, 1995; Elson & Cagatay, 2000). Women and girls bore a disproportionate share of the social costs of this gender blindness, with consequences that undermined the economic goals of the programs themselves (e.g. girls getting pulled out of school or women staying out of paid labor force to provide care work). An example more directly applicable to the context of this paper is the strong association between export-led industrialization strategies and the demand for women's labor. Almost all countries that have successfully industrialized in the modern era have done so by mobilizing large numbers of women into the manufacturing sector (Standing, 1989). The cost minimization strategies that are a central part of the export-led industrialization model take advantage of women's (universally) relatively low wages. Coupled with the perception that women are more productive in this type of labor-intensive work, the feasibility of the export-led industrialization model itself then reflects and reinforces prevailing gender unequal systems (Elson & Pearson, 1981).

An important part of the gender and macroeconomics literature takes up the related question of the gender equality implications of structural transformation, particularly in terms of women's employment in the manufacturing sector. Country- and region specific studies reveal the complexities of the connection between structural transformation and gender inequality. For the Middle East and North Africa region, Dildar (2021) finds that women's share of manufacturing employment is closely correlated with the growth of labor-intensive industries. In Asia, gender-wage gaps in manufacturing have

[3]For a recent review, see Seguino (2020, 2021)

been connected to the region's competitive advantage and success with export-led industrialization Berik & van der Meulen Rodgers (2012); Seguino (2000). Somewhat by contrast, Gupta (2021) finds that trade liberalization in the form of tariff reductions lowered women's manufacturing employment share in India as firms responded to increasing competition by increasing the number of shifts, which favored the employment of men over women, who were legally prohibited from working long hours and late shifts. In Latin America, studies indicate the importance of social policy in supporting gender equality in the labor market, and the failures of structural transformation to produce sufficient high-quality employment for either women or men, with women increasingly excluded from scarce better-quality jobs (Arora et al., 2023; Braunstein & Seguino, 2018). Van den Broeck et al. (2023) come to a similar conclusion for a set of countries in in Sub-Saharan Africa. An associated literature documents the defeminization of manufacturing employment across a variety of countries, both secularly over time and as manufacturing becomes more skill- and capital-intensive (Arora et al., 2023; Borrowman & Klasen, 2020; Seguino & Braunstein, 2019; Tejani & Milberg, 2016). We contribute to this literature by analyzing the macroeconomic factors that drive gender segregation within manufacturing.

Given our gender inequality lens, we are also interested in understanding how this segregation is impacted by economic development (as measured by per capita GDP) more generally. Here we take up the question of what impact economic development has had on gender in the labor market, at least as measured by gender segregation in manufacturing. This entails engaging with a broader literature on the gender inequality – development link, particularly in terms of the feminization U hypothesis (see, for instance, Silva & Klasen (2021); Uberti & Douarin (2022); Tam (2011); Tunalı et al. (2021)).

The feminization U refers to a relationship between women's labor force participation and industrialization, where industrial sector growth (especially mining, construction, and other heavy industries) has been observed to be negatively associated with women's economic activity rates, while the expansion of agriculture and services is positive (Goldin, 1995; Boserup et al., 2013). The empirical illustration of this relationship has largely been based on cross-sectional analyses of the correlation between women's labor force participation and per capita incomes, corresponding with the narrative that as women's traditional productive activities get replaced by industrial production, their work participation declines, but then increases again as industrialization advances and the modern services sector offers new (and more feminized) opportunities – hence the term "feminization U". However, what was once taken as a "stylized fact" in the development literature has become increas-

ingly contested in terms of the lack of robustness in empirical studies, and the literature's failure to adequately specify the social sources and changing nature of industrialization and structural transformation (Gaddis & Klasen, 2014; Klasen et al., 2021; Uberti & Douarin, 2022). We aim to contribute to this literature by using its framework and insights to better understand the dynamics of gender segregation within manufacturing across different levels of economic development, and at the same time, different structural change processes within the manufacturing.

3 Data

This paper combines industry-level disaggregated information from the UNIDO INDSTAT 2 (2022), with country-level information from the International Labor Organization (ILO), the World Development Indicators (WDI) of the World Bank, and the Chinn-Ito database (2020). We build a country-level panel dataset of 63 countries during 1990 and 2019 which combines information in gender segregation in manufacturing jobs and structural change within the manufacturing and macroeconomic variables, such as economic development, female-to-male ratio of labour force participation, various covariates on trade and financial openness, among others.[4]

Figure 1 provides information on how female and male employment in manufacturing distribute across industries. The industrial classification here employed disaggregates the manufacturing sector in 23 ISIC 2-digit level Rev. 3 industries, for which we compute the ratio of gender employment. Sample averages in female employment show that wearing apparel (22%) and food and beverages (20%) are the main industries employing women, while textiles (11%) is the third industry that concentrates more female employment. Food and beverages also employs a significant proportion of male employment (20%), but the rest of male employment distributes in different ways. Table A3 in Appendix shows the share of female and male manufacturing employments by region.

[4]Appendix shows the sample of countries

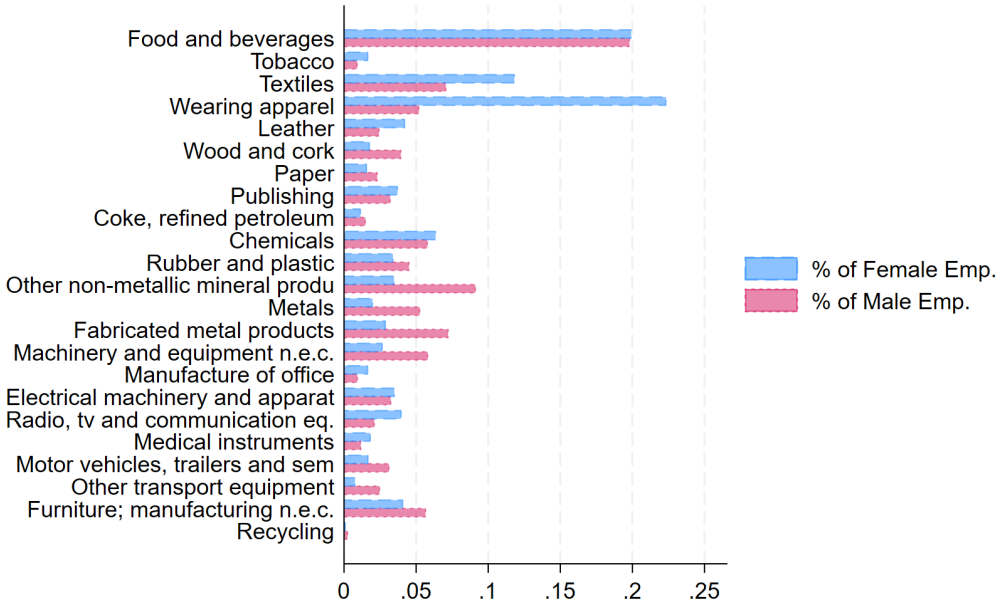

Figure 1: Industry Distribution of Manufacturing Gender Employment

3.1 Measuring segregation: the dissimilarity index

Our first step is to compute a country-level measure of segregation in manufacturing that synthesise the information provided in Figure 1 for each country-year cell of our dataset. To do so, we compute the dissimilarity index of Duncan & Duncan (1955) using the industry-level disaggregated data from UNIDO, and come up with a country-level measure of segregation.

$$ID = \frac{1}{2}\sum_{i=1}^{23} |\frac{F_i}{F} - \frac{M_i}{M}| * 100$$
$$i = [1, ..., 23] \tag{1}$$

where F_i (M_i) is the number of women (men) in industry i and F (M) is the total female (male) employment in manufacturing, while i are the 23 industries (See Figure 1). The dissimilarity index is often referred as "the" measure of segregation, and is widely used in the gender-aware macroeconomics literature (England et al., 2020; Borrowman & Klasen, 2020; Arora et al., 2023). The index provides the percentage of women who should trade industries without replacement in order to bring about an equal distribution across industries as that of men. Its easy interpretation comes at the cost of some technical drawbacks, as its mechanical sensitivity to the size of gender groups and its dependency on

the breath of the classification.[5]

Figure 2 shows the evolution of gender segregation (dissimilarity index) in manufacturing during 1990-2019 by different global regions. There are cross-regional differences in the level of segregation and its evolution: South Asia (37%) and MENA (42%) are the most segregated regions, and their trend has overall increased. Sub-Saharan African countries has followed a hum-shaped trend in segregation, with a slightly lower level than South Asia and MENA. Gender segregation in high-income countries was stable and relatively low (24%), whereas Europe and Central Asia (27%), and Latin America and Caribbean (21%). Hence, countries at different stages of economic development have varying levels of gender segregation in manufacturing.

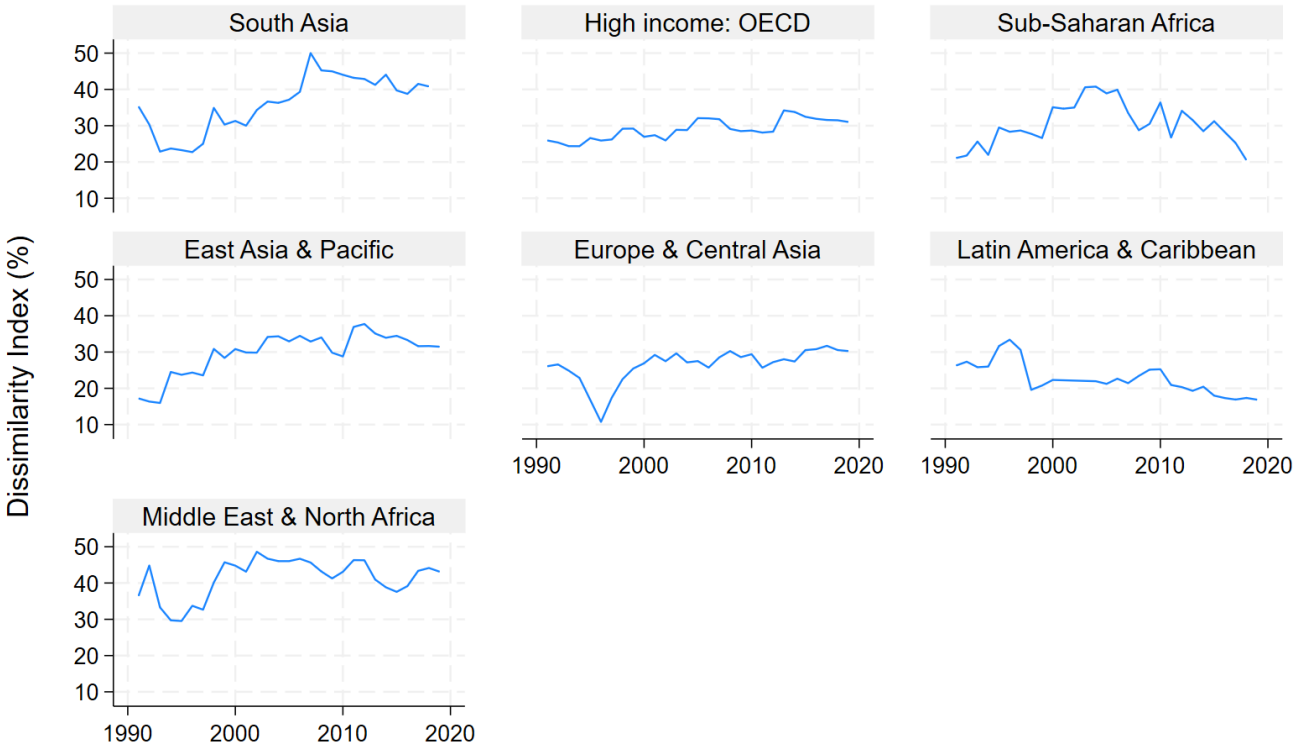

Figure 2: Gender Segregation in Manufacturing

Figure 3 relates dissimilarity index (y-axis) and log-transformed GDP per capita (x-axis), where data points refer to country-year observations colored by region. We find an inverted-U shape

[5]The first issue that the dissimilarity index presents is referred in the statistical literature on segregation measures as "stability" over populations that differ in proportion minority. Regarding the latter issue, it should be noted that virtually all the segregation measures in the literature suffer from the level of disaggregation of sectors (or occupations, fields of study, and so on). See Watts (1998) for more on this.

curve between economic development and gender segregation in manufacturing. This non-linearity between economic development and segregation suggests that at initial levels of income, segregation increases, whereas for further increases of income, segregation decreases.

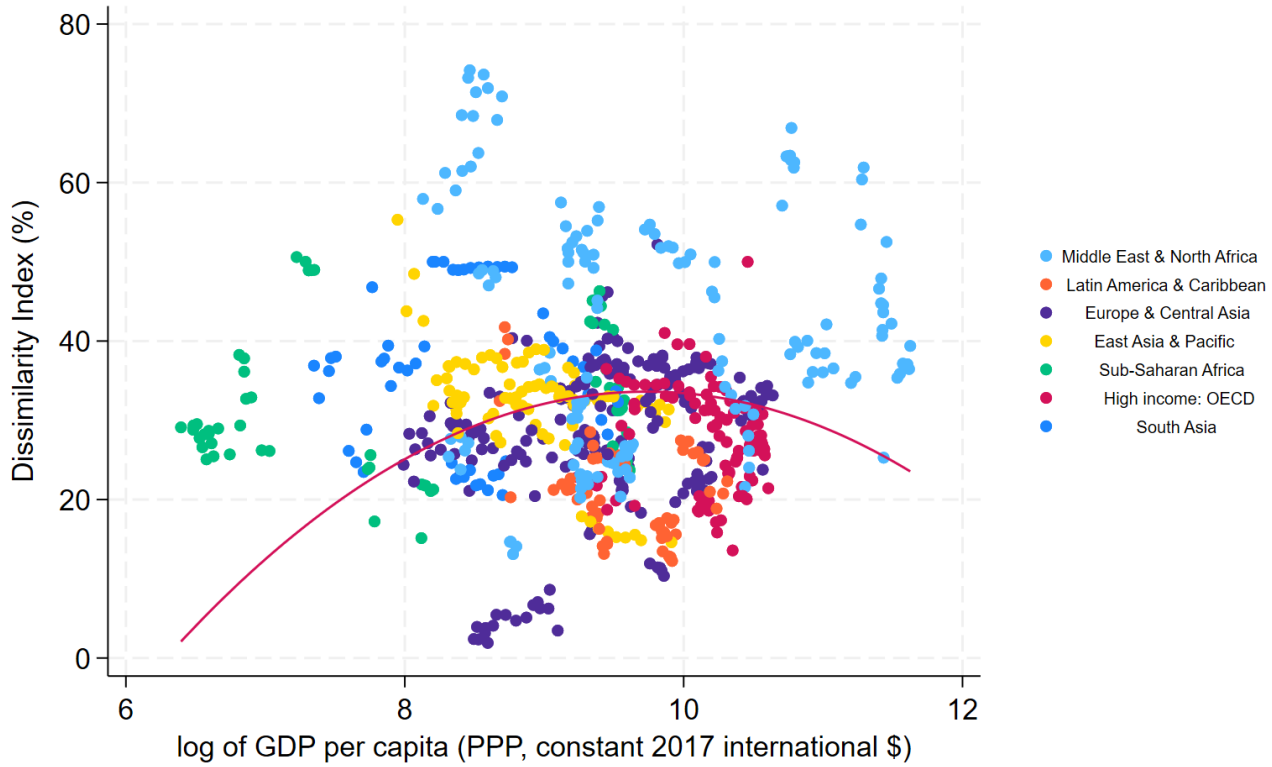

Figure 3: Gender Segregation Kuznets' Curve in Manufacturing

4 Econometric Strategy

We speficy the following econometric model in Eq. 2

$$ID_{ct} = \beta_0 + \beta_1 GDPpc_{c,t-1} + \beta_2 GDPpc^2_{c,t-1} + \beta_3 Prod_{c,t-1} + \beta X' + \gamma_t + \epsilon_{ct}$$
$$c = country, t = year \tag{2}$$

where ID is the dissimilarity index computed over manufacturing industries. $GDPpc$ is the log of GDP per capita and its squared term $GDPpc^2$ is included to capture a non-linear link between income levels and segregation. $Prod$ is the annual growth rate of labor productivity, where labor productivity is defined as the ratio between value added in manufacturing and total employment in manufacturing. Our three key coefficients in our estimates, namely β_1 and β_2 for the inverted-U-shape and β_3 for the role of labor productivity in manufacturing in gender segregation.

Previous research have found a negative impact of labor productivity in the share of women in manufacturing (Tejani & Kucera, 2021), and that capital-labour ratio and the ratio of female-to-male labour force participation rates depresses the relative concentration of women in industrial jobs (Seguino & Braunstein, 2019).

The set of controls included in our model are female-to-male labour force participation rate, the percentage of urban population, fertility rates, net inflows of foreign direct investment (FDI) as % of GDP, government spending as a % of GDP, trade as % of GDP, manufacturing exports as % of merchandise exports, and financial openness.

5 Results

Table 1 provides fixed-effects estimates of equation 2 that suggest first, a negative link between annual growth rate in manufacturing labor productivity and gender segregation, and second, confirm a gender segregation Kuznets curve in manufacturing. Previous econometric works, such as Seguino & Braunstein (2019) and Tejani & Kucera (2021), which include economic growth in their models, did not find a significant association with respectively the relative concentration of women in industrial jobs, and the female share in manufacturing industries. Column 2 in Table 1 shows also that including only economic development, by its own, has no significant role. However, once the squared term is included, the results suggest that initial levels of economic development lead to increasing segregation, whereas the same increases once the countries has achieve a threshold of development, yield a reducing impact on gender segregation in manufacturing. Columns 3 and 4 add female-to-male labor force participation and the full set of controls. The last two columns use respectively developed and developing countries, and we find that the is not a significant link between economic development and segregation in the 12 advanced economies in our sample. For the 41 developing countries, we find a significant inverted-U shape.

Table 1: Sources of Gender Segregation in Manufacturing

	Whole dataset				Developed	Developing
	(1)	(2)	(3)	(4)	(5)	(6)
	FE	FE	FE	FE	FE	FE
L.GDP pc (log)		2.993	85.855**	145.723***	-1.161	142.027***
		(4.595)	(40.499)	(24.351)	(80.944)	(34.480)
cL.GDP pc (log) sq			-4.742**	-8.080***	-0.822	-7.874***
			(2.221)	(1.327)	(4.208)	(1.914)
L.Man. productivity growth	-0.216***	-0.212***	-0.181**	-0.141**	0.032*	-0.196**
	(0.080)	(0.076)	(0.071)	(0.068)	(0.018)	(0.080)
L.F/M labor force			-32.523	-3.540	-23.529	-1.299
			(22.978)	(18.370)	(16.991)	(17.947)
L.Urban pop				0.030	0.231	0.068
				(0.252)	(0.295)	(0.271)
L.Fertility				2.913	-9.590**	4.195
				(2.247)	(3.441)	(2.525)
L.FDI				-0.021	0.426***	-0.023
				(0.015)	(0.084)	(0.014)
L.Gov. spending				-0.553***	-1.145**	-0.489**
				(0.184)	(0.417)	(0.209)
L.Trade				-0.064*	-0.011	-0.070*
				(0.034)	(0.029)	(0.035)
L.Manufacturing X				-0.004	0.222	-0.006
				(0.013)	(0.206)	(0.015)
L.Financial openness				2.115	-4.764**	2.166
				(2.006)	(1.828)	(1.956)
No. of Obs.	761	644	644	567	90	477
No. of Groups	63	58	58	53	12	41
R^2	0.105	0.104	0.219	0.339	0.897	0.346
log-likelihood	-2319.661	-1939.679	-1895.315	-1621.217	-108.973	-1393.472
Within R-squared	0.105	0.104	0.219	0.339	0.897	0.346

Country-level clustered standard errors in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$

To be able to interpret the results above, we compute the marginal effects of one % increase in GDP per capita on the dissimilarity index in manufacturing, based on the estimates in Column

6 in Table 1. Figure 4 shows the margins, while it provides the histogram of economic development of the sample of developing countries. A one % increase in economic development in very initial stages of the development process is associated with a 0.4% increase in the dissimilarity index. For subsequence phases of development, this marginal effect reduces both in slope (magnitude) and its sign reverses. For middle levels of economic development, the relationship is not significant, but for the last stages, the link becomes negative. For countries that have achieve a sufficient level of income per capita, further economic development reduces segregation by 0.5%.

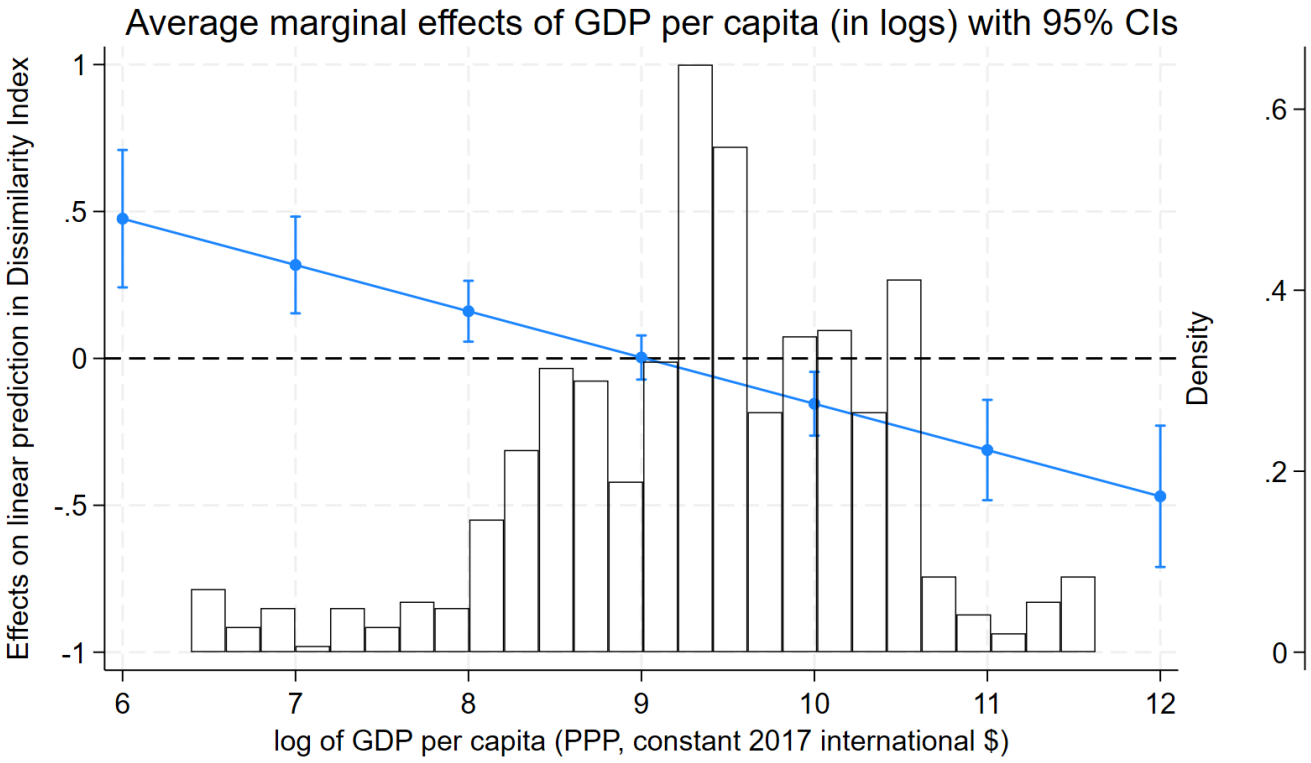

Figure 4: Marginal Effects of Economic Development in Gender Segregation in Manufacturing

5.1 2SLS approach and structural change decomposition

The results above did not consider the potential endogeneity problem arisen from gender equality and economic growth (here cite Braunstein, Seguino, Onaran ETC). Our next step is to tackle this potential issue by adopting an instrumental variables approach, where we instrument GDP per capita by means of its previous realizations and the GDP share of gross fixed capital formation. We do so using the whole database, and then using only the sample of developing countries.

Table 2 uses this 2SLS and finds similar results.

We further decomposed the labor productivity growth rates in manufacturing by its within and between parts, using the decomposition method in equation 3, as in McMillan & Rodrik (2011).

$$\Delta Y_{ct} = \sum \theta_{ic,t-1} \Delta Y_{ict} + \sum Y_{ict} \Delta \theta_{ict} \\ i = industry, c = country, t = year, \Delta = t_1 - t_0 \tag{3}$$

where the first term refers to the within component and the second to the between component. Columns 3 and 4 (Table 2) use fixed effects and 2SLS separating the growth of productivity in manufacturing based on the two components: both have a similar effect.

Finally, Columns 5 and 6 again show fixed effects and 2SLS results using the 3 year moving average of annual growth rates of productivity in manufacturing, to control for the volatility in the data. Similar results are obtained. Figure A1 in Appendix shows the differences between the evolution of productivity annual growth rates and its 3-year moving average.

Table 2: Gender Segregation in Manufacturing: 2SLS Approach and Structural Change

	Whole dataset	Developing countries				
	(1)	(2)	(3)	(4)	(5)	(6)
	2SLS	2SLS	FE	2SLS	FE	2SLS
L.GDP pc (log)	141.037***	145.917**	140.722***	144.763**	130.503***	141.092**
	(32.899)	(63.098)	(34.647)	(63.090)	(43.162)	(63.653)
L.GDP pc (log) sq	-7.910***	-8.153**	-7.800***	-8.090**	-7.220***	-7.878**
	(1.847)	(3.589)	(1.926)	(3.589)	(2.383)	(3.615)
L.Man. productivity growth	-0.168**	-0.249***				
	(0.067)	(0.092)				
L.3yr ma Productivity growth					-0.729***	-0.758***
					(0.260)	(0.259)
L.Within component			-0.138	-0.202**		
			(0.083)	(0.088)		
L.Between component			-0.361*	-0.381*		
			(0.209)	(0.224)		
L.F/M labor force	-12.237	-10.225	-2.011	-10.893	-9.215	-13.312
	(14.888)	(17.016)	(18.015)	(17.074)	(17.761)	(18.072)
L.Trade	-0.061**	-0.066**	-0.070*	-0.067**	-0.064**	-0.064**
	(0.028)	(0.033)	(0.035)	(0.033)	(0.031)	(0.032)
L.Gov. spending	-0.688***	-0.649***	-0.485**	-0.645***	-0.493**	-0.631***
	(0.148)	(0.190)	(0.209)	(0.190)	(0.220)	(0.187)
L.Urban pop.	-0.134	-0.090	0.065	-0.093	0.004	-0.105
	(0.219)	(0.275)	(0.273)	(0.277)	(0.256)	(0.268)
L.Manufacturing X	0.006	0.005	-0.006	0.005	-0.004	0.002
	(0.008)	(0.009)	(0.015)	(0.009)	(0.013)	(0.009)
L.Fertility	0.062	1.240	4.187	1.196	2.648	1.092
	(2.192)	(3.113)	(2.542)	(3.119)	(2.331)	(3.070)
L.Financial openness	-0.147	0.076	2.183	0.117	0.337	0.269
	(2.300)	(2.214)	(1.950)	(2.209)	(2.266)	(2.244)
L.FDI			-0.023			
			(0.014)			
N of Obs.	481	403	477	403	441	403
No. of Groups	48	38	41	38	41	38
R^2	0.337	0.334	0.348	0.335	0.309	0.343
log-likelihood	-1353.182	-1161.623	-1392.882	-1161.259	-1282.699	-1158.783
Hansen J stat.	0.578	0.367	0.476	0.376	0.368	0.334

Country-level clustered standard errors in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$

6 Conclusion

The interplays between the macroeconomy and gendered labor outcomes are understudied, as mainstream economic literature has long deemed the macroeconomy as gender neutral (Elson, 1993). Nonetheless, gender-aware macroeconomics and feminist macroeconomists have supplemented that notion with evidence on the gendered differential effects of monetary policies, through for instance inflation and investments, the impact of fiscal policies in the provisioning of social infrastructure, or trade liberalization (Seguino, 2013, 2020). A defeminization in manufacturing has emerge as a stylized fact in this literature,suggesting that productivity or capital-to-labor ratios are conducive to less women in manufacturing (Seguino & Braunstein, 2019; Tejani & Kucera, 2021). This paper has taken the next, natural step in advancing our understanding of the defeminization of the manufacturing by analysing how women and men employment in manufacturing distributes across industries within the sector. That is, we analyse gender sectoral segregation in manufacturing, and identify the roles of economic growth and structural change in it.

We used an industry-level database with information on 23 manufacturing industries in 63 countries during 1990-2019. We use this data to compute a measure of gender segregation, the so-called dissimilarity index, and employ fixed effects and instrumental variables econometric models to identify the role of economic development and productivity in gender segregation. We then specified fixed effects and instrumental variable models that circumvent the endogenenity biases in the estimates.

Our results suggest that rising labor productivity annual growth rate is associated with lower segregation. We discuss now potential mechanisms and interpretation of these results. As previous literature finds that rising labour productivity decreases the share of women in manufacturing (Seguino & Braunstein, 2019; Tejani & Kucera, 2021), one possible explanation for our result is that a lower presence of women can favor a better representation of women in each industry. Lower presence of women can reduce the competition between women and men for jobs, thus allowing a more gender balanced distribution of employment. Sociological research suggests that relatively low shares of women in certain sectors reduces segregation (Charles & Bradley, 2009), which can operate through two forces: one through lower competition between women and men, and another, through a sense of pioneers for those women in male-dominated sectors. In this light, the negative link between labor productivity and segregation could not mean a gender equality gain, since it could speak to the consequences of the link between lower female shares and lower competition for jobs. Another different interpretation of the negative association between labor productivity and gender segregation can be

that productivity gains and lower segregation are both driven by technological adoption. (Rendall, 2013) finds that lower physical-demanding jobs are conduce to higher entrance of women, yet this being mediated through real or perceived gender differential physical abilities. A final, possible explanation, is the erosion of stigma of women in manufacturing in the process of economic development. We also find a "gender segregation Kuznets curve" between economic development and gender segregation in manufacturing, that is, an inverted-U shaped by which at initial levels of income segregation increases, and further income increases lead to lower segregation. This finding complements the feminization U (Goldin, 1995; Gaddis & Klasen, 2014), confirming the gender differential impacts of the macroeconomy.

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Appendix

Table A1: Manufacturing Industries ISIC Rev. 3 Classification (UNIDO INDSTAT)

ISIC Rev. 3	**Industry name**
15	Food and beverages
16	Tobacco
17	Textiles
18	Wearing apparel
19	Leather
20	Wood and cork
21	Paper
22	Publishing
23	Coke, refined petroleum
24	Chemicals
25	Rubber and plastic
26	Other non-metallic mineral products
27	Metals
28	Fabricated metal products
29	Machinery and equipment n.e.c.
30	Manufacture of office
31	Electrical machinery and apparatus n.e.c.
32	Radio, tv and communication eq.
33	Medical instruments
34	Motor vehicles, trailers and semi-trailers
35	Other transport equipment
36	Furniture; manufacturing n.e.c.
37	Recycling

Table A2: Sample of Countries by Region

South Asia	**High income**	**SSA**	**East Asia & Pacific**	**Europe & Central Asia**	**LATAM & Caribbean**	**MENA**
Bangladesh	Australia	Botswana	Fiji	Albania	Colombia	Egypt
India	Austria	Eritrea	Indonesia	Armenia	Costa Rica	Iran
Nepal	Canada	Ethiopia	Malaysia	Azerbaijan	Ecuador	Jordan
Sri Lanka	Chile	Kenya	Myanmar	Belarus	El Salvador	Kuwait
	Estonia	Madagascar	Philippines	Bulgaria	Mexico	Malta
	Finland	Niger	Vietnam	Croatia	Peru	Morocco
	Hungary	Zimbabwe		Cyprus	Puerto Rico	Oman
	Ireland			Georgia		Palestine
	Japan			Kazakhstan		Qatar
	Lithuania			Kyrgyz Republic		Saudi Arabia
	New Zealand			Moldova		
	Portugal			Montenegro		
	Slovak Republic			Uzbekistan		
	South Korea					
	Sweden					
	United Kingdom					

Table A3: Industry Shares of Gender Employment (% to Total Gender Manufacturing Employment)

	South Asia		**High inc.**		**SSA**		**E. Asia & P.**		**Europe & C. Asia**		**LATAM & C.**		**MENA**	
	women	men	women	men	women	men	women	men	women	men	women	men	women	men
Chemicals	5.6%	5.6%	4.4%	5.0%	4.8%	5.0%	3.6%	5.2%	5.0%	4.7%	7.2%	6.1%	7.1%	5.4%
Coke, refined petroleum	0.1%	0.5%	0.3%	0.8%	0.0%	0.1%	0.1%	0.3%	1.4%	2.1%	0.5%	1.0%	0.9%	1.5%
Electrical machinery	0.6%	1.1%	4.2%	3.5%	0.4%	0.6%	1.9%	2.0%	3.0%	3.1%	3.4%	3.9%	2.6%	2.5%
Fabricated metal products	0.5%	2.2%	4.1%	8.6%	2.6%	5.9%	1.9%	5.2%	2.8%	6.2%	1.7%	5.3%	2.8%	9.5%
Food and beverages	17.8%	16.2%	12.5%	9.7%	19.7%	34.3%	5.8%	9.8%	19.8%	15.8%	20.4%	23.6%	18.8%	13.8%
Furniture; manuf. n.e.c.	3.1%	2.7%	4.0%	4.1%	4.4%	5.9%	4.1%	5.4%	2.9%	4.3%	6.2%	5.1%	1.6%	4.7%
Leather	3.4%	0.9%	2.1%	0.9%	6.0%	6.3%	3.6%	2.2%	2.6%	1.0%	1.9%	1.6%	1.2%	1.3%
Machinery and equip. n.e.c.	0.3%	0.9%	5.1%	11.1%	0.5%	1.0%	1.2%	2.8%	3.7%	7.3%	1.5%	3.3%	1.0%	3.1%
Manufacture of office	0.5%	0.2%	1.5%	1.2%	0.0%	0.0%	2.3%	1.0%	0.5%	0.7%	0.0%	0.0%	0.4%	0.1%
Medical instruments	0.4%	0.4%	1.8%	1.4%	0.1%	0.2%	2.2%	0.7%	0.8%	0.7%	3.7%	2.5%	1.9%	1.2%
Metals	0.1%	1.4%	1.2%	4.6%	0.3%	1.9%	0.8%	3.8%	1.6%	4.1%	0.6%	2.3%	0.7%	2.2%
Motor vehicles, trailers	0.1%	0.4%	2.3%	4.9%	0.5%	1.3%	0.9%	2.2%	1.1%	1.5%	0.7%	1.9%	0.4%	1.3%
Other non-metallic mineral products	1.8%	4.3%	2.6%	5.0%	3.0%	7.4%	2.2%	6.9%	4.2%	10.0%	1.8%	5.6%	3.3%	10.9%
Other transport equipment	0.3%	1.1%	0.7%	3.1%	0.0%	0.0%	0.7%	2.5%	0.9%	2.1%	0.5%	1.0%	0.7%	1.9%
Paper	0.6%	1.5%	1.9%	2.7%	1.1%	1.3%	1.8%	3.6%	1.5%	1.7%	2.0%	3.1%	1.3%	1.7%
Publishing	1.4%	2.9%	4.8%	3.8%	5.0%	3.7%	1.7%	2.3%	2.9%	2.5%	2.8%	2.5%	4.0%	2.8%
Radio, tv and communication eq.	1.1%	0.8%	5.5%	3.3%	0.2%	0.3%	2.4%	1.4%	1.2%	0.9%	0.1%	0.1%	2.4%	0.9%
Recycling	0.0%	0.1%	0.1%	0.3%	0.0%	0.1%	0.1%	0.1%	0.2%	0.4%	0.0%	0.0%	0.1%	0.2%
Rubber and plastic	1.8%	3.8%	3.7%	4.1%	2.9%	2.7%	3.3%	5.1%	2.3%	3.4%	4.6%	6.3%	2.4%	3.9%
Textiles	18.5%	11.5%	9.8%	4.3%	10.8%	7.3%	12.0%	5.8%	7.6%	3.2%	3.7%	3.8%	3.9%	2.7%
Tobacco	6.0%	2.3%	0.3%	0.2%	0.7%	0.6%	2.5%	0.9%	1.5%	1.1%	0.1%	0.2%	1.0%	0.9%
Wearing apparel	20.5%	2.3%	12.5%	1.6%	11.4%	2.3%	15.8%	4.2%	12.2%	2.0%	14.7%	3.6%	25.6%	5.8%
Wood and cork	4.1%	2.5%	1.9%	4.3%	1.2%	3.0%	3.3%	5.9%	1.3%	3.6%	0.4%	1.5%	0.3%	2.2%

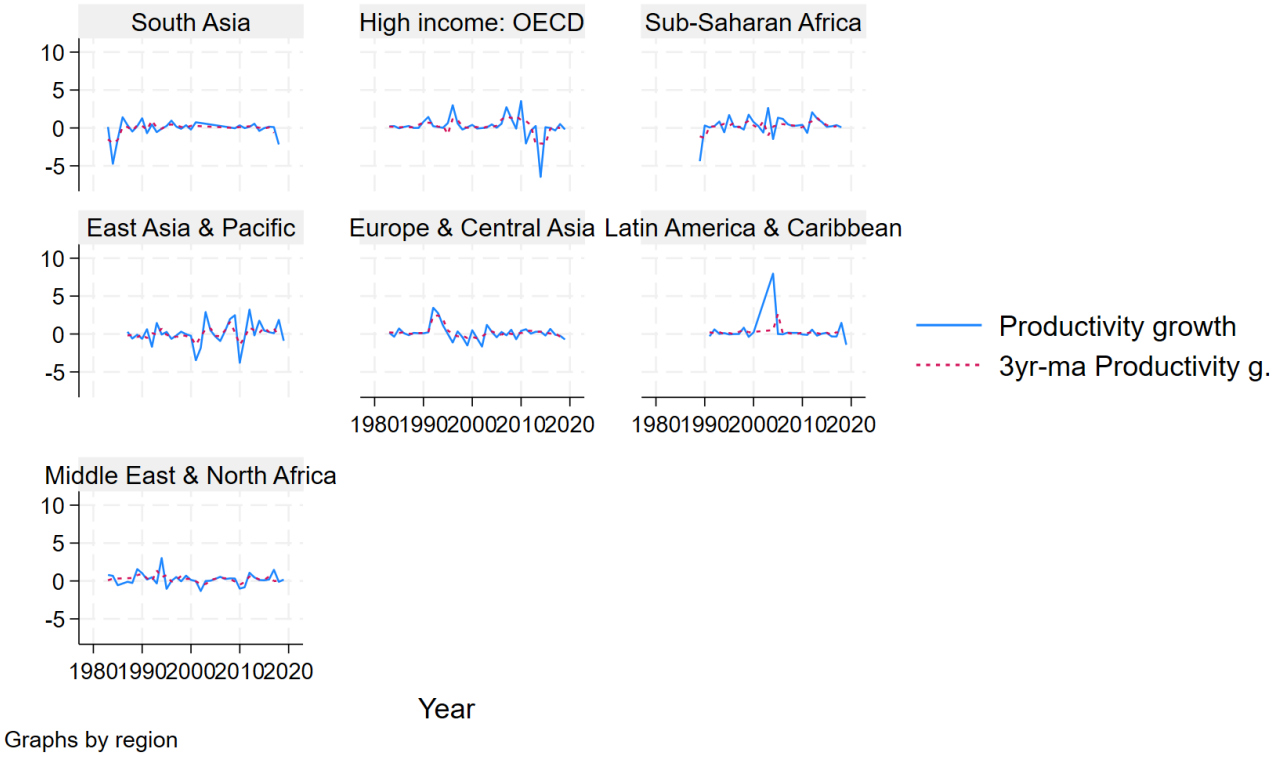

Figure A1: Annual Labor Productivity Growth in Manufacturing by Region