

Opening up policies, Poverty-Inequality and Development

Introduction

Section 1- Opening up policies, Poverty-Inequality

1) Traditional theoretical expectations: growth and income distribution

2) Empirical results and controversies :

-opening up and income growth

-opening up and income inequality

3) Ways forward:

-new channels

-heterogeneity and conditionality

4) Openness and [gender inequality](#)

The study of the repercussions of opening up in terms of inequality faces the same **two challenges** as the one in terms of growth

-1-need to establish **causality empirically**: difficulty is that trade reforms are endogenous (reverse causality and omitted variables plague the proper identification of the causal impact of trade on inequality)

Is it really opening up (rather than other reforms happening at the same time) which raises income inequality?

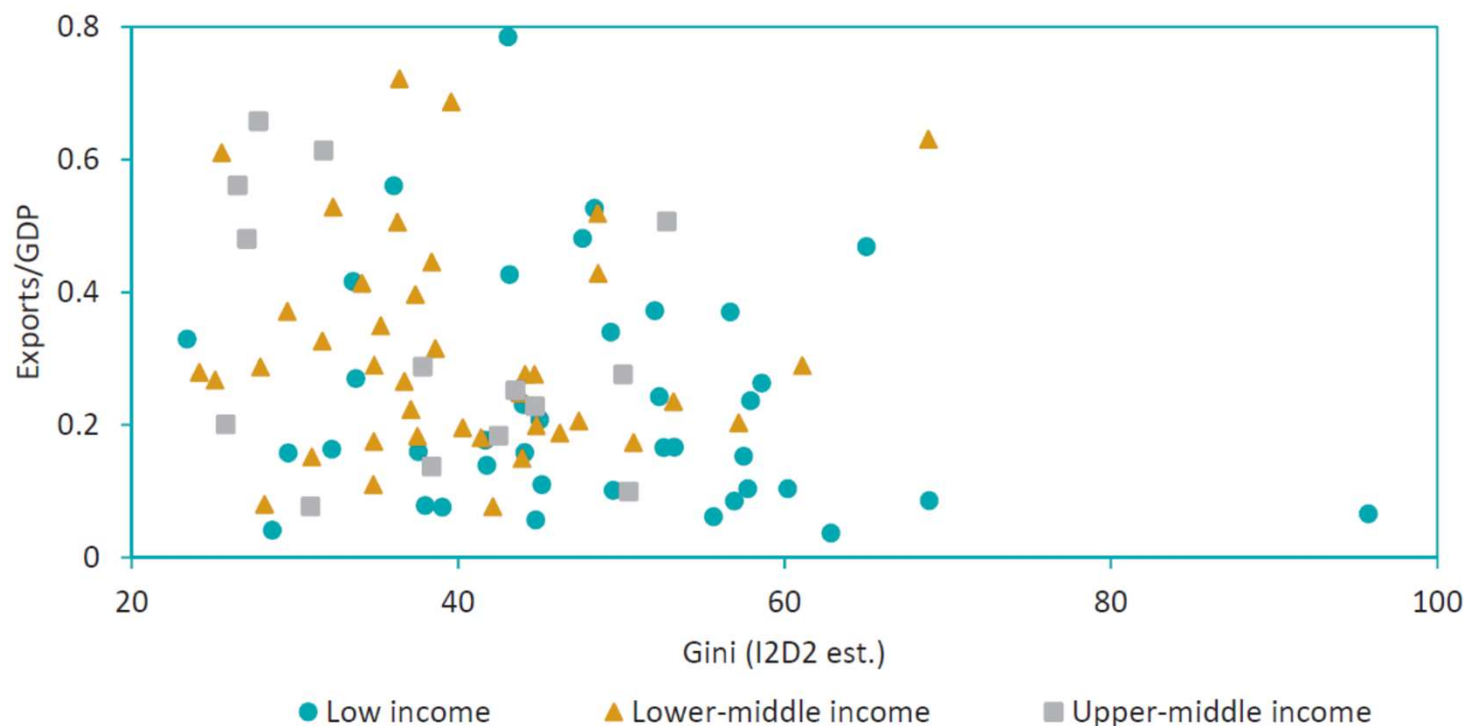
-2-need to rationalize the **channels of impact (consistency with theory)**

Even if we can prove that opening up causes inequality it is key to understand how it happens to draft the best **remediating policies**.

2) Empirical results and controversies : opening up and income inequality

Little correlation between trade openness and income inequality

Figure 8: Trade openness versus income and gender inequality
Inequality



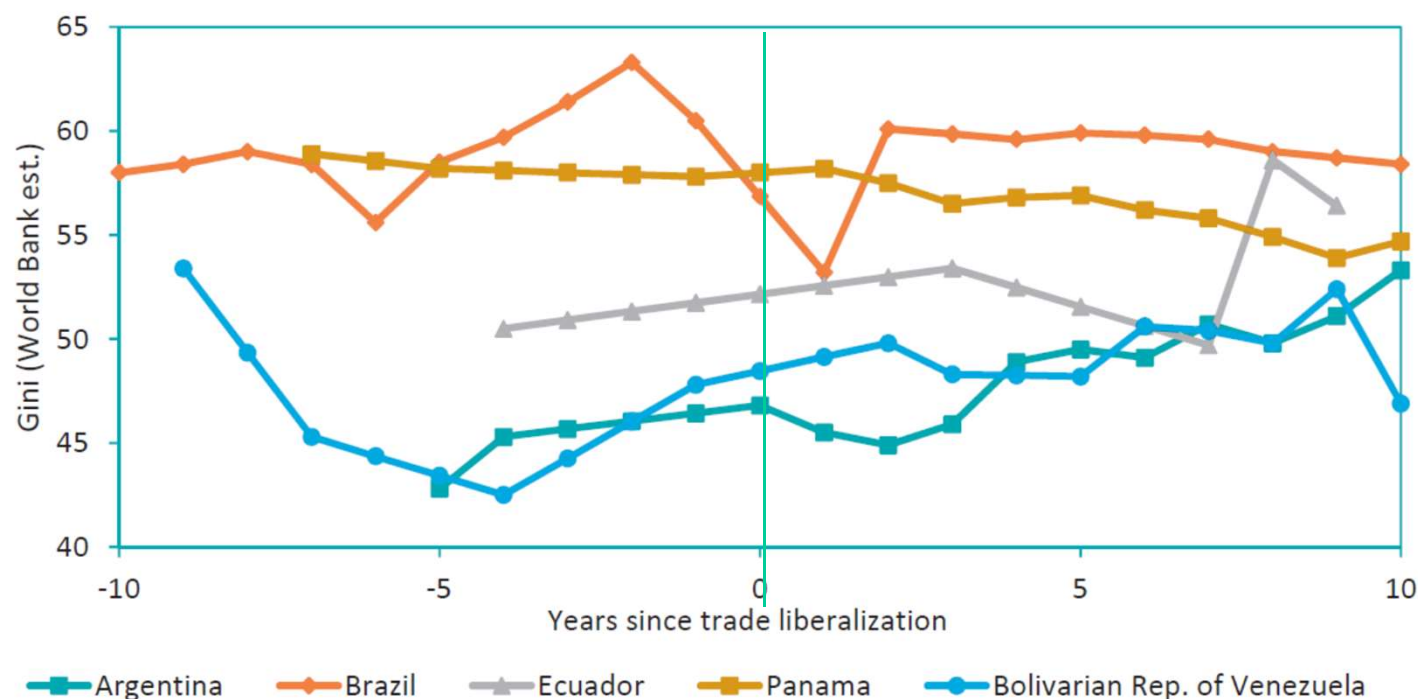
No clear patterns and especially no evidence of the expected difference between High and Low income as predicted by HOS redistributive predictions.

Clearly there is no evidence that global integration of low-income countries led to a reduction in income inequality and a rise for rich countries

Many developing countries, such as **China and India**, which were unskilled labour-abundant, have experienced an increase in income inequality over the recent decades.

In **Latin America**: increase in income inequality in many countries at the time when they opened their markets to international trade (Argentina, Ecuador, Bolivia)

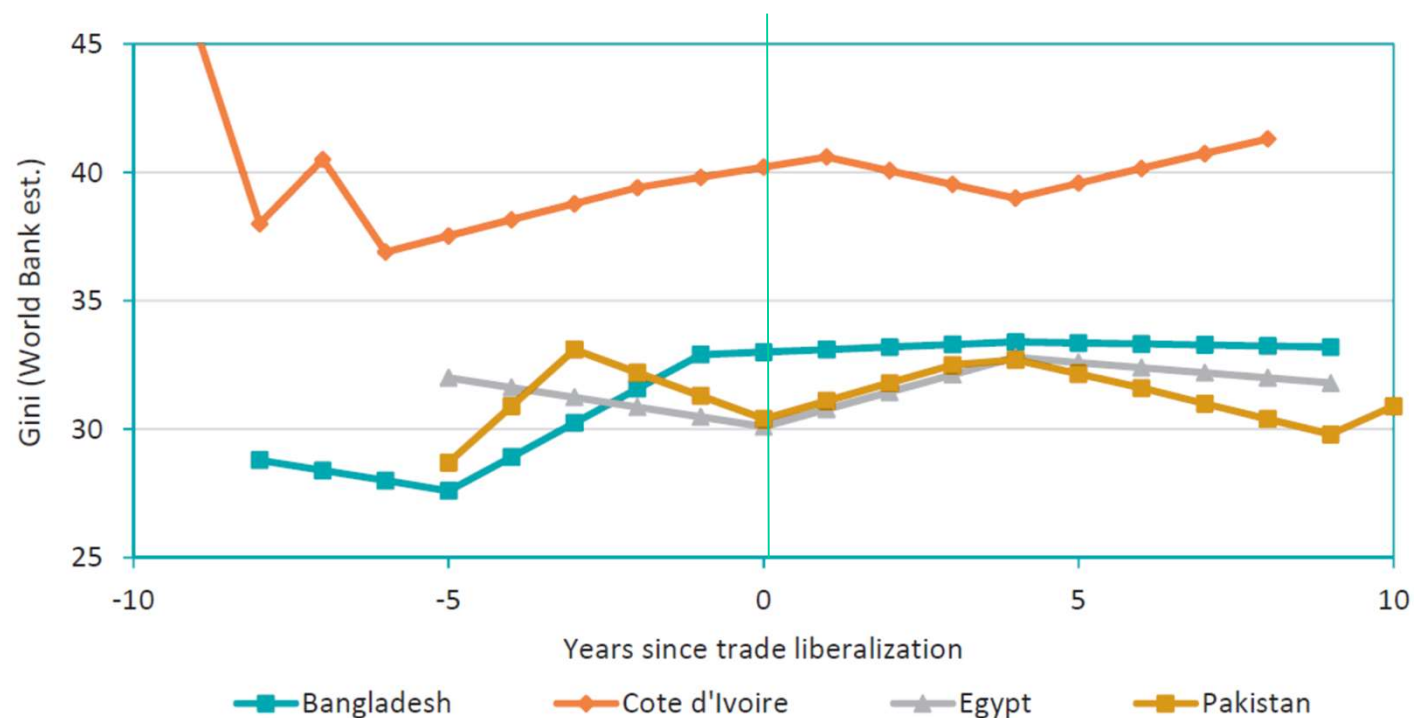
Figure 9: Income inequality before and after trade liberalization – selected countries



Source: UNCTAD 2019, Trade policies for combating inequality, report

In some other countries which also liberalize, no change in income inequality (Bangladesh, Cote d'Ivoire)

Figure 9: Income inequality before and after trade liberalization – selected countries



Source: World Bank's World Development Indicators for Gini indices and Wacziarg and Welch (2008) for the year of trade liberalization in each country.

Source: UNCTAD 2019, Trade policies for combating inequality, report

In fact empirical observations are at odds with the Heckscher–Ohlin Mechanism

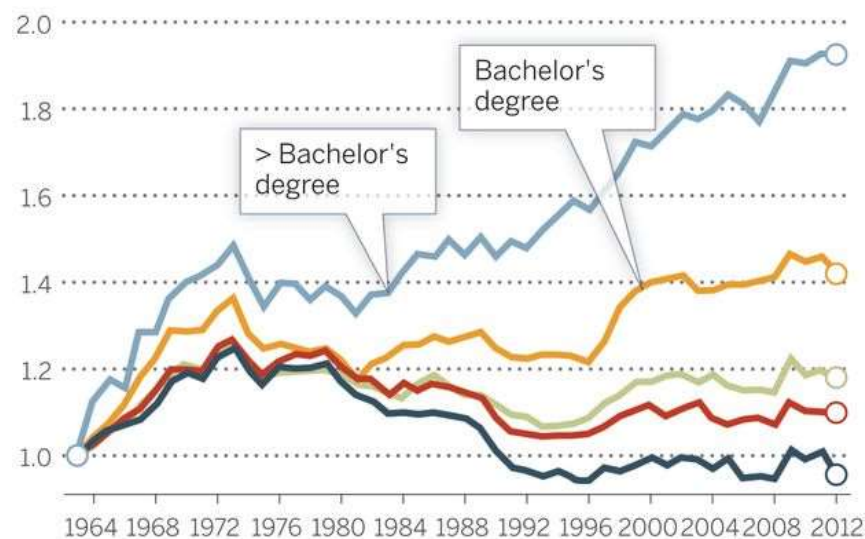
In rich countries: rise in the wage and employment share of skilled workers in virtually all industries during the 1980s and 1990s, including the non-traded sectors.

The rise in wage for the skilled was expected but not the rise in employment share of the skilled labor. Also the skill premium rose sharply even as education levels rose.

Changes in real wage levels of full-time U.S. workers by sex and education, 1963–2012

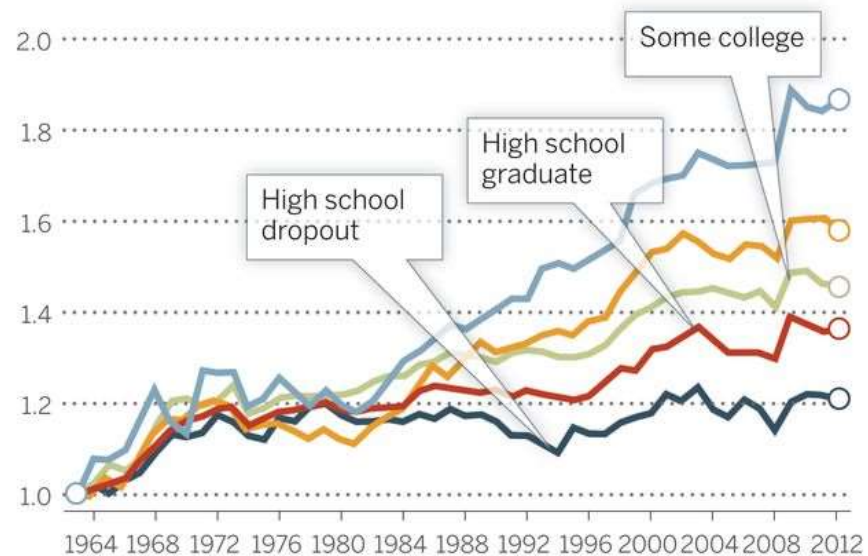
Real weekly earnings relative to 1963 (men)

A



Real weekly earnings relative to 1963 (women)

B



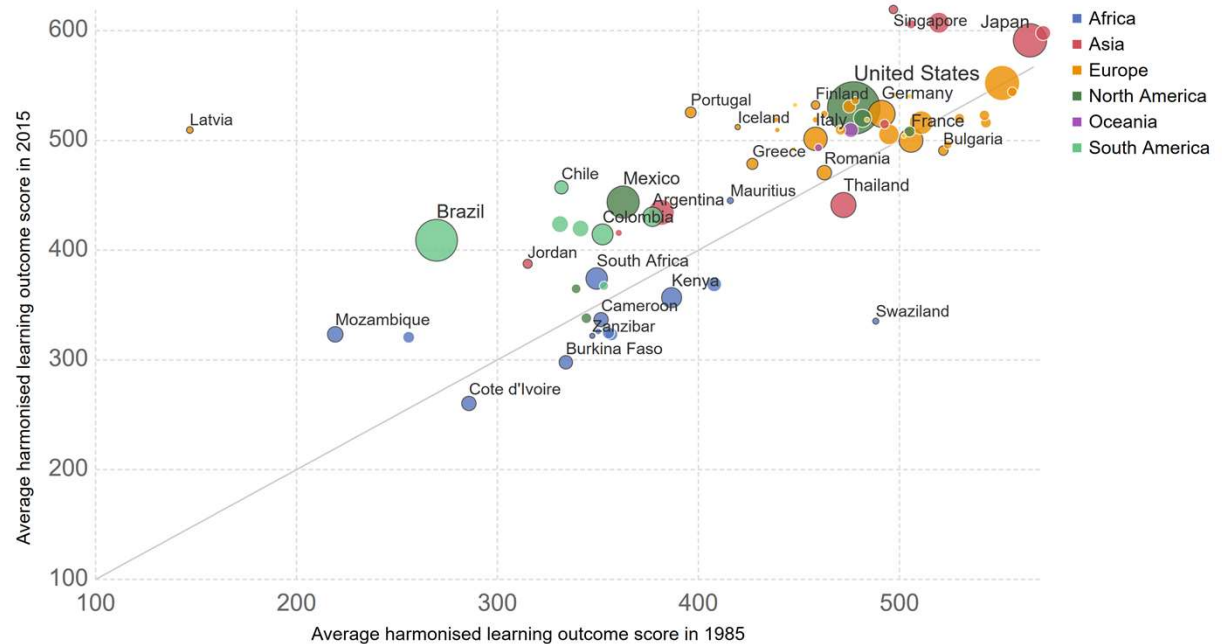
In poor countries: increased relative demand for skilled labor in most industries.

This rise in the intensity of skilled labor in low-skill labor abundant countries is much larger than what was expected from HOS predictions, especially as in many countries the skill premium rose (instead of declined) at the same time that skill levels rose (except in many Sub Sahara Africa countries).

National average learning outcomes, 1985 vs 2015

Average scores across standardized, psychometrically-robust international and regional student achievement tests. In order to maximize coverage by country, tests have been harmonized and pooled across subjects (math, reading, science) and levels (primary and secondary education). The observations correspond to 1985 and 2015, or closest year available.

Our World
in Data



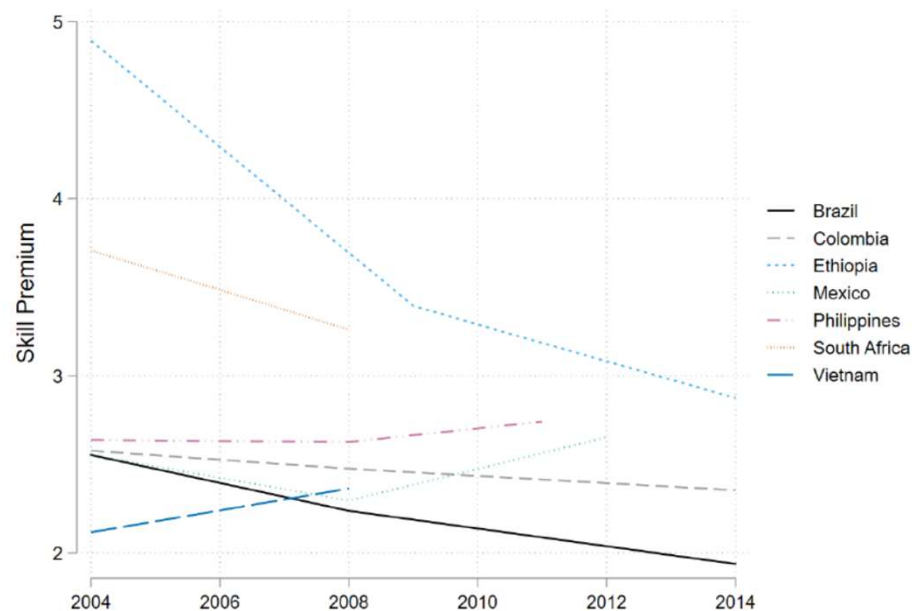
Source: Altinok, Angrist, and Patrinos (2018)

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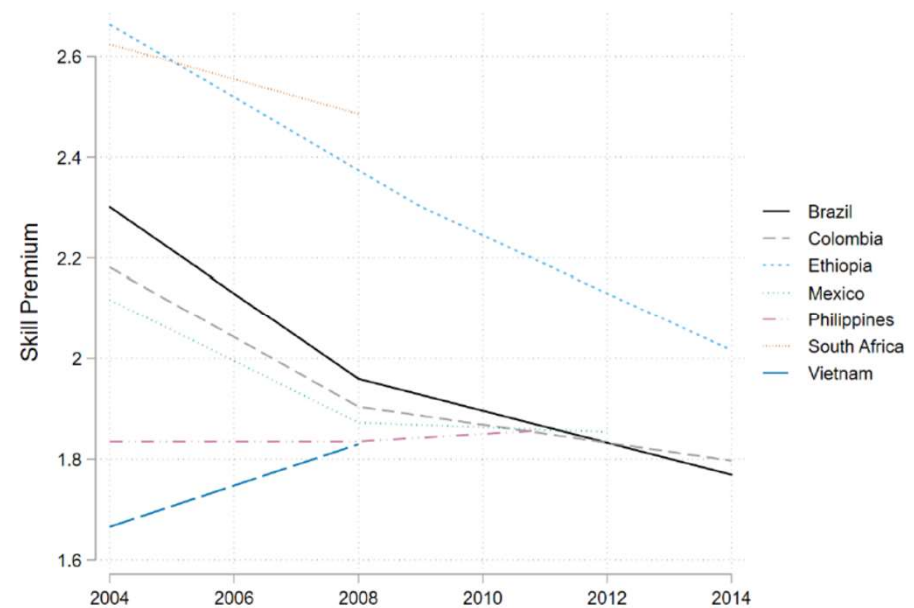
Skill premium is the ratio of the wage of educated workers divided by that of less educated workers. Very demanding to compute so lack of data!

Figure 2: Skill premia

(a) Female



(b) Male



Note: The skill premium is defined as the skilled to unskilled wage ratio conditional on years of experience and its square.

Cruz M, G Nayyar, G. Toews, P-L Vézina, 2018, FDI and the Skill Premium Evidence from Emerging Economies, Policy Research Working Paper 8613

In some countries wage gap between skilled and unskilled rose, in other decline or stagnate. So no clear pattern of reduced skill premium **contrary to what the traditional theory predicts.**

The conflict between empirical evidence and traditional trade theory has had two implications

1-trade could not be responsible for rising income inequality (this is why the consensus among economists has long been that trade is not to be blamed)

The fact that skilled labour wages have increased at the same time as the relative supply of skilled labour also increased in most countries suggests that something else was requiring more skilled workers

Proposition is that the main culprit was a changing **technology favoring more-skilled workers** (that is, **skill-biased technological change**) because of a complementary between technology and skills.

2-traditional trade models are not an adequate reflection of the world and had to be improved.

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3) Ways forward: new channels to better explain the link between trade and inequality

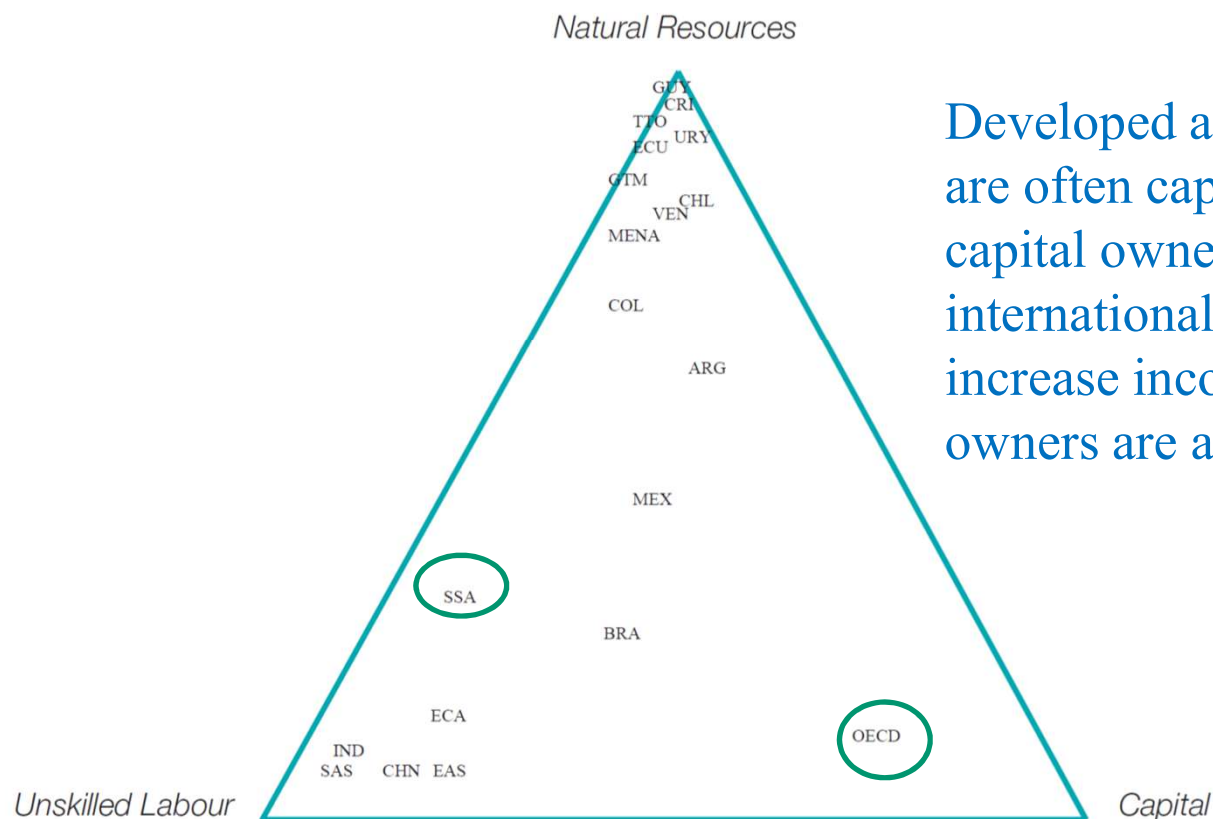
A first step towards allowing trade models to provide a more accurate description of the world involved **moving beyond the two factors of production model** (labour and capital, or skilled and unskilled labour) as a determinant of each country's comparative advantage.

An important neglected factor of production for low-income countries comparative advantage is **natural resources**.

When countries open to trade it is the demand for natural resources and therefore their price that increases.

Whether wages also increase relative to the price of capital will depend on the *substitutability and complementarities* between labour, capital and natural resources.

Figure 10: Factor abundance in a three-factor country model: the Leamer triangle in 2000



Developed and high-income countries are often capital abundant and therefore capital owners benefited more from international trade, which tended to increase income inequality since capital owners are already the richest

Source: Perry and Olarreaga (2007). *Unskilled labour* is obtained from the Barro and Lee dataset assuming that unskilled or raw labour is given by the labour force with up to secondary education completed. Capital is obtained using the perpetual inventory method from *World Development Indicators* data (qualitative similar results are obtained using skilled labour calculated using the Barro and Lee dataset). *Natural Resources* are proxied by net exports of products intensive in natural resources. It is transformed into a positive number by taking the squared root of the exponential of net exports. All endowments are then normalized to be between 0 and 1. Countries in the top corner of the triangle (Chile, Uruguay, and Costa Rica) are abundant in natural resources and scarce in unskilled labour and capital. Countries in the bottom left corner (India for instance) are abundant in unskilled labour and scarce in natural resources and capital. OECD countries appear abundant in capital and scarce in unskilled labour and natural resources. SSA: Sub-Saharan Africa; MENA: Middle-East and North Africa; EAS: East Asia and Pacific; SAS: South Asia.

Figure 10: Factor abundance in a three-factor country model: the Leamer triangle in 2000

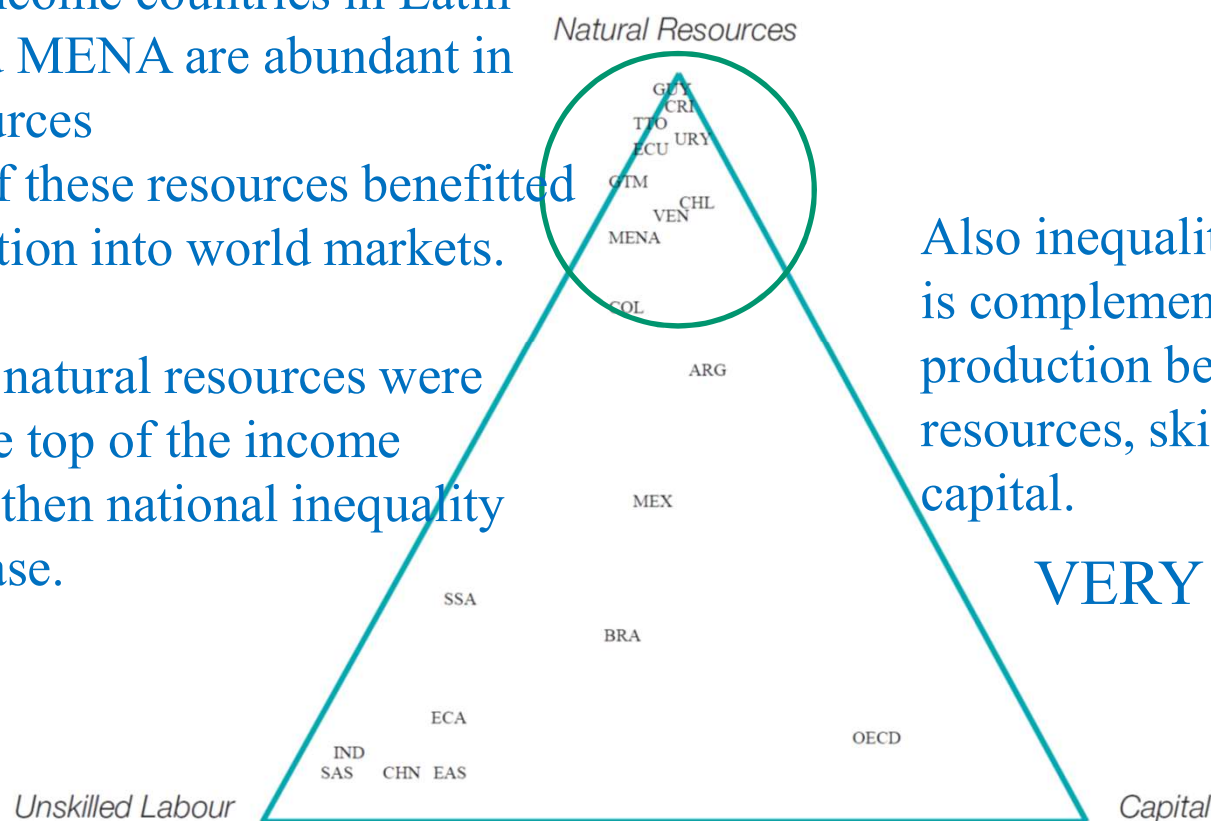
Many low-income countries in Latin America and MENA are abundant in natural resources

So owners of these resources benefitted from integration into world markets.

If owners of natural resources were located at the top of the income distribution, then national inequality would increase.

Also inequality will rise if there is complementarities in production between natural resources, skilled labor and capital.

VERY LIKELY



Source: Perry and Olarreaga (2007). *Unskilled labour* is obtained from the Barro and Lee dataset assuming that unskilled or raw labour is given by the labour force with up to secondary education completed. *Capital* is obtained using the perpetual inventory method from *World Development Indicators* data (qualitative similar results are obtained using skilled labour calculated using the Barro and Lee dataset). *Natural Resources* are proxied by net exports of products intensive in natural resources. It is transformed into a positive number by taking the squared root of the exponential of net exports. All endowments are then normalized to be between 0 and 1. Countries in the top corner of the triangle (Chile, Uruguay, and Costa Rica) are abundant in natural resources and scarce in unskilled labour and capital. Countries in the bottom left corner (India for instance) are abundant in unskilled labour and scarce in natural resources and capital. OECD countries appear abundant in capital and scarce in unskilled labour and natural resources. SSA: Sub-Sahara Africa; MENA: Middle-East and North Africa; EAS: East Asia and Pacific; SAS: South Asia.

3) Ways forward: new channels to better explain the link between trade and inequality

Another adjustment in trade models is to allow for the fragmentation of **production** across countries into different tasks (Feenstra and Hanson, 1999).

Instead of thinking in terms of sectors, production is described as involving a **continuum of tasks**. Example: *perfume bottle*

Some of the tasks can be offshored to other countries depending on:

- relative cost of these tasks in different countries
- trade cost as product of the offshored tasks needs to be imported back.

Low-income countries are relatively abundant in unskilled labor so cost of tasks requiring unskilled workers is relatively cheaper

Unskilled-intensive tasks will be offshored to low-income countries that will specialize in the production of these tasks (*painting on the bottle and cap*). High-income countries, on the other hand, will be the ones producing the skilled-intensive tasks (*perfume liquid and bottle*).

3) Ways forward: new channels

In presence of Fragmentation of production

When trade costs fall between high and low-income countries, offshoring of more unskilled-intensive tasks from high to low-income countries.

These newly offshored tasks are the least skill-intensive of the tasks performed in high-income countries: *the demand for unskilled workers falls, which leads to a decline in unskilled wages, and therefore an **increase in income inequality***

But also, and \neq HOS prediction, **rise in inequality in low-income countries**:

Offshored task, which is the least skill-intensive task from the point of view of the high-income country, is also the most skilled-intensive task in the low-income country: **higher relative demand for skilled workers raise relative wage of the skilled in poor countries**

Feenstra and Hanson (1999): confirmation of the role of offshoring from US to Mexico as an explanation of the rise in relative wages of skilled US workers and skilled workers in Mexico during the 1980s.

The complementarity between imported products and skills appears key

Opening up makes developing countries import disproportionately

R&D-intensive capital equipment:

This raises the skill premium since R&D-intensive capital is complementary to skilled workers (Reshef and Raveh, 2016)

Bas and Paunov (2019) show in the context of Ecuador that reduction in tariffs on inputs raised **imports of more sophisticated components**, which increased the quality of output and required a more skilled work force.

So skilled biased technological progress is triggered by trade and raises income inequality.

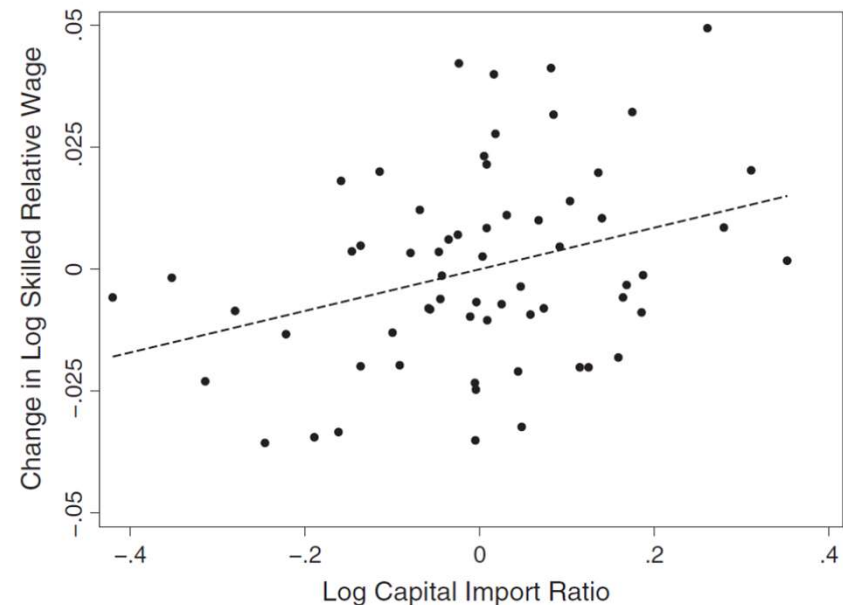


Fig. 1. Wage inequality and the composition of capital imports, 1983–2000. Notes: The figure displays the partial correlation between changes in log skilled relative wage, defined as the wage of non-production workers to production workers, and the capital import ratio, defined as the ratio of R&D-intensive capital equipment imports relative to less innovative capital equipment imports. We control for the change in skill abundance, country and period fixed effects, total capital imports divided by GDP, and shifts in the skill intensity of export shares; as in Table 6, column 3, the slope is 0.04 and the partial R^2 is 0.11.

Reshef A. and O. Raveh, 2016, Capital Imports Composition, Complementarities, and the Skill Premium in Developing Countries, *Journal of Development Economics*, 118, January 2016, pp. 183-206.

3) Ways forward: new channels

Another adjustment is to allow for firm and worker heterogeneity

Recognizing differences in productivity within industries and that differences of worker characteristics helped reconciling theory with empirical evidence as researchers uncovered a puzzling phenomenon:

Following a trade shock (such as a reduction in import tariffs), worker reallocation does not mainly occur between industries (as what HOS predicts) but within industries, from low- to high-productivity firms (Pavcnik, 2002).

What happens is that factors (workers, capital) reallocate not from import-competing to export-oriented industries but from import-competing to export-oriented firms within each industry (Bernard and Jensen, 1997):

This is consistent with **new trade model (intra-industry trade (Krugman))** but also with the fact that exporting firms can pay higher wages as make more profits: exporting firms are different from non exporting firms: **new new trade model with firm heterogeneity!**

Trade models with firm heterogeneity (pioneer is Melitz (2003)):

Set-up: participation in world markets requires paying fixed costs associated with marketing, information and logistics in foreign markets

The consequence is a **selection of firms**: only the most productive firms are able to participate in world markets, leaving smaller and less productive firms outside world markets (they sell only on the domestic market).

Trade liberalization brings competition from more competitive international firms: *low-productivity firms need to close while high-productivity firms expand through exports.*

This **reallocation of resources from low to high-productive firms** leads to a **rise in average productivity** but also to **income inequality within sectors**

-owners/workers of more productive firms will see their profits/wages increase as their firms improve their access to international markets

-owners/workers of less productive firms will see their profits/wages decline or vanish if their firms are forced out of the market by the tougher competition 56

Combining firm heterogeneity and employee heterogeneity further helps to understand that trade opening raises the skilled/unskilled gap:

Burstein and Vogel (2017): high-productive firms tend to hire relatively more skilled workers.

When countries open up to trade and more productive firms become larger, rise in demand for skilled workers in all countries, which leads to an increase in the skill premium and in wage inequality in all countries.

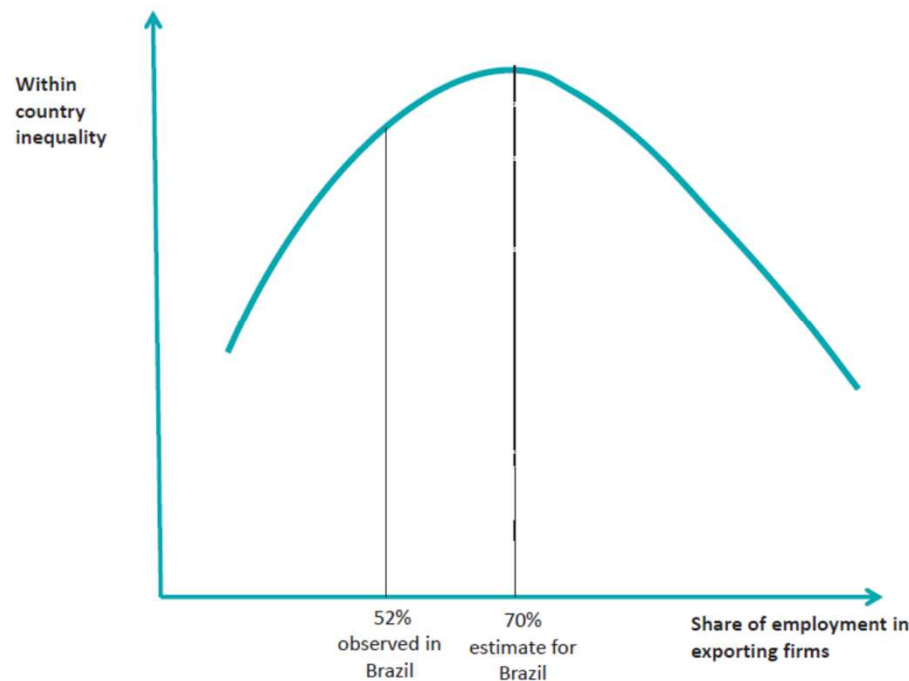
All the quantifications of these new studies however converge in finding that the contribution of trade on inequality is limited:

For example Burstein and Vogel (2017) can only explain an average increase of 5% in wage skill premium following a move from autarky to the observed levels of trade.

Does it mean that more opening up will further hurt the (unskilled) poor in developing countries?

Helpman and co-authors (2017) find that the relationship between trade and inequality exhibits an **inverted-U shape**.

Figure 11: Within country inequality and share of firms exporting



The logic is very similar to the one **Kuznets curve** relating income and inequality (and Lewis model): Initially, reductions in trade costs offer new opportunities to larger firms only and this increases inequality. But as all firms become exporters and have access to the same world market, inequality tends to decline (resorption of dualism)

First stage of liberalization: only the largest, more productive firms that pay higher wages benefit from the move towards freer trade.

The less productive firms cannot afford the fixed costs of exporting and are therefore reduced to selling only in the domestic market or exit all together.

Wage rise hence occurs where wages were initially higher: **rise in wage inequality across firms.**

Further deepening to full liberalization: as trade costs keep declining, smaller firms are able to engage in world markets and benefit from better market access.

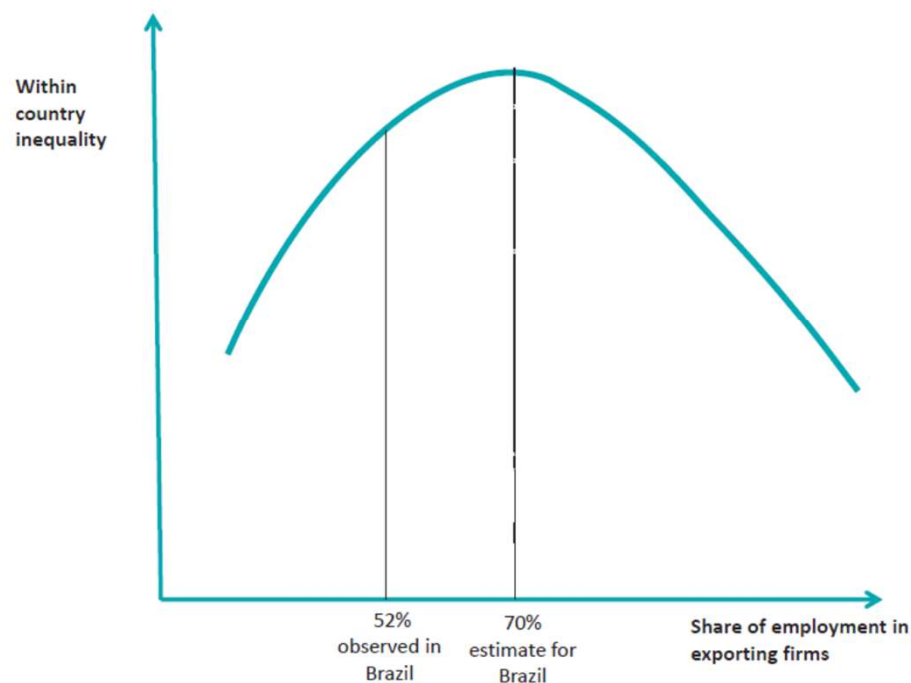
Having access to world markets leads them to expand and to increase their demand for all workers. This in turn reduces income inequality by **reducing the wage gap across firms.**

Conclusion: allowing a larger number of firms and therefore workers to benefit from larger international markets could lead to reductions in wage inequality.

Hence the problem of income inequality in developing countries is not there is too much trade, but rather that there is too little of it.

Application on **Brazil** by Helpman and co-authors (2017): only 52 of workers in Brazilian manufacturing worked in firms that export.

Figure 11: Within country inequality and share of firms exporting



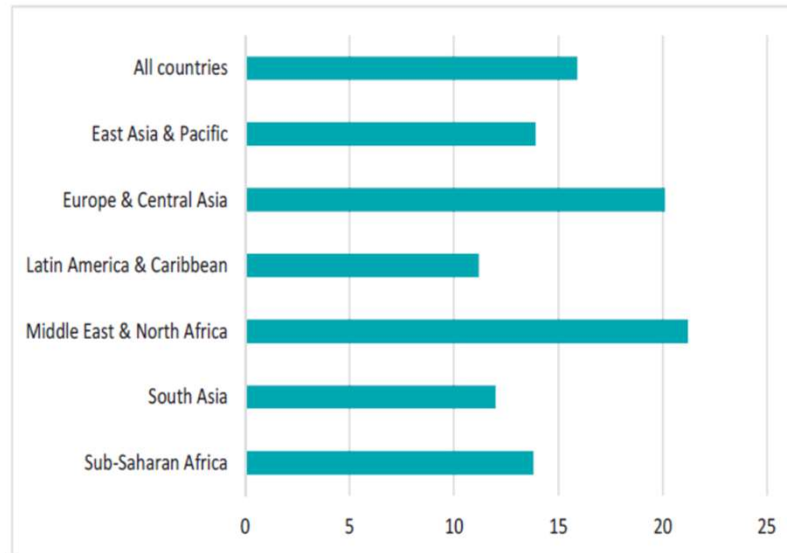
Further liberalization that would increase the share of employment in exporting firms from 52 to 70 per cent would result in an additional increase in inequality of 3 per cent.

But then from that level, further reductions in trade costs will be associated with reductions in income inequality.

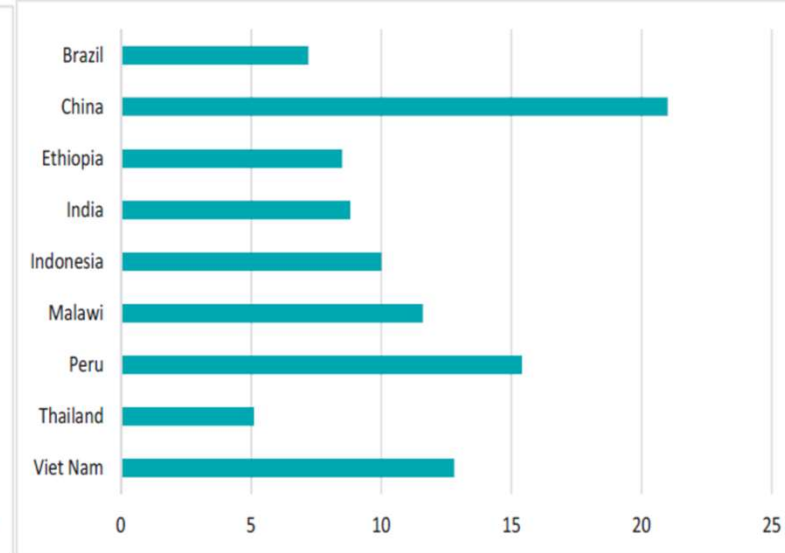
The small fraction of firms engaging in international market is common

Figure 12: Share of exporting firms

(a) selected regions



(b) selected countries



Source: World Enterprise Survey of the World Bank. Data report the share of firms that either exports indirectly or directly at least 10% of their sales. Latest years available used for each country: Brazil (2009), China (2012), Ethiopia (2015), India (2014), Indonesia (2015), Malawi (2014), Peru (2017), Thailand (2016), Viet Nam (2015).

Source: UNCTAD 2019, Trade policies for combating inequality, report

Although few in number, exporters are super big players. There is a huge concentration of exports (more than production)

Freund and Fierola (2015) show that the exports share of **the top firm** is on average 14 per cent (sample of 30 developing countries), the share of the top 5 is 30% of the total exports.

The extreme concentration of exports in a few large firms raises concerns of **market power both in the product and in the labor markets**

The introduction of **imperfect competition** (new trade theory-**Krugman**) implies that large firms enjoy advantages related to their size:

- lower average cost of production
- higher profits
- ability to set prices and wages (\neq market setting)

This has important repercussions since the poor are affected by opening up because it affects their job opportunities

the wages they earn when they work

but also **the prices at which they buy goods** (cheaper consumption)

Trade reforms (entry of cheaper imported goods) should theoretically lead to

-1-a price decline for goods that compete with imports (pro-competitive effect) whether they are final products (consumption or machine) or inputs of production

-2-a price decline for goods that incorporate inputs or use machines that are sourced cheaper

But in practice it appears that the 2nd effect is limited as local firms that use cheaper imported inputs/machines increase their **mark-up** and absorb part of the reduced cost of inputs instead of **passing-through** the totality of the cheaper inputs to the final prices. This is because they have market power (price maker).

So **gains for producers are larger than the gains for consumers**: indicative of a rise in income inequality since firm owners are typically richer.

However **gains for low-income consumers may be higher than for high-income consumers** since they consume a disproportionate amount of traded goods. So trade typically ends up being pro-poor in real income terms thanks to increased purchasing power of consumption.

Conclusion so far

Early literature had trouble reconciling increasing income inequality in low-income countries with the theoretical understanding provided by classical trade models

But **simple extensions** of these models could easily explain it

- several factors of production with complementarities between natural resources and skilled labor

- trade in tasks rather than trade in goods and intra-industry trade

- allow skilled biased technological progress along or induced by trade

Contribution of models of heterogeneous firms and heterogeneous workers is to estimate more precisely the role played by different mechanisms and the exact contribution of trade in rising income inequality in many countries.

First take away from these quantitative exercises is that **trade has indeed led to sizeable increases in income inequality, but it is by far not the main driver of the observed increases in income inequality in both high and low-income countries.** So significant but limited explanatory power

Helpman writes: “A major conclusion from my review of the literature is that the prevalent view that globalization is primarily responsible for the large increase in the inequality of labor compensation has no basis in the evidence.

Yes, globalization impacted the wages of different types of workers to different degrees,

and Yes, it contributed to an increase in the wages of skilled relative to unskilled workers through multiple channels.

Yet, in sum, all these effects explain **only a fraction** of the rise in wage inequality in rich and poor countries alike.”

[Helpman E \(2018\). Globalization and Inequality. Harvard University Press.](#)

A second conclusion is that in order to reduce income inequality **what is needed is to give access to a larger number of workers to the benefits offered by global markets.**

-Facilitating micro, small and medium size enterprises to enter global markets should be a priority when considering trade reforms.

-Trade reforms should attempt to reduce anti-competitive behaviors by large firms in international markets, otherwise gains from cheaper inputs could be captured by producers (rich) and not shared with consumers (poor).

A third message is that the repercussions of trade reforms in developing countries on **income,**
job opportunities
consumption prices paid by people, notably the poor,
depend on the CONTEXT.

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What are the key **context-specific factors** to influence the repercussions of opening up policies on income inequality?

The first factor is the **nature of opening up policy itself**:

Unilateral tariff liberalization (reduction of tariffs on imports) is likely to lower wages in the industries that compete with the imports.

Illustration: India 1991 large scale liberalization

Tariff cuts for *agricultural products* have especially complex repercussions:

- reduce the income of farmers (*poor* producers of good competing with imports)

- reduce the costs of food consumer by city-dwellers (relatively more for poor people for which food has a large share in their spending)

This should increase city-rural inequality but decrease poor-rich real income divide in cities.

What are the key **context-specific factors** to influence the repercussions of **opening up policies on income inequality**?

The first factor is the **nature of opening up policy itself**:

Multilateral tariff liberalization (+reduction of tariffs on exports to trade partners) is likely to raise wages in the industries/locations that are better positioned to gain from enhanced market opportunities.

Experience of Vietnam (Pavcnik and McCaig, 2018):

United States-Vietnam Bilateral Trade Agreement led to large reductions in US tariffs on Vietnamese exports led to sharper reduction of poverty in **sectors/locations that produce goods in high demand by US**

- rise of wages

- reallocation of workers from informal sector to employers in the formal sector

- gains apply especially to the less educated workers

What are the key **context-specific factors** to influence the repercussions of opening up policies on income inequality?

The second factor is the degree of **market frictions** which limit the mobility of workers and capital across firms, industries, and geographic locations.

If workers are immobile and there are barriers to entry/exit/expansion for activities then the gains and the losses will be highly “localized/concentrated” which will trigger inequality.

Increased import competition reduces the demand for labor
If supply of labor remains the same, then wages will decline

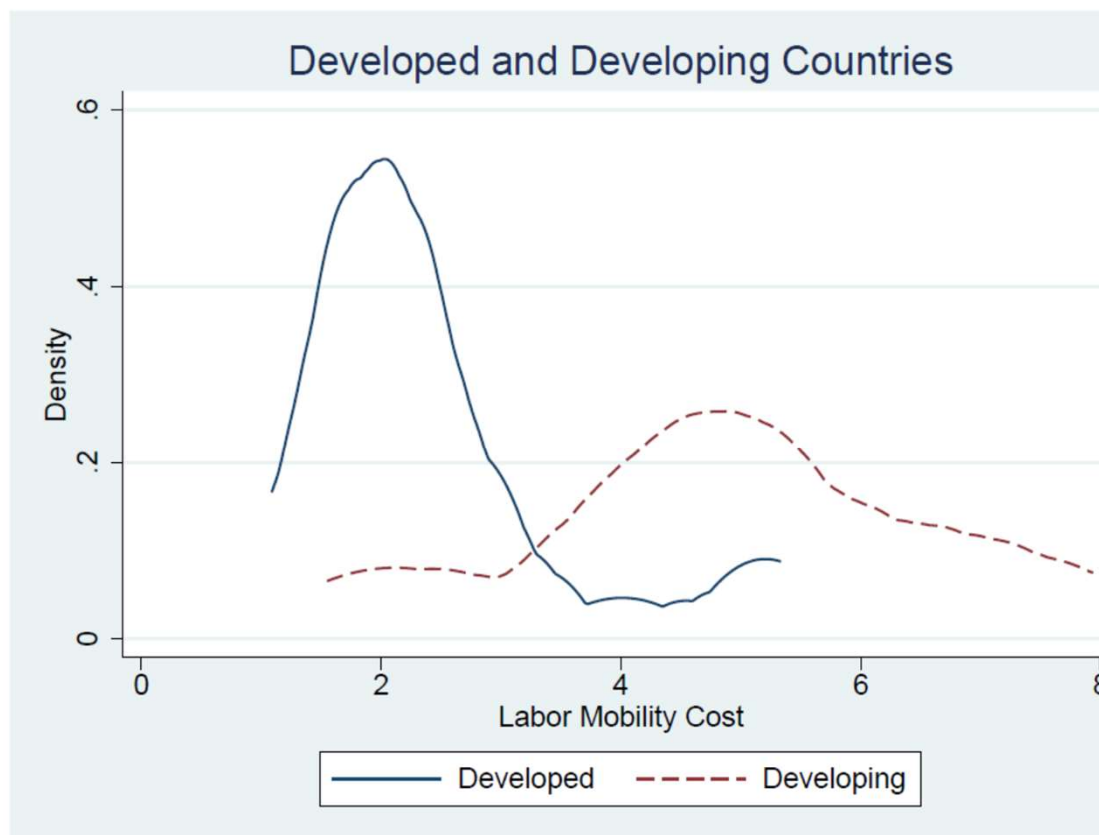
However if workers move away (to other sectors or other locations) then the wage reduction will be limited.

Also lack of mobility and barriers to entry/exit/expansion for activities mean that the negative repercussions will be long-lasting

Evidence of vicious circle in India: negative income shocks lead families to remove kids from school because they can not afford the fees and need the kids to work
(Edmonds, Pavcnik, and Topalova (2009, 2010))

Why don't people move across regions/industries within a country?

Estimates of labor mobility costs are higher in developing countries than in developed countries



Several reasons:

Credit constraints (moving is costly)

Housing costs

Information asymmetries of job opportunities elsewhere

Lack of skills demanded elsewhere

Informal insurance provided by your group (Caste in India)

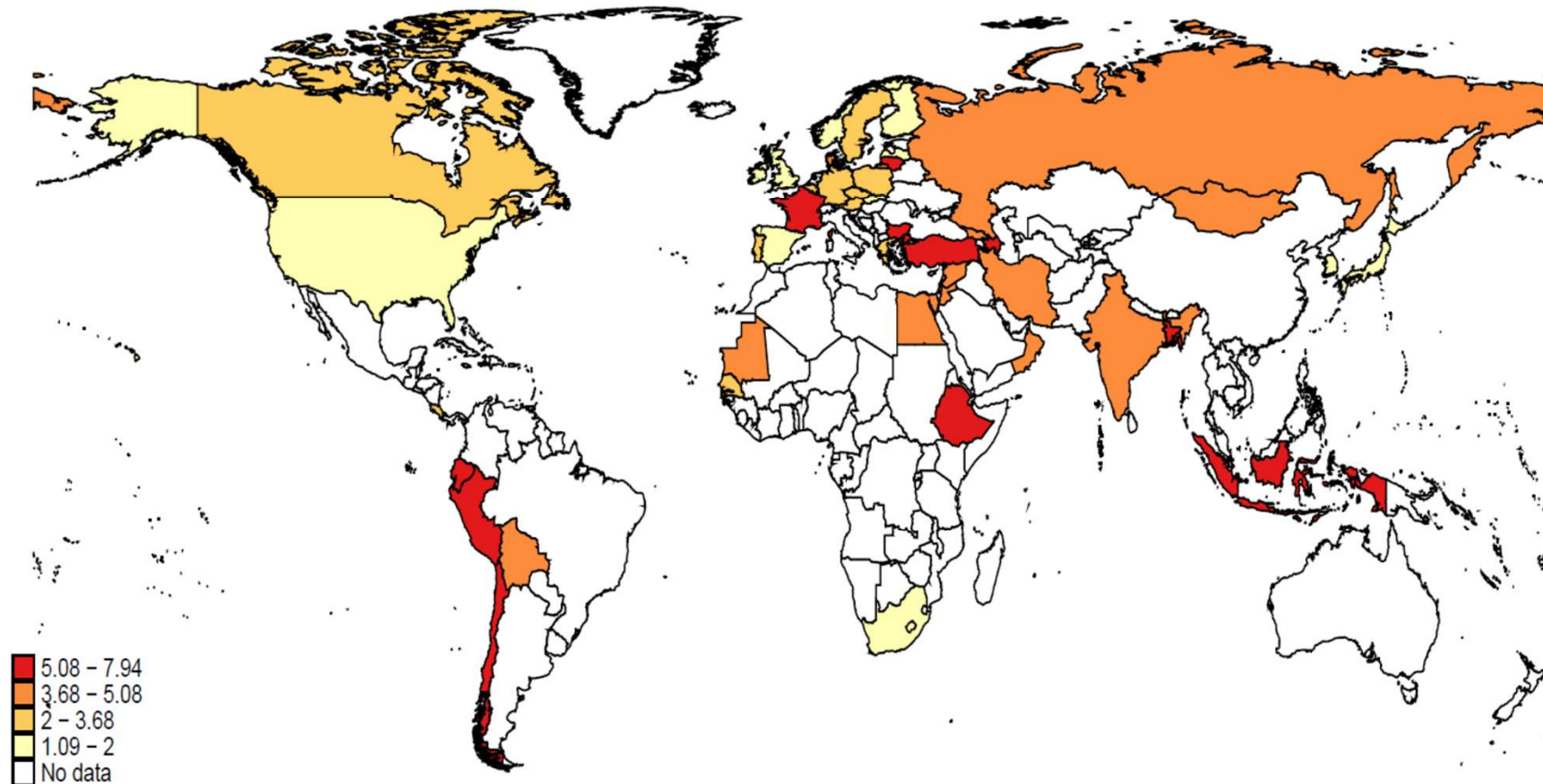
Regulations (Hukou system in China)

Notes: Estimates of labor mobility costs C using UNIDO data. Non-parametric density estimators for developed and developing countries.

Artuc E., D. Lederman and G. Porto, 2014, A mapping of labor mobility costs in the developing world, *Journal of International Economics*, 95 (1), 28-41.

Why don't people move across regions/industries within a country?

Figure 1
A Mapping of Labor Mobility Costs



Notes: Estimates of labor mobility costs C using UNIDO data.

Artuc E., D. Lederman and G. Porto, 2014, A mapping of labor mobility costs in the developing world, *Journal of International Economics*, 95 (1), 28-41.

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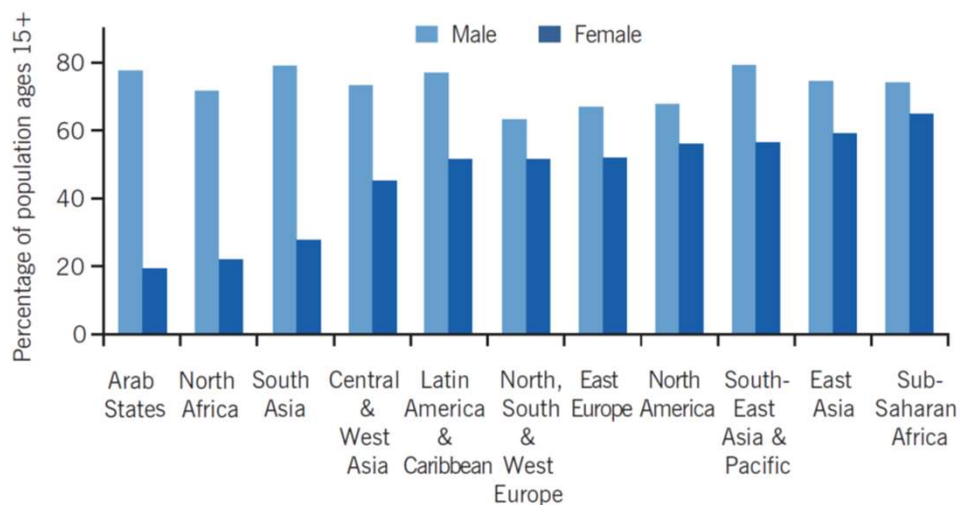
- heterogeneity and conditionality

4) Openness and **gender inequality**

4) Openness and gender inequality

Women work less in labor market and earn lower wages than men.

Male and female labor force participation rate in 2018

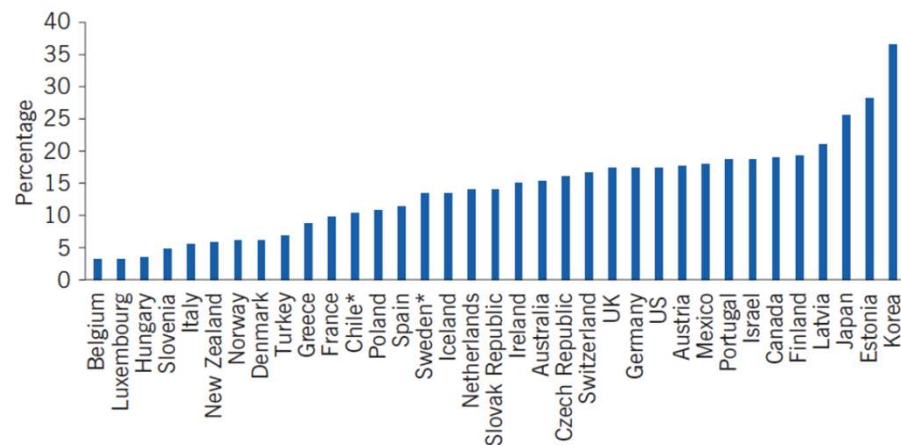


Note: Data from *World Employment and Social Outlook: Trends for Women 2018—Global Snapshot*. Geneva: ILO, 2018; Table 1.

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Pieters J (2018). Trade liberalization and gender inequality. IZA discussion paper.

Figure 2. Gender wage gap in OECD countries, 2014



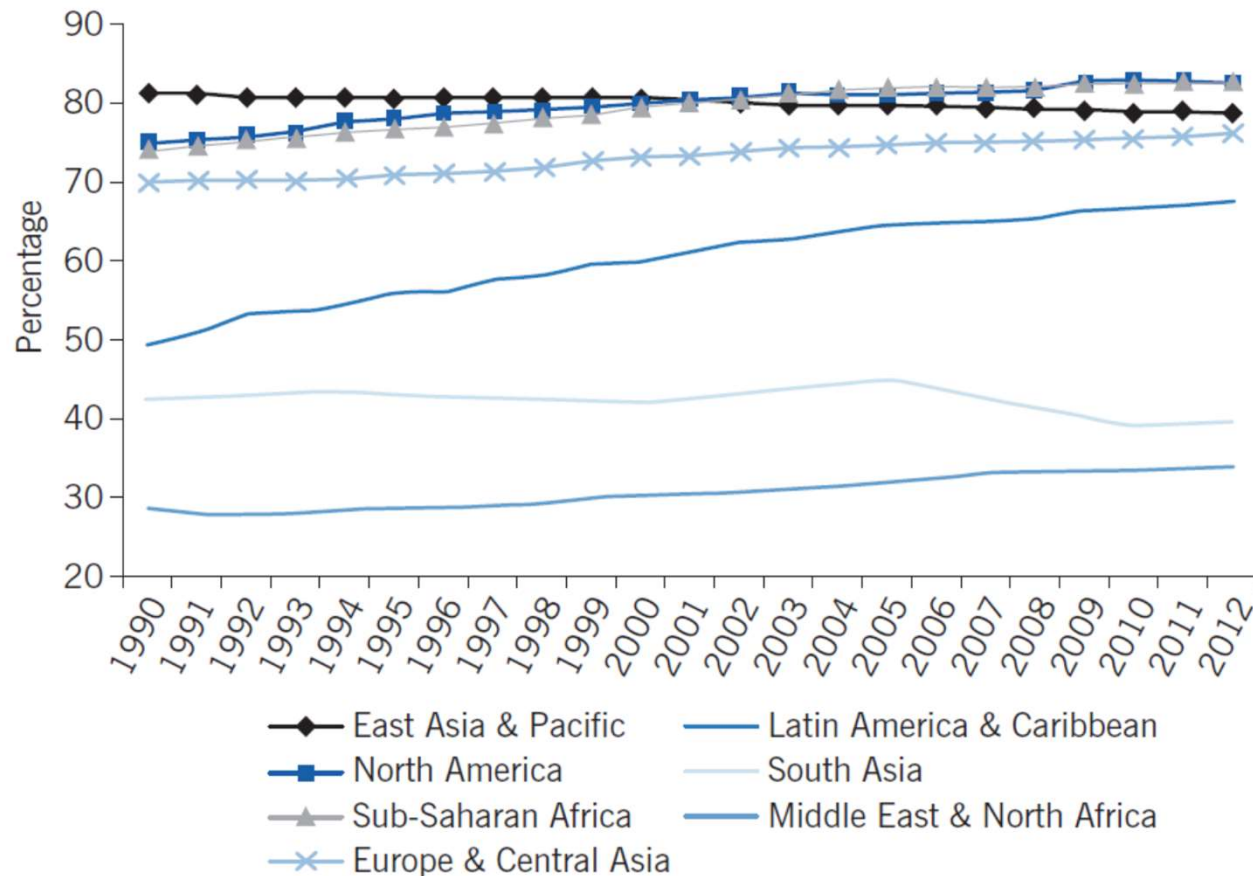
Note: Gender wage gap for full-time employees and self-employed, calculated as (male–female median wage)/(male median wage). Numbers for Chile and Sweden are for 2013.

Source: OECD. Gender Wage Gap (Indicator), 2018. doi: 10.1787/7cee77aa-en [Accessed May 4, 2018].

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Labor force Participation of women is on the rise (except in South Asia)

Figure 1. Ratio of female to male labor force participation rate



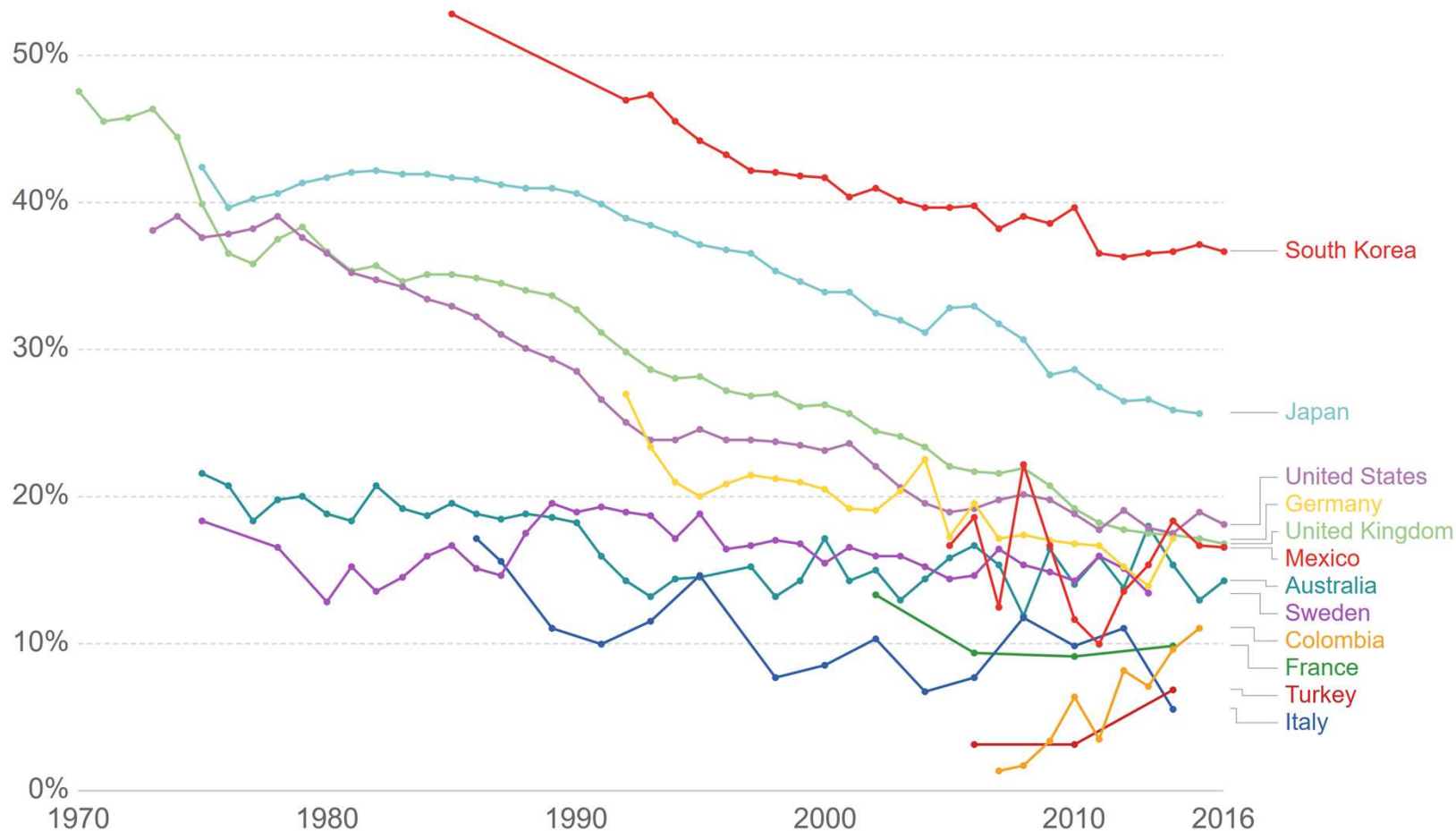
Note: Data apply to the population aged 15+. The declining ratio in South Asia since the mid-2000s is a combination of rising male participation rates and stagnating or even declining female participation rates in some countries, notably a declining female participation rate in India.

Source: ILO Key Indicators of the Labor Market. Online at: http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm

The gender wage gap is declining in many (but not all) countries.

Unadjusted gender gap in median earnings

The gender wage gap is unadjusted and is defined as the difference between median earnings of men and women relative to median earnings of men. Estimates refer to full-time employees and to self-employed.



Source: OECD, Gender Wage Gap (2017)

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Can it be due to opening up policies?

Possible channels whereby opening up could reduce gender inequality

1-Competition promoting effects of trade liberalization can reduce discrimination, by driving discriminating (less efficient) firms out of business or inducing firms to discriminate less.

Evidence in Uruguay that firms subject to import competition discriminate less than those not exposed to import-competition (Yahmed, 2017)

2-Trade liberalization induces firms to invest in new technology, which can lead to manufacturing jobs being less **physically demanding** and more suited to women.

Evidence in Mexico that more blue-collar women work as trade reforms allowed firms to acquire new automatic or computerized machinery which reduced the need for physical-intensive tasks (Juhn et al., 2013)

3-If countries have a **comparative advantage in female-intensive products**, or if trade policies benefit these industries, women may benefit (job, wage)



As opening up induces a change in the sectoral structure of production, it can have either positive or negative effects on gender inequality.

This depends on the **female worker intensity** of the sectors that shrink/ expand

But it will also depend on their **capital/technology intensity** because the total effect will depend on the complementarity between female workers and capital.

Ex in India: opening up prompted skilled-biased technological progress and the expansion of technology-based production (IT): this played against women

Important to account for both **direct and indirect female employee intensity** (indirect means that they work in the supply chain (upstream) of the good studied).

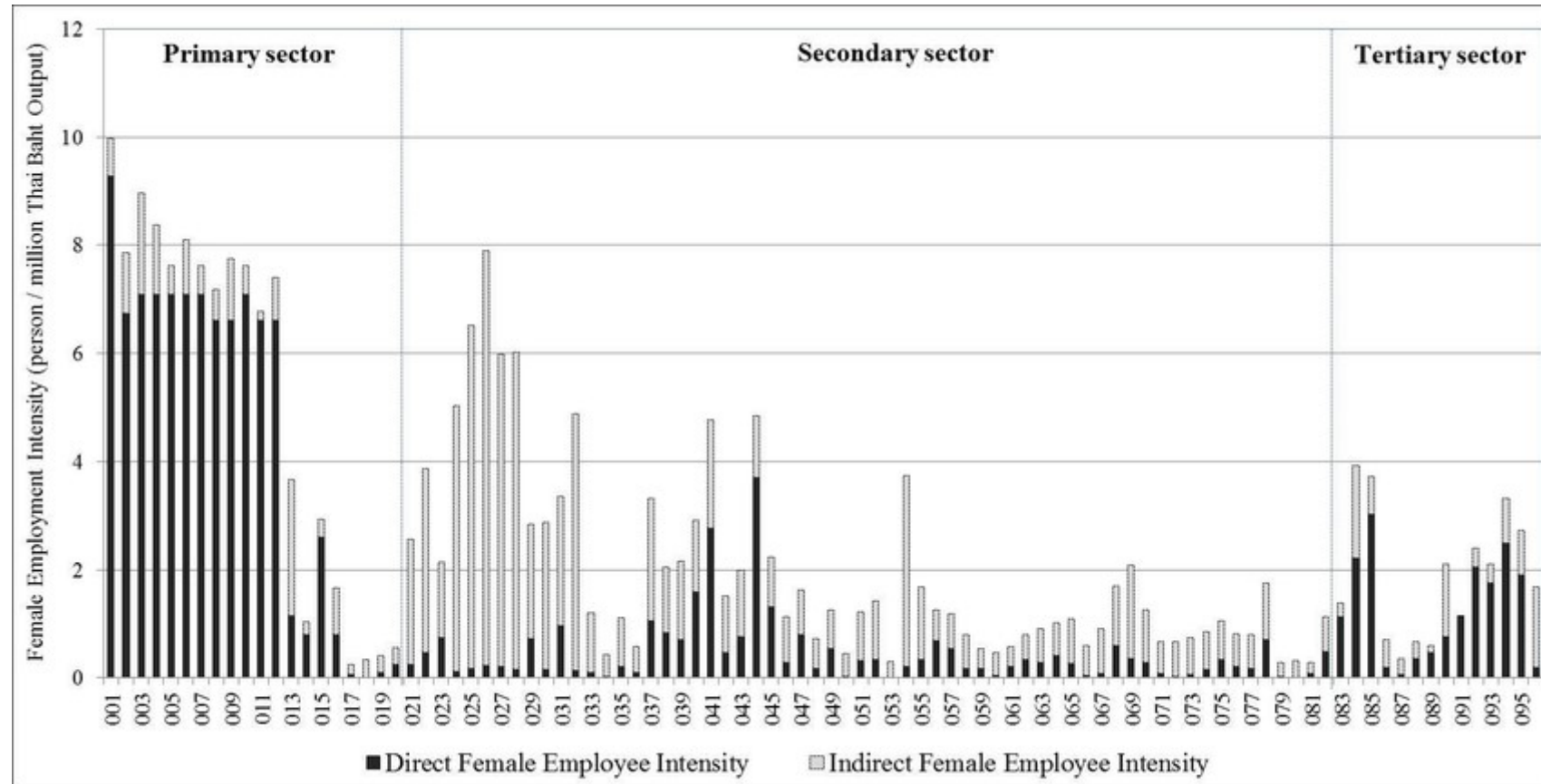


Illustration for Thailand: share of women is higher in agriculture and services but also in some manufacturing sectors (through indirect links)

Caveat: there is possibly also a **competitive advantage effect**. Firms that open to international competition tend to hire more women, who often are paid less and have less bargaining power, as a cost-cutting strategy.

Illustration in early trade liberalization of Asia: female employment increased but gender wage gap increased as well.

By definition not all countries can have a comparative advantage on female intensive products

Some countries will have a comparative advantage in male-intensive products and therefore trade is likely to increase the relative wage of men.

Unintended consequences: If exporting requires more committed workers, and women are (perceived as) less committed/less flexible than men, trade can increase gender inequality.

Bøler et al. (2018) exploit match employer-employee data for Norway (where gender gap is supposed to be low) to study the Gender Wage Gap (GWG)

Exporters and the Gender Wage Gap

Table 1: Exporters versus Non-Exporters

	Non-Exporters			Exporters		
	All	Female	Male	All	Female	Male
Average wage	105.67	84.33	110.83	129.30	108.59	134.76
Average education	12.81	12.18	12.28	12.93	12.79	12.97
Average experience	22.33	18.83	21.61	22.93	21.02	23.04
Average age	41.31	39.73	40.16	41.60	41.46	41.63
Share with Children	0.9	0.88	0.89	0.81	0.91	0.91
Average no of children	1.84	1.91	1.82	1.81	1.84	1.8
Average Centrality	0.52			0.53		
Female share in labor force	.20			0.21		
Total share in labor force	0.19			0.81		

Notes: All numbers apart from average wages are based on the panel of worker-level data for 1996-2010. Average hourly wages (in NOK) are calculated for 2001. An exporter has by definition exports above NOK 10,000 (USD 1,100).

Bøler, E. A., B. Javorcik, and K. H. Ulltveit-Moe, 2018, “Working across time zones: Exporters and the gender wage gap.” *Journal of International Economics* 111, 122–133.

Women earn less than men – this holds after controlling for worker characteristics, hours worked full vs. part time and occupation

The GWG is lower at exporting firms, but this result is reversed once unobservable worker-firm heterogeneity is controlled for

In other words, women working for exporters are paid more than other women, but they are **underpaid** given their unobservable characteristics

The key finding is that GWG is systematically related to the overlap in business hours with the export markets as this implies greater commitment from employees:

- Late night calls due to different time zones

- International travel & 24/7 availability .

- Flexibility: e.g. greater responsiveness to unexpected problems

The underpayment is more likely to apply to **skilled workers (managers, technicians and professionals)** who negotiate deals with clients, provide technical advice and support, take care of logistics such as transport and customs clearance, etc.

The key result is that **a firm's entry into exporting increases the GWG by about 3 percentage points for college educated workers.**

The literature on gender inequality is rather representative of the complexity of the issue of predicting the repercussions that opening up will have in terms of income inequality in general

Opening up will benefit to some and hurt others depending on the **type of opening up** (import liberalization or export opportunities)

and on the **individuals' exposure to the shocks**

- geographical location
- sector of activity (comparative advantage)
- firm of activity (exporter, foreign, import-competing)
- skill profile

Especially so if **labor mobility is limited** (lack of skills, migration costs, search frictions on the labor market)

It is key for policy-makers to identify who are the likely losers from the opening up and target redistribution policy measures to them because opening up is desirable (important income gains in total but not evenly distributed).

It is also key for policy-makers to address some of the unintended consequences of greater integration into world markets

We have seen some unintended consequences:

- rise in market power of firms that capture the gains from price declines
- gender discrimination because perceived lower flexibility of women
- children dropping out from school because parents lose their jobs

Key policies are in terms of pro-competition rules, training, education, social programs

Next section will cover another unintended consequences of opening up: premature deindustrialization

Last section will discuss how can we ensure equality of opportunity and broader sharing in gains from trade

References

- Bas M and Paunov C., 2019, What gains and distributional implications result from trade liberalization? UNU-MERIT working paper series 2019-003.
- Bernard A and Jensen B., 1997, Exporters, Skill Upgrading, and the Wage Gap. *Journal of International Economics* 42, 3-31.
- Bourguignon F., 2016, *The globalization of inequality*. Princeton University Press.
- Bernstein A and Vogel J., 2017, International trade, technology and the skill premium, *Journal of Political Economy* 125(5), 1356-1412.
- Cruz M, G Nayar, G. Toews, P-L Vézina, 2018, FDI and the Skill Premium Evidence from Emerging Economies, Policy Research Working Paper 8613
- Dollar D. and A. Kraay, 2004 Trade, Growth, and Poverty *Economic Journal*, Vol. 114, pp. F22-F49.
- Dollar, David & Kleineberg, Tatjana & Kraay, Aart, 2016. "Growth still is good for the poor," *European Economic Review*, Elsevier, vol. 81(C), pages 68-85.
- Estevadeordal A. and A. M. Taylor, 2013, Is the Washington Consensus Dead? Growth, Openness, and the Great Liberalization, 1970s–2000s, *Review of Economics and Statistics*, 95 (5), 1669-1690.
- Edmonds, E., Pavcnik, N. and Topalova, P. , 2009, Child Labor and Schooling in a Globalizing Economy: Some Evidence from Urban India." *Journal of European Economic Association, Papers and Proceedings*, 7 (2–3), 498–507.
- Edmonds, E., Pavcnik, N. and Topalova, P., 2010, Trade Adjustment and Human Capital Investment: Evidence from Indian Tariff Reforms. *American Economic Journal: Applied Economics*, 2(4), 42–75.
- Feenstra R and Hanson G., 1996, Foreign Investment, Outsourcing and Relative Wages. In R.C. Feenstra, G.M. Grossman and D.A. Irwin, eds., *The Political Economy of Trade Policy: Papers in Honor of Jagdish Bhagwati*. Cambridge, MA: MIT Press.
- Freund C and Pierola M., 2015, Exporter superstars. *Review of Economics and Statistics* 97(5), 1023-1032.

References

- Goldberg P. and N. Pavcnik, 2007, Distributional effects of globalization in developing countries, *Journal of Economic Perspectives*, 18, 1, 199-220.
- Goldberg, Pinelopi, Koujianou and Nina Pavcnik. 2007. Distributional Effects of Globalization in Developing Countries, *Journal of Economic Literature*, 45(1):39-82.
- Helpman E, Itskhoki O, Muendler M-A and Redding S, 2017, Trade and Inequality: from theory to estimation. *Review of Economic Studies* 84, 357-405.
- Juhn C, Ujhelyi G and Villegas-Sanchez C., 2014, Men, women and machines: how trade impacts gender inequality. *Journal of Development Economics* 106, 176-193.
- Kinuthia B and Olarreaga M., 2019, Exports, wages and the decline of labor unions: evidence from Kenya. Mimeo, University of Nairobi
- Melitz M., 2003, The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica* 71, 1695-1725.
- Pavcnik N., 2017, The Impact of Trade on Inequality in Developing Countries, *Proceedings of Jackson Hole Economic Symposium*. (also NBER Working paper 23878).
- Pavcnik Nina and B. McCaig, Export Markets and Labor Allocation in a Low-Income Country, *American Economic Review*, July 2018
- Pavcnik N., 2002, Trade liberalization, exit and productivity improvements: evidence from Chilean plants. *The Review of Economic Studies* 69 (1), 245–276.
- Rodrik D. and F. Rodriguez, "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence", *Macroeconomics Annual* 2000.
- UNCTAD 2019, Trade policies for combating inequality, report.
- Yahmed S B, 2017, Gender wage discrimination and trade openness: prejudiced employers in an open industry. ZEW discussion paper.