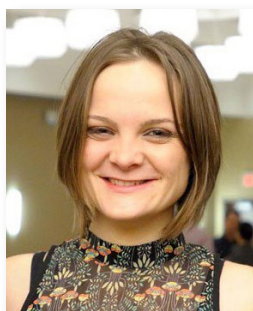


GLOBAL ECONOMIC GOVERNANCE INITIATIVE



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Trading Away Industrialization?

CONTEXT AND PROSPECTS OF THE EU-MERCOSUR AGREEMENT

JERONIM CAPALDO AND ÖZLEM ÖMER¹

EXECUTIVE SUMMARY

The EU-MERCOSUR agreement may contribute to wage stagnation, higher inequality, premature deindustrialization, higher dependence on external demand and other adverse outcomes. Existing projections rule out these outcomes because they overlook critical changes that are under way in both the EU and MERCOSUR. In contrast, they predict small or negligible GDP gains for all countries.

As other free-trade agreements, the EU-MERCOSUR agreement may lead to some job creation, but it may also lock many countries in a condition of technological and industrial subordination, with adverse consequences in terms of inequality, growth and development. Considering the participating countries' economic structures and their evolution, the agreement may well lead to the expansion of low-productivity, low-wage sectors at the expense of more dynamic sectors, reinforcing the drivers of inequality and economic stagnation.

Simple analysis of publicly available data helps capture the critical insight that is missing in model simulations, showing that ongoing changes in the sectoral composition of the economy are cause for concern both in the EU and in MERCOSUR.

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Distinguishing between “dynamic” and “stagnant” sectors of the economy in a sample of EU and MERCOSUR countries – Argentina, Brazil, Czech Republic, France, Italy, Germany, Poland and Turkey – we obtain three main results:

1. All countries in our sample have recently experienced economic polarization becoming more vulnerable to the risks of trade liberalization;
2. Existing projections point to small GDP gains from the agreement while polarization and other adverse outcomes are assumed away; and,
3. Based on these projections, the agreement is likely to push most countries further away from sustainable growth and development.

1. EU and MERCOSUR countries experiencing economic polarization are more vulnerable to the risks of trade liberalization

All countries in our sample have recently experienced a form of economic polarization whereby employment is increasingly concentrated in stagnant sectors and value added is increasingly concentrated in dynamic sectors (Table 1).

From the data, three categories emerge: economies that were recently still industrializing (Czech Republic and Poland), advanced economies that were recently de-industrializing (including Germany, France and Italy), and developing economies that were recently de-industrializing (Argentina, Brazil, and Turkey). All countries exhibit a growing imbalance between high-productivity-high-wage-growth sectors, which we refer to as “dynamic” sectors, and low-productivity-low-wage-growth sectors, which we refer to as “stagnant”. In all countries employment moved from dynamic to stagnant sectors while value added generation moved in the opposite direction, away from stagnant sectors. This structural polarization, or “reverse duality”, is the main cause of the downward trend of productivity growth observed in all countries. It is also the cause of the increase in inequality observed in most countries.

Table 1: Size of the Stagnant Economy

	Size of the Stagnant Economy, 2014				Real Wage Growth	Productivity Growth	Labor Share	
	Employment Share	'00-'14	Value Added Share	'00-'14	annual avg	annual avg	2014	'00-'14
	%	ppts	%	ppts	%	%	%	ppts
Argentina	65.6	7.3	56.3	-0.3		-0.16		
Brazil	54.5	7.0	43.6	-7.1	2.2	1.9	55.0	5.0
Czech Rep.	34.8	3.4	23.3	-8.9	2.3	2.2	51.3	2.5
France	37.9	2.8	31.3	-3.6	1.4	1.0	65.0	3.9
Germany	55.8	3.5	51.5	-8.1	0.4	0.5	62.0	-2.0
Italy	55.3	5.5	62.7	-1.3	0.2	-0.3	58.7	3.3
Poland	43.0	4.0	28.8	-9.3	1.6	2.5	49.8	-6.0
Turkey	52.4	7.2	46.9	-11.5	0.8	3	37.9	-4.1

Note: For Argentina end of period data refer to 2018 and labor share data come from national accounts.

2. Existing projections on the EU-MERCOSUR FTA point to small GDP gains, while economic polarization and other adverse outcomes are assumed away

Existing projections of the effects of the agreement, based on model simulations, point to small or negligible gains in terms of GDP (Table 2). These gains do not usher in a period of faster growth and, in fact, are a short-lived occurrence. Meanwhile, the studies assume away any adverse effects, including on employment, inequality, industrialization and development. In particular, simulation results are driven by three problematic assumptions: full employment, constant income inequality and fixed productivity growth.

Table 2: Growth Gains from EU-MERCOSUR Agreement (Percent Change Compared to Baseline GDP)

	LSE (2020)	EC (2007)	Diao et al. (2003)
Argentina	0.7	0.5	4.35
Brazil	0.3	1.5	2.86
Paraguay	0.1	10	n.a.
Uruguay	0.4	2.1	1.9
EU	0.1	0.1	0.3

Note: Figures referring to LSE (2020) reflect the optimistic scenario.

Different sectoral impacts are also evident in the employment projections with the latest study suggesting deindustrialization in MERCOSUR and negligible employment changes in the EU. But these effects are greatly contained by the assumptions of full employment and constant inequality.

3. The EU-MERCOSUR FTA is not a route to sustainable growth and development

In many countries, existing projections point to output increases in stagnant rather than dynamic sectors (Table 3). But for most countries, taking a “sustainable” growth path requires improving productivity and reducing inequalities. This means increasing the size of high-productivity-high-wage “dynamic” sectors. For developing countries, it also means continuing to industrialize (increasing their manufacturing share both in value added and employment) until they can compete in higher value-added market segments.

Expansion of multiple dynamic sectors is critical to generate sufficient domestic demand for dynamic sector output so that surplus labor created by the process of productivity growth is absorbed by dynamic, rather than stagnant, sectors. Expansion of dynamic sectors means increasing labor productivity and output and more productive, better paying jobs. Free trade agreements play a critical role in this process by promoting specialization in some sectors based on countries’ existing productive structures. Technological and structural features play an important role in determining who wins and who loses in the long term. Countries that have not advanced in high-productivity manufacturing and related sectors tend to lose out. Technologically advanced (developed) countries tend to win and consolidate their technological advantage.

High-productivity sectors in EU countries may benefit in principle from access to MERCOSUR markets. But the adverse structural transformation that the agreement is likely to accelerate in these countries will undermine the growth of their domestic demand, including for imports. While the export boost is projected to be marginal and short-lived, high-end economic output in the EU is

Table 3: Projected Output Gains of EU-MERCOSUR Agreement in Stagnant and Dynamic Sectors

	Sectors	EU28 (sectoral characterization approximated based on our results)		Average	Brazil		Average	Argentina		Average
AGRI-FOOD	Cereals	-0.5	Stagnant	-0.47	2.4	Dynamic	1.91	0.8	Dynamic	1.27
	Rice	-0.5	Stagnant		1.7	Dynamic		0.8	Dynamic	
	Vegetables, fruit, nuts	-0.5	Stagnant		2.2	Dynamic		3.1	Dynamic	
	Oil seeds, vegetable oils	-0.5	Stagnant		3.2	Dynamic		1.9	Dynamic	
	Sugar	-1.0	Stagnant		2.5	Dynamic		1.2	Dynamic	
	Plant and animal fibers	-0.4	Stagnant		1.3	Dynamic		0.5	Dynamic	
	Processed foods, fish	-0.3	Stagnant		1.7	Dynamic		1.5	Dynamic	
	Beef and sheep meat	-1.2	Stagnant		2	Dynamic		2.4	Dynamic	
	Poultry meat, pork	-0.3	Stagnant		3.7	Dynamic		0.5	Dynamic	
	Other animal products	-0.3	Stagnant		2.2	Dynamic		1.5	Dynamic	
	Beverages and tobacco	0.0	Stagnant		0.2	Dynamic		0.4	Dynamic	
	Dairy products	-0.1	Stagnant		-0.2	Dynamic		0.6	Dynamic	
MINING	Wood and paper	0.0	Stagnant	-0.12	0.6	Dynamic	0.18	0.1	Stagnant	0.62
	Coal	0.0	Stagnant		0.2	Dynamic		0.2	Stagnant	
	Oil	0.0	Stagnant		0.1	Dynamic		0.1	Stagnant	
	Gas	-0.6	Stagnant		-0.1	Dynamic		2.6	Stagnant	
	Minerals	0.0	Stagnant		0.1	Dynamic		0.1	Stagnant	
MANUFACTURING	Textiles, apparel, leather	-0.1	Dynamic	0.10	0.9	Stagnant	-0.12	0.9	Dynamic	0.12
	Chemicals, rubber, plastic	0.2	Dynamic		0.2	Stagnant		-0.2	Dynamic	
	Petroleum, coal products	0.1	Dynamic		0.1	Dynamic		0.4	Dynamic	
	Metal products	0.2	Dynamic		-2.5	Dynamic		-1.3	Dynamic	
	Non-metallic minerals	0.2	Dynamic	0.7	Stagnant	0.8	Dynamic			
	Vehicles, transport equipment	0.6	Dynamic	0.20	-1.8	Stagnant	-1.57	-3.2	Stagnant	-1.33
	Machinery	0.5	Dynamic		-5.1	Stagnant		-2.9	Stagnant	
	Electronic equipment	-0.4	Dynamic		2.2	Stagnant		2.7	Stagnant	
Electricity	0.1	Stagnant	0.2		Dynamic	0		Dynamic		
SERVICES	Utilities	0.4	Stagnant	0.07	0.7	Stagnant	0.45	1.5	Dynamic	0.77
	Transport	0.0	Dynamic		0.4	Stagnant		0.8	Dynamic	
	Telecoms, business services	0.0	Dynamic		0.7	Dynamic		1	Stagnant	
	Financial services	-0.1	Dynamic		0.4	Dynamic		0.7	Stagnant	
	Other services	0.0	Stagnant		0.3	Stagnant		0.6	Stagnant	

Note: CGE Modeling results (Table 9) from SIA Report (2020). All numbers are in % change relative to their baseline. Sectoral characterization is made based on authors' evaluations.

unlikely to expand substantially while stronger cost competition in more stagnant sectors is likely to undermine their wage and productivity growth, ultimately compromising economy-wide demand expansion and leading to a deterioration of income distribution. The current trend toward widening economic duality in all countries of our sample, coupled with the historical retreat of public investment and industrial policy, is a conduit to adverse structural change and an accelerator of the global race to the bottom in labor costs.

Furthermore, the agreement's environmental outcomes may affect economic performance negatively. For example, projected expansion of agri-food and mining output may lead to changes in land-use, to deforestation and higher carbon emissions in Brazil and Argentina², with negative impacts on inequality. While an analysis of these impacts is beyond the scope of this paper, the analysis shows that appropriate industrial and income policies – ideally reflected in a binding chapter on sustainability³ – are necessary to ensure that the agreement is sustainable economically, socially and environmentally.

In the context described in the paper, more trade liberalization may well be a step toward less productive, more unequal and more vulnerable economies. These risks may or may not materialize but they are assumed away in existing assessments of the agreements, which are not, therefore, an informative basis for policymaking.

Introduction

Trade models are complex, expensive and full of abstractions about the way economies work. They also provide a cornucopia of projections that are typically biased in favor of trade liberalization. By contrast, simpler analysis based on arithmetic and publicly available data does not provide projections but helps understand critical aspects of trade liberalization which are obfuscated or assumed away in trade models. The proposed EU-MERCOSUR agreement offers a good example.

Plurilateral agreements such as the EU-MERCOSUR agreement involve whole regions of the world economy and take aim at regulatory differences between countries, far beyond tariffs. They are powerful vehicles of globalization that can also lead to adverse structural change. While they facilitate trade, they can be detrimental to income distribution, employment creation, aggregate demand and, ultimately, global growth and development.

Most macroeconomic assessments of trade agreements do not consider these adverse outcomes. Their projected “gains from trade”, defined as increases in GDP, rule out meaningful changes in the composition of employment and incomes. Over the past two decades, as trade models drew more scrutiny and tariffs decreased, the projected gains from new plurilateral agreements have shrunk to the point of irrelevance but models have continued to suggest that aggregate income and welfare would increase everywhere. A more detailed look at the trends in income distribution, and at the historical impact of trade liberalization on different economic sectors, undermines this conclusion for many countries.

In this paper, we analyze economic transformations that have been taking place in the EU and in Mercosur and are overlooked by existing assessments of the proposed trade agreement between the two areas. We do this by examining data on output, employment and incomes in the main productive sectors and zooming in on income inequality, its causes and its prospects, in a way that can

² According to Abman & Lundberg (2020), deforestation tends to increase within a few years after the enactment of the free trade agreements.

³ See Harrison and Paulini (2020), Alguar et.al. (2020, Chapter 3) for more details.

be easily replicated for most countries with publicly available data. This approach does not provide projections of GDP, exports or other variables but highlights the dynamics that any plausible projections must take into account.

The EU-MERCOSUR agreement is a meaningful case not just as an example of a plurilateral agreement. Historically, it matters because it is being negotiated during the COVID-19 crisis, at a time when generating prolonged economic growth is a priority everywhere but returning anxiety about sovereign debts is renewing interest in trade expansion as a growth strategy that may save fiscal space. Meanwhile, debates about inequality and the environment may lead to a less dogmatic appreciation of other options. The agreement also matters to development policy because it ties developed and developing countries based on the expectation that they will be able to capitalize on their respective (static) comparative advantages. Our analysis suggests that, by promoting specialization, the EU-MERCOSUR agreement may in fact add to existing structural challenges that could hinder development. In the last three decades, trade liberalization has been one of the strongest channels of adverse deindustrialization in many developing (and some developed) countries which were not able to expand and upgrade their manufacturing capacities towards more advanced activities (UNCTAD, 2018). Other factors have contributed too, especially financialization (Wade, 2018; Izurieta et al., 2018) and flexibilization of labor markets (Storm and Capaldo, 2018).

The current challenges can only be overcome if the necessary structural change occurs at the sectoral level. Pioneers of economic development, such as Arthur Lewis (1954), Nicholas Kaldor (1966, 1967) and Simon Kuznets (1966), expected a transition of resources from sectors with low productivity and wage growth (e.g. agriculture, mining), or “stagnant sectors” toward “dynamic sectors” with high productivity and wage growth (typically manufacturing but not only) as economies develop. However, Temin (2015), Storm (2017), Taylor and Omer (2019, 2020) and UNCTAD (2020), showed that these “dual economy” dynamics can work in reverse too. While dynamic sectors remain the main source of productivity growth, stagnant sectors become the main source of job creation. If trade agreements overlook structural and developmental differences between countries and do not provide the necessary “unconventional” tools for technological change, this adverse duality can easily deepen, especially in developing countries. As a result, the trajectories of long-term growth, productivity and inequality can deteriorate and the gap between developed and developing countries will widen.

We show that every country in our sample – Argentina, Brazil, Czech Republic, France, Italy, Germany, Poland and Turkey⁴ – has been undergoing a process of economic polarization between dynamic and stagnant sectors that further trade liberalization is likely to accelerate. In the EU’s three largest economies, this has meant weakening industrial capabilities and weaker productivity and GDP growth. In Czech Republic and Poland, the process has allowed for continuing productivity growth with growing disparities between the two areas of the economy while in Argentina, Brazil and Turkey it has generated premature deindustrialization. In all economies we analyzed the most dynamic sectors are shrinking in size relatively to the less dynamic ones. The resulting vicious circle of low productivity growth, low wage growth and insufficient expansion of demand, is a path away from sustainable growth and development. These dynamics threaten any positive impact of trade liberalization, but they are absent from existing assessments based on trade models.

Trade liberalization has long been shown to contribute to structural imbalances through specialization, higher pressure on costs and deindustrialization, unless countervailing policies to support domestic demand and technology transfer are implemented and coordinated internationally. From the standpoint of global growth and development, trade liberalization only makes sense as part of a

⁴ We include Turkey for ease of comparison with other studies (LSE, 2020) and because it has an association agreement with the EU.

package in which these domestic and coordination policies are prominent. It risks chipping away at growth and development if these policies are barred by other rules or by the very agreements that aim at expanding trade.

The paper is organized in five sections. Section 2 briefly reviews the main benefits of international trade for development and some of its overlooked costs providing a benchmark to assess the EU-MERCOSUR agreement. Section 3 discusses the standard macroeconomic assessment of the agreement and points out that it does not reflect that neither the benchmark nor the structural challenges faced by participating countries. Section 4 analyzes country-level trends and shows what is missing in existing projections. Section 5 concludes.

Benchmark to Evaluate Trade and Investment Agreements: Benefits and Costs of External Liberalization

Trade can support economic development by providing an opportunity to expand aggregate demand, leading to better division of labor, economies of scale and innovation (Aghion & Griffith, 2002), and by generating an inflow of foreign exchange, necessary to purchase capital goods and other inputs from abroad. The 1948 Havana charter saw a central role for trade in industrialization and employment generation (UNCTAD, 2019). But these benefits can be turned into positive structural change – i.e. a transition of employment away from primary activities, with higher wages, higher productivity and improving living standards – only if productive capacity is expanded in sectors with positive impact on domestic demand.⁵ Nineteenth century trade theory and its modern-day offshoots argue that this positive outcome is all but guaranteed by market forces. Decades of liberalization experience suggest that, in fact, plenty of active state support is needed, including public investment and policies for technology transfer. Trade and investment liberalization, also through specific provisions in plurilateral agreements, can make the state's work harder and run against development.

Many current discussions on trade liberalization refer to classical trade theory and Ricardo's principle of comparative advantage. According to the latter, a country that enters international trade with a cost advantage over its partners builds a trade surplus, which can continue for some time but will eventually be eliminated by movements in the terms of trade or the exchange rate (Shaikh, 2016; Emanuel 1972). While this adjustment process takes place, any loss of employment is ruled out by assumption. In a twentieth century update of this mechanism, countries are assumed to have access to the same technology and labor and capital (and embedded technology) are assumed to be freely mobile between countries, leading to factor price equalization (Gandolfo, 1994). Thus, the analytical framework of reference for trade liberalization assumes away unemployment, persistent imbalances, technological exclusion and cross-country income inequality, some of the most pressing problems nowadays. In policy discussions, temporary disruptions and adjustment costs are admitted but in the long term every country is assumed to gain (EU Chief Economist Note, 2018).

In practice, high unemployment has proven persistent in many developed countries, including some of the EU's largest economies, and proposals for more trade liberalization have shown little prospects of additional growth (Capaldo, 2015; Kohler and Storm, 2016; Capaldo and Izurieta, 2016). Imbalances too have proven persistent and impervious to price adjustments (Cripps, Izurieta, Singh, 2011; Taylor, 2020). Furthermore, technology has not been transferred to most developing countries by virtue trade and investment liberalization. In fact, many developing countries have specialized in low-productivity and low-value added activities (Shaikh, 2016), in a clear sign that the rules of

⁵ See Schumpeter (1939); Lewis (1954); Kaldor (1966, 1967); Ros (2000); Syrquin, 1988; Palma (2005, 2014); Taylor with Ozlem Omer (2020), Taylor and Omer (2019); Ocampo et. al. (2009).

international trade can lead to adverse structural change.⁶ This has been painfully experienced by many developing countries, which have undergone premature deindustrialization mainly due to their lacking competitiveness in dynamic sectors, especially in manufacturing, and their dependency on commodity exports, as anticipated by Prebisch and Singer more than seventy years ago (Rodrik, 2015; Mcmillan et. al., 2013; UNCTAD, 2018). Argentina and Brazil, which are parties to the EU-Mercosur agreement, and Turkey, are no exception.

Deindustrialization is an important phenomenon to take into account when planning on trade and investment liberalization. Statistically, it is the expansion of non-industrial activities relatively to industrial ones, especially manufacturing, measured in terms of value added or employment. Historically, it has occurred in two very different versions (Szirmai & Verspagen, 2015). One is typical of developed countries, where deindustrialization happens as the service sector expands (often driven by demand from the industrial sector itself). In this version, deindustrialization is a late stage of economic development (Tregenna, 2009; Rowthorn & Ramaswamy, 1999; Palma, 2005, 2014; Cruz, 2015). Another version has occurred in developing countries when changes in international prices or policy space have made existing industrial activities less competitive and led to their downsizing compared to primary activities (Storm, 2017). In these cases, industrial capacity specializes in low value-added manufacturing activities while demand for higher advanced good is satisfied through imports from developed countries. A warning sign is a reallocation of labor from more productive, higher paying dynamic sectors towards less productive-lower paying stagnant sectors. Over time, overall productivity growth slows down as do growth and employment creation, while inequality increases. This premature deindustrialization is a failure of development (Acar et. al., 2020, Palma, 2014).

The causes of premature deindustrialization vary. It can be caused by fast growing exports of primary commodities (the infamous “Dutch disease,” which also occurred in the United Kingdom) or services (tourism for Greece, financial services for Switzerland) that force exchange rate appreciation making industry uncompetitive. Matters can go from bad to worse if industrial exporters cut costs to regain competitiveness. Unless demand recovers swiftly, employment may fall, and inequality increase between skilled and unskilled workers as well as between workers in export-oriented and domestic sectors. It can also be caused by a liberalization shock, as Argentina, Brazil and other countries in Latin America experienced in the 1980s when they shifted from a policy of import-substitution industrialization to free trade and investment liberalization (Palma, 2005, 2014; Storm, 2017). As a result, the structure of employment in these countries shifted too as they specialized in commodity extraction and other low value-added activities.

Trade liberalization has been a conduit of adverse deindustrialization in many developing (UNCTAD, 2018) (and some developed) countries in the last three decades but not in all of them. Some were able to expand and upgrade their manufacturing capacities towards more advanced activities. Singapore, South Korea, Hong Kong and Taiwan gained their competitive advantage because they implemented the policies necessary to protect their strategic manufacturing sectors (Shafaeddin, 2005; Chang, 2007; Reinert, 2007). China did too although its challenges were unique, due to its size and the potential to create a huge domestic market.

These adverse effects have been ignored in most macroeconomic analyses of trade agreements. Trade liberalization has real costs and pitfalls for both developed and developing countries, which appear clearly when their sectoral structures are taken into account. Trade agreements (and the

⁶ In contrast, the Heckscher-Ohlin-Samuelson model claims that when the labor-intensive countries specialize in producing labor intensive goods, the demand and price of the abundant factor of production will gradually rise, and those countries will eventually lose their comparative advantage in labor intensive products. Then, they would shift their production towards more capital-intensive goods and their technology would improve (Turan Subasat, 2002).

larger international trading system) enter the equation as they define the policy space countries have their disposal to address these problems and achieving sustainable structural change.

Macroeconomic Assessments of the EU-MERCOSUR Trade Agreement

The EU-MERCOSUR trade agreement is the recently negotiated trade pillar, 20 years in the making, of a larger project of economic cooperation between the two regions. It proposes tariff reductions and some non-tariff changes on goods trade and includes provisions on sanitary and phytosanitary measures, state-owned enterprises, public procurement and intellectual property. Overall, the agreement proposes to remove tariffs on 92 percent of EU's imports from MERCOSUR and 91 percent of tariffs on MERCOSUR's imports from the EU, over a period of 15 years (EC, 2019). These totals reflect different weights given to liberalization of industrial and agricultural products in the two regions: the EU would liberalize imports of industrial goods more than agricultural goods, while MERCOSUR would do the opposite.

Table 1: Proposed Tariff Reductions (Share of Import Value by Region)

Imports To	Industrial Goods	Agricultural Goods	Total
EU	100%	82%	92%
MERCOSUR	90%	95%	91%

These figures are the starting point of the five main studies that estimate impacts on trade volumes and GDP growth (Diao et al., 2003; EC, 2007, 2011; Estrades, 2012, LSE, 2020). These studies are all based on versions of the same computable general equilibrium model (CGE), on the same assumptions concerning economic adjustment mechanisms and, mostly, on the same data. The inadequacies of this approach are well known and are rediscovered during major trade negotiations (Ackerman and Gallagher, 2008; Taylor and Von Arnim, 2006; Capaldo, 2015; Capaldo and Izurieta, 2018; Kohler and Storm, 2016). Beyond technicalities related to specific markets (such as poultry, car parts or cosmetics) the assumptions that drive the results in these studies are:

- a) Full employment. All resources with economic value, including labor, are fully utilized at all times, implying that any changes in sectoral demand for labor are quickly absorbed across each economy. This also generally implies that wages quickly increase or decrease responding to any imbalance between supply and demand of labor. The reality of persistent unemployment and underemployment in both the EU and MERCOSUR makes this assumption clearly untenable as an instrument of policy analysis.
- b) Income inequality is considered between workers of different skill levels but not between wage income and profit income. The distribution of income between wages and profits is fixed and does not deteriorate over time. This means assuming away the major causes of inequality in the size distribution of income (Taylor and Ömer, 2020b; Taylor, 2020). In today's EU and MERCOSUR, high and increasing inequality make this assumption inappropriate.
- c) Exogenous productivity growth. With the assumption on inequality this implies that the critical relationship found in the data between wage growth and productivity growth is overlooked. As a result, the sector composition of the economy, its labor market and the institutions that define their functioning (such as minimum wage regulation, employment protection, social protection, property rights) have no impact on productivity or competitiveness.

As has been repeatedly shown, these assumptions ensure that aggregate demand does not fall after trade liberalization. Yet most studies project small or negligible increases in GDP (Table 2). The most recent study, which benefits from the most recent information on the trends that inform the global economy, points to GDP gains of less than one percent of the baseline after 10 years (LSE, 2020). For example, with baseline growth at an optimistic 5 percent, this implies a GDP gain of less than 0.5 at the end of the simulation period. While the full simulated path of GDP is not shown in the study, in similar studies the GDP gains do not usher in a period of faster growth. Rather they are a short-lived occurrence.

Table 2: Growth Gains from EU-MERCOSUR Agreement Percent Change Compared to Baseline GDP

	LSE (2020)	EC (2007)	Diao et al. (2003)
Argentina	0.7	0.5	4.35
Brazil	0.3	1.5	2.86
Paraguay	0.1	10	n.a.
Uruguay	0.4	2.1	1.9
EU	0.1	0.1	0.3

Note: Figures referring to LSE (2020) reflect the optimistic scenario.

The small aggregate gains are the result of gains and losses in different sectors that almost compensate each other. Projections indicate that the EU will experience output contractions in several agricultural sectors and increases in manufacturing activities such as vehicle and transport equipment and machinery, while all Mercosur countries will lose output in these industrial activities and generally gain in agricultural ones. In reality these sectoral changes affect aggregate productivity and income distribution but in the study the effects are assumed away.

Different sectoral impacts are also evident in the employment projections. While these figures are hard to accurately interpret because none of the CGE studies provide enough detail on the way they are calculated, the latest study (LSE, 2020: 57) makes the general conclusion clear: in MERCOSUR “the greatest employment gains are to be expected in the cereals (especially for Brazil), vegetables, fruits and nuts (Brazil, Argentina, Uruguay), oil seeds, vegetable oils and fats (Brazil), bovine (Brazil, Argentina, Uruguay), other meat, gas (Brazil, Argentina), agricultural sectors. Job losses are seen in some manufacturing sectors such as metal products, motor and transport, machinery sectors (all Mercosur countries in each case).” Meanwhile “the impact on EU employment is proportionally much less significant given the bigger size of European labor markets. All sectors report employment changes under 1 percent under both scenarios, with only the sugar and beef sectors reporting job losses between 1.1 percent and 1.5 percent in the ambitious scenario.” In other words, according to this study, the agreement will lead to deindustrialization in MERCOSUR and to negligible employment changes in the EU. But these effects are greatly contained by the assumptions of full employment and constant distribution. The study also projects an increase in welfare, defined as the value of additional consumption that people will be able to enjoy (assuming they do keep their jobs and that prices are pushed down by liberalization), but no indication is provided on the composition of this amount. This notion of welfare, which is centerpiece to the textbook arguments in favor of liberalization, has been shown to be flawed (Kohler and Storm, 2016).

Summarizing, assessments of the EU-MERCOSUR agreement based on CGE models, relying on unrealistic assumptions on the functioning and features of all economies, point to small gains in GDP

and small but not necessarily positive changes in employment. More importantly, these studies play a major role shaping future policy debates within and between countries. In order to better evaluate these results, it makes sense to dive deeper into the structural features of the economies involved.

Overlooked Reality: Sectoral Structures in EU and MERCOSUR

In this section we analyze and discuss the changes occurred in the productive structures of key EU and MERCOSUR economies – Argentina, Brazil, Czech Republic, Germany, France, Italy, Poland – and in Turkey. While the latter is not party to the agreement, it is closely integrated into the EU’s common market and is considered in other studies. We look at sector-level data on productivity, productivity growth, employment, wages and profits distinguishing between “stagnant” and “dynamic sectors” based on productivity growth. Details about employment, productivity and profit share decomposition results are provided in Appendix.

In each sector productivity and wages adjust to imbalances in employment. Productivity growth creates a force to generate additional output, which is distributed to higher profits and/or wages. If productivity grows more rapidly than real wages, over time the share of profits in value added increases, while the labor share decreases. In the aggregate, these sectoral dynamics determine the evolution of inequality, the economy’s growth performance and rising income and job polarization (Storm, 2017a; UNCTAD, 2020; Taylor and Ömer, 2020a). Rising income and job polarization have a common root in the demand shortfall, originating from the ‘unbalanced’ growth between technologically ‘dynamic’ and ‘stagnant’ sectors. More insight into these dynamics can be extracted from decompositions that highlight different components of productivity, employment and profit share growth (see Appendix).

We use data from the latest World Input-Output Database Socio-Economic Accounts (WIOD-SEA), which contains comparable data on value added, employment and wages for all our sample but Argentina. For Argentina, we use data from the Groningen Growth and Development Centre, which does not contain data on wages. The data cover the period 2000–2014 (2000–2018 for Argentina), allowing to explore structural changes in the leadup to and the aftermath of the Great Recession. Whether the COVID-19 pandemic is changing these trends is early to say. As after other recessions, its immediate impact on primary distribution has been superficially progressive, with profits dropping more quickly than salaries. But high unemployment and downward pressures on wages could well lead to lower labor shares once economies reopen and profits pick up.

From the data, three categories emerge: industrializing economies (Czech Republic and Poland), de-industrializing advanced economies (including Germany, France and Italy), de-industrializing developing economies (Argentina, Brazil, and Turkey). All countries exhibit a growing imbalance between high-productivity-high-wage-growth sectors, which we refer to as “dynamic” sectors, and low-productivity-low-wage-growth sectors, which we refer to as “stagnant” (Table 3). In all countries employment moved from dynamic to stagnant sectors while value added generation moved in the opposite direction, away from stagnant sectors. This structural polarization, or “reverse duality,” is the main cause of the downward trend of productivity growth observed in all countries.

Czech Republic and Poland managed to increase their productivity, output and wages simultaneously, which allowed them to experience positive structural change and continue industrializing. However, both countries feature lower labor shares than other countries in the EU. Since the labor share is also the main measure of the unit cost of labor, relatively low labor shares allowed Czech Republic and Poland to establish a competitive export-oriented industry. The sharp fall of the labor share in Poland made the country more competitive but threatened the expansion of domestic demand. In Czech Republic, the increase of the labor share has reinforced domestic demand, as

Table 3: Size of the Stagnant Economy

	Size of the Stagnant Economy, 2014				Real Wage Growth	Productivity Growth	Labor Share	
	Employment Share	'00-'14	Value Added Share	'00-'14	annual avg	annual avg	2014	'00-'14
	%	ppts	%	ppts	%	%	%	ppts
Argentina	65.6	7.3	56.3	-0.3		-0.16		
Brazil	54.5	7.0	43.6	-7.1	2.2	1.9	55.0	5.0
Czech Rep.	34.8	3.4	23.3	-8.9	2.3	2.2	51.3	2.5
France	37.9	2.8	31.3	-3.6	1.4	1.0	65.0	3.9
Germany	55.8	3.5	51.5	-8.1	0.4	0.5	62.0	-2.0
Italy	55.3	5.5	62.7	-1.3	0.2	-0.3	58.7	3.3
Poland	43.0	4.0	28.8	-9.3	1.6	2.5	49.8	-6.0
Turkey	52.4	7.2	46.9	-11.5	0.8	3	37.9	-4.1

Note: For Argentina end of period data refer to 2018 and labor share data come from national accounts.

industrialization progresses and the labor share continues to increase, cost competitiveness can be fast eroded (Lavoie and Stockhammer, 2013). Unless domestic demand expands fast enough to become the main source of demand growth, a transition that requires appropriate industrial and income policies, the progress made in terms of industrialization (in both countries) and inequality reduction (in Czech Republic) is unlikely to continue.

As summarized in Table 3, wage retardation (wages lagging behind productivity) widened the gap between profits and wages and led to worse inequality in Germany, Poland and Turkey. In Germany sectoral duality caused a slowdown in productivity and GDP growth. In Poland, productivity and output growth accelerated as industrialization progressed but income inequality continued to increase. Turkey benefitted from low wages and grew faster than all other countries but struggled with visible deindustrialization and increasing income inequality. Income inequality in Argentina improved with progressive macroeconomic policies. Manufacturing's contribution to productivity was visible but it did not create jobs, also signaling deindustrialization. Brazil grew relatively fast and improved its labor share, but its manufacturing sector lost output and employment shares and was replaced by FIRE (Finance-Insurance and Real Estate), indicating "deindustrialization by financialization."

As Argentina, Italy had negative productivity growth (-0.3 percent per year on average). Relatively high real wage growth, compared to productivity growth, led to profit share decline as in Brazil, France and Czech Republic.⁷ In Italy, all wage growth was experienced in two sectors: manufacturing and information. In France, manufacturing, business services and information were the main contributors to real wage increases, while most of the wage growth in Brazil was experienced in business services, agriculture and public services. In other words, even in countries where the labor share grew, most sectors did not experience wage growth.

⁷ This assumes a narrow definition of the labor share in which no part of the income of unincorporated enterprises (or "mixed income") is included. This choice is dictated by our data source. However, mixed income often includes labor compensation, for example when it relates to small businesses, and it also is a statistical receptacle of income that cannot easily attributed to labor or capital, such as informal sector wages.

Growth of productivity and GDP per capita was also low or declining in our sample of countries, Turkey was an exception⁸. Except in Brazil, manufacturing maintained its traditional role as the main driver of productivity growth. However, in all countries of our sample, its contribution to employment growth was either declining or negligible. The pattern of structural change observed in our sample of countries resulted from increasing economic duality combined with different degrees of deindustrialization.

For most countries, taking a “sustainable” growth path requires improving productivity and reducing inequalities. This means increasing the size of high-productivity-high-wage “dynamic” sectors. For developing countries, it also means continuing to industrialize (increasing their manufacturing share both in value added and employment) until they can compete in higher value-added market segments.

Expansion of multiple dynamic sectors is critical to generate sufficient domestic demand for dynamic sector output so that surplus labor created by the process of productivity growth is absorbed by dynamic, rather than stagnant, sectors. As a result, the size of the stagnant sectors would shrink, labor productivity and output would increase by creating more productive, better paying jobs. Free trade agreements play a critical role in this process by promoting specialization in some sectors based on countries’ existing productive structures. Competitive dynamics reflecting technological and structural features play an important role in determining who wins and who loses in the long term. Countries that have not advanced in high-productivity manufacturing and related sectors tend to be the losers. Technologically advanced (developed) countries tend to win and consolidate their technological advantage.

As observed in Poland and Czech Republic, whose manufacturing sectors were recently built, developing countries can sustain higher productivity and GDP growth as long as they strengthen manufacturing’s roles and keep their stagnant sectors’ size relatively small. Thus, in principle, MERCOSUR countries could experience a similar process if their export shares of the industrial products increased and they received effective transfers of technology from the EU. But the latter is not contemplated in the EU-MERCOSUR trade agreements and the former, according to LSE (2020), will not happen. The report (ambitious scenario) predicts a 30.7 percent increase in agri-food exports to the EU while the increase in industrial good exports is expected to be 9.6 percent by 2032. Meanwhile, the EU is expected to increase their exports of industrial products to Mercosur by 94 percent. Table 4 links projections of sectoral output changes with our stagnant-dynamic classification. Based on this logic, the EU-MERCOSUR agreement will reduce the output shares of the most critical manufacturing sub-sectors (vehicle, transport machinery and electronic equipment) while agri-food, mining and service sectors will gain in weight in Argentina and Brazil, as our analysis also suggest. The opposite outcome is foreseen for the EU.

Trade liberalization has exacerbated regressive trends in many developed and developing countries (Reinert, 2007; Storm, 2017b; UNCTAD, 2018), when policies for industrial development, technology transfer and demand support have not been implemented as part of macroeconomic strategy aimed at expanding domestic demand in the medium term. To the extent that plurilateral agreements, including the EU-MERCOSUR agreement make these policies harder to implement or take place between countries whose policy independence is constrained by other rules and treaties, participating countries face the prospect of worsening economic duality and perverse structural change. Overall, the EU-MERCOSUR agreement is far from providing any solution to current structural problems, especially in MERCOSUR. Because of its scale and structure, the effect of the agreement on

⁸ In Turkey, growth of real GDP per capita was comparably high (around 5 percent per year on average), but productivity was declining.

Table 4: Projected Output Gains of EU-Mercosur Agreement in Stagnant and Dynamic Sectors

	Sectors	EU28 (sectoral characterization approximated based on our results)		Average	Brazil		Average	Argentina		Average
AGRI-FOOD	Cereals	-0.5	Stagnant	-0.47	2.4	Dynamic	1.91	0.8	Dynamic	1.27
	Rice	-0.5	Stagnant		1.7	Dynamic		0.8	Dynamic	
	Vegetables, fruit, nuts	-0.5	Stagnant		2.2	Dynamic		3.1	Dynamic	
	Oil seeds, vegetable oils	-0.5	Stagnant		3.2	Dynamic		1.9	Dynamic	
	Sugar	-1.0	Stagnant		2.5	Dynamic		1.2	Dynamic	
	Plant and animal fibers	-0.4	Stagnant		1.3	Dynamic		0.5	Dynamic	
	Processed foods, fish	-0.3	Stagnant		1.7	Dynamic		1.5	Dynamic	
	Beef and sheep meat	-1.2	Stagnant		2	Dynamic		2.4	Dynamic	
	Poultry meat, pork	-0.3	Stagnant		3.7	Dynamic		0.5	Dynamic	
	Other animal products	-0.3	Stagnant		2.2	Dynamic		1.5	Dynamic	
	Beverages and tobacco	0.0	Stagnant		0.2	Dynamic		0.4	Dynamic	
	Dairy products	-0.1	Stagnant		-0.2	Dynamic		0.6	Dynamic	
MINING	Wood and paper	0.0	Stagnant	-0.12	0.6	Dynamic	0.18	0.1	Stagnant	0.62
	Coal	0.0	Stagnant		0.2	Dynamic		0.2	Stagnant	
	Oil	0.0	Stagnant		0.1	Dynamic		0.1	Stagnant	
	Gas	-0.6	Stagnant		-0.1	Dynamic		2.6	Stagnant	
	Minerals	0.0	Stagnant		0.1	Dynamic		0.1	Stagnant	
MANUFACTURING	Textiles, apparel, leather	-0.1	Dynamic	0.10	0.9	Stagnant	-0.12	0.9	Dynamic	0.12
	Chemicals, rubber, plastic	0.2	Dynamic		0.2	Stagnant		-0.2	Dynamic	
	Petroleum, coal products	0.1	Dynamic		0.1	Dynamic		0.4	Dynamic	
	Metal products	0.2	Dynamic		-2.5	Dynamic		-1.3	Dynamic	
	Non-metallic minerals	0.2	Dynamic	0.7	Stagnant	0.8	Dynamic			
	Vehicles, transport equipment	0.6	Dynamic	0.20	-1.8	Stagnant	-1.57	-3.2	Stagnant	-1.33
	Machinery	0.5	Dynamic		-5.1	Stagnant		-2.9	Stagnant	
	Electronic equipment	-0.4	Dynamic		2.2	Stagnant		2.7	Stagnant	
SERVICES	Electricity	0.1	Stagnant	0.07	0.2	Dynamic	0.45	0	Dynamic	0.77
	Utilities	0.4	Stagnant		0.7	Stagnant		1.5	Dynamic	
	Transport	0.0	Dynamic		0.4	Stagnant		0.8	Dynamic	
	Telecoms, business services	0.0	Dynamic		0.7	Dynamic		1	Stagnant	
	Financial services	-0.1	Dynamic		0.4	Dynamic		0.7	Stagnant	
	Other services	0.0	Stagnant		0.3	Stagnant		0.6	Stagnant	

Note: CGE Modeling results (Table 9) from SIA Report (2020). All numbers are in % change relative to their baseline. Sectoral characterization is made based on authors' evaluations.

macroeconomic performance (as captured by GDP, productivity, employment and inequality) is highly questionable.

Finally, the agreement's environmental outcomes may affect economic performance, including distribution. For example, projected expansion of agri-food and mining output may lead to changes in land-use, to deforestation and higher carbon emissions in Brazil and Argentina⁹. While an analysis of these impacts is beyond the scope of this paper, the analysis above shows that appropriate industrial and income policies – ideally reflected in a binding chapter on sustainability¹⁰ – are necessary to ensure that the agreement is sustainable economically, socially and environmentally.

Next, we take a closer look at country-specific details from our decomposition analysis.

GERMANY

Between 2000 and 2014, Germany had low productivity and real GDP per capita growth. Average annual productivity growth (per hour) was around 0.7 percent and average annual growth of GDP per capita was 1.08 percent. A 16-sector disaggregation of productive sectors highlights a dual structure in the economy, with some sectors exhibiting high productivity growth on average for the whole period and the rest exhibiting low productivity growth.

Dynamic sectors included manufacturing, information, public services, wholesale, warehousing & transportation, and energy. Stagnant sectors included agriculture, retail, education and health, FIRE (Finance, Insurance and Real Estate), accommodation and food services, other services, construction, water and sewerage, mining and business services. In 2014, manufacturing had the highest share in total value added (23.5 percent), employment share (20 percent) and share of total wages (24.6 percent). Its employment share did decline 2.5 points from its 2000 level, but in 2014 its annual average productivity growth rate was the highest among all sectors. In other words, Germany maintained its advantage in industrialization.

However, increasing employment share of the stagnant sectors points to worsening economic duality. Meanwhile, wage repression intensifies if the wage share does not keep up with the increasing employment share. As shown in Table 5, while the total employment share of the stagnant sectors in Germany increased from 52.3 percent in 2000 to 56.8 percent in 2014, their real wage share in total wages fell from 52.8 percent to 50.2 percent in the same period. More than half of workers in Germany participate in a stagnant economy and have, accordingly, seen their share of aggregate labor income decline. The stagnant economy's output share also fell, from 61 percent in 2000 to 52 percent in 2014. Alongside an increasing employment share, this points to declining productivity growth in these sectors as a whole.

At the high end of the economy, the employment share of the dynamic sectors fell from 46.7 percent to 43.3 percent while their share of total wages went up from 45.4 percent to 50.4 percent. Workers in dynamic sectors became relatively fewer but acquired a larger share of total wage payments.

As can be seen in Figure 1, stagnant sectors represented in the first group had slower (or negative) real hourly wage growth and productivity growth rates than the dynamic sectors. Their real wages lagged behind their productivity¹¹. The same was true for most dynamic sectors but the gap between

⁹ According to Abman & Lundberg (2020), deforestation tends to increase within a few years after the enactment of the free trade agreements.

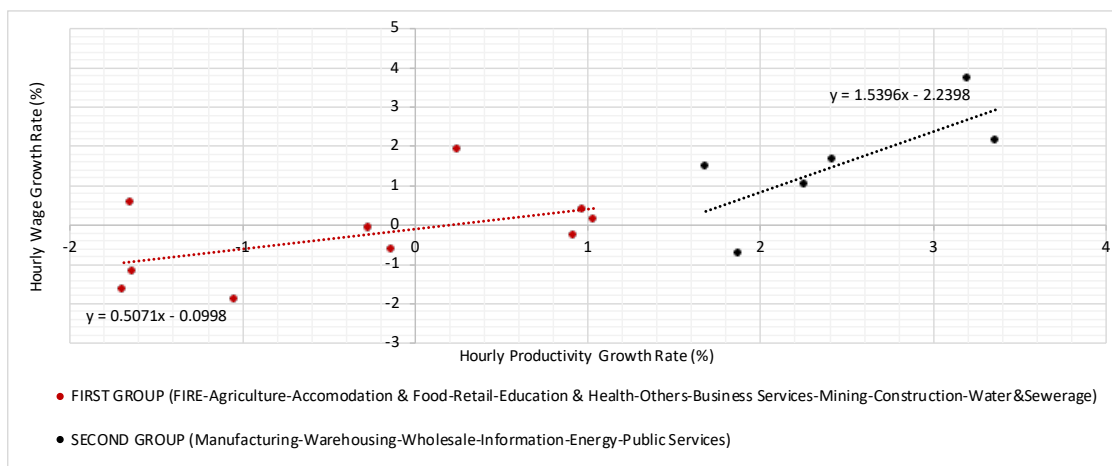
¹⁰ See Harrison and Paulini (2020), Alguiar et.al. (2020, Chapter 3) for more details.

¹¹ The slope of the trend line in Figure 1 (the cross-sectional elasticity of wage growth with respect to productivity growth) is 0.5. This indicates that for every 1 percent increase in stagnant sectors' productivity growth their wage growth increases 0.5 percent on average – wages are lagging behind productivity growth.

Table 5: Summary Data, Germany

Sectors (Germany)		Hourly Productivity Growth (%)	Hourly Real Wage Rate Growth (%)	Real Hourly Wage Rate (LCU)		Employment Share in Total (%)		Wage Shares in Total (%)		VA Share (%)		Productivity Level Hourly (LCU)	
		AVG	AVG	2000	2014	2000	2014	2000	2014	2000	2014	2000	2014
DYNAMIC SECTORS	Manufacturing	2.42	1.67	28.1	35.3	22.5	20.7	22.4	24.6	20.0	23.5	39.9	54.5
	Information	3.20	3.72	29.1	48.4	2.8	3.1	2.9	5.0	3.4	5.4	54.5	83.8
	Wholesale	3.36	2.15	28.3	37.6	6.7	6.1	6.7	7.7	5.0	6.7	33.9	52.9
	Warehousing & Transportation	2.26	1.02	19.1	21.5	5.2	5.4	3.5	3.9	3.2	4.1	27.7	36.7
	Energy	1.87	-0.73	55.2	45.1	0.8	0.8	1.6	1.1	2.1	2.2	114.8	137.6
	Public Services	1.68	1.50	27.2	33.5	8.7	7.2	8.3	8.1	6.3	6.2	33.1	41.7
	TOTAL						46.7	43.3	45.4	50.4	48.1	54.1	
STAGNANT SECTORS	Mining	1.03	0.14	46.3	37.0	0.4	0.2	0.6	0.2	0.3	0.2	39.1	42.8
	Water and Sewerage	0.97	0.38	27.7	28.8	0.8	0.8	0.8	0.8	1.0	1.1	60.4	68.7
	Construction	0.92	-0.25	29.4	28.2	7.7	5.7	8.1	5.4	5.5	4.3	32.1	36.3
	Retail	0.24	1.94	15.2	19.8	7.5	7.1	4.0	4.7	3.6	3.3	21.9	22.6
	Education & Health	-0.13	-0.62	28.0	25.7	15.3	18.0	15.2	15.5	10.8	11.6	31.7	31.1
	Other Services	-0.27	-0.10	29.4	28.9	4.0	4.1	4.2	4.0	4.1	3.7	45.2	43.4
	FIRE	-1.04	-1.89	55.7	40.7	4.5	3.9	8.8	5.3	21.0	14.0	211.8	175.2
	Accommodation & Food Services	-1.63	-1.16	21.8	18.4	2.9	3.2	2.2	2.0	1.8	1.5	28.2	22.1
	Business Services	-1.65	0.58	27.1	29.2	8.3	11.9	7.9	11.6	10.5	11.1	57.2	45.1
	Agriculture	-1.69	-1.66	32.8	24.7	1.0	0.9	1.1	0.7	1.0	0.6	45.2	31.4
	TOTAL						52.3	55.8	52.9	50.2	59.7	51.5	

Figure 1: Productivity Growth vs. Real Wage Growth, Germany



productivity growth and wage growth was smaller than in the stagnant sectors. Thanks to wage growth in information, dynamic sector average wage growth went up and dynamic sectors positively contributed to the economy's wage share (or slowed down its downward trend)¹².

These structural features have clear implications for inequality. A decrease in inequality requires movement of workers from stagnant to dynamic sectors, a movement that will also lead to faster overall productivity growth. In fact, strong wage retardation and increasing employment in the stagnant sectors caused the share of profits in total value added to increase from 35 percent in 2000 to 41 percent in 2006 and then, settled around 38 percent in 2014¹³.

Along with high productivity growth most dynamic sectors also had higher productivity levels than most stagnant sectors, with the exception of FIRE. Unlike other stagnant sectors, FIRE had an exceptionally high productivity level but low growth.

In general, stagnant sector businesses have reduced real unit labor costs through wage repression. By reducing the incentive to productivity increasing technical change this may well have brought down their productivity growth (Kennedy, 1964; Hicks, 1963). As Table 5 shows, most dynamic sectors also had higher end-of-period real hourly wage rates. On average, their share of total wages exceeded their share in total employment while the opposite is true for the stagnant sectors.

In Germany between 2000 and 2014, there was a visible movement of workers from high-productivity-high-wage-growth sectors towards low-productivity-low-wage growth sectors. The resulting increase in economic dualism has led to a noticeable decline of labor's income share, a slowdown of economy-wide-productivity growth and a slowdown of GDP per-capita growth. The inter-sectoral dynamics discussed by Lewis (1954), Kuznets (1973, 1979), Kaldor (1966, 1967) and many others have worked in reverse in Germany as they have in the United States (Taylor and Omer 2019, 2020).

Overall, in Germany, the most dynamic sectors, namely manufacturing, wholesale and information, kept their positions as the main providers of demand, productivity and profit share growth, and also paid higher wages than many other sectors. Their share in total value added grew much faster than average. On the other hand, most of employment has been created in stagnant sectors –business services, education and health and accommodation and food (see Appendix). Although information, warehousing and transportation had small but positive contribution to job creation, manufacturing and other dynamic sectors did not. Increasing profits since 2000 and the movement of labor to lower-wage, low- productivity-growth sectors explain the latest rise in inequality in Germany.

FRANCE

GDP in France grew on average one percent per year between 2000 and 2014 and 0.6 percent on average in per capita terms. Productivity per hour expanded at an average rate of 0.9 per year while hourly wage growth was 1.4 per year on average, leading to labor share increase of approximately 4 percentage points. As in Italy, economy-wide productivity growth moved countercyclically following a downward trend. It slowed down until the Great Recession, then picked, then slowed down again.

France's dynamic sectors generated an increasing share of value added and wage payments but absorbed fewer workers. This pattern was less pronounced than in other countries of our sample but still visible, with almost 2 percent of total employment transferring from dynamic sectors – including

¹² For the dynamic sectors, every 1 percent increase in productivity growth causes 1.5 percent increase in their real wage growth on average.

¹³ This could explain increasing GINI coefficient from 28 percent in 2000 to 31.3 percent in 2014 in Germany (OECD).

manufacturing, information, retail and public services – to stagnant sectors – including education and health, agriculture and construction.

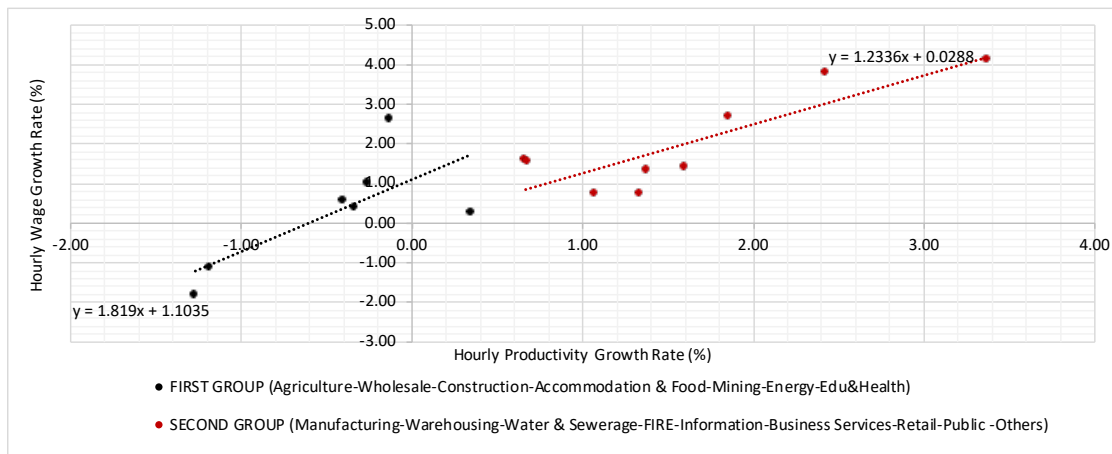
As Table 6 and Figure 2 show, wage growth was positive and higher than productivity growth in all dynamic sectors (except warehousing and transportation, public services, and water and sewerage which had positive but lagging wages). All stagnant sectors (except education and health), on the other hand, had negative productivity growth. Except agriculture, they also had negative or very low wage growth rates (see Appendix).

Overall, dynamic sectors in France sustained reasonable productivity and wage growth. Wages grew more rapidly than productivity leading to decreasing inequality. But dualism has emerged in France too driving a movement of workers from high productivity and high wage growth sectors to low productivity and low wage ones. Most of the job losses occurred in manufacturing sector as it remained as the main source of productivity (see Appendix). Although it was the second largest employer

Table 6: Summary Data, France

Sectors (France)		Hourly Productivity Growth (%)	Hourly Real Wage Rate Growth (%)	Real Hourly Wage Rate (LCU)		Employment Share in Total (%)		Wage Shares in Total (%)		VA Share (%)		Productivity Level Hourly (LCU)	
				2000	2014	2000	2014	2000	2014	2000	2014	2000	2014
		AVG	AVG										
DYNAMIC SECTORS	Manufacturing	3.37	4.14	22	37.9	15.4	10.9	11.3	11.5	11.5	11.2	36.0	57.2
	Information	2.42	3.81	35	58.2	2.9	3.2	3.4	5.3	3.9	5.2	64.0	88.9
	Retail	1.86	2.69	19	27.3	6.8	7.3	4.4	5.5	3.8	4.5	26.7	34.3
	Public Services	1.60	1.41	26	32.0	11.5	10.2	10.2	9.1	8.3	8.0	34.9	43.6
	FIRE	1.38	1.34	40	46.9	4.4	4.5	6.0	5.9	17.3	18.2	190.7	225.4
	Water & Sewerage	1.34	0.76	30	32.6	0.6	0.7	0.6	0.6	0.6	0.7	51.1	60.6
	Warehousing & Transportation	1.07	0.75	34	36.6	5.7	5.6	6.4	5.7	5.3	5.2	45.3	52.0
	Other Services	0.67	1.58	25	30.6	3.6	4.1	3.0	3.5	2.5	2.7	32.9	36.0
	Business Services	0.68	1.55	31	38.1	13.0	14.8	13.5	15.8	11.7	12.8	43.8	48.0
		TOTAL					63.88	61.15	58.9	62.8	53.4	57.3	
STAGNANT SECTORS	Agriculture	-0.13	2.62	35	46.7	1.5	1.3	1.7	1.8	2.2	1.7	73.2	69.9
	Wholesale	-0.33	0.36	38	40.1	6.0	6.0	7.8	6.7	7.3	6.0	58.8	55.5
	Construction	-1.18	-1.13	39	32.9	6.2	6.6	8.1	6.1	6.4	5.1	50.5	42.6
	Mining	-1.27	-1.82	46	33.7	0.1	0.1	0.2	0.1	0.2	0.1	96.5	77.2
	Energy	-0.25	1.02	49	53.4	0.6	0.6	1.0	0.8	1.8	1.4	151.0	141.2
	Education & Health	0.35	0.26	33	33.7	17.3	19.4	19.1	18.3	14.1	14.4	39.2	41.1
	Accommodation & Food	-0.40	0.55	26	27.8	3.4	3.9	3.0	3.0	2.9	2.7	40.3	38.0
		TOTAL					35.1	37.9	40.8	36.8	34.9	31.3	

Figure 2: Productivity Growth vs. Real Wage Growth, France



in 2014, its declining share in employment and stable share in value added point out to deepening deindustrialization.

ITALY

Italy's annual economic output, measured as value added, shrank 3.2 percent between 2000 and 2014, at an average rate of 0.2 percent per year. Working age population expanded slightly so that GDP per capita contracted 3.7 percent. Wages stagnated, growing only 0.4 percent in real terms in 14 years, while productivity contracted 3.7 percent driving up the labor share. Income distribution was less unequal in 2014 than in 2000 not because of progressive income policy or strong labor market institutions but because perverse structural change made Italy's economy more labor intensive than in the past (Storm, 2019).

Italy's dynamic sectors were manufacturing, mining, warehousing, information, public service and energy. Their employment share decreased four percentage points (more than Germany's dynamic sectors did) while their share of value added expanded. The dual economy comprised of the stagnant sectors – including FIRE, which had high productivity but low productivity growth – expanded its employment share and generated a smaller share of value added.

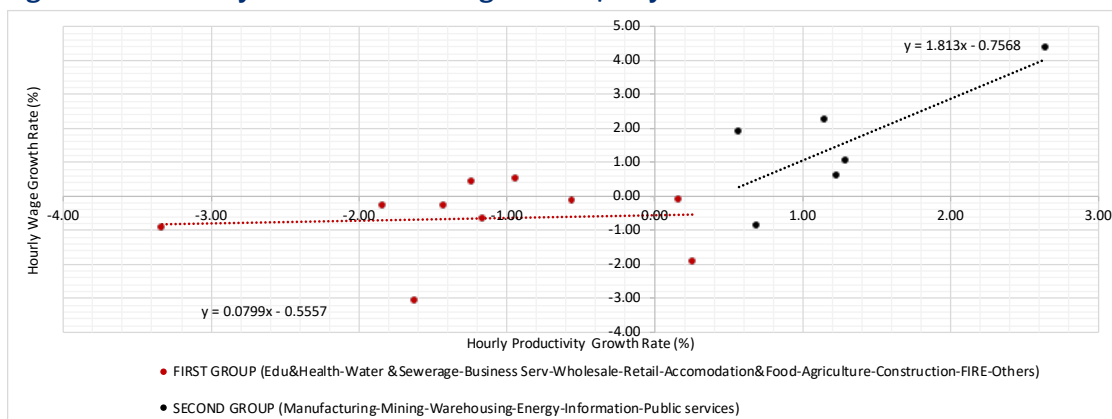
All dynamic sectors had positive average productivity growth and, with the exception of energy, positive wage growth. In a clear contrast, all stagnant sectors had negative wage growth on average and all, but FIRE and education and health had negative productivity growth. In the stagnant sectors there was almost no pass through of productivity growth to wage growth, as indicated by the flat line in Figure 3. Dynamic sector fared much better, with wage growth almost twice productivity growth on average. In terms of productivity levels, mining, energy and FIRE were outliers but only mining featured fast productivity growth.

Overall, adjustments in Italy's economic structure revolved around manufacturing and business service, which drove most changes in terms of employment, productivity and profits (see Appendix). The profit share decreased in Italy between 2000 and 2014, but the dual economy expanded considerably as the economy has experienced deindustrialization. In fact, primary income distribution improved because job creation in stagnant sectors led to a contraction of overall productivity by putting a strong downward pressure on growth. A possible contributing factor may have been higher

Table 7: Summary Data, Italy

Sectors (Italy)		Hourly Productivity Growth (%)	Hourly Real Wage Rate Growth (%)	Real Hourly Wage Rate (LCU)		Employment Share in Total (%)		Wage Shares in Total (%)		VA Share (%)		Productivity Level Hourly (LCU)	
		AVG	AVG	2000	2014	2000	2014	2000	2014	2000	2014	2000	2014
DYNAMIC SECTORS	Mining	2.64	4.34	25.1	40.7	0.2	0.1	0.2	0.1	0.5	0.5	148.5	196.0
	Manufacturing	1.15	2.23	20.3	27.7	25.5	19.9	21.0	18.2	17.5	16.6	34.1	39.9
	Warehousing & Transportation	1.23	0.60	24.4	25.9	6.0	6.0	5.7	5.1	5.0	6.0	41.0	47.7
	Information	0.57	1.91	27.8	36.1	2.7	2.9	3.4	3.5	3.2	4.0	60.5	64.9
	Public Services	1.29	1.02	29.8	34.2	8.5	6.9	7.9	7.9	7.2	7.3	42.4	50.7
	Energy	0.69	-0.90	34.4	29.8	0.7	0.5	0.8	0.7	1.7	1.5	123.7	132.1
	TOTAL						43.5	36.4	39.0	35.5	35.2	35.9	
STAGNANT SECTORS	Business Services	-3.33	-0.93	44.3	38.8	5.7	8.8	8.9	11.8	9.6	9.5	83.5	51.8
	Accommodation & Food	-1.84	-0.28	25.3	24.1	4.1	5.3	3.7	4.4	3.6	3.7	44.3	33.9
	Water & Sewerage	-1.62	-3.07	29.1	18.6	0.9	1.1	0.8	0.9	0.8	0.8	42.8	33.6
	Agriculture	-1.16	-0.66	25.2	22.5	2.7	2.6	2.6	2.0	2.7	2.3	50.2	41.1
	Retail	-1.23	0.42	28.1	29.8	5.6	6.4	6.5	6.4	5.2	5.2	46.0	38.4
	Others	-1.42	-0.30	30.4	29.0	2.8	3.3	3.0	3.3	2.7	2.7	47.9	38.8
	Construction	-0.55	-0.15	31.3	30.5	6.0	5.4	5.8	6.0	5.6	4.8	46.6	42.8
	Wholesale	-0.94	0.50	36.6	38.8	5.3	5.5	7.2	7.3	7.0	6.4	64.8	55.8
	FIRE	0.26	-1.94	47.0	32.4	3.7	3.7	5.8	5.2	16.7	16.3	222.8	213.0
	Education & Health	0.16	-0.09	33.6	33.1	13.0	13.3	15.0	14.8	10.1	11.1	38.9	39.8
	TOTAL						49.8	55.3	59.3	62.2	63.9	62.7	

Figure 3: Productivity Growth vs. Real Wage Growth, Italy



competition among businesses under pressure to delocalize, which may have led to shrinking profit margins. Another factor may have been the shift in the status of many workers from employee to contractor, whose falling incomes would be reflected in falling profits.

CZECH REPUBLIC

In Czech Republic, GDP per capita grew 2.2 percent per year on average, slightly higher than total GDP. Productivity (per hour) grew at annual average of 2.1 percent while real hourly wages grew slightly faster, at 2.3 percent per year on average, pointing to an increasing labor share economy wide.

In a pattern common to other countries in our sample (Table 8), the dynamic sectors – including manufacturing, construction, information, FIRE and others – grew to generate a growing share of total value added (from 65 percent to 72 percent) and a growing share of total wages (from 64

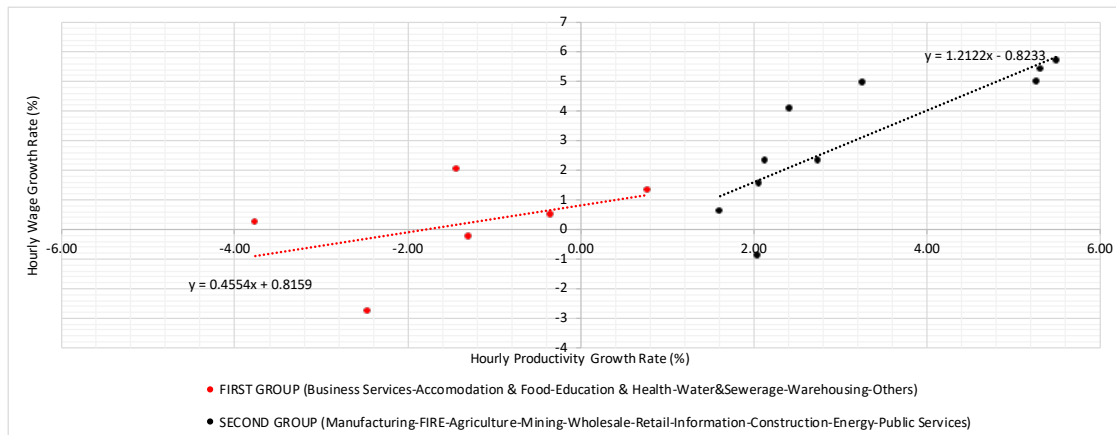
Table 8: Summary Data, Czech Republic

Sectors (Czech Republic)		Hourly Productivity Growth (%)	Hourly Real Wage Rate Growth (%)	Real Hourly Wage Rate (LCU)		Employment Share in Total (%)		Wage Shares in Total (%)		VA Share (%)		Productivity Level Hourly (LCU)	
				2000	2014	2000	2014	2000	2014	2000	2014	2000	2014
		AVG	AVG										
DYNAMIC SECTORS	Retail	5.51	5.70	104.3	220.0	5.9	6.7	3.6	6.0	2.5	4.4	152.3	315.4
	Manufacturing	5.31	5.40	109.3	223.8	28.9	27.4	18.3	25.1	17.9	25.8	220.6	448.4
	Agriculture	5.28	5.00	94.3	171.3	4.6	2.9	2.5	2.0	2.2	2.0	168.9	330.4
	Wholesale	3.27	4.95	141.5	271.4	6.2	7.7	5.1	8.5	5.4	7.5	307.6	470.1
	FIRE	2.75	2.31	284.1	384.9	3.3	3.2	5.4	5.1	13.4	14.3	1468.3	2101.7
	Information	2.42	4.09	253.1	436.5	2.1	2.7	3.0	4.8	3.9	5.1	673.8	920.4
	Public Services	2.14	2.34	211.4	289.7	7.8	6.6	9.6	7.8	7.7	6.5	350.5	468.6
STAGNANT SECTORS	Construction	2.06	1.53	241.8	294.3	7.6	6.5	10.6	7.9	7.6	6.5	358.8	471.9
	Energy	2.05	-0.91	495.6	401.4	0.9	0.7	2.6	1.1	5.0	3.5	1974.8	2488.9
	Mining	1.61	0.61	393.4	399.1	1.3	0.7	3.0	1.1	2.2	1.0	592.1	691.0
	TOTAL					68.5	65.0	63.6	69.5	65.2	72.2		
	Education & Health	-0.35	0.48	214.6	227.2	11.8	13.1	14.7	12.2	10.6	8.3	319.5	301.9
	Business Services	0.78	1.32	245.1	289.8	6.1	7.6	8.7	9.1	7.1	7.2	410.2	447.4
	Warehousing & Transportation	-1.29	-0.25	133.3	105.9	6.7	6.5	5.2	2.8	5.5	2.7	291.1	200.4
	Accommodation & Food	-3.76	0.23	154.4	155.4	3.1	3.7	2.8	2.3	4.1	2.0	462.6	258.2
	Other Services	-1.43	2.04	223.0	290.6	2.2	2.5	2.9	3.0	3.3	2.2	519.9	417.1
	Water & Sewerage	-2.45	-2.79	263.3	170.7	1.3	1.3	1.9	0.9	1.7	0.9	480.7	323.6
TOTAL					31.4	34.8	36.3	30.4	32.3	23.3			

percent to 69 percent), but absorbed a smaller share of employment (from 68.5 percent to 65 percent). The stagnant sectors – including education and health, transportation, accommodation and food and others – shrank in terms of value added and total wages, relatively to the dynamic ones, but grew in terms of employment indicating wage repression. The shifts in employment and wages from stagnant to dynamic sectors were of the same order of magnitude as in Germany but in Czech Republic the dynamic sectors still have a heavier weight. In Czech Republic too, there are a core economy, which generates a growing share of wages but employs fewer and fewer workers, and a dual economy that absorbs more and more workers but recedes in importance in terms of value added and wage generation.

On average throughout the period, the stagnant sectors had negative or slow wage and productivity growth, while the dynamic ones mostly featured faster growth on both accounts (Figure 4). However, productivity levels were not necessarily higher in dynamic sectors. FIRE and energy were outliers with exceptionally high levels of productivity, while manufacturing, which had the second highest productivity growth on average, had a lower productivity level than several stagnant sectors. Real wages grew much faster than productivity in most dynamic sectors with a few exceptions. With the help of fairly high GDP growth, this led to a small but visible decline in inequality after 2003.

Figure 4: Productivity Growth vs. Real Wage Growth, Czech Republic



Overall, output, productivity and wage growth in Czech Republic were driven by developments in manufacturing, pointing to large weight of the sector in the country's economic structure. The labor share increased slightly, then fell again. Behind these changes lurks a substantial increase in the size of the dual economy. Manufacturing's shares in total employment, value added and wages were the highest throughout the period. The employment share experienced a small (1.5 percentage points) decline while shares in total value added and wages increased substantially (8 and 6.8 points respectively). These changes and a relatively small size of the stagnant sectors indicate ongoing industrialization.

POLAND

Poland experienced higher productivity and GDP growth than most countries in our sample. Growth of real GDP per capita was around 3 percent while annual productivity growth (per hour) and average hourly real wage growth rates were around 2.5 percent and 1.6 percent respectively between 2000 and 2014.

As in Germany, dynamic sectors in Poland – including manufacturing, construction, other services, accommodation and food services, information, FIRE, business services, wholesale, energy and

agriculture – had higher productivity and real wage growth than stagnant sectors – retail, education and health, public services, warehousing and transportation, mining, water and sewerage. In addition, all dynamic sectors except accommodation and food paid higher real wages than the stagnant sectors in 2014. However, this did not prevent real wages from lagging behind productivity growth. As a result, the profit share in Poland increased from 42.5 percent in 2001 to 50.2 percent at the end of the period, a much stronger deterioration in income inequality than Germany.

According to Table 9, while the employment share of the stagnant increased from 39 percent in 2000 to 43 percent in 2014, their share in total wages decreased from 43.7 percent to 36.8 percent in the same period. In addition, their share in real output also declined from 38.1 percent to 28.8 percent. This points to strong wage repression. On the other hand, the dynamic sectors' employment share declined from 61 percent to 57 percent while their share of total real wages rose from 56.3 percent to 62.6 percent. Overall, real wages lagged behind productivity growth driving the decline of the labor share from 57.2 percent in 2000 to 49.8 percent at the end of the period. The drive toward external competitiveness in Poland resulted in a massive imbalance in income distribution.

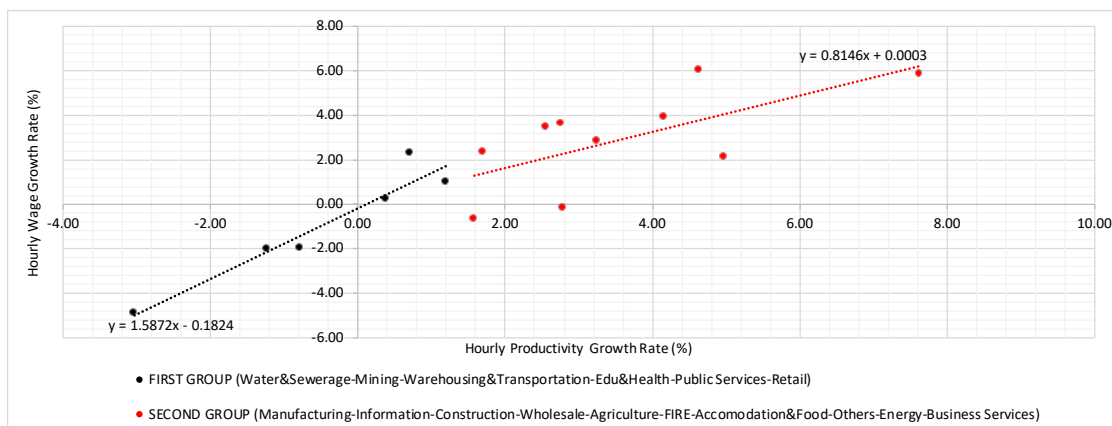
Table 9: Summary Data, Poland

Sectors (Poland)		Hourly Productivity Growth (%)	Hourly Real Wage Rate Growth (%)	Real Hourly Wage Rate (LCU)		Employment Share in Total (%)		Wage Shares in Total (%)		VA Share (%)		Productivity Level Hourly (LCU)	
				2000	2014	2000	2014	2000	2014	2000	2014	2000	2014
		AVG	AVG										
DYNAMIC SECTORS	Manufacturing	7.62	5.83	9.9	21.4	24.4	24.2	10.9	18.9	10.5	20.3	16.8	46.3
	Wholesale	4.96	2.14	32.2	39.0	6.2	5.2	8.9	7.4	10.4	11.7	65.9	125.1
	Construction	4.64	6.03	15.1	30.0	11.6	7.6	7.9	7.7	10.3	8.1	34.7	59.4
	Other Services	4.15	3.91	19.8	32.1	2.7	2.6	2.4	3.1	2.0	2.3	28.3	48.2
	FIRE	3.25	2.83	25.6	36.2	4.0	3.8	4.6	5.1	9.5	9.6	93.0	138.7
	Agriculture	2.78	-0.18	108.7	100.4	2.0	1.6	9.9	5.8	3.9	2.9	74.8	100.8
	Accommodation & Food	2.77	3.60	11.3	17.3	2.2	2.3	1.1	1.5	1.3	1.4	23.8	33.8
	Information	2.56	3.48	28.8	44.5	1.7	2.2	2.2	3.6	3.2	4.0	71.7	98.6
	Business Services	1.70	2.36	25.7	34.8	5.1	6.0	5.9	7.7	6.9	7.1	52.6	65.1
	Energy	1.58	-0.66	51.0	41.7	1.1	1.2	2.5	1.9	3.8	3.5	135.8	153.6
		TOTAL					60.9	56.8	56.3	62.6	61.8	71.0	
STAGNANT SECTORS	Retail	0.72	2.28	12.1	16.1	9.7	9.1	5.3	5.3	9.5	6.9	38.4	41.8
	Education & Health	1.21	0.97	22.7	25.9	12.2	15.3	12.5	14.4	8.8	9.2	28.2	33.2
	Public Services	0.39	0.24	30.7	31.6	8.0	8.6	11.0	9.9	6.9	5.6	33.9	35.6
	Warehousing & Transportation	-0.77	-1.93	20.0	13.8	6.1	6.8	5.4	3.4	5.7	3.7	36.5	30.1
	Mining	-3.03	-4.91	84.8	36.8	2.1	2.0	8.2	2.7	5.6	2.4	102.9	64.3
	Water & Sewerage	-1.22	-2.02	29.3	21.5	1.0	1.2	1.3	0.9	1.5	1.1	59.1	48.5
		TOTAL					39.0	43.0	43.7	36.8	38.1	28.8	

A movement of workers towards low wage-low productivity growth sectors took place mostly due to the increase in unregulated temporary employment contracts – most contracts were not bound to the minimum wage (Lewandowski and Magda, 2018). Compared to Germany, in 2014 stagnant sectors’ shares in output (28.8 percent) and employment (43 percent) were much lower indicating that the dual economy (the low-wage, low-productivity economy) was smaller even though it was growing. Moreover, unlike in other countries, some dynamic sectors still contributed to overall employment growth. As in Czech Republic, manufacturing had the highest shares in total value added (20.3 percent) and employment (24.2 percent) in 2014. Its employment share was quite stable around 24 percent, whereas its share in value added and wages almost doubled by the end of the period, following Poland’s rapid industrialization.

As Figure 5 shows, most stagnant sectors had negative or slow wage and productivity growth. The dynamic sectors, on the other hand, had much higher productivity and wage growth mostly accompanied by higher wages and productivity levels¹⁴. Some dynamic sectors – manufacturing, construction, accommodation and food and other services – had lower productivity levels than others but their productivity growth rates were among the highest (Table 9). However, with a few exceptions – such as construction, accommodation and food, information, wholesale and retail – real wage growth lagged behind productivity growth in almost all sectors. As a result, the profit share grew rapidly between 2001 and 2005 and stabilized at a high level in 2014, indicating an increase of inequality.

Figure 5: Productivity Growth vs. Real Wage Growth, Poland



In sum, In Poland, the relative size of the stagnant economy increased but its shares in total employment and value added remained low, making economic duality less severe than in other countries. In addition to high productivity growth, high and increasing shares of manufacturing in total value added and employment point to strong industrialization. The similarity with Czech Republic is clear (see Appendix). The difference is that in Czech Republic inequality decreased, while in Poland it continued to increase.

ARGENTINA

The WIOD Socio-Economic Accounts (SEA) does not provide industry-level data for Argentina. Instead, we used data from the Groningen Growth and Development Centre (GGDC) at the 12-sector disaggregation level, which only includes sectoral value added and employment data for the

¹⁴ This is true for each dynamic sector except agriculture and energy, which had negative wage growth. They were included in the dynamic sectors because they had the highest productivity levels after FIRE, and higher productivity growth rates than all the stagnant sectors.

period of 2000-2018. Argentina's output per capita and productivity grew around 3 percent and 1.7 percent per year respectively until 2012. After 2011, both slowed down sharply. Annual real GDP per capita grew around 0.9 percent, while productivity per employee was -0.16 percent on average between 2000 and 2018.

Stagnant sectors – wholesale-retail-accommodation and food, public services, business services, financial services, real estate, construction and mining– had lower (or negative) productivity growth and levels than the dynamic sectors –agriculture, transportation-storage and communication, utilities, manufacturing, and other services (Table 10). As in Brazil and Turkey, the stagnant sectors' employment share went up by more than 7 percentage points—from 58.3 percent in 2000 to 65.6 percent in 2018. In the same period, their share in total value added dropped by 0.3 points—from 56.6 percent to 56.3 percent, explaining the declining productivity and economic slowdown. In Argentina there was a strong shift from dynamic sectors to more stagnant sectors. As in Germany Italy, Turkey and Brazil, the stagnant sectors' share in total value added was relatively high around 56 percent in 2018. Manufacturing had the largest share in total value added (27 percent), while its share in employment declined by 1.7 percent —from 12 percent in 2000 to 9.8 percent in 2018. Public services, on the other hand, had the largest share in total employment (26 percent) in 2018. On average, employment growth was 1 percent per year. All jobs created in stagnant sectors. Between 2000-2011, high productivity growth contributed to output growth and pushed surplus labor toward stagnant sectors. After 2012, declining productivity was the main driver of employment creation in the stagnant zone.

Income inequality in Argentina declined after 2002 (as in Czech Republic, Italy, France and Brazil). According to Judzik et al (2017), throughout the era of the Convertibility Plan (1996-2002), inequality in Argentina increased due adoption of macroeconomic reforms which included fixed exchange

Table 10: Summary Data, Argentina

Sectors (Argentina)		Productivity Growth per employee (%)	Employment Share in Total (%)		VA Share (%)		Productivity Level per employee (LCU)	
		AVG	2000	2018	2000	2018	2000	2018
DYNAMIC SECTORS	Agriculture	2.42	8.03	5.14	6.1	5.8	365353.5	519687.5
	Transportation & Storage & Communication	2.01	7.82	6.14	4.8	5.4	295370.1	407226.3
	Utilities	1.62	1.67	1.51	1.4	1.6	411909.1	490081.2
	Manufacturing	0.68	11.58	9.80	27.3	27.1	1140056.8	1273963.6
	Other Services	0.27	12.62	11.82	3.8	3.9	146755.2	150786.5
	TOTAL			41.7	34.4	43.4	43.7	
STAGNANT SECTORS	Wholesale-Retail-Accommodation & Food	0.12	18.8	19.0	14.6	15.3	376380.0	372763.1
	Public Services	0.12	22.6	25.9	13.4	16.2	287295.2	288280.8
	Business Services	-0.69	9.6	10.7	10.3	10.1	519193.3	436348.5
	Financial Services	-1.11	1.4	1.5	4.4	3.9	1575549.0	1222876.0
	Construction	-1.48	5.2	7.5	5.2	5.4	486818.0	331295.5
	Real Estate	-3.15	0.7	0.8	3.8	2.3	2640384.9	1414816.1
	Mining	-5.35	0.2	0.3	4.8	3.1	13747149.5	4616595.9
	TOTAL			58.3	65.6	56.6	56.3	

rates, trade openness, deregulation of labor and financial markets, and privatization. The Gini coefficient rose to 56 percent in 2002. After 2002, a new macroeconomic regime with more progressive market and social protection institutions was implemented. The minimum wage was increased, collective bargaining sustained, increases in retirement benefits guaranteed by law, and conditional transfer programs for the most vulnerable groups were strengthened (Judzik et. al, 2017). The Gini coefficient declined but remained high at 42 percent after 2013. According to Grana (2018) productivity in Argentina slightly lagged behind increasing wages, especially in the manufacturing sector. This trend has lowered profits and alleviated income inequality but low productivity growth in manufacturing sector set a limit to further wage increases.

In summary, Argentina grew faster than the developed countries in our sample between 2000 and 2011, but slowed down after 2012. The relative size of the stagnant sectors remained high and reverse duality was strong. Moreover, manufacturing's share of employment declined and its productivity growth remained lower than in most other countries. To achieve successful industrialization and gain competitive strength, Argentina will have to raise productivity and improve job and output creation in manufacturing-related dynamic sectors.

BRAZIL

Between 2000 and 2014, real GDP per capita grew around 2.9 percent on average, while (hourly) productivity growth for the same period was 1.8 percent. This resulted in faster job creation, mostly in stagnant sectors. In addition, real wages increased 3 percent on average, almost twice as fast as productivity growth. Brazil's profit share declined from 50 percent in 2000 to 45 percent in 2014 as wages grew more rapidly than the productivity.

The similarity with Argentina extends to the role of manufacturing. Productivity and productivity growth (0.89 percent) in manufacturing were lower than in many other dynamic sectors and some stagnant sectors. Additionally, its shares of employment (12 percent) and value added (13.69 percent) were among the lowest in 2014, along with France and Argentina. These features make Brazil's manufacturing more a stagnant sector than a dynamic one. However, given its traditional role as the engine of productivity and growth, we listed it among dynamic sectors. In the period we examined dynamic sectors in Brazil consisted of energy, mining, information, FIRE, agriculture, accommodation and food, and manufacturing while stagnant sectors included public services, retail, wholesale, water & sewerage, warehousing & transportation, education & health, and other services. As in most other countries, the dynamic sectors – excluding agriculture, business services and accommodation and food – generally paid higher wages than stagnant sectors. Moreover, real wages grew faster in dynamic sectors.

According to Table 11, stagnant sectors' share of total wages decreased from 60.7 percent to 54.10 percent while their employment share increased from 47.5 percent in 2000 to 54.5 percent in 2014. As mentioned earlier, these trends point to strong wage retardation in stagnant sectors. On the other hand, the dynamic sectors' employment share declined from 43.12 percent to 38.28 percent, while their share in total wages increased from 38 percent to 43 percent, meaning that workers in more dynamic sectors enjoyed relatively higher wages.

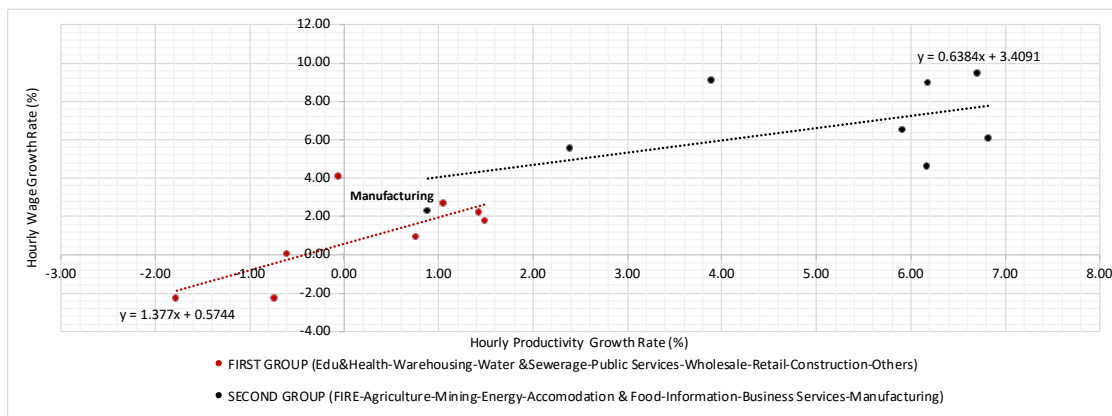
In Brazil too workers moved from dynamic to stagnant sectors. However, as in France, Italy and Czech Republic, average real wage growth was stronger than productivity growth. This resulted in a visible decline in inequality and lowered the Gini coefficient from 58 percent in 2000 to 53 percent in 2014.

Most dynamic sectors had above-average productivity levels and productivity growth rates, while stagnant sectors clustered around low (or negative) productivity growth rates and below-average productivity levels (Figure 6). Among dynamic sectors, agriculture, information and business services had relatively low productivity and end-of-period real wages, but experienced significant

Table 11: Summary Data, Brazil (2000-2014)

Sectors (Brazil)		Hourly Productivity Growth (%)	Hourly Real Wage Rate Growth (%)	Real Hourly Wage Rate (LCU)		Employment Share in Total (%)		Wage Shares in Total (%)		VA Share (%)		Productivity Level Hourly (LCU)	
		AVG	AVG	2000	2014	2000	2014	2000	2014	2000	2014	2000	2014
DYNAMIC SECTORS	Energy	6.83	6.02	21.11	36.26	0.41	0.19	1.15	0.68	2.30	1.35	81.02	132.04
	Mining	6.71	9.45	19.91	46.25	0.40	0.27	1.04	1.23	3.51	3.48	127.91	240.13
	Information	6.19	8.92	9.26	16.92	1.93	1.55	2.34	2.55	3.36	3.15	25.40	38.23
	FIRE	6.18	4.54	17.50	31.43	1.93	1.77	4.42	5.41	10.74	17.20	81.14	182.77
	Agriculture	5.91	6.47	3.18	6.82	14.44	8.56	6.03	5.68	5.00	5.02	5.04	11.02
	Business Services	3.90	9.05	3.90	9.30	6.89	8.89	3.53	8.04	5.52	8.34	11.66	17.62
	Accommodation & Food	2.40	5.51	2.29	4.26	5.06	4.85	1.52	2.01	2.06	2.06	11.66	7.96
	Manufacturing	0.89	2.21	11.35	14.70	12.07	12.19	18.00	17.44	16.23	13.69	19.56	21.09
	TOTAL						43.12	38.28	38.04	43.05	48.73	54.29	
STAGNANT SECTORS	Public Services	1.50	1.73	24.96	25.55	5.44	5.70	17.84	14.17	11.70	9.35	31.29	30.82
	Retail	1.43	2.20	5.34	6.19	8.73	8.98	6.13	5.41	6.20	5.85	10.34	12.23
	Wholesale	1.05	2.61	4.70	6.05	10.35	8.90	6.39	5.24	7.36	5.51	10.34	11.63
	Water and Sewerage	0.77	0.88	29.21	10.68	0.14	0.60	0.55	0.63	0.57	0.78	57.93	24.48
	Warehousing & Transportation	-0.59	-0.03	14.72	13.50	3.25	4.21	6.29	5.53	5.03	4.48	22.49	19.98
	Education & Health	-0.73	-0.03	15.73	15.19	8.16	10.42	16.85	15.41	10.58	9.35	18.87	16.85
	Construction	-0.05	4.03	4.31	6.13	7.54	10.11	4.27	6.03	7.17	6.54	13.83	13.26
	Other Services	-1.77	-2.30	4.66	3.08	3.91	5.64	2.39	1.69	2.00	1.70	7.45	5.66
	TOTAL						47.53	54.55	60.69	54.10	50.61	43.56	

Figure 6: Productivity Growth vs. Real Wage Growth, Brazil



productivity and real wage increases. Manufacturing had strikingly low productivity level and productivity growth. FIRE, on the other hand, played a significant role in Brazil. Its share in value added (17 percent) was the highest in 2014, far higher than manufacturing. Furthermore, its productivity level was one of the highest and grew rapidly. Additionally, it paid much higher wages than most other sectors, although its share of total wages and employment remained small. The declining economic role of manufacturing sector combined with a thriving FIRE sector, points to a period of strong deindustrialization in Brazil, likely due to the rapid financialization, and liberalization in trade.

Brazil exhibited a familiar pattern. High and increasing employment shares in stagnant sectors point to increasing duality with workers moving from high productivity-high wage growth dynamic sectors towards low-productivity-low-wage growth stagnant sectors. Most dynamic sectors and some stagnant sectors in Brazil experienced higher real wage growth than productivity growth, leading to higher labor share and a reduction of inequality by 2014 (as in France, Italy and Czech Republic). According to Marquetti et al. (2019), redistributive policies implemented in 2003-2010 played a significant role in this outcome. Cash transfer programs directed towards the poor, improved minimum-wage policy, and the “Growth and Acceleration Program” launched in 2007 improved the bargaining power of workers and consumption. This led to economic growth and growing profits although profits’ share in total income fell. As a result, Brazil managed to grow by “unifying different groups with different interests” and inequality declined (Marquetti, 2019). However, these improvements didn’t prevent reverse economic duality. In fact, manufacturing’s competitiveness declined especially between 2002 and 2007. By 2014, it had the lowest shares in employment and value added, coupled with low productivity level and growth (as in Argentina and France). This retreat of manufacturing and the increasing share of FIRE in employment, value added and profits, provide evidence for strong deindustrialization. Increased financialization and trade liberalization were among the main forces pushing manufacturing into the stagnant zone.

TURKEY

Between 2000 and 2014, average annual real output per capita growth in Turkey was around 4.5 percent, while average annual productivity (per hour) was approximately 3 percent. As a result, employment grew at around 1.4 percent per year (the second highest after Argentina). On the other hand, economy-wide real wage growth (per year) was only 0.7 percent. The gap between wage and productivity growth points to strong wage repression and increasing inequality. Turkey not only had the highest output and productivity growth, but also one of the highest increases in inequality.

The dynamic sectors included manufacturing, wholesale, retail, warehousing and transportation, business services and information, while the stagnant sectors consisted of agriculture, public services, education and health, mining, energy, accommodation and food, water and sewerage, FIRE, construction and other services. Manufacturing’s share of total value added increased but remained low (around 17 percent) compared to other industrialized and industrializing countries. Its employment share was the highest among all sectors but fell from 29 percent in 2000 to 25 percent in 2014.

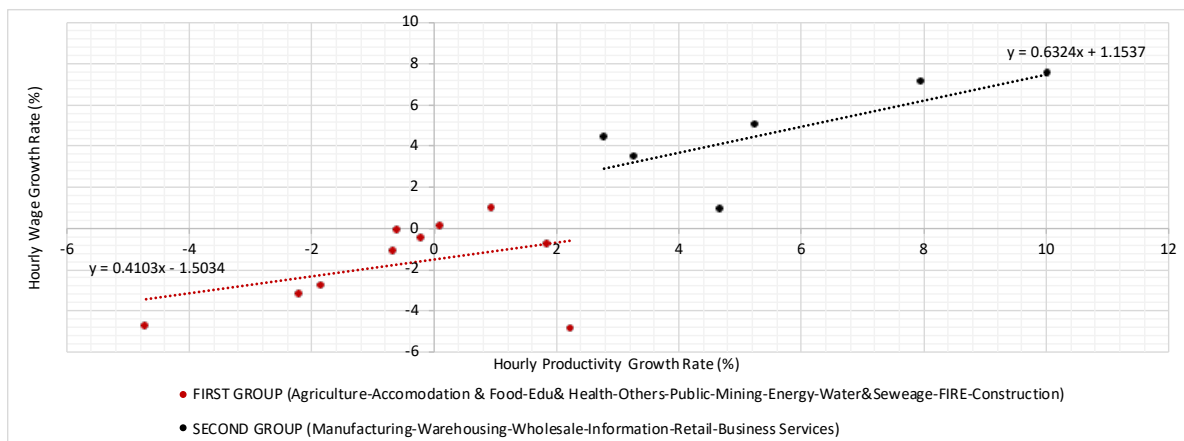
As Table 12 shows, the employment share of the stagnant sectors increased from around 45.2 percent, while their share in total wages fell from 71.1 percent to 57 percent. Their share in total value added also fell from 58.4 percent to 47 percent. Clearly, Turkey’s economic duality also deteriorated. A strong decline of the wage share and an increasing employment share of the stagnant sectors point to strong wage repression. The shift of workers toward low-productivity-low wage growth sectors was more pronounced than in other countries of our sample.

Based on Figure 7, stagnant sectors represented in the first group had much lower (or negative) real wage and productivity growth than the dynamic sectors in the second group. Real wages lagged

Table 12: Summary Data, Turkey (2000-2014)

Sectors (Turkey)		Hourly Productivity Growth (%)	Hourly Real Wage Rate Growth (%)	Real Hourly Wage Rate (LCU)		Employment Share in Total (%)		Wage Shares in Total (%)		VA Share (%)		Productivity Level Hourly (LCU)	
		AVG	AVG	2000	2014	2000	2014	2000	2014	2000	2014	2000	2014
DYNAMIC SECTORS	Information	10.03	7.50	5.5	13.7	1.4	1.4	0.7	1.6	1.0	2.4	16.8	54.2
	Manufacturing	5.25	5.03	4.6	8.7	29.9	25.2	12.5	18.3	14.9	17.8	11.2	22.2
	Wholesale	2.78	4.42	4.4	7.6	12.0	9.1	4.9	5.7	9.2	6.9	17.3	23.9
	Retail	3.29	3.47	8.8	12.0	5.7	4.1	4.6	4.1	6.8	5.1	27.0	39.4
	Warehousing & Transportation	7.97	7.08	12.1	29.0	4.7	4.0	5.2	9.7	8.1	13.5	38.9	105.8
	Business Services	4.70	0.93	10.4	10.9	0.8	3.1	0.8	2.8	1.5	7.0	42.1	72.0
	TOTAL						54.5	46.9	27.9	40.7	40.5	50.4	
STAGNANT SECTORS	Agriculture	0.10	0.10	80.8	76.7	3.9	3.2	28.8	20.4	15.5	8.6	89.8	85.3
	FIRE	2.23	-4.88	10.1	4.7	3.6	5.8	3.4	2.3	11.5	14.5	71.2	78.4
	Construction	1.85	-0.77	5.0	4.1	10.6	10.2	4.8	3.5	5.9	4.7	12.6	14.6
	Public Services	0.94	0.96	13.5	15.1	11.9	9.6	14.8	12.0	7.5	4.8	14.2	15.8
	Education & Health	-0.66	-1.09	13.6	11.4	8.5	11.8	10.6	11.2	6.7	5.9	17.8	15.8
	Mining	-0.19	-0.54	35.3	27.1	0.7	0.8	2.2	1.8	2.4	1.7	78.6	64.4
	Energy	-2.19	-3.18	20.1	10.4	0.6	1.0	1.1	0.9	2.3	1.7	85.7	53.0
	Accommodation & Food	-4.71	-4.79	9.0	3.8	3.4	6.7	2.8	2.1	4.0	2.6	26.7	12.2
	Other Services	-0.59	-0.09	14.8	10.1	1.8	2.9	2.4	2.4	1.9	1.5	23.5	16.2
	Water and Sewerage	-1.85	-2.84	19.5	10.8	0.2	0.4	0.4	0.4	0.9	0.8	83.2	54.8
	TOTAL						45.2	52.4	71.3	57.0	58.4	46.9	

Figure 7: Productivity Growth vs. Real Wage Growth, Turkey



behind productivity growth in all sectors. All these results signal increasing exploitation in the labor market. Although real wages in dynamic sectors grew more rapidly than in stagnant sectors, some – such as manufacturing and wholesale – paid much lower wages than the stagnant sectors. As a result, the share of total wages in value added fell from 42 percent in 2000 to 38 percent indicating severe inequality. Consistently, the Gini coefficient for Turkey increased from 38 percent to 42 percent between 2006 and 2014.

In summary, Turkey had the highest output, and productivity growth rates among the countries in our sample and generated the second-largest employment increase (after Argentina). However, the gap between real wage and productivity growth was much bigger in Turkey than in other countries, which made the increase of inequality more severe. Some critical dynamic sectors such as manufacturing and information featured lower wages than stagnant sectors. As a result, the size of the stagnant sectors increased more than in other countries with the help of increasing exploitation and stronger wage repression. Increasing capital inflows, large scales of privatization and exploitation of labor (increasing profitability for businesses), are the best candidates to explain the observed productivity and output increases, and deindustrialization along with increasing inequality in Turkey—not the technological or structural change.

CONCLUSION

The EU-MERCOSUR agreement is set to tie together two economic regions that are facing profound changes. The major economies are all experiencing a relative downsizing of the most dynamic sectors of activity and a relative expansion of the most stagnant ones. As a result, productivity growth has already slowed down and threatens to lead to a deterioration of income distribution. Trade liberalization is likely to accelerate these transformations unless appropriate policies for investment and domestic demand support are implemented.

Free trade agreements often fail to generate productivity and output growth (Storm, 2017; Raza et al., 2014), as well as technology transfer. This is because the emergence and expansion of dynamic activities is not a natural outcome in any economy and is often fraught with obstacles in open economies. It generally requires active technological and domestic financial transformation (Ocampo, 2004, 2009).

Even though these inadequacies can emerge both in developing and developed countries, they are more likely to occur in developing countries as trade liberalization leads to specialization in more stagnant sectors. The EU-MERCOSUR agreement is projected to lead to a similar pattern with Argentina and Brazil exporting more beef and dairy products and other less sophisticated primary goods.

High-productivity sectors in EU countries may benefit in principle from access to MERCOSUR markets. But the adverse structural transformation that the agreement is likely to accelerate in these countries will undermine the growth of their domestic demand, including for imports. While the export boost is projected to be marginal and short-lived, high-end economic output in the EU is unlikely to expand substantially while stronger cost competition in more stagnant sectors is likely to undermine their wage and productivity growth, ultimately compromising economy-wide demand expansion and leading to a deterioration of income distribution. The current trend toward widening economic duality in all countries of our sample, coupled with the historical retreat of public investment and industrial policy, is a conduit to adverse structural change and an accelerator of the global race to the bottom in labor costs. Additionally, unless the agreement includes binding commitments on environmental policy, it is likely destined to contribute to environmental degradation reinforcing climate change's impact on inequality. In this context, more trade liberalization may well be a step

toward less productive, more unequal and more vulnerable economies. These risks may materialize or not, but they are assumed away in existing assessments of the agreement based on global trade models.

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APPENDIX: DECOMPOSITION OF PRODUCTIVITY, EMPLOYMENT AND PROFIT GROWTH

This section provides more information about our decomposition analysis and complements to our main findings presented in Section 4. For each country, we look at sectoral-level data on productivity, productivity growth, employment, wages and profits, then decompose changes in productivity, employment and profits into different components. We distinguish between “stagnant” and “dynamic sectors” based on productivity growth.

Interdependent movements in employment, productivity and wages determine critical changes. While productivity and wages adjust to imbalances in employment, productivity growth creates a force to increase output that can be distributed to higher profits or wages. If productivity grows more rapidly than real wages, the share of profits in total value added is increasing. This, in turn, determines the distributional dynamics, as pointed out in several studies (Storm, 2017a; Taylor, 2020; UNCTAD, 2020) and rising income and job polarization. The two diseases have a common root in the demand shortfall, originating from the ‘unbalanced’ growth between technologically ‘dynamic’ and ‘stagnant’ sectors. In order to understand these dynamics, we use a decomposition technique employed by Taylor and Omer (2019, 2020).

The analysis is centered on decompositions of productivity, the employment rate and the profit share. The decompositions help trace the factors that we believe explain changes in the three variables, but they do not impose any behavioral assumptions.

The decomposition of productivity starts with observing that

$$(Labor)Productivity = \frac{Real\ Output}{Employment}$$

Higher productivity growth (real output per hour or per employee) could be attained either by employing more efficient production techniques or greater exploitation of labor in the workplace. Slower labor productivity and wage growth create a channel to replace surplus labor generated by the imbalances between dynamic and stagnant sectors. It also plays an important role in distribution of income. If real wages grow less rapidly than the labor productivity, the profit share increases. We distinguish each sectors’ observed productivity growth into two components: the sector’s “own” productivity growth measures improvements in productivity that would have taken place if the sector’s employment had not changed; the “reallocation effect measures the change in productivity resulting from movements of workers between sector.¹⁵

Shifts in productivity have strong linkages with employment growth. Our key employment variable is the employment rate, which gives a better sense of the state of the labor market than sheer employment and allows more meaningful international comparisons:

$$\frac{Employment}{Population} = \frac{\left(\frac{Output}{Population}\right)}{\left(\frac{Output}{Employment}\right)} \text{ or } Employment\ Ratio = \frac{Output\ per\ capita}{Productivity}.$$

We decompose the growth rate of the employment share into two factors: the weighted average of the growth rates of sectoral outputs per capita and the weighted average of the growth rates of productivity. Their difference measures employment share growth. While increasing growth rate of

¹⁵ For example, an increase in employment in a high productivity sector increases economy-wide productivity growth. A decrease in employment in a low-productivity sector leads to lower productivity because labor is less utilized. The sum of these two effects is positive, indicating that labor transferred from low to high productivity employment, driving up economy-wide productivity. See Ocampo et. al., (2009); Pieper (1999); Taylor and Omer (2019, 2020) for details.

sectoral output per capita growth (demand growth) has a positive impact on job creation, positive productivity growth leads to job losses.

In order to understand which sectors are the drivers of the observed profit share changes, the economy-wide profit share growth is decomposed into a weighted average of sectoral productivity growth, wage growth and demand growth effects. Positive growth of productivity and demand has a positive impact on profit share growth, while increasing wages causes the profit share to decline.

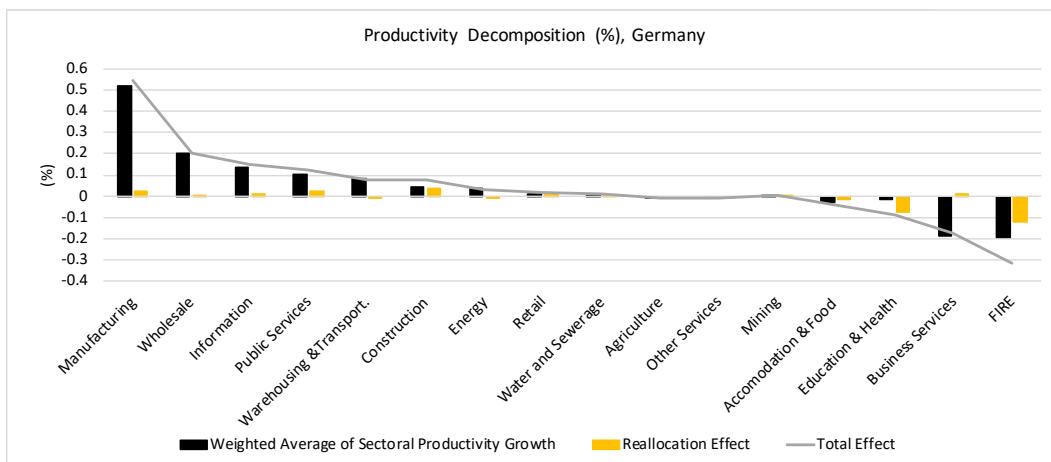
We use data from the latest World Input-Output Database Socio-Economic Accounts (WIOD-SEA) and, for Argentina, from the Groningen Growth and Development Centre. The data cover the period 2000-2014 (2000-2018 for Argentina).

When considering changes in wage shares it is important to note that every database, including WIOD, makes assumptions on how income accrues to labor and capital. While in some cases, incomes can be clearly classified as coming from work of capital ownership, in some others the distinction is more arbitrary. This is especially true for income accruing to unincorporated enterprises, or mixed income, which often reflects a remuneration for the proprietors' work and sometimes an estimate of the informal economy. The transition away from dependent employment and toward the "gig economy", where employees formally become independent contractors, implies that income that was once accounted for as wages is now accounted for as mixed income. Depending on how mixed income is divided between wages and profits, a contraction of workers-contractors' incomes during a recession may appear as fall of the labor share or the profit share. This may help explain why in countries such as Italy, with low productivity growth and a fast-shrinking industrial sector, the wage share appears to have increased.

Germany: Productivity Decomposition

Average hourly productivity growth in Germany was negligible in 2000, around 0.7 percent, and declined over the period. Keeping this in mind, Figure 8 presents sectoral contribution to productivity growth in 2000-2014. Our results show that dynamic sectors with high own productivity growth; mainly manufacturing, wholesale, information, warehousing and transportation and public service sectors, were the main source of productivity increase in Germany. In addition to having the largest share in in total value added, employment and real wages in 2014, manufacturing had the highest

Figure 8: Productivity Growth Decomposition, Germany (2000-2014)



productivity growth. Without manufacturing's contribution, productivity growth in Germany would have plummeted.

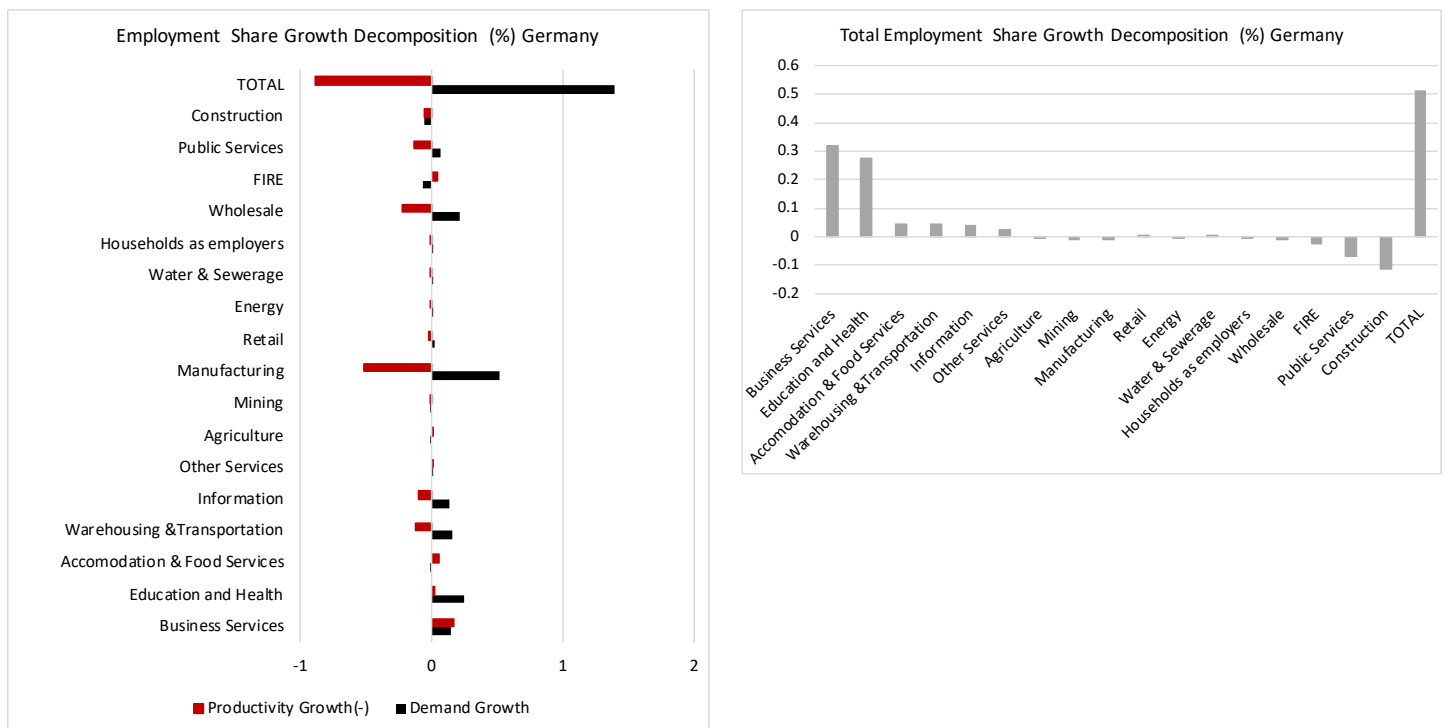
Stagnant sectors such as FIRE, business services and education and health, on the other hand, have been largely responsible for the productivity slowdown. FIRE and water and sewerage had higher end-of-period productivity levels than the manufacturing sector. Additionally, some of the stagnant sectors – FIRE, education and health, business services – also had large shares in total value added (17 percent, 11 percent and 10 percent respectively). However, their large negative own-productivity growth rates and negative reallocation effects had the biggest impact on the economy-wide-productivity slowdown.

In most sectors, within-sector productivity growth and reallocation effects were either both positive, or both negative. Overall, reallocation was a much smaller component of the change in productivity growth than within-sector productivity growth.

Germany: Employment Decomposition

Figure 9 presents sectoral contributions to overall employment share growth. According to data, stagnant sectors such as business services, education and health, and accommodation and food, were the main source of job creation due to negative productivity growth and large increases in their demand per worker. Some dynamic sectors such as warehousing and transportation and information also had a smaller but positive effect on employment growth, mostly due to high demand for their services. Manufacturing sector, on the other, had the largest demand component but its high productivity growth rate outstripped its demand growth by preventing it from creating new jobs. The biggest job losses occurred in FIRE, public services and construction. Information and warehousing

Figure 9: Employment Growth Decomposition, Germany (2000-2014)



and transportation sectors played some role in contributing to both economy-wide productivity and employment growth by complementing the manufacturing sector.

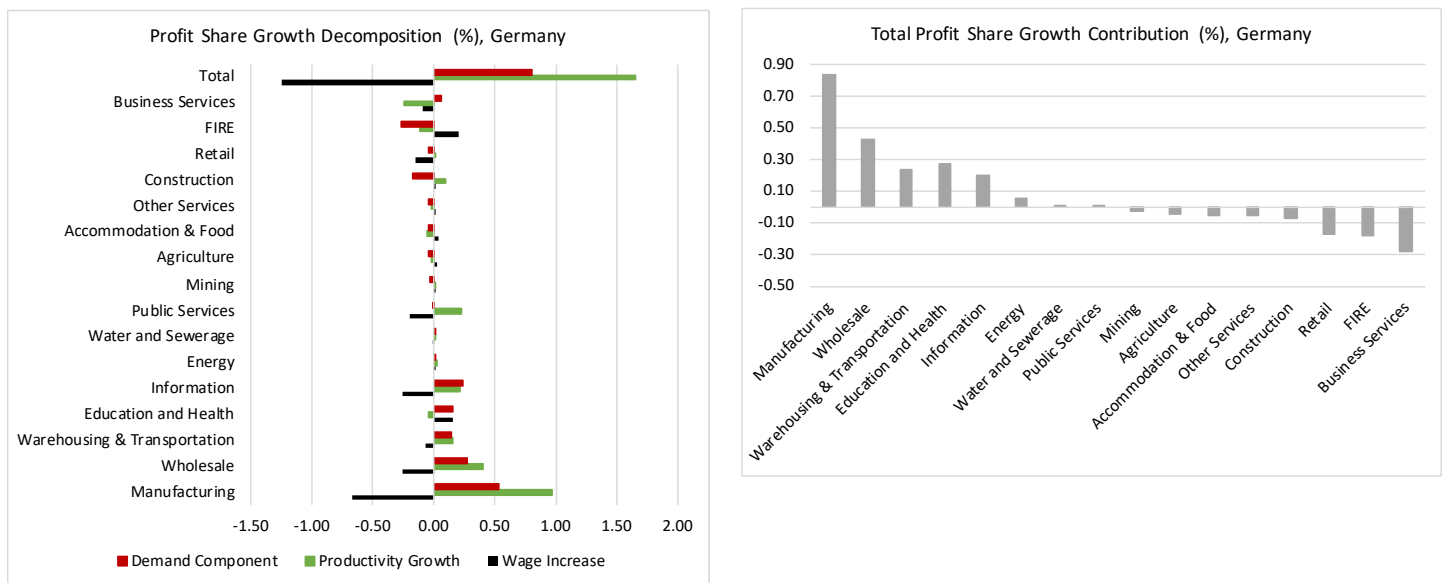
In general, in dynamic sectors productivity growth followed from output growth (a manifestation of the Kaldor-Verdoorn law) quickly outweighing employment creation. This pattern does not appear as clearly in stagnant sectors.

Germany: Profit Share Decomposition

The profit share of total value added was approximately 35 percent in 2000. It rose to 41 percent in 2006 and stabilized at around 38 percent in 2014. In terms of levels, FIRE, manufacturing, business services and information provided approximately 26 percent of total value added with substantial profits.

Manufacturing, wholesale, warehousing and transportation, and information played the main role in rising economy-wide profits (Figure 10). Although they featured the highest real wage increases (showing as negative bars in the chart as they reduced profits), strong productivity growth and substantial demand shifts in these sectors contributed to economy-wide profit share growth. In addition, education and health (a stagnant sector) also contributed to increasing profits through declining wages and a positive demand shift. The rest of the stagnant sectors had falling shares in total profits. For example, the business services sector cut into total profits as a result of increasing wages and falling productivity. In the FIRE sector, falling wages contributed to profits, but the negative productivity growth with a large negative demand shift had a stronger effect, which negatively contributed to the overall profit share. Rising wages and a small, but negative, demand shift eroded profits in retail.

Figure 10: Profit Share Growth Decomposition (%), Germany (2000-2014)

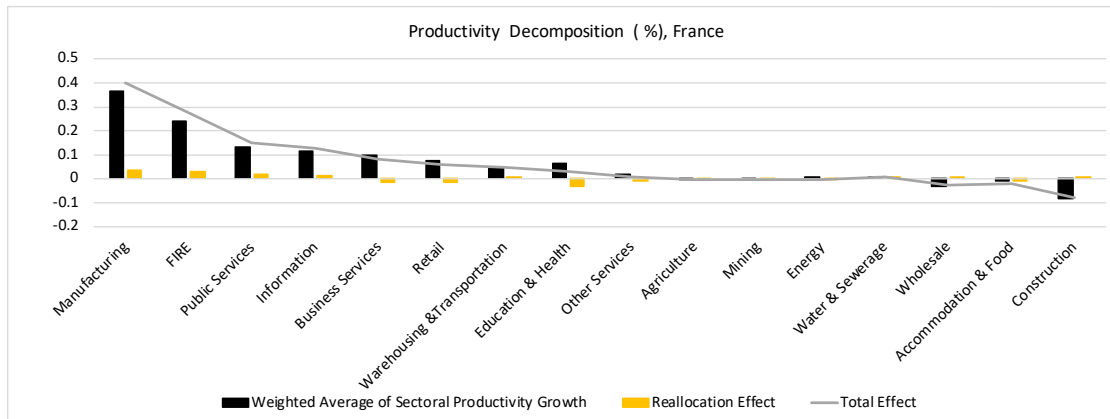


In general, in sectors where wage growth took a large toll on profits, productivity growth was stronger. In these sectors the profit share grew mostly through productivity growth, not wage repression. By contrast, in sectors where wage repression did happen, productivity growth did not contribute or contributed negatively to profit share growth.

France: Productivity Decomposition

The sectoral pattern of productivity growth in France was more even than elsewhere. Most dynamic sectors contributed to productivity growth while most stagnant sectors experienced falling productivity, albeit to a negligible degree. Manufacturing, FIRE, public services and information experienced particularly high productivity growth. Construction, wholesale and accommodation and food featured the largest productivity contraction. In general, reallocation effects were small and balanced each other out (Figure 11) so most productivity changes were driven by within-sector productivity.

Figure 11: Productivity Growth Decomposition (%), France (2000-2014)



France: Employment Share Decomposition

The employment rate fell slightly as sustained productivity growth more than offset the slow expansion of demand. Manufacturing, warehousing and wholesale were the main drivers of the decrease. In manufacturing and warehousing, two dynamic sectors, this occurred as positive output growth was more than offset by fast productivity growth. By contrast, in wholesale - a stagnant sector - productivity contracted but a fall in demand more than offset the positive impact on employment. The fall of the employment rate was contained mostly by increases in education and health and business services, quintessential stagnant and dynamic sectors respectively. In both sectors, relatively strong demand expansion was accompanied by positive productivity growth that partially offset the positive impact on the employment rate (Figure 12).

France: Profit Share Decomposition

The profit share decreased by 4 percentage points approximately, as wage growth outstripped productivity growth on average. Demand expansion had a positive but minimal effect overall. Similar to Italy, half of profits were generated in two sectors: FIRE (39 percent) and manufacturing (11 percent).

Most of the profit share contraction happened in wholesale, construction and manufacturing, with the latter the only dynamic sector. In wholesale demand contraction, negative productivity growth and wage gains all contributed to driving down the profit share. In construction wage repression pushed productivity up but falling demand and negative productivity outweighed it. In manufacturing the demand effect was negligible while relatively strong wage growth outweighed positive productivity growth.

The fall of the profit share was contained mostly by education and health, FIRE and information. In all three, moderate wage growth was outweighed by increasing demand and negative productivity growth.

Figure 12: Employment Share Growth Decomposition (%), France (2000-2014)

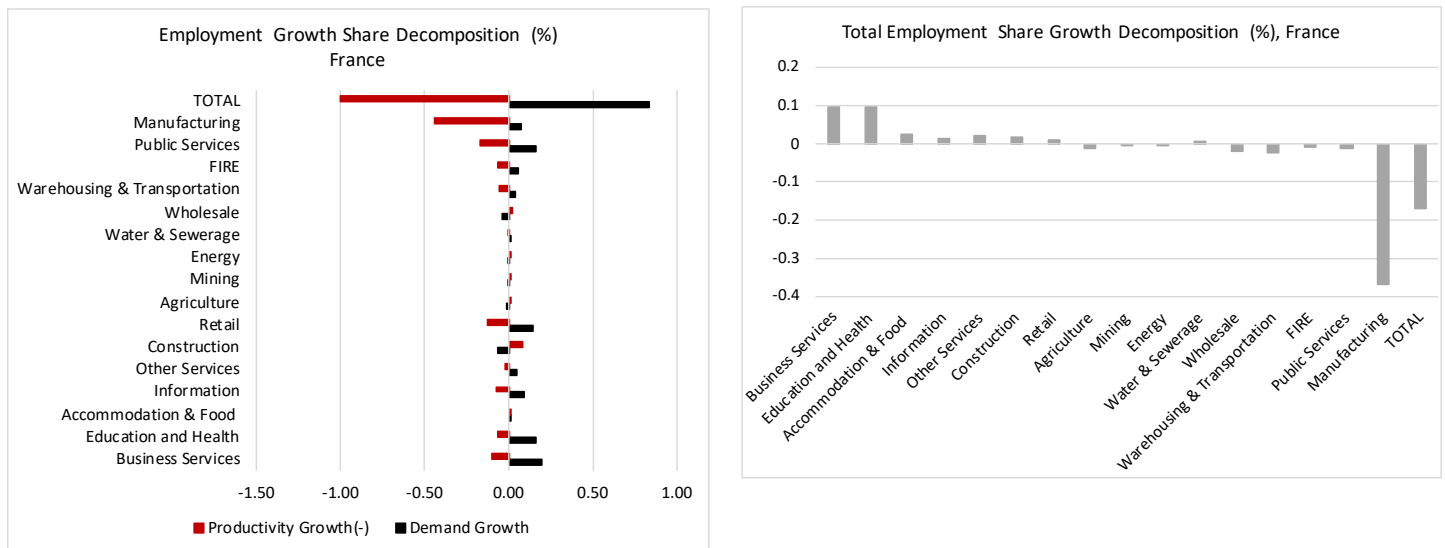
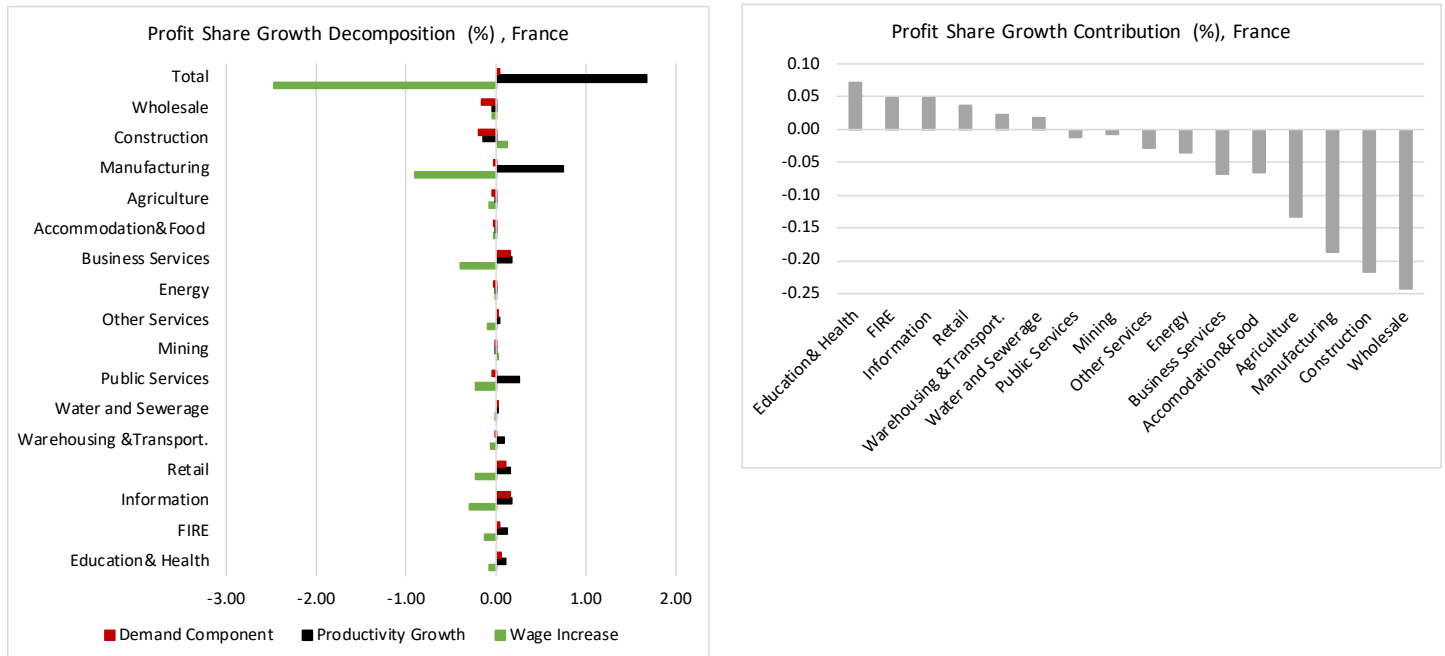


Figure 13: Profit Share Growth Decomposition (%), France (2000-2014)

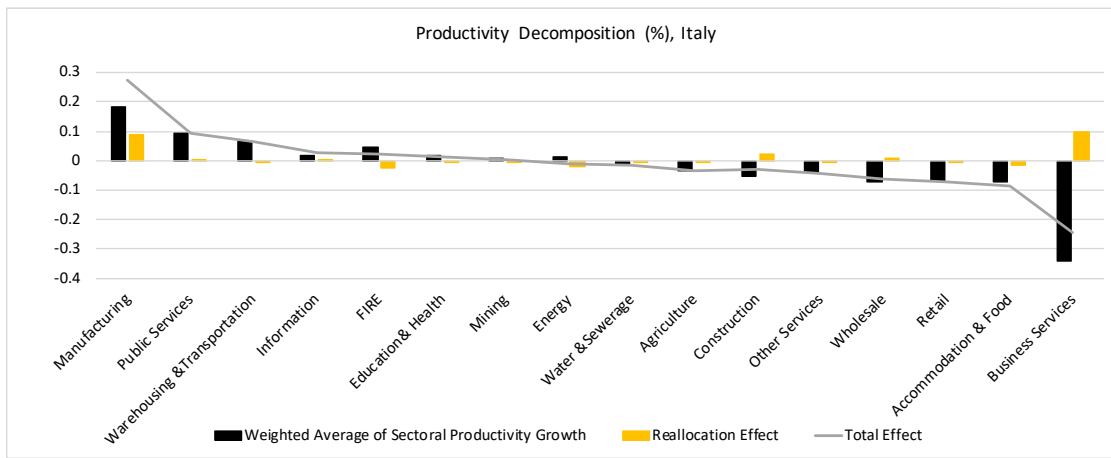


Italy: Productivity Decomposition

Negative productivity growth was the result of a familiar cyclical pattern with a downward trend: after contracting for years productivity increased during the Great Recession then turned back again. Business services, accommodation and food, retail, domestic employment and wholesale, all stagnant sectors, drove most of the contraction in productivity. Manufacturing, public services and warehousing prevented it from plummeting (Figure 14).

Reallocation effects were significant only in manufacturing, business services and domestic employment. They were positive for manufacturing and business service and negative for domestic employment. Overall, the main drivers of the contraction of productivity were sectors' own productivities, while reallocation effects acted as a partial counterweight.

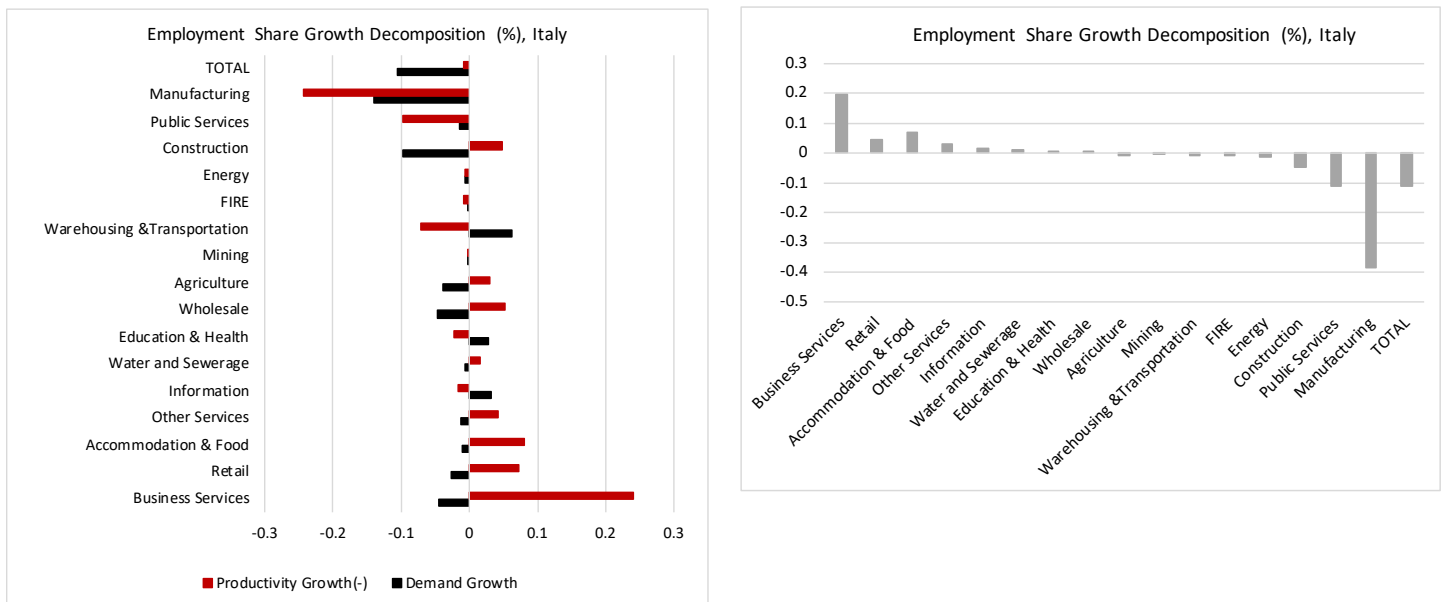
Figure 14: Productivity Growth Decomposition (%), Italy (2000-2014)



Italy: Employment Share Decomposition

The employment rate contracted slightly because of the combined action of employment creation in the stagnant sectors and employment destruction in the dynamic sectors. The largest contributor was manufacturing where productivity growth and a contraction of demand (per worker) drove down employment (and the employment to population ratio). A similar pattern occurred in accommodation and food, wholesale and retail (Figure 15). In construction productivity fell but less than demand per worker, driving up the employment rate. The largest counteracting force came from business services where productivity contracted sharply more than offsetting the contraction of demand. This underscores that employment creation in Italy was upheld by falling productivity rather than demand expansion. In fact, demand contributed to employment expansion in only three sectors – warehousing and transportation, education and health and information. Notably, manufacturing remained Italy’s largest employer but it experienced the largest job losses. As a result, its share in employment and value added declined.

Figure 15: Employment Share Growth Decomposition (%), Italy (2000-2014)

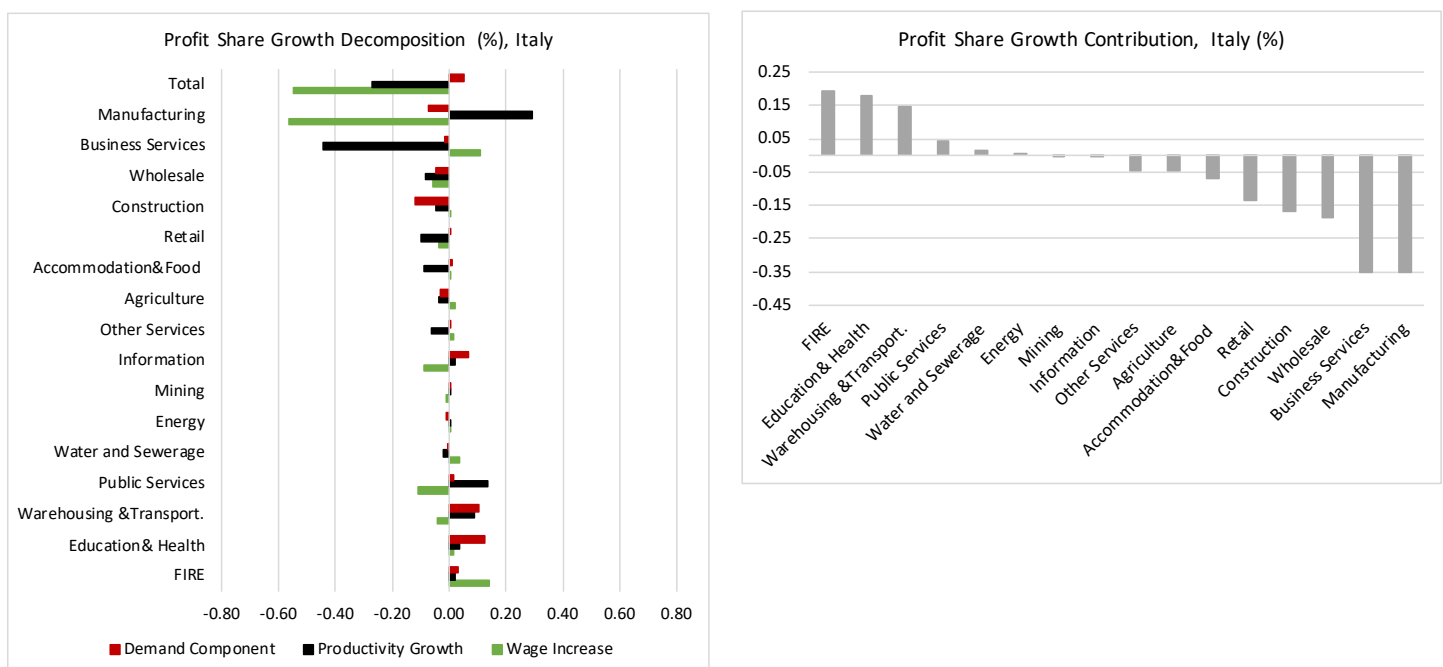


Italy: Profit Share Decomposition

The profit share decreased 3.3 points between 2000 and 2014. More than half of profits were generated in two sectors: FIRE (41 percent) and manufacturing (11 percent). But while profits in FIRE increased, they decreased in manufacturing. In fact, the main drivers of the fall in the profit share were manufacturing, business services, and wholesale. In manufacturing, positive productivity growth supported profit share expansion but was more than offset by relatively high wage growth and the contraction of output. Business services featured wage repression, which was more than offset by negative productivity growth a contraction of output. In wholesale all three components of profit share growth contracted.

The sectors that most contained the fall of the profit share were FIRE, education and health and warehousing and transport. In FIRE and in education and health demand expansion, productivity growth and wage repression all contributed to driving up sector -level profit shares but in FIRE the dominant factor was wage repression, while in education it was demand expansion (Figure 16).

Figure 16: Profit Share Growth Decomposition (%), Italy (2000-2014)

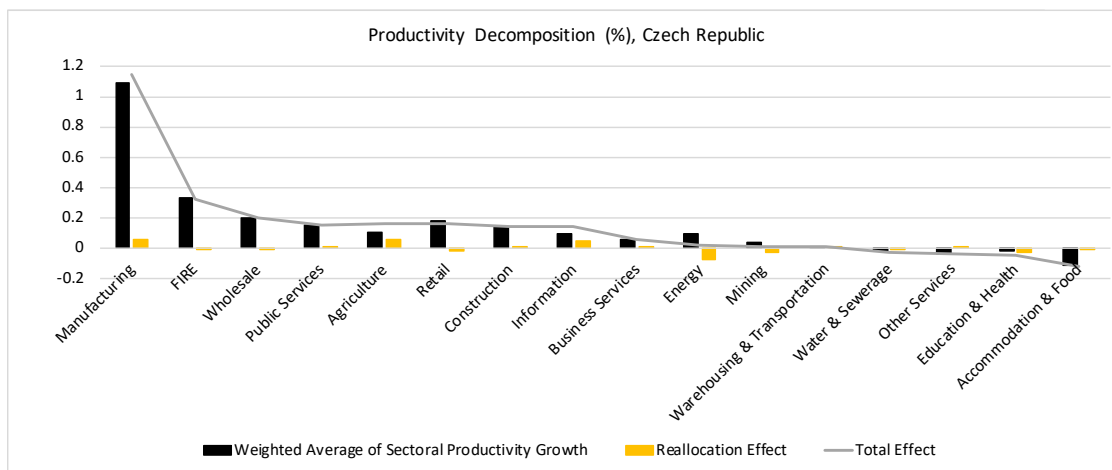


Czech Republic: Productivity Decomposition

Economy-wide productivity growth was positive and around 2.1 percent on average, but followed a steep downward trend, slowing down from more than 7 percent in 2000 to negative values in three of the last four years.

As shown in Figure 17, the average hides an uneven sectoral pattern. Productivity growth mostly happened in manufacturing, with all other dynamic sectors contributing negligible increases and most stagnant sectors featuring negative growth. Productivity gains in manufacturing were mostly due to the sector's own improvements. In general, reallocation effects had little to no impact on productivity growth, suggesting that any movements of workers across sectors were either small or did not affect productivity growth. In fact, the cross-sectoral migration wasn't particularly small compared to other countries (around 3.5 percent of total employment) but only half of it affected manufacturing (which

Figure 17: Productivity Growth Decomposition (%), Czech Republic (2000-2014)



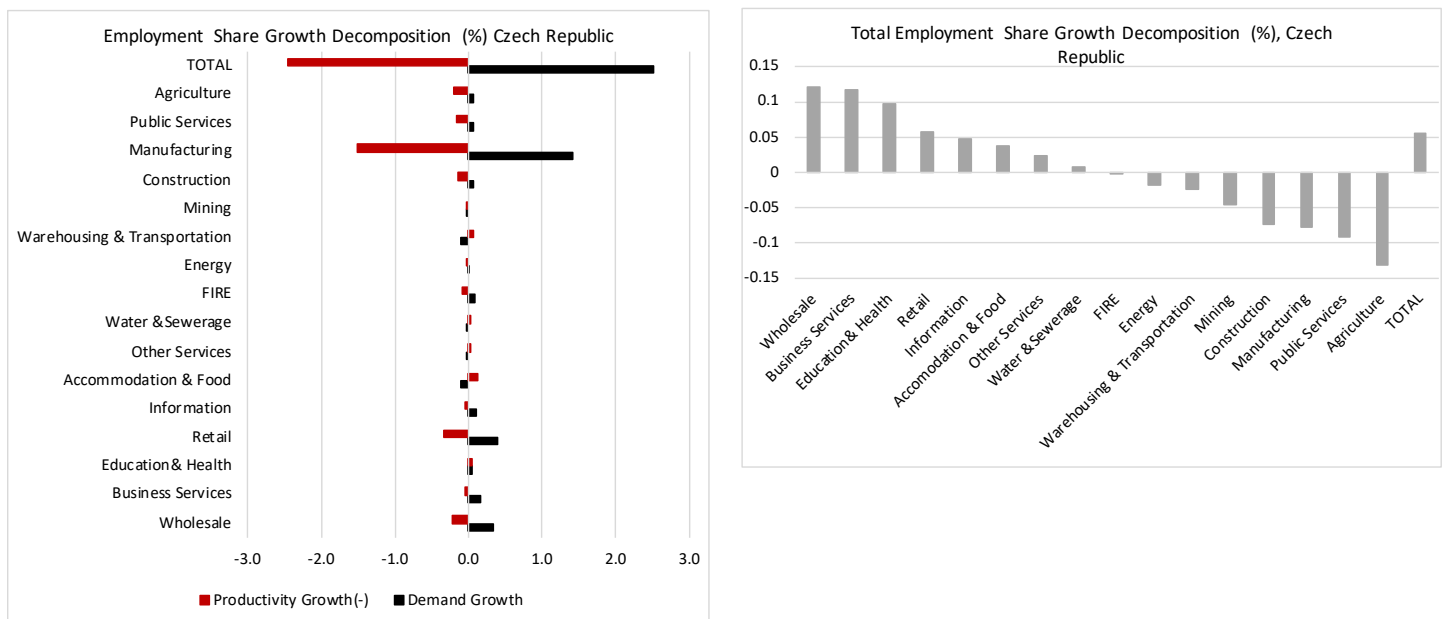
shrank in terms of employment 1.5 percent approximately), the only sector making a substantial contribution to productivity growth. This reallocation mostly explains the observed slowdown of productivity.

Czech Republic: Employment Share Decomposition

The employment rate grew 0.05 percent per year on average. Among stagnant sectors the pattern was simple, with only warehousing and transportation reducing its employment share. In dynamic sectors, the transition was more uneven. Retail, wholesale and information increased their employment share. The others reduced their shares, with most of the employment loss happening in manufacturing, public services and construction.

While demand growth was significant for the economy as a whole, productivity growth erased almost all employment gains. In fact, demand and output growth clearly drove productivity growth

Figure 18: Employment Share Growth Decomposition (%), Czech Republic (2000-2014)



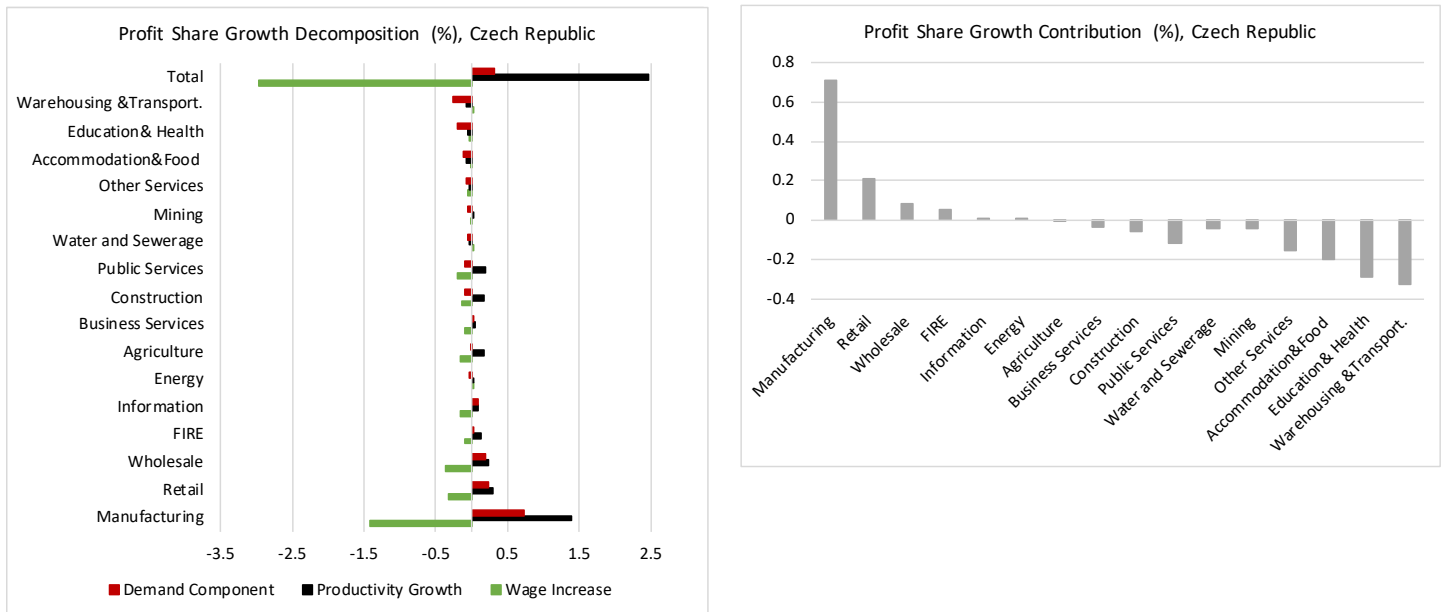
at the sector level, as anticipated by Kaldor (1966). Where demand growth was highest, businesses were able to increase productivity more than employment.

Czech Republic: Profit Share Decomposition

The profit share decreased from approximately 51 percent to 47 percent between 2000 and 2012, then picked up again. By 2014, it had increased by two points.

In terms of levels, more than half of total profits were generated in three sectors - manufacturing (27 percent), FIRE (21 percent) and warehousing (5.5 percent). In terms of growth drivers, manufacturing was again the sector where most of the adjustment took place: demand growth and productivity growth in manufacturing drove up the profit share strongly and were only partially offset by real wage growth. Wage growth and demand growth balanced each other, in an indication that the former led to the adoption of labor-saving productivity enhancements. Demand growth, however, was not offset by more wage growth and was passed through to profit share growth. Similar patterns occurred in wholesale and retail but to a much smaller degree. By contrast, most of the profit share loss occurred in retail, wholesale and FIRE, which led to a decrease (probably reversed by now) of the profit share economy wide.

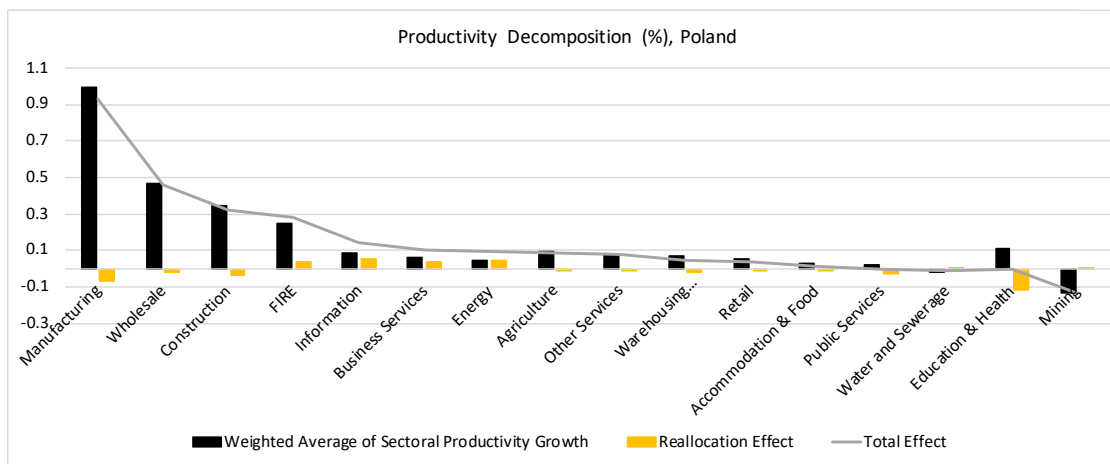
Figure 19: Profit Share Growth Decomposition (%), Czech Republic (2000-2014)



Poland: Productivity Decomposition

Economy wide productivity growth in Poland was positive but exhibited a declining trend. Our decomposition indicates that all dynamic sectors, especially manufacturing, wholesale, construction, FIRE and information, made the largest contribution to overall productivity growth. As in all countries (with the exception of Brazil), manufacturing was the strongest driver of economy-wide productivity growth. In addition to having high own-productivity growth rates, sectors such as FIRE, business services and information also had small but positive “reallocation effect,” meaning that increasing employment and output in these sectors positively contributed to the overall productivity increase. On the contrary, all stagnant sectors had either negligible or negative impacts on total productivity growth (Figure 20).

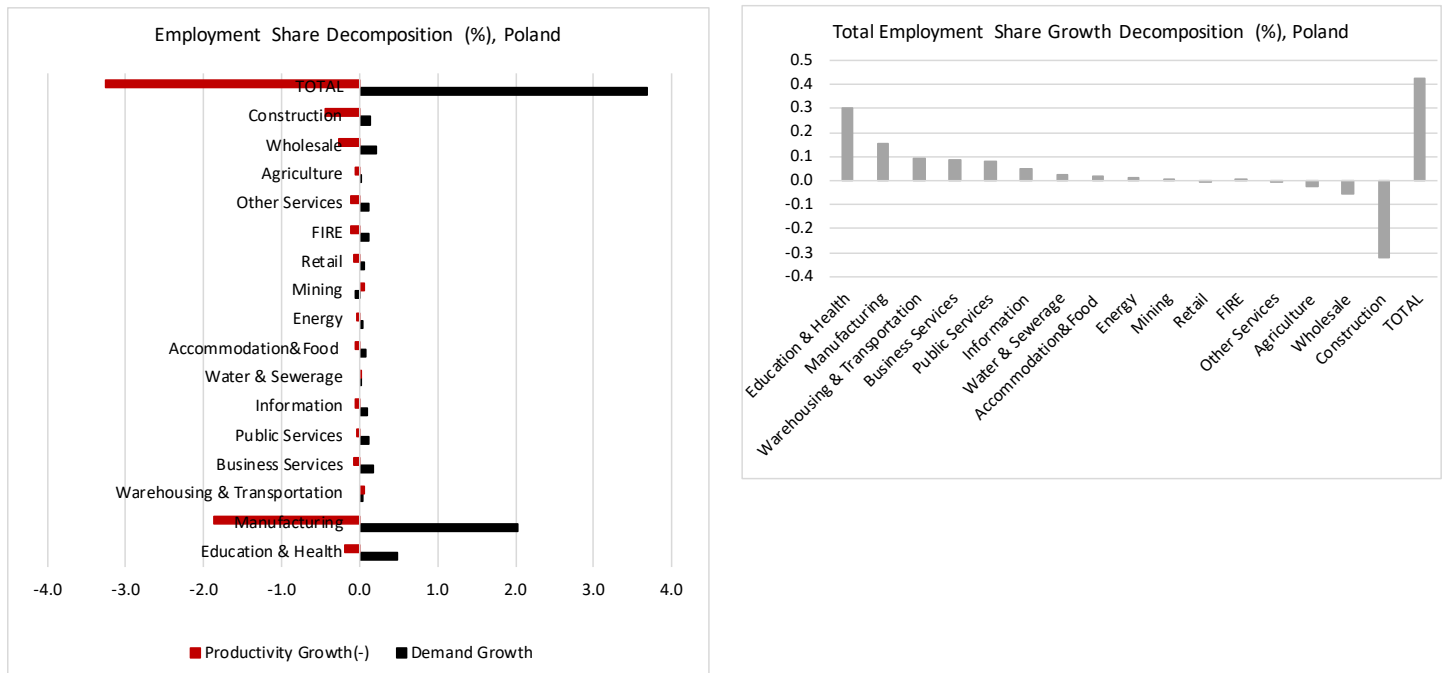
Figure 20: Productivity Share Growth Decomposition, Poland (2000-2014)



Poland: Employment Share Decomposition

Average annual employment share growth was around 0.5 percent. Figure 21 presents sectoral contributions to economy-wide employment growth for Poland. Most job creation took place in stagnant sectors but, unlike other EU countries in our sample, manufacturing’s contribution was the second largest. This is important because increasing employment in manufacturing and manufacturing-related sectors with high productivity growth points to ongoing industrialization. This contained the rise of inequality.

Figure 21: Employment Share Growth Decomposition, Poland (2000-2014)



The main stagnant sectors that contributed to employment growth were education and health, warehousing and transportation and the public sector, while the dynamic sectors that created jobs were manufacturing, business services and information. The strong increase in demand for manufacturing outweighed the negative impact of productivity growth on employment leading to a large job creation. Likewise, the main force behind employment growth in all job creating sectors was strong

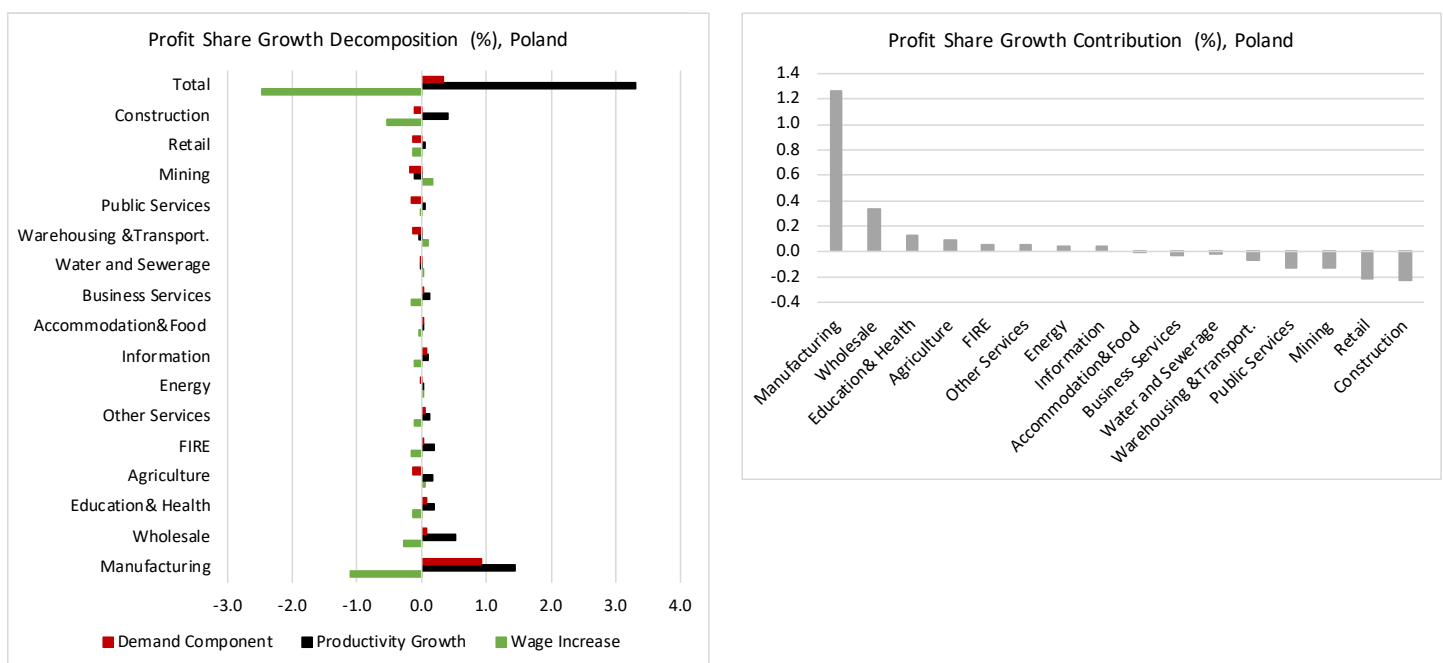
demand growth. The major job losses took place in construction and wholesale, where demand growth was not sufficient to outweigh the labor-saving effect of productivity growth.

Poland: Profit Share Decomposition

The profit share was around 42 percent in 2001 and jumped to 51 percent in 2005. It fell during the great recession, as in most countries, but returned back to its pre-recession level after 2009 (also as in most countries). Manufacturing, wholesale and FIRE had the largest end-of-period-profit shares in total value added – 10.5 percent, 8 percent and 6.8 percent respectively.

Real wage growth lagging behind productivity growth allowed to distribute increasing output to profits. Rising demand and productivity were the main drivers of increasing profits (Figure 22). Manufacturing was the major sector contributing to profit share growth. Other dynamic sectors (wholesale and FIRE) and some stagnant sectors (agriculture, education and health) also had small but visible impact on increasing profits.

Figure 22: Profit Share Growth Decomposition, Poland (2000-2014)



As in Germany, manufacturing and wholesale experienced the highest real wage growth but strong productivity gains, combined with significant positive demand shifts, prevailed making these sectors positive contributors to profit share growth. Manufacturing had the highest real wage increase, but its end-of-period real wage level was still one of the lowest allowing manufacturing businesses to achieve relatively higher profit share growth. Education and health followed a similar pattern. Demand for agricultural products declined but agriculture benefitted from falling wages and increasing productivity growth (in a pattern common to industrializing economies). On the other hand, construction and other stagnant sectors cut into overall profit share growth. Construction featured increasing wages and declining demand. Falling real wages in mining was not enough to compensate falling demand and productivity, thus its profit share declined. Retail was negatively affected by increasing wages and declining demand.

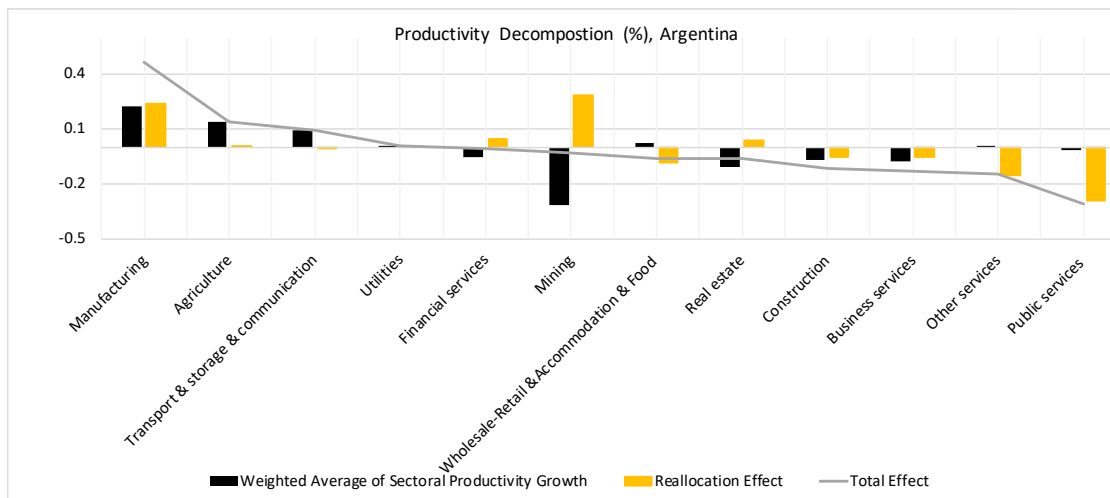
Argentina: Productivity Growth

Argentina's average annual productivity growth rate was around -0.16 percent between 2000-2018. It grew slowly until 2011, but declined rapidly afterwards.

As shown in Table 10, dynamic sectors generally had higher productivity levels and growth rates than stagnant sectors. Economy-wide productivity growth was driven only by dynamic sectors – mainly manufacturing, agriculture and transportation-storage-communication (Figure 23). Manufacturing prevented further decline in productivity, however it also featured the lowest productivity growth of all countries in our sample. It had both high own-sectoral productivity growth and positive reallocation effects, meaning that the output share was higher than the employment share in these sectors. As a result, every job created in manufacturing drove up overall productivity growth.

In contrast, along with other services, stagnant sectors– especially public services, FIRE and business services – drove down economy-wide productivity. This was mostly because stagnant sectors' own productivity growth rates were low and they had negative reallocation effects –their output share was lower than their employment share. Every job created in these sectors led to a slowdown in overall productivity growth.

Figure 23: Productivity Share Growth Decomposition, Argentina (2000-2018)

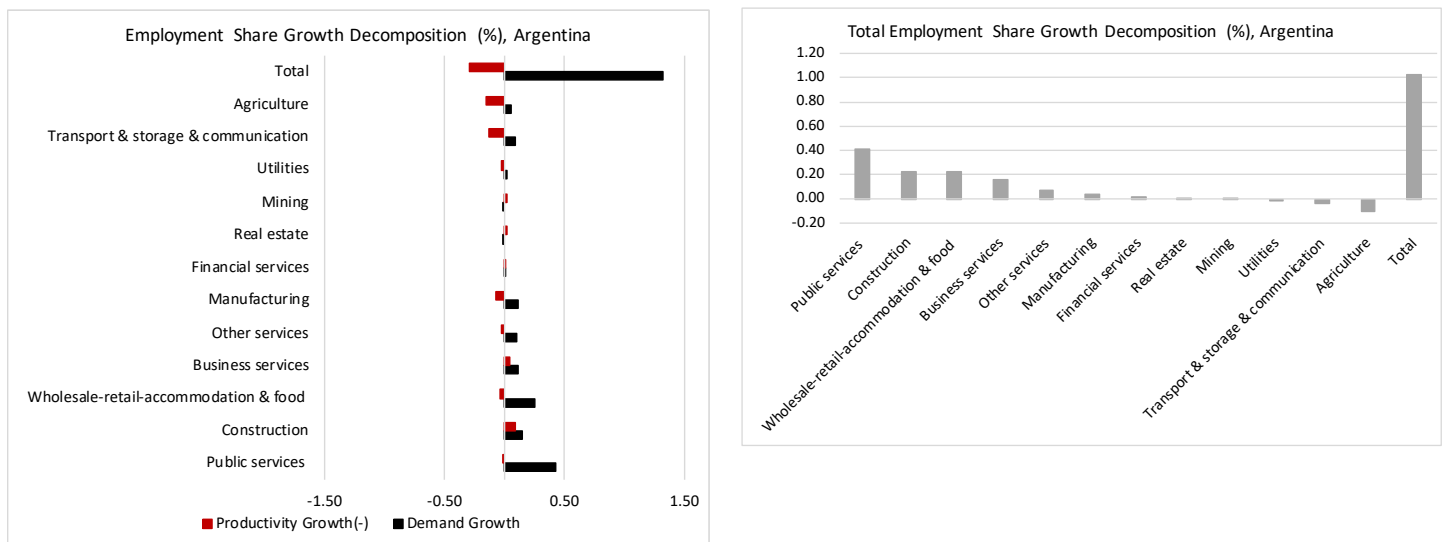


Argentina: Employment Growth Decomposition

Average annual employment rate growth was around 1 percent, making job creation in Argentina stronger than in other countries. However, almost all jobs were created in sectors with low productivity and low productivity growth such as public services, construction, and business services (Figure 24). Although it had visible (but small) demand increase, agriculture and transportation, storage and communication were the only sectors that lost its share in employment due to their higher productivity growth. Other sectors had negligible impacts on employment.

As mentioned before, between 2000-2011, high productivity growth pushed surplus labor created in dynamic sectors towards more stagnant sectors. But after 2011, declining productivity was the main reason behind employment creation in Argentina.

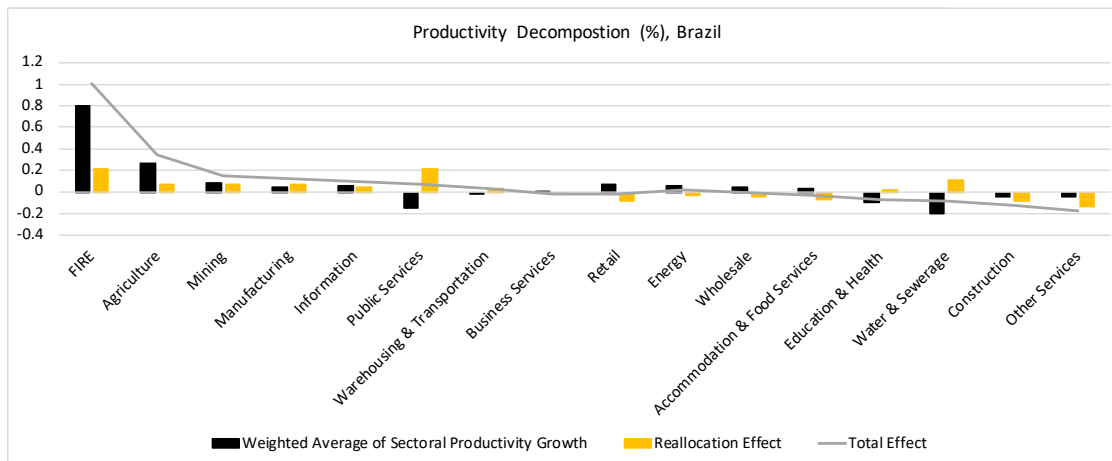
Figure 24: Employment Share Growth Decomposition, Argentina (2000–2018)



Productivity Growth in Brazil:

As mentioned above, for Brazil, economy-wide average productivity growth (hourly) rate was around 1.8 percent for the period. Figure 25 presents the sectoral contributions to productivity growth for Brazil between 2000–2014. It shows that the dynamic sectors—in particular FIRE and agriculture, were the main contributors to overall productivity growth. In addition to high productivity increases, they created a substantial reallocation effect. Mining, manufacturing and information also had small but negligible impact on overall productivity growth. On the other hand, stagnant sectors, particularly education & health, construction and other services cut into overall productivity growth.

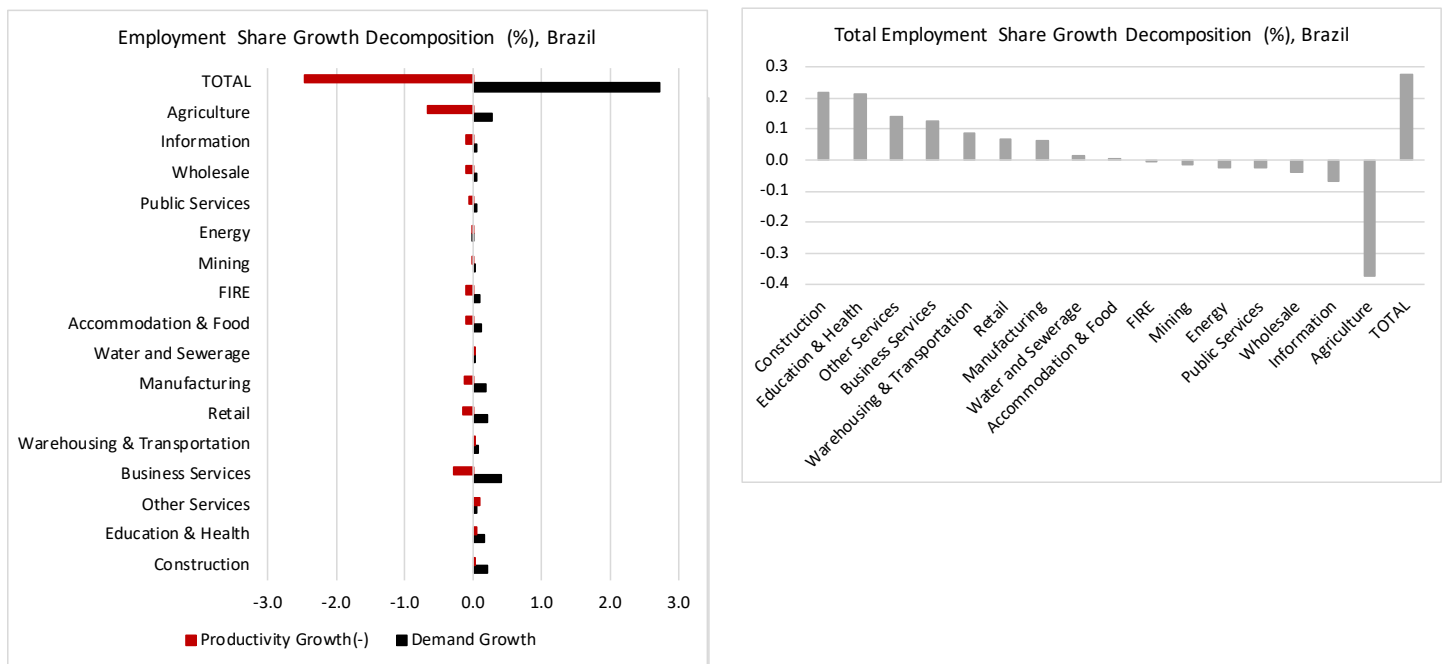
Figure 25: Productivity Growth Decomposition, Brazil (2000–2014)



Employment Share Growth in Brazil:

Between 2000 and 2014, average annual employment growth rate was around 0.3 percent in Brazil. As Figure 26 reveals, most jobs were created in stagnant sectors with the strongest wage repression and the lowest productivity growth, such as construction, education and health, other services,

Figure 26: Employment Growth Decomposition, Brazil (2000-2014)



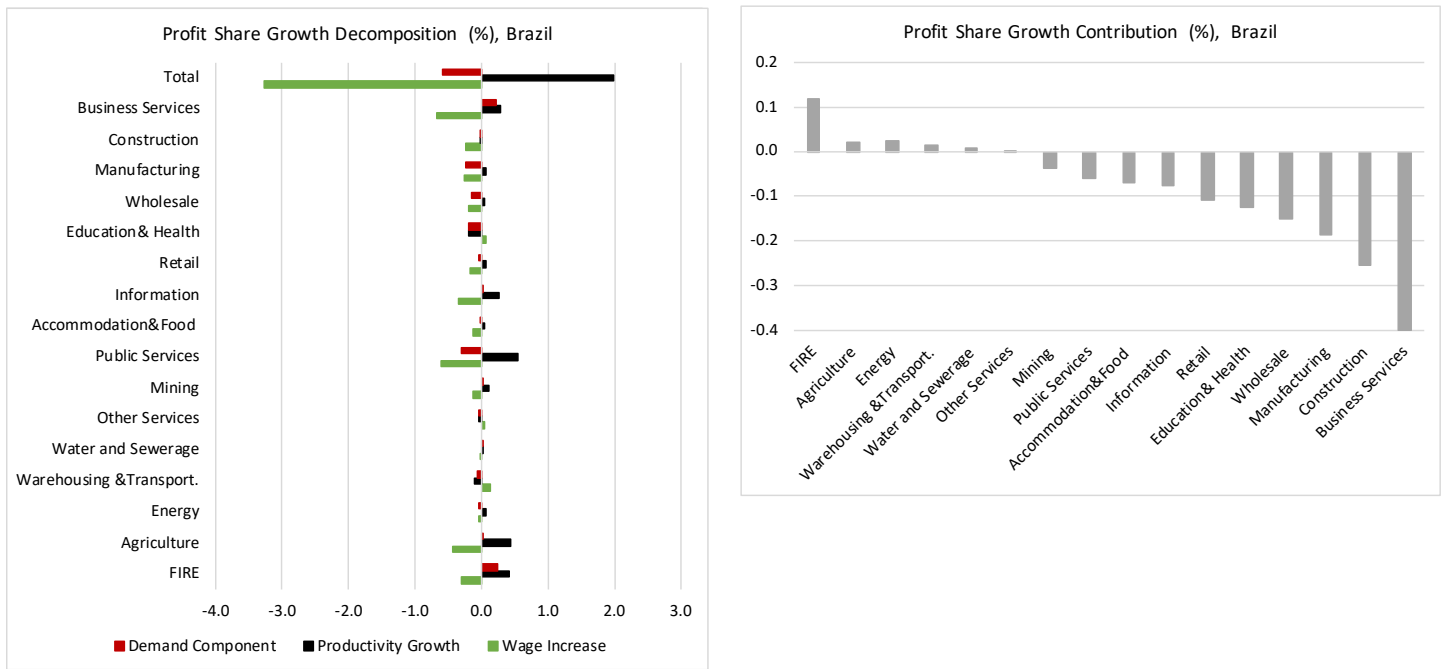
warehousing and transportation, and retail. Construction, education and healthcare, and other services benefited from declining productivity and noticeable increases in demand. Business services and manufacturing, which were among the dynamic sectors, also contributed to overall employment as their productivity lagged behind their demand. The rest of the dynamic sectors—especially agriculture and information, lost jobs because demand could not keep up with the productivity increases. Job losses were also observed in wholesale and public service, which were among the stagnant sectors.

Profit Share Growth in Brazil:

The profit share was 50 percent in 2000. It peaked at around 52 percent in 2004 then dropped to 45 percent in 2014. While duality of stagnant and dynamic sectors was visible as in other countries, fast wage growth (faster than productivity growth) in most dynamic sectors and some stagnant sectors drove down the overall profit share after 2004. Although Brazil is still one of the most unequal countries in the world, its GINI coefficient declined by 6 percentage points (from 58 percent in 2001 to 52 percent in 2014).

In 2014, FIRE (29.5 percent), manufacturing (7.9 percent), construction (8 percent) and business services (8.6 percent) held the largest shares in profits. Together they accounted for 54 percent of total profits. As Figure 27 shows, the decline in the profit share was mostly caused by rising wages in the dynamic sectors. Among dynamic sectors, FIRE maintained the highest profit growth and prevented further decline in the economy-wide profit share. Agriculture and energy had small but positive effect. FIRE and agriculture had a visible negative wage growth but also positive productivity and demand shifts that strongly contributed to total profits. Other dynamic sectors suffered from relatively high wage increases, which put strong downward pressure on profits. Manufacturing was the only dynamic sector whose demand declined. Coupled with rising wages and negligible productivity growth, this led to one of the largest sectoral drops in total profit share. Overall, business services, manufacturing, construction, wholesale, education and health, retail and information were the main sectors contributing to the decline of the profit share.

Figure 27: Profit Growth Decomposition, Brazil (2000-2014)

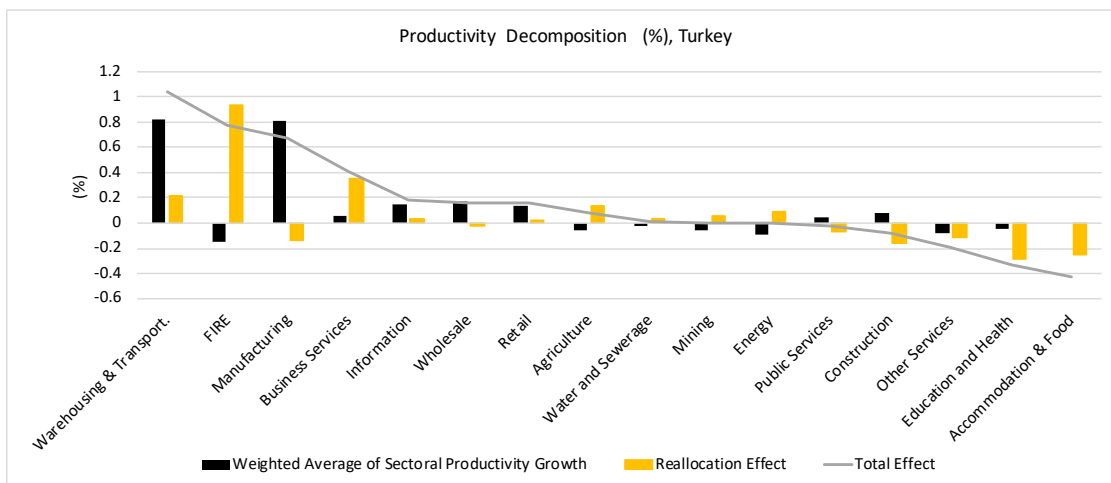


Turkey: Productivity Decomposition

As Table 12 shows that some dynamic sectors, such as manufacturing, wholesale, and retail had much higher productivity growth than others, but lower productivity levels compared to some stagnant sectors such as agriculture, FIRE, mining, energy and water and sewerage.

Dynamic sectors - manufacturing, warehousing and transportation business services, and information and wholesale - were the main drivers of overall productivity gains (Figure 28). Among the stagnant sectors, FIRE made a large contribution mostly because its output share was higher than its share of employment resulting in a highly positive reallocation effect. As opposed to dynamic sectors' positive contribution to productivity, construction, other services, education and health and accommodation and food reduced economy-wide productivity growth.

Figure 28: Productivity Growth Decomposition, Turkey (2000-2014)

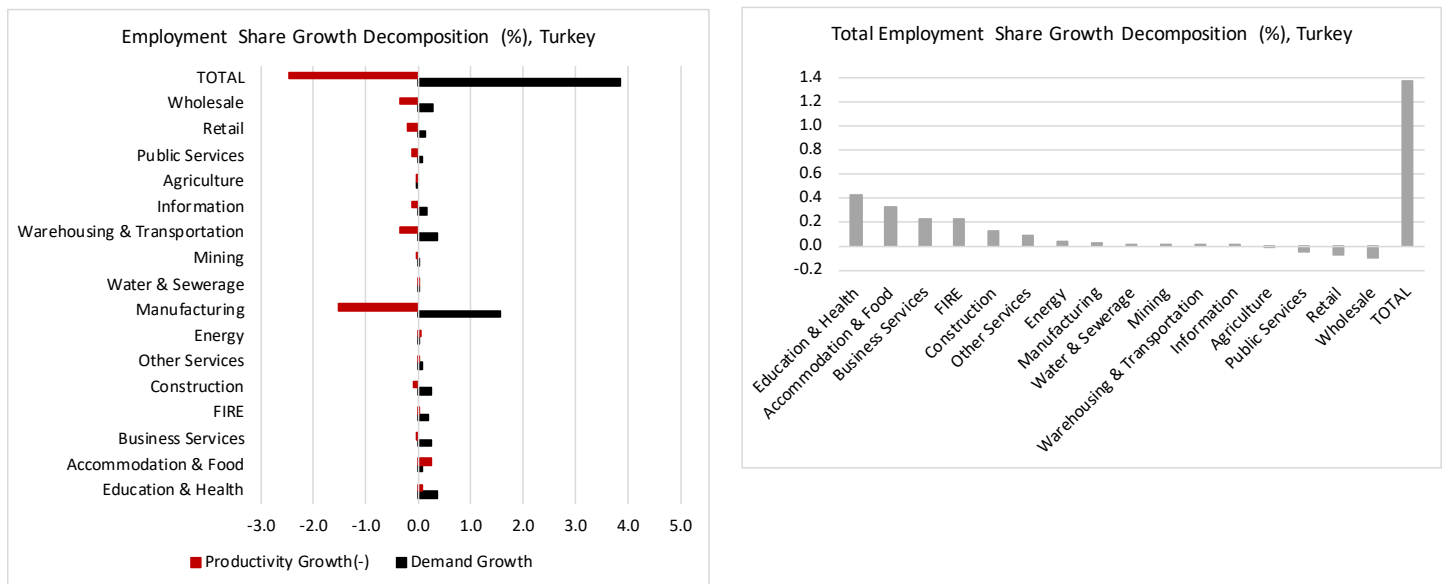


Turkey: Employment Share Decomposition

Manufacturing had the largest employment share (around 25 percent) in 2014. It was followed by education and health (11.8 percent), construction (10.2 percent), wholesale (9.1 percent) and public services (9.6 percent).

Figure 29 illustrates the combined effects of demand and productivity on employment growth in Turkey. Overall output growth, which was higher than productivity growth, drove up employment after 2000. Most jobs were created in the stagnant sectors, especially in education and health, accommodation and food, construction, FIRE, and other services. Business services was the only dynamic sector that contributed to employment. Demand growth along with declining productivity led to job creation in education and health.

Figure 29: Employment Share Growth Decomposition, Turkey (2000–2014)



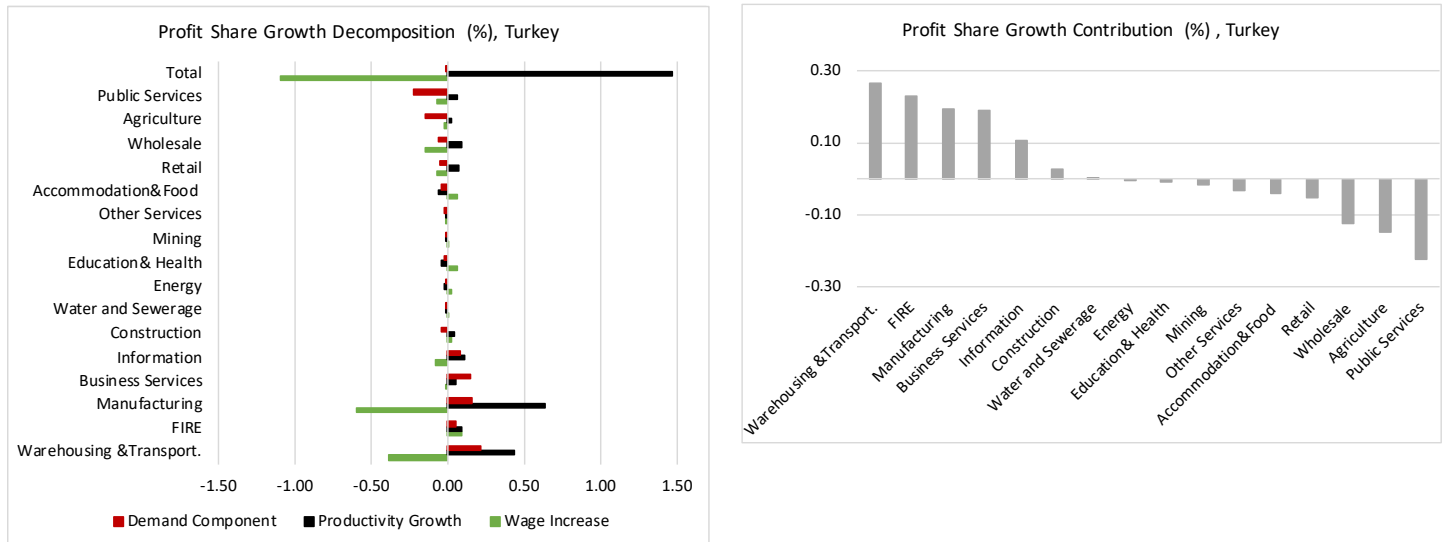
The rest of the dynamic sectors, on the other hand, experienced a decline (or negligible increase) in employment as productivity grew faster than demand. In the relatively large manufacturing sector, productivity growth outstripped demand growth. Job losses occurred in wholesale, retail and public sector as productivity growth exceeded demand growth. Overall, in Turkey between 2000 and 2014, there was a strong shift of employment toward the stagnant sectors. As informal employment increased in recent years—mostly due to increasing immigration, workers’ bargaining power weakened. The absence of legal sanctions regarding labor contracts has worsened the situation. Moreover, strong government support for finance, real estate (FIRE) and construction put further downward pressure on wages and productivity in Turkey (Orhangazi, 2020). As a result, the role of manufacturing in creating high-skilled-labor employment deteriorated and employment expanded toward service oriented stagnant sectors.

Turkey: Profit Share Decomposition

Turkey’s profit share rose from 58 percent in 2000 to 62 percent in 2014. In terms of levels, four sectors – FIRE, manufacturing, warehousing and transportation and wholesale – provided approximately 50 percent of total value added along with large profits – FIRE (13 percent), manufacturing (11 percent), warehousing and transportation (9.7 percent) and wholesale (5.3 percent).

The effect of demand shifts on profit growth were minor but they did stimulate profits in manufacturing, warehousing and transportation, FIRE, business services and information (Figure 30). These sectors played an important role in driving economy-wide profits. Manufacturing, warehousing and transportation and information showed strong wage growth, but demand and productivity growth outweighed the impact of the increasing wages. FIRE, business services and construction benefitted from rapidly declining wages as well as positive productivity and demand growth. Despite relatively high level of profits and positive productivity growth, profits in wholesale suffered from increasing wages and declining demand. The stagnant sectors – public, other services, accommodation and food, agriculture – cut into profit share growth mostly due to declining demand.

Figure 30: Profit Share Growth Decomposition, Turkey (2000–2014)





GLOBAL ECONOMIC GOVERNANCE INITIATIVE

The Global Economic Governance Initiative (GEGI) is a research initiative at Boston University's Global Development Policy Center. The GDP Center is a University wide center in partnership with the Frederick S. Pardee School for Global Studies. The Center's mission is to advance policy-oriented research for financial stability, human wellbeing, and environmental sustainability.

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