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Developing countries in the global apparel value chain: a tale of upgrading and downgrading experiences

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Abstract

This paper applies a parsimonious measurement approach to study how a sample of developing countries have performed in the global apparel industry during the past decade, and particularly after the phase-out of the Multi-Fibre Arrangement (MFA) in 2004, and to trace their economic and social upgrading and downgrading trajectories. It also addresses the question of whether economic upgrading leads to social upgrading and, more generally, investigates the relationship between economic performance and social performance in the apparel sector. This analysis takes a quantitative approach and is based on a narrow set of indicators. While maintaining a rigorous and parsimonious approach to measuring economic and social upgrading using secondary data, the analysis undertaken here also draws on case study literature to embed the findings and provide explanations for the outcomes of this parsimonious approach. Looking at the performance of selected apparel-producing developing countries in the 2000s (and particularly post-MFA), we find there have been not only winners (upgraders) but also quite a number of losers (downgraders). In general, while economic upgrading has been fairly widespread among the countries in our sample, social upgrading has been more difficult to achieve. Conversely, while downgrading also occurred in the economic sphere, it has been far more common in the social realm. Meanwhile, the results of our investigation of the relationship between economic performance and social performance suggest that economic upgrading does not automatically translate into, but seems to be conducive to, social upgrading.

Keywords: apparel sector, economic upgrading, social upgrading, export performance, employment, real wages

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Abbreviations

AGOA	African Growth and Opportunity Act
ASIES	Association for Research and Social Studies
BFC	Better Factories Cambodia
CNZFW	National Free Zones Council
CPI	Consumer Price Index
CPRC	Chronic Poverty Research Centre
DFID	Department for International Development
DR-CAFTA	Dominican Republic–Central America Free Trade Agreement
EBA	Everything but Arms
EMIH	Honduran Independent Monitoring Team
EPZ	Export Processing Zone
EPZA	Export Processing Zones Authority
ESRC	Economic and Social Research Council
EU	European Union
Eurostat	Statistical Office of the European Communities
GSP	Generalized System of Preferences
GVC	Global Value Chain
HOPE	Hemispheric Opportunity through Partnership for Encouragement
HS	Harmonized Commodity Description and Coding System
IFS	International Financial Statistics
ILO	International Labour Organization
IMF	International Monetary Fund
INEGI	National Institute of Statistics and Geography
LC	Labour Costs
LDC	Least Developed Country
LIC	Low-income Country
MFA	Multi-Fibre Arrangement
MSN	Maquila Solidarity Network
OECD	Organisation for Economic Co-operation and Development
QIZ	Qualifying Industrial Zone
PASE	Professionals for Corporate Social Auditing
RoO	Rules of Origin
SACU	Southern African Customs Union
SC	Social Charges
SCI	Sustainable Consumption Institute
UK	United Kingdom
UN	United Nations
UNCTAD	UN Conference on Trade and Development
UNECE	UN Economic Commission for Europe
UNIDO	UN Industrial Development Organization
US	United States
WIOD	World Input-Output Database
WTO	World Trade Organization

Introduction

Historically, the apparel sector has played an important role as a gateway to industrialization and economic development. Because capital, technology and skill requirements are rather modest, there have been relatively low barriers to developing countries entering apparel production, which, at the same time, is labour intensive, thereby potentially conferring a comparative advantage on developing countries with their abundant supply of un- or low-skilled workers.

Today, as the production of goods and services is increasingly becoming fragmented and organized within international networks and 'global value chains' (GVCs) – with lead firms coordinating suppliers, assembly, design, logistics, marketing and branding in multiple locations across the globe – the path of economic development is also changing. In this new context, economic development has become more and more associated with 'upgrading' within such international networks and GVCs. This is particularly true for the apparel sector, which is well suited to such global production arrangements, given that most intermediate products can be easily traded at each stage of the value chain. As a consequence, it has become one of the most-globalized sectors in the world (with global exports at $330 billion in 2010, up by 70 percent compared with the year 2000), with production and trade largely organized within and shaped by GVCs, which, in turn, are characterized by a high degree of involvement of developing country producers.

However, in recent years, the global apparel sector has gone through two major crises (Gereffi and Frederick 2010). The first, at the end of 2004, was the expiration of the Multi-Fibre Arrangement (MFA), which had governed international garment trade since 1974 by imposing quotas on developing countries' apparel and textile exports to developed countries. Its end marked a deep structural break and led to substantial reshuffling in the global apparel value chain. Given its far-reaching implications, the analysis that follows will give special attention to this structural break. The second crisis is the global economic recession that originated in the US financial sector and that spread around the globe starting in 2008 – which further accelerated the reconfiguration and restructuring of the global apparel sector.[1]

The case study literature on the apparel sector that analyses these developments is extensive. These case studies provide a great deal of in-depth information on the dynamics and on the (underlying drivers of) success or failure of apparel production in specific countries or regions. The purpose of this paper is different. Using a parsimonious approach, it aims to provide an overview and introductory assessment of sector-wide dynamics in the global apparel industry during the past decade, and particularly after the MFA phase-out. Within this wider sectoral picture, this paper also discusses how a number of selected supplier countries have fared post-MFA and traces their economic and social upgrading and downgrading trajectories. This analysis takes a quantitative approach. It is based on a narrow set of indicators and relies entirely on secondary data. Such an approach, admittedly, has certain limitations, but it allows us to make some inferences about overall trends and to compare performances across countries. At the same time, an effort is made to embed and link this quantitative analysis to the insights from the case study literature to offer explanations of the outcomes of the parsimonious approach adopted here.

The methodology, the 'parsimonious approach', is presented in the following section. Following this, the methodology is applied to identify economic and social upgraders and downgraders, respectively, among a sample of apparel-exporting developing countries. Then we address the question of whether economic upgrading leads to social upgrading and, more generally, investigate

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[1] These dual crises and their consequences on the global apparel sector are analyzed in Gereffi and Frederick (2010) and Staritz (2011), and in a book volume recently published by the World Bank and edited by Lopez-Acevedo and Robertson (2012).

the relationship between economic performance and social performance in the apparel sector. This final section is, thus, a bit different from the preceding sections, which are dedicated to the tracking of economic and social up/downgrading trajectories of *individual countries.* Meanwhile, this final section not only intends to identify 'overall upgraders' among our sample countries (i.e. those that have experienced upgrading in both economic and social terms) but also, based on our country sample, tries to draw inferences of a *more general nature.* The paper ends with some concluding remarks but, ultimately, this parsimonious analysis presented here serves to frame but also to complement the case study literature on the global apparel value chain.

Methodology: a parsimonious approach to defining and measuring economic and social upgrading

Economic and social upgrading are multifaceted and thus highly complex processes. Case studies typically offer many details on these complexities and, in doing so, provide a rich set of (possible) explanations for underlying drivers of economic and social developments over time. However, the case study literature often focuses on the idiosyncrasies of the country case(s) under investigation and uses a wide variety of measures for upgrading, which complicates comparability across countries (see Milberg and Winkler 2011). The present paper takes a different, parsimonious, approach to defining and measuring economic and social upgrading, and uses quantitative secondary data to trace upgrading (or downgrading) trajectories of a number of developing countries integrated in the global apparel value chain.[2] This goes at the expense of detailed portrayals of individual supplier countries, but allows us to sketch overall trends in the global apparel sector and to compare up/downgrading dynamics across countries and regions.

Broadly speaking, economic upgrading can be defined as 'the process by which economic actors – firms and workers – move from low-value to relatively high-value activities in global production networks' (Gereffi 2005: 171). Following Amartya Sen (1999; 2000), social upgrading, in turn, can be conceived of as a process of improvement in the entitlements and rights of workers as social actors that enhances the quality of their employment through the advancement of decent work[3] and respect for labour standards (see also Barrientos et al. 2011a; 2011b). These are very broad definitions that pay tribute to the complexity of the underlying processes. However, in order to be able to measure these phenomena using available (secondary) data, it is necessary to come up with narrower definitions that are easier to operationalize. The present paper therefore applies a *parsimonious approach* to the study of economic and social upgrading in the apparel sector.

Economic upgrading

Following Kaplinsky and Readman (2005) and Amighini (2006), a country's apparel sector is said to experience *economic upgrading* when the following two conditions are fulfilled:

1. There is an increase (or at least no decrease) in its world export market share, reflecting international competitiveness of its exports; and
2. There is an increase (or at least no decrease) in the export unit value, implying the production of higher-value products.[4]

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[2] See Bernhardt and Milberg (2011; forthcoming), which develop and apply this approach to four sectors.
[3] 'Decent work' is a concept developed by the International Labour Organization (ILO) that emphasizes, *inter alia*, the generation of employment, the provision of adequate remuneration, the protection of rights at work and the promotion of social dialogue; see, for example, ILO (1999).
[4] Progress on these two indicators might be interpreted to reflect what in the recent GVC literature, and the typology developed therein, is known as 'product upgrading' (defined as a shift to the production of more sophisticated and higher-priced goods), 'functional upgrading' (understood as the adoption of a wider range of functions within the value chain and/or the transformation of the mix of operations towards more

It is essential to look at *changes* in these indicators *over time* to capture the dynamic nature of *upgrading (or downgrading) as a process*. Moreover, it is important to include *both* dimensions in our analysis, as they convey complementary information that allows us to more adequately capture economic upgrading.

Export unit values[5] are commonly used as proxies or surrogates for price indices and, consequently, as proxies for product quality (see IMF et al. 2009, for example). Various recent studies of GVCs suggest the use of export unit value data to capture economic upgrading (see Evgeniev and Gereffi 2008, Frederick and Staritz 2012, Staritz 2011, for example). In their study of the technological content and quality of Chinese export products, Li and Song (2011: 77) take export unit values as proxies for prices and assert that they are indicators of the quality of the products traded: 'In the international market, for the same kinds of products coming from different countries, the ones with higher prices are often of relatively higher quality.' In a similar vein, Aiginger (1997: 574) points out that '[a] country with a higher [export] unit value will in some sense supply more quality'. He suggests that export unit values can be used 'as a complementary indicator for assessing the qualitative side of competitiveness' (Aiginger 1998: 60).

However, it is important to note that increasing export unit values could, in principle, also reflect rising production costs (possibly related to rising input costs or deteriorating infrastructure or declining productivity, e.g. caused by the wearing-off of machinery), which over time would lead, in a competitive market, to a loss of international competitiveness. For this reason, it is crucial to use the change in export market shares as a second, complementary indicator in our analysis to identify instances of economic upgrading more accurately and to avoid fallacious, misleading interpretations. This is also along the lines of the argument brought forward by Kaplinsky and Readman (2005: 682): 'Firms which engage in successful product innovation […] can expect to receive relatively higher prices for their output. […] Higher prices may also reflect inefficiencies in production, suggesting a decline in innovative performance, but in this case with regard to process innovation. Therefore we need an indicator of cost competitiveness.' To this end, the authors recommend the use of export market shares which, in combination with the first indicator (export unit values), gives a more reliable picture about whether a sector experiences economic upgrading or not.[6]

Social upgrading

Meanwhile, *social upgrading* is defined to occur in a given country's apparel sector when the following two conditions are fulfilled:

1. There is an increase (or at least no decrease) in sectoral employment, and
2. There is an increase in sectoral real wages.

The rationale for choosing these two indicators of social upgrading is fairly straightforward: through the creation of jobs, labour is given the possibility to earn income – which potentially helps workers in developing countries move out of poverty and thereby contributes to social well-being. Real wages, on the other hand, are a measure of how much workers benefit from the value created by economic activity in their country's apparel sector. They give an idea of labour's bargaining power

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complicated and higher-value activities) and maybe also 'process upgrading' (the reconfiguration of the production system and/or the introduction of new technologies that increases efficiency) (see Gereffi et al. 2005, Humphrey 2004, Humphrey and Schmitz 2002, UNIDO 2011, for example).
[5] Export unit values are calculated by dividing the total value of a country's exports (of a certain commodity or a certain product group) in a given period by the quantity or volume of these exports and therefore measure the average monetary value of one unit of export.
[6] For similar reasoning, see also Amighini (2006).

and an indication of how much of the (sectoral) value added generated is appropriated by labour. As mentioned above, and consistent with the logic of our parsimonious approach, these are rather quantitative indicators, which do not fully capture the qualitative features of social upgrading. In a sense, however, real wages are also taken as a proxy for the *quality* of employment – which matters equally for social upgrading. Yet a note of caution on the limitations of such an approach is warranted here: increases in (real) wages are not always and not necessarily an indication of improved working conditions. The 'theory of compensating differentials', for example, states exactly the opposite (predicting that higher wages are needed to compensate labour for poor working conditions). However, in a study of the ILO *Better Factories Cambodia* (BFC) programme, Warren and Robertson (2011) find that compliance with wage payments has increased alongside compliance with labour standards, suggesting a robust positive relationship between wages and working conditions and casting doubt on the predictions of the compensating differential theory.

Country selection

The parsimonious approach just presented is applied to identify economic and social upgraders (or downgraders) among a sample of developing countries. The selection of countries for our sample was determined partly by the list of countries participating in the Better Work programme and the interests of the Capturing the Gains research network. It was also guided by the idea of including major economies for each continent, that is, China, India, Mexico and South Africa. The remaining countries were included to reflect a balanced regional distribution and on the basis of their role as important apparel suppliers. Such a rather arbitrary composition of the sample admittedly creates a certain risk of selection bias, for example the risk of including a disproportional share of upgraders and success stories. Therefore, wherever this text draws more generalized conclusions, these should be interpreted with some caution. However, it should be emphasized that, with the exception of Turkey, Thailand and Morocco, all the developing countries ranking among the top 15 of global apparel exporters are included in our selection (see Table 2) so that, overall, the sample seems to capture the main producers and, thus, should be fairly robust.

Table 1: Country sample

Region	Country
Africa	Kenya, Lesotho, Mauritius, South Africa
Asia	Bangladesh, Cambodia, China, India, Indonesia, Jordan, Sri Lanka, Vietnam
Central America and the Caribbean	Dominican Republic, El Salvador, Guatemala, Haiti, Mexico, Nicaragua

Economic upgrading and downgrading in the global apparel sector in the 2000s: experiences of selected developing countries

The apparel sector has been much debated as a catalyst for industrialization and economic development. With the increasing international fragmentation of production and the rise of GVCs, developing countries' stakes in global apparel production have increased. Today, apparel production is organized in a classic 'buyer-led' chain (see Gereffi 1994), in which lead firms – mass retailers such as Walmart, specialty retailers like H&M or The Gap and brand manufacturers/designers such as Levi's – source globally. Indeed, a number of developing countries have become major producers of apparel products, and several of them are now among the top apparel exporters.[7] As Table 2 shows, four of the top five (China, Bangladesh, Turkey and

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[7] For the purpose of measuring economic upgrading through the two indicators mentioned above, the apparel sector is defined as being comprised of Chapters 61 ('Articles of apparel and clothing accessories, knitted or crocheted') and 62 ('Articles of apparel and clothing accessories, not knitted or crocheted') of the

India) and 10 of the top 15 apparel exporting countries in terms of world export market share are developing countries. Almost all of them are Asian: besides the four economies already mentioned, the ranking also includes Vietnam, Indonesia, Cambodia and Thailand. The only other developing countries that made it into the top 15 exporters ranking are Mexico (with the 11th-largest export market share) and Morocco (the world's number 15).

Most of these countries are analysed here. By comparison, the other (mainly African and Central American and Caribbean) countries in our sample are rather small apparel exporters, commanding market shares (sometimes well) below 1 percent, with South Africa, Africa's industrial powerhouse, strikingly, holding the smallest market share of all the countries in our sample (see Table 3).

Table 2: Top 15 apparel exporters in 2010

Rank	Country	World export market share (%)	Export value ($ millions)
1	China	42.58	140,693
2	Bangladesh	5.03	16,633
3	Turkey	4.48	14,788
4	Italy	4.42	14,599
5	India	3.90	12,897
6	Vietnam	3.36	11,088
7	Germany	2.81	9,287
8	Indonesia	2.40	7,916
9	France	1.98	6,530
10	Spain	1.41	4,650
11	Mexico	1.27	4,202
12	Cambodia	1.27	4,196
13	Netherlands	1.21	4,011
14	Thailand	1.15	3,797
15	Morocco	1.14	3,770
	World	**100.00**	**330,398**

Source: Author's own calculation based on UN Comtrade data.

In what follows, this section provides an analysis of economic upgrading in the apparel sector over the past 10 years. We first present and discuss data on the two economic upgrading indicators and highlight interesting patterns and trends. We then apply the definition specified above to explore the extent to which economic upgrading has taken place in the developing countries in our sample. In doing so, we pay particular attention to the structural break that occurred in the apparel sector at the end of 2004 with the elimination of the quota system under the MFA, which considerably reshaped the international division of labour, reallocating apparel production and employment between countries, and which increased the importance of other factors such as labour costs, lead times, flexibility in production, trade preferences[8] and the availability of nonmanufacturing capabilities in the supplier base (with global buyers increasingly preferring full-package suppliers over simple assemblers) (Frederick and Staritz 2012).

The left-hand panel of Table 3 shows for each country in our sample the value of its apparel exports in million US dollars as well as its world export market share for the years 2000, 2004, 2005, 2009 and 2010; the right-hand panel gives the growth rates of these two variables pre-MFA phase-out (i.e. 2000-2004), post-MFA phase-out (i.e. 2004-2010) and over the entire decade of the 2000s. Broadly speaking, throughout the 2000s, the Asian countries have been on an upward trend (i.e. gaining export markets shares) whereas most African and Latin American and

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Harmonized Commodity Description and Coding System (HS) of tariff nomenclature. Please note that the definition of the apparel sector differs somewhat for the social upgrading indicators; see also Footnote 10 below. All trade data are taken from the UN Comtrade database.

[8] It is important to stress that, while in the post-MFA world global apparel trade flows are no longer governed and restrained by quotas, they are still shaped and influenced by tariffs (which continue to be relatively high). Against this backdrop, preferential market access plays an important role, as is stressed below.

Caribbean countries have been on a downward trend. The exceptions to these regional patterns are Sri Lanka in Asia (which lost market share), Haiti and Nicaragua in Latin American and the Caribbean (gaining market share during the 2000s) and Kenya and Lesotho in Africa. For several Asian countries, in particular China and India but also Bangladesh, the increase in export market shares after 2004 was, among other things, related to the fact that previously, that is, under the MFA, they had been quota constrained. After the demise of the MFA, they no longer needed to pay for quotas, which improved their international competitiveness and boosted their exports.

In fact, the African countries provide an intriguing picture. Looking at the entire decade of the 2000s, Kenya and Lesotho could increase their market share (i.e. their respective world export market shares in 2010 were higher than in 2000). However, this outcome owes to impressive gains in market share pre-MFA phase-out. Since the end of the MFA, both have lost about 50 percent of the market share they commanded in 2004. One key explanation of the reversal in market share dynamics seems to lie in the inception of the African Growth and Opportunity Act (AGOA) in 2000. AGOA grants numerous African countries preferential access to the US market, which attracted quota-seeking foreign investors and initially spurred exports in the early 2000s, not least in Kenya and Lesotho. However, once the MFA expired, apparel production in Kenya and Lesotho suffered from the slipping competitive advantage vis-à-vis exporters from Asia previously awarded by the combination of unused MFA quotas and AGOA and the related withdrawal of many 'MFA quota-hopping firms' (Staritz 2011: 55). Meanwhile, the other two African countries in our sample (Mauritius and South Africa) have been on the losing track throughout the 2000s, with the downward trend accelerating after the MFA phase-out but with distinct outcomes: while Mauritius is still an important exporter, South Africa has basically disappeared from the export scene (Staritz 2011).

Interestingly, in most countries, the trend prior to the MFA phase-out also continued afterwards. The exceptions, that is, where expiration of the MFA caused a reversal in the previous trend, are, as mentioned, Kenya and Lesotho, but also Guatemala and Jordan (all were affected negatively by the MFA phase-out, as their market share gains in the early 2000s turned into losses post-2004) and Indonesia (which lost market shares in the first half of 2000s but regained them afterwards). In the case of Jordan, the success of the early 2000s seems to be related strongly to the preferential access to the US market it was granted by the US Congress in the framework of the Qualifying Industrial Zone (QIZ) initiative, established in 1996. This initiative aims at supporting the Middle East peace process and allows Jordan (and Egypt) to export products to the US duty-free, as long as they contain inputs from Israel. In conjunction with unused MFA quotas, the QIZ initiative conferred a competitive advantage on Jordan, which helped in the expansion of its apparel export production. However, part of this competitive advantage eroded with the demise of the MFA.

Finally, also interesting to note is that, between 2000 and 2010, the Dominican Republic, Guatemala, Mexico, Mauritius and South Africa not only lost market shares but even saw their export values decline, whereas all the other countries in our sample managed to increase the value of their exports (albeit not all of them at the same pace of growth as the world apparel market, so their respective market share declined, e.g. El Salvador and Sri Lanka).

Table 3: Apparel exports ($ millions) and world export market shares, 2000-2010

Country	2000	2004	2005	2009	2010	% change 2000-2004	% change 2000-2010	% change 2000-2010
Africa								
Kenya	50.34	306.80	297.16	212.98	222.50		-27.48%	341.97%
Market share	*0.03%*	*0.12%*	*0.11%*	*0.07%*	*0.07%*		*-44.56%*	*160.62%*
Lesotho	152.51	494.27	421.70	303.47	317.74	224.08%	-35.71%	108.34%
Market share	*0.08%*	*0.20%*	*0.16%*	*0.10%*	*0.10%*	*150.00%*	*-50.86%*	*22.85%*
Mauritius	961.11	958.52	807.37	817.51	769.25	-0.27%	-19.75%	-19.96%
Market share	*0.49%*	*0.38%*	*0.30%*	*0.27%*	*0.23%*	*-23.07%*	*-38.65%*	*-52.80%*
South Africa	396.00	476.66	335.12	166.32	177.03	20.37%	-62.86%	-55.29%
Market share	*0.20%*	*0.19%*	*0.12%*	*0.05%*	*0.05%*	*-7.15%*	*-71.61%*	*-73.64%*
Asia								
Bangladesh	4,862.64	7,956.99	8,041.71	14,252.64	16,632.82	63.64%	109.03%	242.05%
Market share	*2.50%*	*3.15%*	*2.98%*	*4.70%*	*5.04%*	*26.23%*	*59.79%*	*101.70%*
Cambodia	1,215.12	2,435.78	2,699.84	3,489.22	4,195.39	100.46%	72.24%	245.27%
Market share	*0.62%*	*0.97%*	*1.00%*	*1.15%*	*1.27%*	*54.63%*	*31.66%*	*103.60%*
China	48,065.05	71,240.18	89,933.26	124,555.57	140,539.12	48.22%	97.28%	192.39%
Market share	*24.70%*	*28.24%*	*33.38%*	*41.05%*	*42.58%*	*14.34%*	*50.80%*	*72.42%*
India	5,133.91	7,308.36	9,482.59	11,945.00	12,895.70	42.35%	76.45%	151.19%
Market share	*2.64%*	*2.90%*	*3.52%*	*3.94%*	*3.91%*	*9.81%*	*34.88%*	*48.12%*
Indonesia	4,689.85	5,298.07	5,690.19	7,182.95	7,913.87	12.97%	49.37%	68.74%
Market share	*2.41%*	*2.10%*	*2.11%*	*2.37%*	*2.40%*	*-12.85%*	*14.18%*	*-0.49%*
Jordan	68.23	1,030.52	1,157.48	826.38	873.41	1410.31%	-15.25%	1180.05%
Market share	*0.04%*	*0.41%*	*0.43%*	*0.27%*	*0.26%*	*1065.07%*	*-35.21%*	*654.82%*
Sri Lanka	2,519.67	2,975.61	3,084.93	3,541.67	3,732.82	18.10%	25.45%	48.15%
Market share	*1.29%*	*1.18%*	*1.14%*	*1.17%*	*1.13%*	*-8.90%*	*-4.11%*	*-12.64%*
Vietnam	1,684.50	4,493.65	4,831.45	9,523.39	11,088.37	166.76%	146.76%	558.26%
Market share	*0.87%*	*1.78%*	*1.79%*	*3.14%*	*3.36%*	*105.79%*	*88.63%*	*288.16%*
Central America and the Caribbean								
Domin. Rep.	2,480.84	2,113.70	1,908.20	670.55	675.86	-14.80%	-68.02%	-72.76%
Market share	*1.27%*	*0.84%*	*0.71%*	*0.22%*	*0.20%*	*-34.28%*	*-75.56%*	*-83.94%*
El Salvador	1,689.00	1,818.48	1,718.49	1,422.13	1,770.90	7.67%	-2.62%	4.85%
Market share	*0.87%*	*0.72%*	*0.64%*	*0.47%*	*0.54%*	*-16.95%*	*-25.56%*	*-38.17%*
Guatemala	1,561.39	2,068.74	1,939.22	1,231.36	1,293.88	32.49%	-37.46%	-17.13%
Market share	*0.80%*	*0.82%*	*0.72%*	*0.41%*	*0.39%*	*2.21%*	*-52.19%*	*-51.13%*
Haiti	267.68	358.08	459.88	572.37	578.24	33.77%	61.48%	116.02%
Market share	*0.14%*	*0.14%*	*0.17%*	*0.19%*	*0.18%*	*3.19%*	*23.44%*	*27.38%*
Mexico	8,925.97	7,286.73	6,684.33	3,928.56	4,201.98	-18.36%	-42.33%	-52.92%
Market share	*4.59%*	*2.89%*	*2.48%*	*1.29%*	*1.27%*	*-37.03%*	*-55.92%*	*-72.24%*
Nicaragua	351.60	624.16	753.55	960.33	1,096.20	77.52%	75.63%	211.78%
Market share	*0.18%*	*0.25%*	*0.28%*	*0.32%*	*0.33%*	*36.94%*	*34.25%*	*83.85%*

Source: Author's own calculation based on UN Comtrade data.

As for the second economic upgrading indicator, the growth of export unit values,[9] progress has been more widespread. Compared with the beginning of the 2000s, except for some Central American and Caribbean economies (the Dominican Republic, El Salvador, Haiti and Nicaragua), all countries in our sample managed to export their apparel products at a higher value (price) per unit (kilogram) at the end of the decade (see Table 4).

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[9] As noted, export unit values are calculated by dividing the total value of a country's annual exports by the quantity or volume of these exports. A complication is that quantities are usually recorded at higher levels of product disaggregation. For this reason, the UN Comtrade database offers information on export quantities only at the four-digit level of product disaggregation but not at the two-digit level (on which our sector definition is based). The sector-wide (or 'aggregated') export unit values that are presented here, therefore, have to be computed through the aggregation of export unit values at the four-digit level, applying a weighted average method. However, the recording of export volumes is not always in the same unit, and not always complete. Some export quantities are reported in kilogram, others in pairs or number of items, and this can change over time – which creates a certain problem of consistency. As for the overwhelming majority of apparel export shipments, the quantity is reported in kilograms, export unit values are specified as US dollars per kilogram here. However, given the consistency problems and data gaps mentioned above, the data reported here, especially the absolute figures, should be interpreted with a grain of salt.

Table 4: Aggregated apparel export unit values ($/kg)

Country	2000	2004	2005	2009	2010	% change 2000-2004	% change 2004-2010	% change 2000-2010
Africa								
Kenya	11.89	12.97	12.34	12.47	12.20	9.08%	-5.94%	2.61%
Lesotho	12.29	12.55	13.20	12.63	13.35	2.12%	6.37%	8.62%
Mauritius	19.57	22.72	23.15	29.95	30.65	16.10%	34.90%	56.62%
South Africa	11.70	13.25	15.32	17.68	n.a.	13.25%	33.43%	51.11%
Asia								
Bangladesh	12.52	12.09	11.64	15.26	15.42	-3.43%	27.54%	23.16%
Cambodia	16.91	16.63	16.36	17.86	18.18	-1.66%	9.32%	7.51%
China	12.35	15.95	14.53	18.54	18.54	29.15%	16.24%	50.12%
India	19.25	17.00	18.30	21.30	21.70	-11.69%	27.65%	12.73%
Indonesia	18.57	17.80	17.02	21.34	20.43	-4.15%	14.78%	10.02%
Jordan	18.36	16.00	15.95	17.68	18.94	-12.85%	18.38%	3.16%
Sri Lanka	21.03	19.41	20.72	25.12	24.91	-7.70%	28.34%	18.45%
Vietnam	16.87	16.38	16.85	20.06	20.45	-2.90%	21.36%	21.22%
Central America and the Caribbean								
Dominican Rep.	16.52	16.68	16.05	16.87	14.96	0.97%	-10.31%	-9.44%
El Salvador	12.33	10.87	10.37	11.84	11.46	-11.84%	5.43%	-7.06%
Guatemala	16.84	14.67	14.78	16.77	17.26	-12.89%	17.66%	2.49%
Haiti	10.79	7.58	6.90	7.64	8.44	-29.75%	11.35%	-21.78%
Mexico	12.34	12.29	12.59	13.52	13.72	-0.41%	11.64%	11.18%
Nicaragua	13.28	13.20	11.51	11.14	11.26	-0.60%	-14.70%	-15.21%
World average	**15.76**	**18.23**	**16.97**	**19.81**	**20.39**	**15.67%**	**11.85%**	**29.38%**

Source: Author's calculation based on UN Comtrade data.

However, this overall finding masks some interesting sub-trends. In fact, with the exception of China, the Dominican Republic and all the African countries in our sample, export unit values went down everywhere in the first half of the 2000s (i.e. pre-MFA expiration), which is related at least partly to China's accession to the World Trade Organization (WTO) in 2001. Also, except for China and Mauritius (+29.2 percent and +16.1 percent between 2000 and 2004, respectively), apparel export unit values did not keep pace with the growth rate of the world average (+15.7 percent). By contrast, in the second half of the decade, all countries in our sample but the Dominican Republic, Kenya and Nicaragua could increase their export unit values – which is somewhat surprising given that it was widely expected that the MFA phase-out would lead to an intensification of international competition and, consequently, to a downward pressure on prices in the global apparel sector. Indeed, for more than half of the developing countries in our sample, the growth in their export unit values exceeded the world average (which, however, was rather meagre at +11.85 percent in the six years between 2004 and 2010 and thus lower than the +15.67 percent in the four years between 2000 and 2004, which might indeed reflect an overall intensification of competition after the MFA). However, looking at the entire decade, apparel export unit values grew faster than the world average only in China, Mauritius and South Africa (see the last column in Table 4).
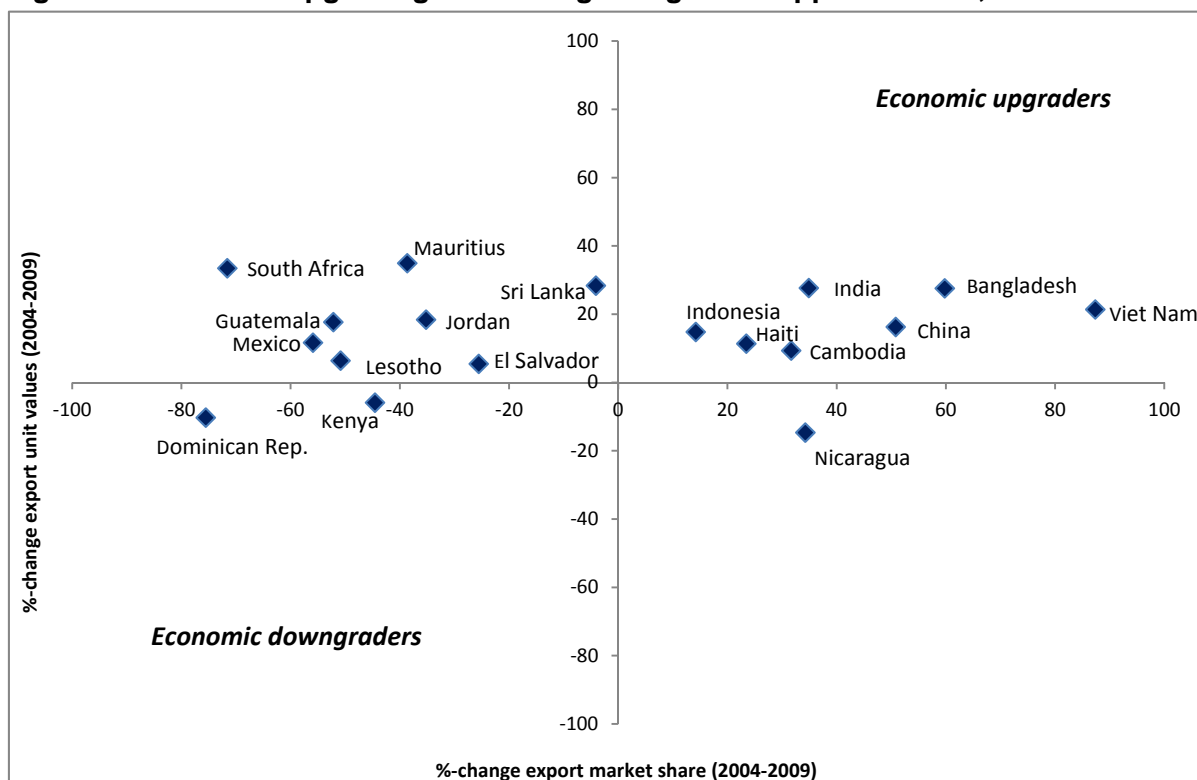
In absolute figures, Mauritius (with $30.65/kg) topped the ranking of apparel export unit values in 2010, followed by Sri Lanka ($24.91/kg) and India ($21.70/kg), with all of them above the world average (of $20.39/kg). These relatively high unit values can, to a considerable extent, be explained by the product composition of these countries' exports, which reflects which kinds of apparel items each country has specialized in. In Mauritius, for example, companies have acquired relatively strong design capabilities and have established themselves as suppliers of high-quality knits and woven men's shirts. Moreover, in relative terms, the European Union (EU) (with higher-priced niche markets) has gained importance as an apparel export destination vis-à-vis the US (a mass market with lower prices). Sri Lanka, on the other hand, exports a lot of lingerie (e.g. for Victoria's Secret), which typically commands relatively high unit prices, while Indian apparel exports often contain embroidery and beads, which add to their value. At the bottom of the ranking one finds the Central American and Caribbean nations of El Salvador ($11.46/kg), Nicaragua

($11.26/kg) and Haiti (with a mere $8.44/kg) which all export rather unsophisticated products (Table 4).

Covering the post-MFA period, Figure 1 combines the two economic upgrading indicators in a 2x2 matrix where the countries that figure in the upper right-hand quadrant are considered clear-cut economic upgraders (according to the definition presented above), as they have managed to couple export market share gains (plotted on the horizontal axis) with increases in their export unit values (plotted on the vertical axis). By contrast, the countries that appear in the lower left-hand quadrant are considered clear-cut economic downgraders, which saw both their export market shares and their export unit values decline between 2004 and 2009.

As Figure 1 shows, there has been quite some economic upgrading after the MFA phase-out in our country sample – and it has been concentrated in Asia. In fact, six of the seven countries that qualify as clear economic upgraders are Asian, the only exception being Haiti (whose success has been related strongly to its duty-free access to the US market and the more liberal rules of origin (RoO) thanks to the Hemispheric Opportunity through Partnership for Encouragement (HOPE) Act (see Frederick and Gereffi 2011). For some of them, like Bangladesh, Cambodia and Vietnam, this positive development post-MFA has been quite surprising, given that quota hopping had contributed considerably to the development of their apparel industries, so that they were expected to lose out significantly in the aftermath of the MFA dismantling (Goueva Abras 2012, Staritz 2011). However, all three countries have managed effectively to turn their low labour costs into a genuine competitive advantage and to utilize the preferential access they have been enjoying particularly to the EU market (through the EU's Everything but Arms (EBA) initiative for least developed countries (LDCs) in the case of Bangladesh and Cambodia, and within the Generalized System of Preferences (GSP) scheme in the case of Vietnam). Vietnam's positive development was additionally spurred by its accession to the WTO in 2007, which further improved global market access. Moreover, in Bangladesh and Vietnam, proactive government policies to prepare for the MFA phase-out and to encourage industry upgrading have played a crucial role in the strong performance of their apparel firms. Both countries also saw considerable investments in backward linkages into the textile industry, which helped improve supply chains, delivery time and competitiveness. In the case of Bangladesh in particular, for a part of the sector this has facilitated functional upgrading from assembly to full-package apparel production, including the provision of sourcing and logistics services (see Fernandez-Stark et al. 2011, Staritz and Frederick 2012a, 2012b). In Cambodia, while government support was limited and product and functional upgrading rather scarce, trade preferences (EBA), the ILO's BFC programme and the reputation for ethical sourcing played an important role in the survival and even success of the apparel industry post-MFA (Brown et al. 2011, Staritz and Frederick 2012c).

Figure 1: Economic upgrading and downgrading in the apparel sector, 2004-2009

Note: In order to even out year-on-year fluctuations and to minimize the impact of data outliers, we used three-year averages, i.e., we calculated the percentage change from 2003-2004 to 2008-2010.

Source: Author's illustration based on data from UN Comtrade.

For other countries, the good post-MFA performance was less surprising (given that they had faced quota restrictions during the MFA); particularly 'China, and to a lesser extent India [were expected to] sweep the board in the US and EU markets at the expense of other suppliers' (Thoburn 2010: 3). And indeed, these two countries are among the stellar economic performers in our sample. Frederick and Gereffi (2011) describe China as the big winner in the global apparel sector since 2000 and list a number of explanatory factors for its success: government support (including infrastructure investments), a well-developed textile industry (providing strong backward linkages), the establishment of apparel clusters allowing for economies of scale, heavy investment in machinery leading to process upgrading and productivity growth, the availability of skilled and cheap labour and management capabilities, a diversified export product basket and the diversification of end markets into the dynamic domestic market and emerging regional markets.

The good performance of India's apparel sector, in turn, can also be explained to a large extent by its backward linkages to a well-established fibre-textile supply chain and its – increasingly dynamic (thanks to the emerging Indian middle class) – domestic market, which both have fostered the development of a broad range of functional capabilities, including manufacturing, product development, design and even branding. In fact, this functional upgrading has been quite important in bolstering the competitiveness of India's apparel sector after the MFA, given its comparatively more sophisticated – and higher-priced – export basket (as reflected in its export unit values, see Table 4). Targeted domestic policies (most notably the National Textile Policy 2000) and local entrepreneurship also contributed decisively to the prosperity of India's apparel sector post-MFA (Staritz and Frederick 2012d, Tewari 2008).

By contrast, solely two countries in our sample appear to be outright economic downgraders, namely, Kenya and the Dominican Republic. As mentioned above, Kenya's apparel sector suffered

from a reversal of 'quota hopping' after the MFA phase-out. The Dominican Republic, on the other hand, as one of the regional suppliers to the US whose key competitive advantage is its proximity to the end market, has paid for its dependence on demand from the US. Moreover, it has suffered from some of the drawbacks of the US–Dominican Republic Central America Free Trade Agreement (DR-CAFTA), which offers preferential access to the US market, but only for apparel products assembled under complex rules of origin that favour US-made fabric: the (induced) reliance on (more expensive) US inputs has harmed international competitiveness while US trade preferences have augmented competition among regional suppliers rather than encouraged regional production sharing through the development of complementary capabilities like in Asia (Frederick and Gereffi 2011).

In the remaining two quadrants, one finds the 'intermediate cases', that is, those countries where progress on one indicator has been accompanied by regression on the other indicator. Half of the countries in our sample rank as 'intermediate cases'. Loosely speaking, their experiences conform to economic theory in the sense that in these cases prices (export unit values) and demand for their products (as reflected in their market share) have developed inversely. Within this group, the bulk of countries have registered declines in their market shares but increases in their export unit values and, thus, show up in the upper left-hand quadrant. One could conjecture that in these cases price increases have gone at the expense of international competitiveness, as reflected in declining market shares. However, the group of countries appearing in this one quadrant is actually quite heterogeneous. For example, Mauritius, South Africa and Sri Lanka are all situated in the north-western quadrant but their underlying stories are quite different – which underscores the importance of complementing and cross-checking the analysis undertaken here with the findings from case studies. In South Africa, apparel production is increasingly geared towards the domestic market (Morris and Barnes 2009), which is reflected in a reduction in both export values and export market share. However, those articles that are still produced for export are in a higher-value segment which, together with rising wages (see Table 6), explains the rise in export unit values. Meanwhile, Sri Lanka is a prominent case of both functional and product upgrading, where production has shifted from lower-value to more complex higher-value products, especially lingerie articles (Staritz and Frederick 2012e), which is mirrored in the increase in export unit values. At the same time, this moving out of lower-value segments has resulted in a loss of world market shares (while export values kept increasing). The story of Mauritius is quite similar. Many foreign-owned (mostly Hong Kong-owned) firms that had been serving the US market left Mauritius when the MFA expired, while locally owned and European firms, which offered more capabilities and produced higher-value products, picked up the slack by expanding exports to the EU market (Staritz 2011). Overall, this resulted in a decline of world market shares (and indeed of export values) and an increase in export unit values.

By contrast, in the case of Mexico, the increase in export unit values does not so much reflect product upgrading but primarily rising production costs. Labour costs are relatively high (see Table 6) and the costs of inputs – with yarns and fabrics largely imported from the US within production-sharing arrangements – have gone up. Limited government support, the lack of broad upgrading among suppliers (which mostly operate under the traditional *maquiladora* model, which locks them into simple assembly tasks and provides few opportunities to develop more advanced full-package capabilities) and the failure to diversify export markets beyond the US have further contributed to Mexico's slipping market position in a context of increased competition from low-cost Asian suppliers (Staritz and Frederick 2012f). Similarly, Lesotho's apparel manufacturing has not upgraded much post-MFA, and has basically remained concentrated on low-value assembly activities, which are no longer enough for many global buyers. The loss of competitiveness – especially against low-cost Asian exporters – has been aggravated by slow productivity growth

(related to very limited process upgrading), the lack of backward linkages and infrastructural challenges, which have contributed to rising costs – which have been one reason for rising export unit values. However, the increase in unit values might also reflect a bit of product and channel upgrading: while many Taiwanese-owned firms closed and left Lesotho in 2004, another type of foreign investor emerged, namely, South African apparel manufacturers. Suppliers integrated in these South African-owned supply chains produce comparatively more complex and higher-value articles, which are then exported to South Africa. Given the substantial surge of these exports and the relative increase in importance of South Africa as an end market, this also seems to have contributed to higher aggregate unit values of Lesotho's exports[10] (Morris et al. 2011, Staritz 2011, Staritz and Morris 2012).

The only intermediate case that appears in the lower right-hand quadrant is Nicaragua, which has combined decreasing export unit values with market share gains. This combination raises the question as to whether it was process upgrading and productivity growth that led to declining production costs, lower prices and, consequently, market share gains. However, there has been little evidence for process upgrading in the Nicaraguan apparel sector. Rather, garment producers have had limited success in upgrading and in moving up the value chain. In fact, they are still engaged mainly in assembly services and the expansion of exports has been mainly in low-value articles. The drop in Nicaragua's unit values, thus, has to do with a shift in the composition of its export basket in favour of cheaper apparel items.[11] Yet, in these low-value segments, Nicaragua has managed to stay competitive and even increase its market share post-MFA, thanks largely to preferential access to the US market within the DR-CAFTA and the less strict RoOs it was granted (Fernandez-Stark et al. 2011). Besides, Nicaragua's apparel exporters have also benefited from favourable exchange rate developments (with the local currency depreciating by about a third vis-à-vis the US dollar between 2004 and 2010, according to International Monetary Fund (IMF) data).

To sum up, there has been quite some post-MFA economic upgrading in our country sample. More precisely, seven of the eighteen countries studied here have managed to gain export market shares and at the same time also increase the unit values of their apparel exports. These countries appear to have truly enhanced their competitiveness and, thus, qualify as unequivocal economic upgraders according to our definition. With the exception of Haiti, all of these post-MFA winners are Asian countries, including Bangladesh, Cambodia, China, India, Indonesia and Vietnam. Interestingly, only two apparel exporters in our sample, the Dominican Republic and Kenya, experienced clear-cut economic downgrading after the MFA phase-out, reflecting the fact that not even a decline in their export unit values could prevent their loss of market share. Meanwhile, half of the developing countries studied here have experienced ambiguous progress, with improvements on one front but deterioration on the other. The bulk of these 'intermediate cases' have lost export market share while increasing their export unit values – the latter reflecting

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[10] Lesotho's case shows the importance of combining trade data analysis with case study analysis because Lesotho's apparel producers are actually supplying to two very distinct value chains (one primarily serving the US, the other one supplying higher-value products to South Africa) with very different dynamics. Looking only at trade data does not allow for distinguishing and identifying these different dynamics, particularly since the UN Comtrade database does not report Lesotho's exports to South Africa (given that both countries are members of the Southern African Customs Union, SACU). This shows the limits of relying just on trade data.

[11] In this context, it is important to point to the fact that one can actually distinguish between two different apparel value chains operating and competing in Nicaragua: one Asian based and one US based. While suppliers in the value chain with Asian headquarters are concentrated predominantly in the knitwear sector (producing the lowest-priced goods coming out of Nicaragua), the US-owned companies are involved mainly in woven goods (which command higher unit prices). In recent years, the cheaper products made by the Asian-based chains have gained importance in Nicaragua's apparel export basket at the expense of the more expensive articles produced in the US-based chains, resulting in an overall decline in aggregate export unit values (see Bair and Gereffi 2011).

product and/or functional upgrading in some cases, and rising production costs and loss of competiveness in other cases. Among the African and Central American and Caribbean countries in our sample, almost all are classified either as intermediate cases or as economic downgraders. Overall, our findings thus confirm the pattern also identified in the case study literature that, in general, regional suppliers and also some low-income countries (LICs) in Sub-Saharan Africa have lost out to the low-cost and often more capable apparel producers in Asia.

Social upgrading and downgrading experiences

In a second step, we now look at how the countries in our sample have fared in terms of social upgrading. Before starting, however, a note of caution is warranted, as data gaps are much more of an issue than for the economic upgrading indicators. The statistical recording of information on employment and wages, particularly at a sufficiently detailed sectoral level, is not as comprehensive as for trade flows, so for some countries and years data are scarce or not available at all. The categorization of economic activities can differ somewhat between (national and international) data sources, so the definition of what constitutes the 'apparel sector' can vary to some extent across countries and/or indicators.[12] A more general problem is that official data typically do not cover the informal sector and do not account sufficiently for irregular employment like temporary or contractual work (where working conditions and pay are usually worse than in regular jobs) – which, however, is quite important in several countries. Moreover, contingent on data availability, the time spans of data coverage are not always identical across the countries in our sample. All this hampers to a certain degree the comparability of the social upgrading analysis, first with the findings from the economic analysis and second across countries. Thus, inferences made here should be interpreted with some caution. The same caveat applies to the analysis on the relationship between economic and social upgrading undertaken later.

Looking at the first indicator of social upgrading, that is, the change in apparel employment, one can observe a clear regional pattern (see Table 5). In all the Asian countries in our sample, the number of jobs in the apparel sector increased throughout the 2000s, that is, both before and after the MFA phase-out, the only exception being Sri Lanka, where employment increased in the early 2000s but fell after 2004. This clearly reflects and confirms the shift towards Asia as the new centre of gravity in garment manufacturing. Vietnam, China, Jordan and Bangladesh were the biggest winners in terms of apparel employment creation (+227 percent, +108 percent, +107 percent and +94 percent between 2000 and 2009, respectively).

In the cases of Bangladesh and, in particular, Vietnam, these rapid rates of employment expansion reflect the burgeoning demand for labour that accompanied the increasing integration of these two countries into international apparel value chains (see export growth rates in Table 3 above). In the case of Jordan, however, it is important to qualify this impressive rise in employment, as many of the jobs created have been filled by migrant workers from South Asia, who are estimated to account for 70-75 percent of all employment in the Jordanian apparel sector. This has raised questions about the long-term sustainability of the garment industry in Jordan and the real extent of employment creation for the Jordanian economy (Brown and Deardoff 2011).

Meanwhile, in China but also in India (where apparel employment also grew rapidly over the 2000s), rising incomes and the emergence of a middle class have contributed to an increasing importance of the domestic market, which has helped maintain or even further spur employment

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[12] In some cases, for example, data are available only for the 'textiles and clothing sector', and we have to make do with these and use them as proxy for the apparel sector more narrowly. In other cases, wage data can be found only for certain occupational groups within the apparel sector (like garment cutters or sewing-machine operators) so the evolution of their wage rates are taken as a proxy for the sector as a whole.

generation (Frederick and Gereffi 2011).[13] This reorientation towards domestic consumers notwithstanding, the recent global economic crisis did not leave the Chinese apparel sector unscathed, and employment has actually been slightly decreasing since 2008. For India, no data are available for 2009 but already between 2007 and 2008 employment fell a bit and Forstater (2010) reports that 0.9-3 percent of workers in the Indian apparel and textiles sector lost their jobs during the crisis. Yet the informal sector in India is a quite sizable[14] (Gouvea Abras 2012), and has probably absorbed some of the labour that lost formal jobs during the crisis. Nicaragua is another success story, as apparel producers in EPZs generated almost 20,000 new jobs between 2002 and 2009. However, this overall trend masks the fact that the peak in apparel employment was actually reached in 2007, while employment declined in 2008 but started to increase again in 2009. What is worthwhile noting in this context is that there are only two countries in our sample where apparel employment did not decline in the wake of the crisis, namely, Bangladesh and Jordan.

By contrast, among the poorest employment performers are the African and most Central American and Caribbean countries in our sample, where many apparel workers have lost their jobs in the course of the 2000s. Labour was hit hardest in the Dominican Republic, Mexico and South Africa, where employment was reduced through the entire decade – with quite an acceleration after the MFA phase-out – so that by 2009 over half of all jobs had been cut back. In El Salvador and Mauritius, apparel employment has also declined since the beginning of the new millennium, yet at a more moderate speed (-18 percent and -42 percent, respectively). Meanwhile, in Guatemala, Kenya and Lesotho, the apparel sector added jobs in the early 2000s (in the latter two countries spurred by the inception of AGOA) but, when the MFA expired in 2004, this upward trend was reversed. Indonesian workers, by contrast, seem to have benefited from the MFA phase-out: while apparel employment decreased between 2000 and 2004, it went up again afterwards[15] – although this upward trend suffered markedly from the economic crisis that set in in 2008.

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[13] Please note that, with a few exceptions where they relate to export processing zones (EPZs), the employment figures reported here cover the entire apparel sector, not just employment for apparel production geared towards export markets. That is, official data make no distinction between employment related to apparel production for export demand (stemming from the country's insertion into GVCs) and production for domestic demand. We therefore have to take developments in the apparel sector as a whole as a proxy for developments in export-related apparel production if we want to get an idea about social upgrading/downgrading processes stimulated by or related to participation in GVCs. This is an issue, given that the indicators for economic upgrading are more narrowly based on export data. The same caveat also applies to the wage data.
[14] This implies that official figures underestimate the real number of jobs in garment production.
[15] This exactly mirrors the pattern in Indonesia's export market share; see above.

Table 5: Employment in the apparel sector, 2000-2009

Country	2000	2004	2005	2008	2009	% change 2000-2004	2004-2009	2000-2009
Africa								
Kenya	25,288	34,614	34,234	25,766	24,359	36.88%	-29.63%	-3.67%
Lesotho	16,866	47,998	37,608	41,753	33,742	184.58%	-29.70%	100.06%
Mauritius	72,810	59,691	52,659	50,924	42,355	-18.02%	-29.04%	-41.83%
South Africa	124,001	99,558	76,792	55,892	49,698	-19.71%	-50.08%	-59.92%
Asia								
Bangladesh	1,600,000	2,000,000	2,000,000	2,800,000	3,100,000	25.00%	55.00%	93.75%
Cambodia	168,824	269,846	283,906	324,871	281,855	59.84%	4.45%	66.95%
China	2,156,300	3,202,600	3,460,600	4,587,000	4,493,100	48.52%	40.30%	108.37%
India	329,401	447,466	538,615	622,913	n.a.	35.84%	39.21%	89.10%
Indonesia	479,155	438,045	451,938	495,192	464,465	-8.58%	6.03%	-3.07%
Jordan	14,216	18,002	18,427	22,410	29,460	26.63%	63.65%	107.23%
Sri Lanka	280,000	306,984	273,600	270,000	280,000	9.64%	-8.79%	0.00%
Vietnam	231,948	498,226	511,278	758,274	n.a.	114.80%	52.19%	226.92%
Central America and the Caribbean								
Dom. Rep.	141,945	131,978	91,491	49,735	41,285	-7.02%	-68.72%	-70.91%
El Salvador	131,300	123,300	105,400	107,100	n.a.	-6.09%	-13.14%	-18.43%
Guatemala	88,255	113,272	87,682	n.a.	56,702	28.35%	-49.94%	-35.75%
Haiti	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mexico	640,000	482,396	409,910	314,343	289,351	-24.63%	-40.02%	-54.79%
Nicaragua	32,220	40,940	56,335	50,712	51,850	27.06%	26.65%	60.92%

Note: For the Dominican Republic, Kenya and Nicaragua, data refer to employment in EPZs. For Lesotho, figures are for employment in the textiles and clothing sector. For El Salvador, the figure for 2008 refers to 2007; for Guatemala, the figure for 2000 refers to 2001; for Kenya and Nicaragua, the figure for 2000 refers to 2002; and for Sri Lanka, the figure for 2000 refers to 1999. The growth rates reported in the last three columns cover different time periods accordingly.

Sources: Author's illustration based on data from UNIDO INDSTAT4 and ILO LABORSTA databases, National Bureau of Statistics of China, ASIES (2007, 2010), CNZFE (2005, 2010), EPZA (2009), Lesotho Bureau of Statistics (2010), ProNicaragua (2011), Staritz and Frederick (2012a, 2012c, 2012e, 2012f).

Table 6 presents data on labour earnings in the apparel sector (the second indicator for social upgrading). It is difficult to find homogenous information across countries, which is why we have to settle for different indicators or different units across countries. The top panel of Table 6 shows the average nominal annual wages in US dollars for various countries for the years 2000, 2004, 2005, 2008 and 2009.[16] For other countries, no wage data could be found. In these cases, we instead use data on hourly labour costs (including social charges), as gathered by Jassin-O'Rourke Group (2002, 2008), as a proxy for labour earnings (see bottom panel of Table 6). For Nicaragua, given the lack of availability of data on actual wages, the table indicates the minimum annual wages in US dollars (including social charges) that are set through tripartite agreements (among trade unions, employers and the government). The last three columns present the growth rates of nominal wages pre-MFA phase-out (2000-2004), post-MFA phase-out (2004-2009) and over the full decade of the 2000s.

As Table 6 shows, wages are highest in Mexico and South Africa, where employees in the apparel sector earn more than $5,000 per year.[17] In a labour-intensive sector, where low labour costs provide a competitive advantage, these relatively high wages might have contributed to the loss of international competitiveness, as reflected in declining export market shares shown in Table 3

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[16] In some cases, these annual figures had to be calculated from data reported in different time units, e.g. average weekly or monthly wages. All wages reported in local currency were converted into US dollars using exchange rate data from the International Financial Statistics (IFS) database of the IMF.

[17] Please note that here we discuss *nominal* wages, as they allow cross-country comparisons. In Figure 2, however, we use (changes in) *real* wages (i.e. nominal wages deflated by the Consumer Price Index, CPI), as they give an indication of the development of workers' purchasing power. Real wages are thus more revealing about the extent to which labour has been able to appropriate the value created in apparel production, that is, the distribution of the value generated – which is a better indicator of social upgrading.

above. At the bottom end of the ranking are Cambodia, Kenya, Lesotho and Indonesia, where workers are paid less than or a just bit more than $1,000 per year. Intermediate cases, where annual wages in the clothing sector average around $3,500, include China, the Dominican Republic, Jordan and Mauritius. As mentioned, for several countries, the only information that could be found is on hourly labour costs, which are taken here as a proxy of labour earnings. Among these countries, Bangladesh has by far the lowest labour costs (at $0.22 per hour), followed by Vietnam ($0.38/hour) and Sri Lanka ($0.43/hour). By comparison, apparel producers in Central America face labour costs that are a bit higher in Haiti (at $0.52 per hour) and much higher in Guatemala ($1.65/hour).

What is more important for our analysis is how wages in the apparel sector have developed over the past decade. The most remarkable cases in this regard are China (where nominal wages almost tripled between 2003 and 2009) and Nicaragua, India and Jordan (where wages more than doubled over the 2000s). In China, this increase in wages in US dollar terms has been driven by a tightening of labour legislation, currency appreciation and rapid economic growth creating labour shortages (which strengthen workers' bargaining power). Still, China could preserve its international competiveness thanks to high labour productivity, supply chain development and backward linkages and well-developed infrastructure systems (Clark and Milberg 2010, Frederick and Gereffi 2011). As for the positive development of wages in the Nicaraguan apparel sector, the strong industrial relations system and the fairly well-established social dialogue, as incarnated in tripartite negotiations (with a relatively active role of the Ministry of Labour), have played important roles. They also seem to have brought some improvement in working conditions, although they remain poor in many *maquila* apparel factories (MSN et al. 2012).

Table 6: Nominal wages and labour costs in the apparel sector (US$), 2000-2009

Country	Indicator/unit	2000	2004	2005	2008	2009	% change		
							2000-2004	2004-2009	2000-2009
Africa									
Kenya	Avg. annual wage	747	987	938	1,139	926	32.10	-6.15	23.97
Lesotho	Avg. annual wage	1,271	1,656	1,811	1,142	1,325	30.28	-19.98	4.25
Mauritius	Avg. annual wage	2,833	3,562	3,645	n.a.	3,577	25.73	0.43	26.26
S. Africa	Avg. annual wage	3,758	5,161	6,35	5,718	6,066	37.35	17.53	61.43
Asia									
Bangladesh	LC ($/hour, incl. SCs)	0.39	n.a.	0.23	0.22	n.a.	-41.03	-4.35	-43.59
Cambodia	Avg. annual wage	753	705	n.a.	888	834	-6.25	18.16	10.77
China	Avg. annual wage	n.a.	1,402	1,578	3,094	3,661	n.a.	161.09	191.46
India	Avg. annual wage	777	1,032	1,136	1,642	n.a.	32.80	59.16	111.36
Indonesia	Avg. annual wage	752	1,127	1,012	1,37	1,33	49.79	18.07	76.85
Jordan	Avg. annual wage	1,737	1,947	2,275	4,107	3,444	12.09	76.87	98.26
Sri Lanka	LC ($/hour, incl. SC)	0.48	0.46	n.a.	0.43	n.a.	-4.17	-6.52	-10.42
Vietnam	LC ($/hour, incl. SC)	n.a.	n.a.	0.28	0.38	n.a.	n.a.	35.71	n.a.
Central America and the Caribbean									
Domin. Rep.	Avg. annual wage	3,718	2,182	3,38	3,466	3,537	-41.32%	62.10%	-4.87%
El Salvador	Avg. annual wage	1,988	2,084	2,72	2,853	n.a.	4.81%	36.88%	43.46%
Guatemala	LC ($/hour, incl. SC)	Jän.49	n.a.	n.a.	Jän.65	n.a.	n.a.	n.a.	10.74%
Haiti	LC ($/hour, incl. SC)	0.49	n.a.	n.a.	0.52	n.a.	n.a.	n.a.	6.12%
Mexico	Avg. annual wage	4,829	4,95	5,467	6,312	5,328	2.51%	7.64%	10.34%
Nicaragua	Min. annual wage in $, incl. SC	963	1,243	1,362	2,138	2,202	29.10%	77.12%	128.66%

Note: 'LC ($/hour, incl. SC)' is for 'labour costs ($ per hour, including social charges)'. For Cambodia and Lesotho, the figures refer to the textiles and clothing sector. For the Dominican Republic, Kenya, and Nicaragua, the figures reported are wages in textiles and apparel in EPZs. For El Salvador, the figure for 2000 refers to 2001; for Bangladesh, Cambodia, Guatemala, Haiti, Kenya and Sri Lanka, the figure for 2000 refers to 2002; for China and Mexico, the figure for 2000 refers to 2003; for Mauritius, the figure for 2009 refers to 2007. For El Salvador, India, Bangladesh, Guatemala, Haiti, Sri Lanka and Vietnam, the final year underlying the calculation of growth rates is 2008. Growth rates reported in the last three columns cover different time periods accordingly.
Sources: Author's own illustration based on wage data from UNIDO INDSTAT4, Jassin-O'Rourke Group (2002, 2008), CNZFE (2005, 2010), EPZA (2009), Lesotho Bureau of Statistics (2010), INEGI data, ProNicaragua (2011) and exchange rate data from the IMF IFS database.

Other countries where apparel workers managed to increase their pay considerably include Indonesia and South Africa (+77 percent and +61 percent from 2000 to 2009, respectively). Meanwhile, labour income grew quite slowly in Cambodia, Guatemala, Haiti, Lesotho and Mexico, where wages in the late 2000s were only about or not even 10 percent higher than in the early 2000s. Yet our sample also includes a few countries where nominal wages or labour costs in US dollar terms even declined in the course of the decade, namely, Bangladesh, the Dominican Republic and Sri Lanka.[18] However, while in Bangladesh and Sri Lanka labour costs in US dollars decreased throughout the 2000s, in the Dominican Republic wages in US dollar terms went down only in the first half of the decade but rose again after 2004. More in-depth analysis shows that Dominican wages have actually increased continuously in local currency terms, so that the main driving factor behind the decline in the early 2000s seems to have been exchange rate depreciation. A similar pattern can be observed in Cambodia, where apparel wages fell slightly in the early 2000s but went up again after the demise of the MFA in 2004. However, unlike in the Dominican Republic, exchange rate movements played no role in Cambodia (i.e. wages converted into US dollar terms have followed the same trend as wages measured in the local currency). This upward trend in the second half of the decade can rather be explained, at least in part, by the increase in minimum wages that was agreed on in tripartite negotiations in 2006 (Arnold 2011) and the positive effects of the BFC programme (Robertson 2011).

There are two other countries in our sample where 2004, the year of the MFA phase-out, marked a turning point in wage trends, namely, Kenya and Lesotho – however, in these cases in the other than expected direction: in both countries, apparel wages in US dollar terms rose until 2004 but then started to fluctuate so that average earnings in 2009 were below the 2004 level. However, in the case of Kenya, this owes primarily to a dramatic crisis-related drop in wages in 2009; in fact, in both the preceding and the following year (i.e. 2008 and 2010), average wages exceeded the level of 2004. For Lesotho, the picture is somewhat more complicated, with even more pronounced oscillations in average wages, but the exchange rate emerges as one explanatory factor: in local currency, average earnings in 2009 actually exceeded their 2004 level but, when converted into US dollars, average earnings in 2009 are below their 2004 level. Overall, one can observe a slight upward trend in nominal wages in the apparel sector over the past 10 years.
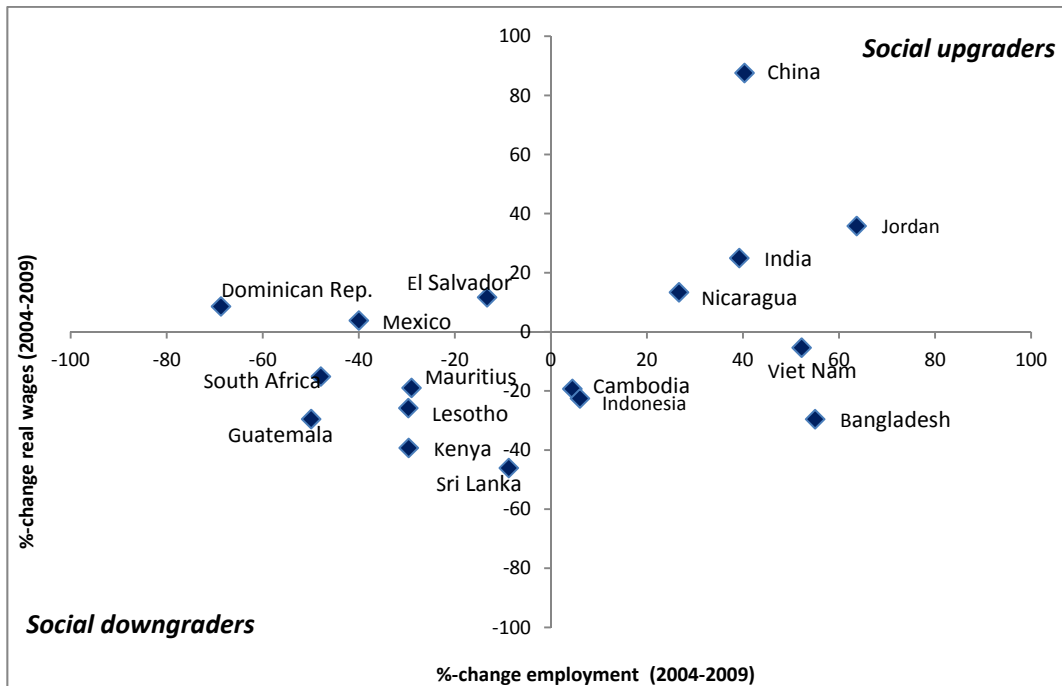
Bringing together the data on changes in employment and real wages to assess social upgrading or downgrading for the post-MFA period, we find that clear-cut social *upgrading* in the apparel sector was rather rare after the MFA phase-out. In fact, only four countries in our sample qualify as unambiguous social upgraders (according to the definition presented above) and show up in the upper right-hand quadrant of Figure 2. More precisely, only in China, India, Jordan and Nicaragua did both employment and real wages go up in the apparel sector during 2004-2009. Among them, China recorded the highest increase in real wages (+88 percent), while Jordan saw the largest expansion in employment (+64 percent), which, however, as mentioned above, has to be qualified somewhat because of the high share of migrant workers. In both India and Nicaragua, the other two clear-cut upgraders, advances have been more modest.

Social *downgrading*, on the other hand, was quite widespread in our sample, with six countries registering a decline in both employment and real wages in their apparel sectors. Strikingly, all the African countries in our sample (Kenya, Lesotho, Mauritius and South Africa) are classified as downgraders, appearing in the south-western quadrant. Guatemala and Sri Lanka are the other

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[18] Please note, however, that for Bangladesh and Sri Lanka the latest figures are for 2008 and thus do not take into account increases in minimum wages in 2010 (see Staritz and Frederick 2012a).

unambiguous social downgraders in our sample. While employment did not decline by much in the Sri Lankan garment sector, real wages saw the most dramatic drop of all countries in our sample.

Figure 2: Social upgrading and downgrading in the apparel sector, 2004-2009

Note: Time spans covered are different for Bangladesh (2005-2008), El Salvador (2004-2008), Guatemala (2002-2008) and Vietnam (2005-2008).
Source: Author's own illustration; data sources as indicated above.

Seven countries in our sample figure as 'intermediate cases' (with opposite developments on the two indicators), revealing an interesting regional pattern. Whereas all the countries that show up in the north-western quadrant are from Central American and the Caribbean, all the countries in the south-eastern quadrant are Asian. The latter include many of the economic success stories – Bangladesh, Cambodia, Indonesia and Vietnam – where growing demand for labour (triggered by increases in apparel production and exports) apparently did not translate into a rise in real wages.

For the countries located in the upper left-hand quadrant, it is interesting to note that two of them (El Salvador and Mexico) show up in the same quadrant in the economic upgrading matrix (see Figure 1 above), so that in these cases export market share losses (and indeed export *value* losses) were matched with job cuts, and real wage increases went hand in hand with rising export unit values. The third one, the Dominican Republic, also displays a consistent pattern across the economic and the social spheres: it is the country in our sample that has experienced both the biggest loss in export market shares and the sharpest decline in apparel employment.

Overall, the findings from our country sample suggest that social upgrading has not been easy to achieve in the apparel sector since the MFA phase-out, maybe reflecting mounting pressure on labour (as a cost factor) related to the intensification of competition unleashed by the end of the quota system. In fact, the bulk of developing countries studied here experienced either outright social downgrading or ambiguous progress, with improvements on one front but deterioration on the other. Compared with the economic realm, it seems that upgrading has been more tenuous in the social sphere while downgrading has been far more common. This observation already gives a first hint on the possible relationship (or lack thereof) between economic and social up- and downgrading. Let us therefore now turn to the analysis of the connection between the two realms.
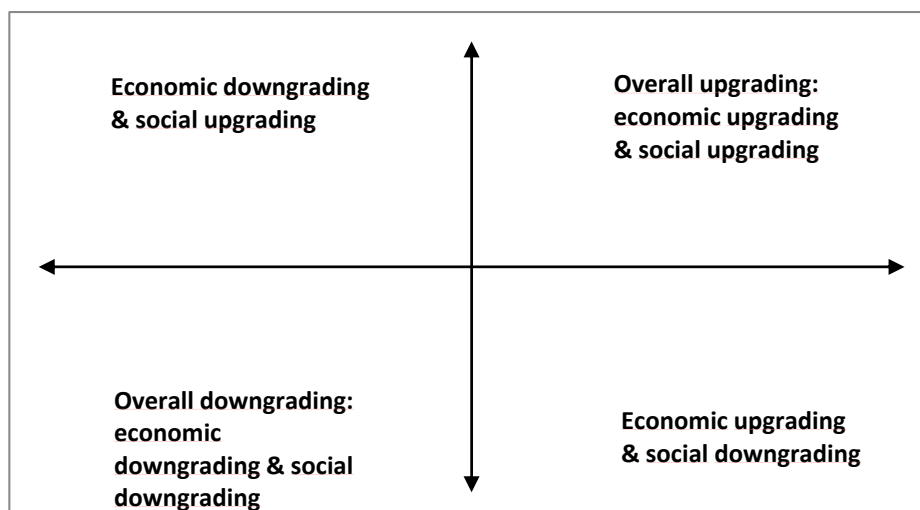
'Overall upgrading': where did economic upgrading and social upgrading concur, and what is their relationship?

In a final step, we now apply our parsimonious approach to undertake some basic investigation on the relationship between economic performance and social performance in the apparel sector. To recall, economic upgrading is defined here as a combination of changes in export market shares and changes in export unit values; social upgrading is defined by changes in employment and changes in real wages. We now create a single (composite) index of economic upgrading and a single (composite) index of social upgrading, and we plot them together. This allows for an analysis of the relation between economic and social upgrading in a 2x2 matrix, a prototype of which is displayed in Figure 3. Of the four different scenarios in Figure 3, the north-eastern and south-western quadrants represent the clear-cut cases. Apparel exporters that combine economic upgrading and social upgrading for 'overall upgrading' appear in the north-eastern quadrant. The south-western quadrant, on the other hand, features those countries that have registered both economic and social downgrading and that, therefore, have experienced 'overall downgrading'. Countries located in the remaining two quadrants are intermediate cases, with success on one front (either economic or social) but lack of progress on the other. Their experiences are thus harder to interpret as either clear 'overall' upgrading or downgrading.

To generate such matrices and, more generally, to relate changes in the economic and social realms to each other, it is necessary to create a single variable for each realm. This is indispensible, as we have to reduce four dimensions (our two indicators for economic upgrading plus our two indicators for social upgrading) to just two dimensions (i.e. economic upgrading on the one hand and social upgrading on the other). In those cases where both indicators *within one sphere* (i.e. the economic or the social sphere) have the *same* sign, the designation is unambiguous. These countries are clearly economic or social upgraders or downgraders. When the two indicators in a given realm have moved in *opposite* directions, however, the designation is less straightforward. For example, if a country has experienced an *increase* in export market shares but a *decrease* in export unit values, should it be classified as an economic upgrader or an economic downgrader? Similarly, what if employment has *grown* while real wages have *fallen*? Is that to be called social upgrading or social downgrading?

There are, in fact, infinite ways to create such composite indexes. Below, we propose three simple methods. Method 1 is discussed more extensively and also serves to generate a 2x2 matrix for the post-MFA apparel sector. The other two methods are deployed to do some robustness checks.

Figure 3: Prototype matrix of 'overall upgrading/downgrading'

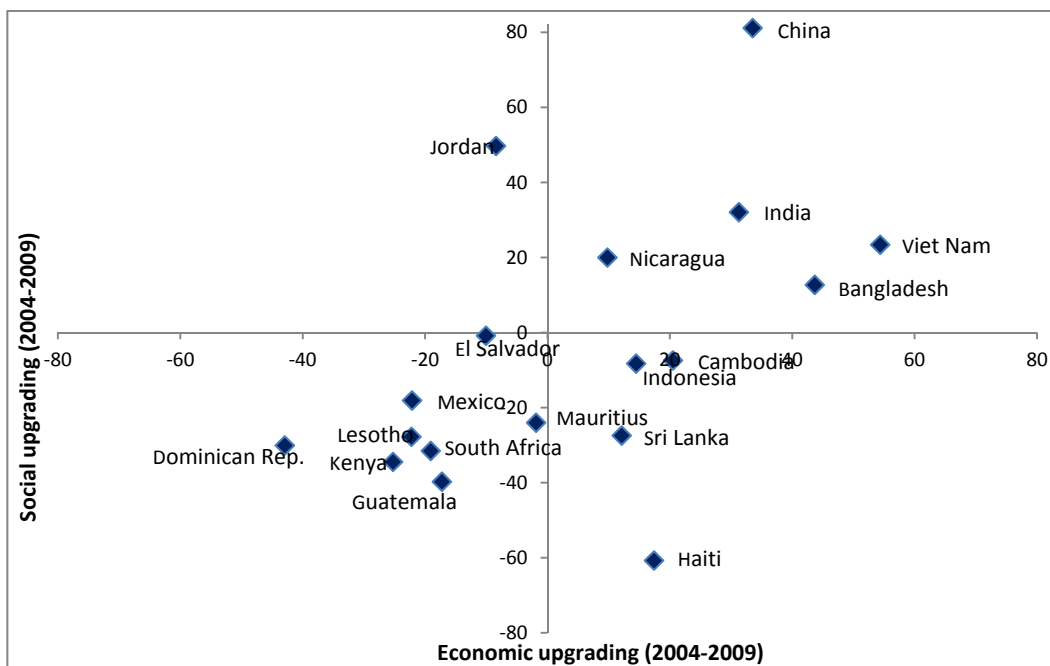**'Overall upgrading' according to Method 1: symmetric 'composite index'**

In the first method, all four underlying indicators are given equal weight, that is, they enter the computation of the composite index symmetrically. To compute the composite indicator for 'economic upgrading', for example, a weight of 50 percent each is assigned to both the percentage change in export market share and the percentage change in export unit value. The underlying formulas for the calculation of upgrading/downgrading are:

*Economic up/downgrading = 0.5 * (%-change in market share) + 0.5 * (%-change in export unit value)*

*Social up/downgrading = 0.5 * (%-change in employment) + 0.5 * (%-change in real wages)*

Using this method yields unambiguous results in those cases where both underlying indicators within one sphere (i.e. economic or social) have identical signs. If both indicators are positive, or if both are negative, so will be the composite index, respectively. For ambiguous cases, the sign of the 'composite index' depends on the absolute values of the two underlying indicators. If the absolute value in the increment of one indicator exceeds the absolute value in the decrease of the other indicator, the composite index will have a positive sign – signalling (economic or social) *up*grading. It can be argued that this is a reasonable result as it makes sense to characterize a country as having experienced, overall, economic or social upgrading as long as the positive development in one indicator *outweighs* the negative development in the other indicator.

Figure 4: 'Overall upgrading and downgrading' in the apparel sector, 2004-2009

Note: For Haiti, the measure of 'social upgrading' is based solely on the % change in real wages.
Source: Author's own illustration; data sources as indicated above.

Figure 4 shows the 2x2 matrix for 'overall up/downgrading' when we use Method 1. It reveals that there have been quite a number of cases of overall upgrading since the MFA phase-out. In fact, five out of the eighteen countries in our sample appear in the north-eastern quadrant, combining upgrading in both economic and social terms. Except for Nicaragua, this group of overall upgraders consists entirely of Asian apparel producers: Bangladesh, China, India and Vietnam. While Bangladesh and Vietnam have excelled in economic upgrading, China has been the prime performer on the social front. By contrast, full-fledged overall downgrading has been considerably more widespread, affecting almost half of the apparel-producing countries in our sample. Among the worst performers, with substantial downgrading on both the economic and the social front,

have been the Dominican Republic, Guatemala, Kenya, Lesotho and South Africa. By comparison, in El Salvador and Mauritius, downgrading has been less pronounced. In fact, El Salvador's social performance indicator fell only narrowly in the negative range, while Mauritius registered only modest downgrading on the economic front. Mexico, another plain overall downgrader, experienced a fair amount of downgrading in both domains. The remaining five countries in our sample are categorized as intermediate. Most have experienced upgrading in the economic sphere but downgrading in the social sphere, appearing in the lower right-hand quadrant. This group includes the Asian exporters Cambodia, Indonesia and Sri Lanka, which have all performed quite well in economic terms but have not been able to match this with progress in social terms. The extreme cases are Haiti, where economic upgrading has been accompanied by devastating social performance, and Jordan, which has combined a good social performance[19] with economic downgrading and which is, thus, the only country located in the upper left-hand quadrant.

More generally, Figure 4 also displays what was mentioned earlier, namely, that for the countries in our sample economic upgrading has been easier to achieve than social upgrading: more countries are located to the right of the vertical axis than above the horizontal axis. Overall, when judged by Figure 4, where the bulk of countries appear in the north-eastern and south-western quadrants, there seems to have been a positive relationship between economic upgrading and social upgrading in the apparel sector. This is investigated further below.

Robustness checks

A drawback of this first method of calculating composite indices for economic or social upgrading is that the underlying indicators have a lower bound of -100 percent but an upper bound of infinity. To be sure, none of the indicators can fall below zero – which would correspond to a decrease of -100% from any initial level. On the other hand, countries can in principle register increases on any of the indicators that go (far) beyond +100 percent. This introduces a certain pro-upgrading bias in the results Method 1 yields. To assess the robustness of the findings based on this method, in the following we therefore introduce two alternative algorithms for determining upgrading/downgrading, and we compare and discuss results across methods (see Tables 7 and 8).

Method 2: Asymmetric 'composite index'
The second metric addresses the problem of the existence of a lower bound (-100 percent) in the absence of an upper bound. The underlying formulas for Method 2 are:

*Economic up/downgrading = [(1+Δ market share) * (1+Δ unit value)] - 1*
*Social up/downgrading = [(1+Δ employment) * (1+Δ real wage)] - 1*

where Δ denotes the change in the respective indicator. Like Method 1, this second metric also delivers unequivocal results in those cases where both underlying indicators within one domain (i.e. economic or social) have identical signs. Meanwhile, it is important to note that, for the intermediate cases (where the two indicators have moved in opposite directions), the bias towards upgrading does not vanish altogether (because there continues to be a lower bound for each indicator, while there is still no upper bound). Yet, unlike Method 1, this second metric 'penalizes' a decrease in one of the two indicators (within one sphere) in the following sense: the more one of the indicators declines, the more the other indicator has to increase to yield *upgrading* as a result. In other words, a pronounced decrease on one front has to be 'compensated' by an even higher

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[19] This good social performance of Jordan's apparel sector is a result primarily of the tremendous expansion of employment which, however, as mentioned above, has to be qualified, as many of the jobs created have been filled by contract labour and temporary migrant workers.

increase on the other front for our second metric to indicate upgrading.[20] On the other hand, this method 'rewards' countries that perform well on both fronts. For example, if a country has experienced high increases on both of the two indicators within one sphere, this metric will – owing to its multiplicative form – result in a value for the composite index of (economic or social) upgrading that is higher than the symmetric composite index yielded by Method 1.

Method 3: Narrow definition

Compared with Method 1, the second method is stricter in the sense that it will classify fewer countries as upgraders. This is so because, as elaborated above, a country where one of the two indicators in either the economic or the social sphere declined has to record a bigger increase in the second indicator to still give a result of economic or social upgrading in the composite index. However, it is still possible with Method 2 (as with Method 1) for a country to qualify as an economic or social upgrader even if one of the indicators has a negative sign. This classification might be disputed on the basis of a very narrow interpretation of our definitions of economic and social upgrading specified above. A very rigorous reading of these would imply that a country can be said to have experienced economic or social upgrading *if and only if both* underlying indicators have positive signs. Such an approach is along the lines of the argument Kaplinsky and Readman (2005) put forward. Using this method yields no intermediate cases within a single domain. Instead, any country that experiences a decline in any of the indicators automatically disqualifies as an upgrader and is rated as a downgrader. That is, Method 3 ranks only those countries as *overall* upgraders where *all four* indicators have a non-negative sign.

Table 7 summarizes the categorization into overall upgraders, intermediate cases and overall downgraders after applying the three methods and, thereby, allows a comparison across methods – which will serve as a robustness check of findings. As we can see, Methods 1 and 2 lead to exactly the same classification of countries. Both methods identify five cases of overall upgrading, eight cases of overall downgrading and five intermediate cases. By contrast, Method 3 leads to a significantly different diagnosis; in fact, only China and India qualify as full-fledged overall upgraders in the apparel sector, confirming that Method 3 is indeed the strictest in terms of classifying countries as overall upgraders. Moreover, compared with the other two methods, it ranks one additional country (Sri Lanka) as an overall downgrader.

Table 7: Overall upgraders and downgraders according to the three methods

Method 1	Overall upgraders	Intermediate cases	Overall downgraders
	Bangladesh, China, India, Nicaragua, Vietnam	Cambodia, Haiti, Indonesia, Jordan, Sri Lanka	Dominican Republic, El Salvador, Guatemala, Kenya, Lesotho, Mauritius, Mexico, South Africa
Method 2	**Overall upgraders**	**Intermediate cases**	**Overall downgraders**
	Bangladesh, China, India, Nicaragua, Vietnam	Cambodia, Haiti, Indonesia, Jordan, Sri Lanka	Dominican Republic, El Salvador, Guatemala, Kenya, Lesotho, Mauritius, Mexico, South Africa
Method 3	**Overall upgraders**	**Intermediate cases**	**Overall downgraders**
	China, India	Bangladesh, Cambodia, Haiti, Indonesia, Jordan, Nicaragua, Vietnam	Dominican Republic, El Salvador, Guatemala, Kenya, Lesotho, Mauritius, Mexico, South Africa, Sri Lanka

Connecting economic and social upgrading

Based on the marginal productivity theory of wages (or returns to factors of production more generally), conventional economics often claims that higher productivity also leads to higher

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[20] See Bernhardt and Milberg (2011: 55-56) for a more detailed discussion and numerical examples.

compensation or remuneration.[21] Applied to the question we seek to explore here, this would imply that economic upgrading should translate into social upgrading.

And indeed, while our framework does not allow for a direct test of this relation, the findings generated by applying our parsimonious approach to our country sample provide some broad support to the view that, at least, there has been a positive *correlation* between economic upgrading and social upgrading in the apparel sector. A first indication is provided by visual inspection of Figure 4: although no clear pattern emerges, it seems to suggest a positive relationship between economic and social performances with countries clustered in the north-eastern and south-western quadrants. A second piece of evidence can be drawn from Table 8. If the claim that economic upgrading goes hand in hand with social upgrading were true, then the signs that enter the economic upgrading and social upgrading columns for a given country should be identical. Indeed, the number of countries for which the sign for economic up/downgrading corresponds to the sign of social up/downgrading is fairly high, at least according to Methods 1 and 2 (but less so according to Method 3): for 13 among the 18 countries in our sample, both indicators have identical signs according to both Methods 1 and 2, while Method 3 yields 10 such cases. Third, and most importantly, with the exception of Jordan there is not a single case in our sample of social upgrading occurring without economic upgrading. In other words, Jordan is the only country studied here where social upgrading has taken place without economic upgrading; all other countries that have experienced social upgrading have also experienced economic upgrading.[22] Yet it is important to stress that not every country that experienced economic upgrading also registered social upgrading. These previous two findings suggest that, while economic upgrading has not automatically translated into social upgrading, it seems to have facilitated social upgrading in the post-MFA apparel sector. To put it differently, economic upgrading seems to be if not a necessary then at least a conducive yet not a sufficient condition for social upgrading.

Table 8: Economic and social upgrading and downgrading according to the three methods

Country	Method 1 Economic upgrading	Social upgrading	Method 2 Economic upgrading	Social upgrading	Method 3 Economic upgrading	Social upgrading
Bangladesh	+	+	+	+	+	-
Cambodia	+	-	+	-	+	-
China	+	+	+	+	+	+
Dominican Rep.	-	-	-	-	-	-
El Salvador	-	-	-	-	-	-
Guatemala	-	-	-	-	-	-
Haiti	+	-	+	-	+	-
India	+	+	+	+	+	+
Indonesia	+	-	+	-	+	-
Jordan	-	+	-	+	-	+
Kenya	-	-	-	-	-	-
Lesotho	-	-	-	-	-	-
Mauritius	-	-	-	-	-	-
Mexico	-	-	-	-	-	-
Nicaragua	+	+	+	+	-	+
South Africa	-	-	-	-	-	-
Sri Lanka	+	-	+	-	-	-
Vietnam	+	+	+	+	+	-

Note: A '+' indicates (economic or social) upgrading according to the respective method while a '-' indicates downgrading.

[21] For a textbook presentation of this idea, see Mas-Colell et al. (1995) or Varian (1992). For recent empirical tests for developing countries, see Flanagan (2005) and van Biesebrock (2011).
[22] This finding is delivered by Methods 1 and 2. According to Method 3, there is actually a second case of social upgrading without economic upgrading: Nicaragua.

However, it has to be emphasized that all that these exercises can at best indicate is a *correlation* between developments in the economic and social spheres. They tell us nothing about the *direction of causality* between the two. Causality may plausibly run in either direction, depending on how a number of different mediatory factors (including the governance structure of value chains in which suppliers are integrated, the degree of unionization and labour organization, government policies and labour legislation, extent of local ownership, availability of trade preferences, etc.) play out, and there is empirical evidence on both sides. Flanagan (2005) finds a tight correlation between productivity growth and wage growth in the apparel sector in a large sample of developing countries over 1995-2000. On the other side, Brown et al. (2011) find that improvements in working conditions in Cambodian apparel firms participating in the ILO's BFC programme have been associated with a higher probability of plant survival and improved performance in terms of productivity and exports, citing 'efficiency wage' theory (according to which higher wages may be associated with higher labour productivity) as one possible explanation. Nicaragua might be another example for the causality rather running from social upgrading to economic upgrading: its strong industrial relations system, as typified in tripartite agreements where, among other things, minimum wages are set for a period of three years, is a key competitive advantage and attractive to investors and global buyers, as it offers stability and predictability on labour costs (Bair and Gereffi 2011, Fernandez-Stark et al. 2011, MSN et al. 2012).

Concluding remarks

The global apparel sector has gone through considerable restructuring in recent years, particularly since the expiration of the MFA in 2004. This has impinged on the opportunities for upgrading of developing countries supplying to the global apparel value chain. This paper applied a parsimonious approach to defining and measuring economic and social upgrading/downgrading to analyse the post-MFA performance of a sample of 18 apparel-producing developing countries.

This analysis, which has relied mainly on secondary and quantitative data, but for interpretations has drawn on case studies, shows there have been not only winners (upgraders) but also quite a few losers (downgraders). In general, while economic upgrading has been fairly widespread among the countries in our sample, social upgrading has been more difficult to achieve. More precisely, our study of the post-MFA period identifies seven clear-cut economic upgraders but just four social upgraders. The economic success stories in our sample include Bangladesh, Cambodia, China, Haiti, India, Indonesia and Vietnam, which have all managed to gain export market shares at the same time as they have been increasing their export unit values. China and India are also among the social upgraders, together with Jordan and Nicaragua, which have all combined an expansion in apparel employment with growing real wages. Conversely, while downgrading has also occurred in the economic sphere, it has been far more common in the social realm, mainly because of stagnant real wages. Our analysis finds only two clear-cut economic downgraders (Dominican Republic and Kenya) but six social downgraders (Guatemala, Kenya, Lesotho, Mauritius, South Africa and Sri Lanka). Comparing across regions, economic but also social upgrading have been fairly concentrated in Asia, whereas downgrading has mainly affected the African countries and, to a lesser extent, the Central American and Caribbean countries in our sample.

Apart from tracing the up/downgrading trajectories of individual supplier countries, we have also tried to address the question of whether improved international trade competitiveness translates into social gains. Simply improving export competitiveness and upgrading says little about how the gains are distributed and thus how social welfare is affected. Yet, as Barrientos et al. (2011a) emphasize, social upgrading depends strongly on the distribution of gains from industrial upgrading in global production networks. While most research presumes that economic upgrading leads

directly to social upgrading, this connection has not been analysed in a systematic fashion and there is ample evidence that transmission is not so straightforward. Milberg and Winkler (2011), for example, find a rather weak link between economic and social upgrading. Others have documented cases where economic downgrading is associated with some social upgrading.[23] Here, we have created composite indices to investigate the relationship between developments in the economic sphere and developments in the social sphere. While some prudence is warranted when interpreting the findings from our parsimonious approach, they seem to suggest there has indeed been a certain degree of positive *correlation* between economic and social performances (which says nothing about the *causality*, though). In fact, economic and social *upgrading* have occurred together in five countries while economic and social *downgrading* have coincided in eight countries. Put differently, in only five out of 18 cases has economic performance not concurred with social performance. We also find that, with one or two exceptions (depending on the method used), social upgrading has not occurred in the absence of economic upgrading. However, as not every country that has recorded economic upgrading has also experienced social upgrading, our analysis, in summary, suggests that economic upgrading does not automatically translate into, but seems to be conducive to, social upgrading. Although these results are found to be generally robust across a few alternative techniques for measuring upgrading and downgrading, they have to be taken as preliminary. Further analysis is necessary to learn more about the conditions under which economic and social upgrading are positively correlated or even mutually reinforcing, and to advance our understanding of the direction of causality between economic and social change.

Throughout this paper, we have tried to stress that our findings should be interpreted with some caution, given limitations in the secondary trade and labour market data on which our analysis has relied. For one, our effort to give some precision to the measurement of economic and social upgrading has suffered from problems of data availability. Data gaps and data consistency are particularly an issue for social upgrading indicators as well as for export quantities (which are needed for the computation of export unit values). Comparability across countries and indicators is hampered somewhat by differences in the sector definitions applied in different data sources. These caveats also indicate an urgent need for a rethinking of data compilation and categorization in a world economy characterized by a new geography of trade where production is increasingly fragmented internationally and effectively organized in global production networks and value chains. These data shortcomings also compromise research, but first steps have been undertaken to address this issue, including the WTO's Made in the World initiative, the Global Forum on Trade Statistics (organized jointly by the UN Statistics Division, the Statistical Office of the European Communities (Eurostat), the WTO and the UN Conference on Trade and Development (UNCTAD) and the development of a World Input-Output Database (WIOD).[24]

These data issues notwithstanding, in this paper we have pursued a parsimonious approach to trace, admittedly with a broad brush, the upgrading trajectories of a number of apparel-producing developing countries. In doing so, numerous details have been neglected, but it is not the objective of this paper to provide these. Rather, the paper's aim is to provide the broader sectoral context to frame fieldwork and case studies on the global apparel value chain. By the same token, the insights gained from the analysis undertaken here are most useful if cross-checked and complemented with findings from this case study literature.

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[23] See Pickles et al. (2006) on the apparel sector in Central and Eastern Europe, for example.
[24] See www.wto.org/english/res_e/statis_e/miwi_e/miwi_e.htm,
http://unstats.un.org/unsd/trade/s_geneva2011/geneva2011.htm and www.wiod.org/database as well as Escaith and Timmer (2012).

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