

NEW EVIDENCE ON TRADE AND EMPLOYMENT: AN OVERVIEW

2

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Acknowledgements

This paper has been published as a chapter in the ILO-EU co-publication “Trade and Employment: From Myths to Facts” (M. Jansen, R. Peters and J. M. Salazar Xirinachs (Eds.)) that has been produced with the assistance of the European Union. The contents of this chapter are the sole responsibility of the authors and can in no way be taken to reflect the views of the European Union or the International Labour Organization.

2.1 INTRODUCTION

In 1983, Anne O. Krueger, completed three volumes titled *Trade and Employment in Developing Countries* for the National Bureau of Economic Research. In Volume 3, “Synthesis and Conclusions”, she writes:

“Everyone agrees that unemployment is a ‘problem’ and that increased employment opportunities are an ‘objective’ in most LDCs. Employment and employment growth are major points of concern in virtually all of them. There is less agreement, however, on the nature and cause of the ‘problem’ and on why employment creation is desirable.”

Strip away the dates from these volumes and one would be hard pressed to guess whether the volumes were written today or 30 years ago. For example, the *official* unemployment rates presented in table 2.1 indicate that unemployment in developing countries is much higher today than it was in the 1980s. Moreover, the numbers in table 2.1 almost certainly understate unemployment in these countries since they typically do not include those who choose not to participate in the workforce.²

¹ The authors would like to thank Dani Rodrik, Bill Gibson, and the editors of this book for comments and suggestions. We would also like to thank participants in the Expert Meeting on Assessing and Addressing the Effects of Trade on Employment organized by the EU and ILO for their comments.

² For example, the World Bank’s report “Economic Growth, Employment Generation and Poverty Reduction in Nigeria” 2009 points out that a common problem in the African context is that all those who do not seek work because they feel that there is no work available are likely to be classified as economically inactive. As a result, official unemployment numbers are sometimes quite low.

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Table 2.1: Global unemployment rates, by region

Region	Unemployment rate in		
	1986 %	1994 %	2007 %
East Asia and the Pacific	2.31	2.94	10.69
Europe and Central Asia	--	9.41	15.02
Latin America and the Caribbean	5.46	7.24*	10.17
Middle East and North Africa		12.81**	20.83
South Asia	--	3.9	16.88
Sub-Saharan Africa	--	--	28.77
High income: non-OECD	--	--	7.74
High income: OECD	7.68	7.63	5.75

* Average (1993, 1995). ** Earliest available (1991)

Source: Authors' calculations using data from CIA World Factbook 2007 and WOI (2010), see: http://www.photius.com/rankings/economy/unemployment_rate_2007_0.html.

Today, one of the most commonly cited reasons for unemployment in both developed and developing countries is increased trade and offshoring. In developed countries, the fear is that jobs are being exported to low-wage countries. In developing countries, the primary concern is that trade liberalization is wiping out entire sectors that cannot compete with cheaper imports from China or more sophisticated products from developed countries. Despite the prominence of these concerns in the public debate, there has been remarkably little theoretical or empirical work on this issue.³ Part of the reason for this is that the standard Heckscher-Ohlin-Samuelson (HOS) trade model assumes full employment, which has tended to shift the discussion of the effects of trade away from labour market outcomes. Additionally, unlike unemployment in developing countries, unemployment in many developed countries has been relatively low for several decades, making the assumption of full employment seem reasonable to many economists primarily focused on developed countries.

As Krueger (1983) noted, the standard HOS model is not a satisfactory analytical framework within which to study problems of unemployment in developing countries. For the purposes of her volumes, she relied heavily on extensions of the HOS framework that emphasized the importance of factor and product market distortions. More recent theoretical advances in the trade literature incorporate firm heterogeneity (Melitz, 2003), search frictions and equilibrium unemployment (Davidson and Matusz, 2009),⁴ firm heterogeneity and bargaining between workers and employers (Egger and Kreickemeier, 2009), and all of the above plus idiosyncratic match quality (Helpman, Itsknoki and Redding, 2009). These recent studies have given more

³ See Goldberg and Pavcnik (2007).

⁴ This reference is to the recent book by Davidson and Matusz (2009), which synthesizes the work these two authors have done incorporating labour market frictions into trade models. According to Matusz, this work began in the 1980s when he was a graduate student at Michigan.

attention to the employment effects of trade liberalization and have moved away from the HOS assumption of full employment.

In addition to these developments, there has been a significant change in focus in the trade literature or, as Feenstra (2007) and Grossman and Rossi-Hansberg (2008) would call it: a change in paradigm. Feenstra (2007) argues that trade theories and the empirical evidence can be reconciled with the findings from the empirical literature – although not “traditional” trade theories such as the Heckscher-Ohlin model – if we “... adopt a new paradigm which emphasizes how tasks or activities can be sent across borders.”⁵ Instead of viewing trade – in goods and services – as an exchange of material goods,⁶ an increasing number of papers have approached the study of trade as the exchange of specific tasks that form the value chain.⁷

These theoretical advances have important implications for policy-makers in developing countries. The three most important implications are: (1) the extent of the gains in allocative efficiency associated with trade liberalization depends critically on the institutional setting; (2) exposure to international trade can have an impact on aggregate employment and therefore the rate of unemployment; and (3) exposure to international trade can increase wage inequality in both rich and poor countries. This means that governments can and should play a role in shaping the relationship between trade and employment.

With this in mind, this paper builds on recent literature surveys on trade, employment and inequality (Hoekman and Winters, 2005; Goldberg and Pavcnik, 2004 and 2007) to discuss the most recent theoretical and empirical findings in this field. The paper is organized around what we consider to be some of the most important features of developing country labour markets not sufficiently emphasized in the recent trade literature.⁸ First and foremost is the importance of the agricultural and informal sectors in most poor countries. Even though most of the new theoretical work is general equilibrium in nature, the focus of these models is still primarily on activity in the industrial sector. This is because most trade theorists believe that industrialization is the key to growth and that growth will automatically lead to job creation. Nevertheless, by focusing only on outcomes in the industrial sector, these studies leave out the majority of the population of most developing countries. Detecting the general equilibrium effects of trade and offshoring on labour markets

⁵ See Feenstra (2007).

⁶ By material goods we mean physical units of either finished or intermediate manufactured goods.

⁷ In this sense, a task can be anything from the assembly of a chair to data analysis or the design of an airplane wing.

⁸ For example, in a review of the work on globalization and employment, Lee (2005) notes the importance of taking into account movements in and out of the formal sector in developing countries. He argues that the narrow scope of papers that focus primarily on the manufacturing sector leave out the informal and non-manufacturing sectors of the economy, which is where most employment takes place in low-income countries. As Lee notes, he is not the first to point this out. Greenaway (1993), Collier (1993), and Agenor and Aizenman (1996) have all challenged the view that trade liberalization leads to an increase in employment. Lee (2005) also notes that the effects of globalization on employment vary greatly depending on regional and institutional factors and that the effects of trade liberalization on employment should be analysed on a case-by-case basis.

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in developing countries is complicated because of the large informal-sector presence in both traded and non-traded goods in many of these countries (see table 2.2). But, to really understand the effects of trade on labour market outcomes in developing countries, workers in the informal and agricultural sectors must be included in distributional analyses. Related to this is the question of rural-urban linkages and the extent to which job creation in the industrial sector can reduce unemployment. As Harris and Todaro (1970) pointed out, simply increasing the number of jobs in the urban sector can actually increase urban unemployment because the increase in the number of jobs could increase rural-urban migration, thereby increasing the number of jobseekers in the urban sector. Other issues we address include: asymmetric bargaining power between labour and capital; the importance of initial conditions; the quality of jobs; information sharing and its potential to reduce unemployment; and the implications of trade in tasks for employment in developing countries.

We begin this review in section 2.2 with a description of trends in trade policy and employment in the industrial sectors across countries over the period 1980–2006. The reason for studying the industrial sector is that the promise of trade liberalization lay in its ability to stimulate manufacturing exports. The goal of this section is simply to document broad trends in manufacturing employment and wages over time and across countries, and to relate these trends to the trends in trade policy. Section 2.3 reviews the recent empirical evidence on trade and employment that takes into account the concerns raised above. In section 2.4 we turn our attention to the role that government policy can play in ensuring that trade and foreign direct investment (FDI) create jobs in developing countries. Section 2.5 concludes with a synthesis of the empirical results and directions for future research.

Table 2.2: Employment in the informal sector

Region	Year	Employment in the informal sector as percentage of total employment (%)	Female share in total employment in the informal sector (%)
East Asia and the Pacific	2000	71.00	44.99
Europe and Central Asia	2004	3.85	39.23
Latin America and the Caribbean	2006	55.27	43.59
Middle East and North Africa	2003	30.25	12.10
South Asia	2004	39.80	9.11
Sub-Saharan Africa	2004	27.55	51.51
High income: non-OECD	1999	7.36	38.94
High income: OECD	1999	23.00	23.67

Note: Table shows data for the latest available year.

Source: Authors' calculations using ILO's KILMnet data.

2.2 TRADE AND EMPLOYMENT: AGGREGATE TRENDS

The goal of this section is to present some stylized facts about trade, wages and industrial employment that can be used to stimulate further discussion about the employment effects of trade liberalization. In addition, we focus here primarily on developing countries because that is where the most dramatic changes occurred. We find that: (1) developing countries have significantly reduced industrial tariffs over the past decade; (2) two-thirds of industrial employment is now located in developing countries, and that China drives this trend; and (3) at least in the aggregate, trade liberalization is not correlated with changes in real wages or industrial employment. We cannot and do not wish to imply that our results say anything about causality between changes in trade liberalization and labour market outcomes, but they do show the general pattern of correlation between these variables.

Our data come from UNIDO's *INDSTAT2 2009* and the *Economic Freedom of the World: 2009 Annual Report* database.⁹ One of the nicest features of these datasets is that they span a 26-year time-horizon for a large number of countries. Thus, we are able to document long-term trends in the data.¹⁰ As noted by Krugman (2008) and others, researchers have disputed the validity of the Stolper-Samuelson theorem based on evidence or data that spans only a short period.¹¹ According to Krugman, the adjustment process that starts as a result of trade within the Stolper-Samuelson framework takes some time, so analysing data over short periods of time might reflect disequilibria more than a finalized effect. So, Krugman notes, the Stolper-Samuelson framework "should not be taken too seriously when interpreting data over short periods, say, five years"¹². A limitation of our data is that it is aggregate in nature and it only covers the industrial sector.

2.2.1 Trends in openness, real wages and employment

Table 2.3 shows the dramatic percentage point declines in tariffs in the developing world between 1980 and 2005 by region. Figure 2.1 shows the strong upward trend in developing country exports as a share of GDP between 1980 and 2006. By 2006, exports as a share of GDP in developing countries averaged around 32 per cent, surpassing the average for developed countries of 27 per cent.

⁹ Indicative tariff rates for each country in this database are obtained by using unweighted means for each country's tariff rates. The ultimate data sources are various issues of the WTO, ITC, UNCTAD *World Tariff Profiles*.

¹⁰ By short-term we mean a five-year time-frame. On the other hand, long-term refers to a time-frame greater than five years, where relocation and disequilibria effects tend to disappear.

¹¹ The Stolper-Samuelson theorem states that under a particular set of assumptions (e.g. constant returns to scale, perfect competition) a rise in the relative price of a good will lead to a rise in the return to that factor which is used most intensively in the production of the good, while a fall in the relative price of a good will lead to a fall in the return to that factor which is used most intensively in the production of the good. In the context of trade, opening to trade is expected to increase the relative price of the good which uses the relatively abundant factor in an economy and, in this way, increase the relative returns to that factor.

¹² Krugman (2008).

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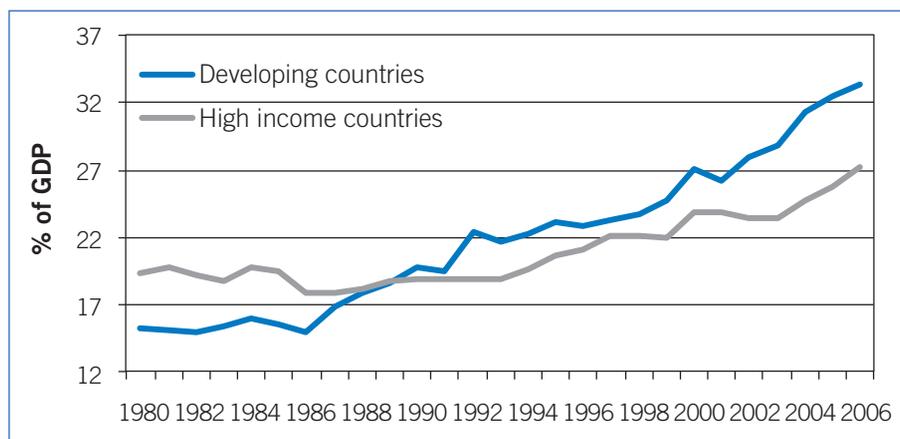
Table 2.3: Changes in tariff by region

Region	Mean tariffs (%)						Change (1980–2005) percentage points
	1980	1985	1990	1995	2000	2005	
East Asia and the Pacific	31.9	24.3	25.2	24.8	13.2	9.0	-22.8
Europe and Central Asia	44.0	26.0	18.2	18.2	8.8	6.2	-37.8
Latin American and the Caribbean	37.9	35.6	23.6	23.6	10.6	8.0	-30.0
Middle East and North Africa	25.1	20.5	22.9	22.9	22.4	11.7	-13.4
South Asia	63.0	62.9	57.9	57.9	25.1	14.9	-48.2
Sub-Saharan Africa*	28.3	28.7	25.2	25.2	14.1	12.7	-15.6
All developing, average	38.4	33.0	28.8	28.8	15.7	10.4	-28.0
Non-OECD, non-developing	18.2	11.2	13.2	13.2	9.6	7.3	-10.9
OECD, non-developing	9.2	7.9	7.8	7.8	3.7	3.5	-5.7
All non-developing, average	13.7	9.5	10.5	10.5	6.7	5.4	-8.3

Source: Authors' calculations based on data from Economic Freedom of the World (2009).

Note: Madagascar was excluded from the sample due to inconsistencies in the data.

Figure 2.1: Evolution of export share in GDP by income level



Source: Authors' calculations with data from the World Bank's World Development Indicator database, 2009.

Table 2.4 shows average annual percentage point changes in real industrial wages and employment by region and income level. For all of the developing regions of the world, real wages measured in United States dollars (US\$) have fallen, with the largest declines in the Middle East, North Africa and sub-Saharan Africa. Part of the reason for this is that real wages are reported in US\$. A number of countries

Table 2.4: Annualized changes in real wages and employment, by region and income group (1980–2005)

Region	Annualized percentage change in real wages (per employee)	Annualized percentage change in employment
Developed Economies	0.33	-0.51
East Asia and the Pacific*	-1.56	3.87
Europe and Central Asia	-2.88	4.35
Latin America and the Caribbean	-1.27	-0.07
Middle East and North Africa	-4.39	-0.42
South Asia	-0.27	0.16
Sub-Saharan Africa**	-3.55	-0.84
World	0.01	1.36

Income group	Annualized percentage change in real wages (per employee)	Annualized percentage change in employment
High Income: OECD	0.49	-0.51
High Income: nonOECD	0.00	-0.46
Low Income	-6.79	-0.56 [?]
Lower Middle Income***	-4.18	2.67
Upper Middle Income****	-1.95	1.54

* The numbers are -2.02% and 5.80%, respectively, if China is excluded from the sample.

** The numbers are -9.40% and -1.34%, respectively, if South Africa and Mauritius are excluded from the sample.

*** The numbers are -4.31% and -0.27%, respectively, if China is excluded from the sample.

**** The numbers are -2.20% and 1.68%, respectively, if South Africa is excluded from the sample.

? Excludes Viet Nam due to lack of data for the country before 2000. The 2000–05 rate when Viet Nam is included is 8.4%.

Source: Authors' calculations based on UNIDO INDSTAT2 data. Time period covered is 1980-2005.

have experienced significant declines in the value of their currency. However, we note that these trends are consistent with the findings of the World Bank (1995), which showed a divergence in real wages between developed and developing regions of the world. The report warned of a substantial risk that inequality between rich and poor countries could grow over the coming decades. The numbers in table 2.4

are also consistent with what we know about the industrialized world. Industrial employment is contracting, while real wages for those who remain employed in the industrial sector have increased. For a recent discussion of these stylized facts regarding wages and employment in the industrial sector of the United States, see Ebenstein et al. (2009).

Table 2.4 also shows that average annual employment growth in the industrial sector of developing countries has been mixed. Average annual growth in industrial employment in East Asia and the Pacific was 3.87 per cent. When China is excluded from the sample, the annualized percentage point increase in industrial employment is even higher, at 5.8 per cent, reflecting the tremendous success of Viet Nam in particular. In Latin America and the Caribbean, the average annual percentage point change in industrial employment was -0.07; in the Middle East and North Africa (-0.42 percentage points) and sub-Saharan Africa (-0.84 percentage points) average annual growth in industrial employment has been negative. If one excludes South Africa and Mauritius from the sample, average annual growth in industrial employment in sub-Saharan Africa has been -1.34 percentage points. This means that industrial employment in sub-Saharan Africa contracted by more than 25 percentage points over the period 1980-2005.

Table 2.5 shows total employment of industrial workers by region. In 1980, more than half of all industrial employment was located in the developed world. By 2005, more than two-thirds of industrial employment was located in the developing world, with China accounting for roughly 65 per cent of the total employment of industrial workers in the developing world. Also notable is the 26 percentage point increase in industrial employment in China between 2000 and 2005 – the period following the Chinese Government’s official “go global” policy, which became effective in 1999. This policy was designed to encourage Chinese private and state-owned enterprises to expand overseas. The period 2000-05 also coincides with a decline in industrial employment for all other regions of the world, both developed and developing, with the exception of a modest increase in industrial employment in Latin America and the Caribbean, which occurred mainly in Brazil.

2.2.2 Correlations between tariffs, employment and real wages

We now turn to an analysis of the correlations between trade liberalization and wage and employment outcomes. Figures 2.2.a and 2.2.b show correlations between five-year changes in industrial employment and five-year changes in tariffs¹³ lagged by one five-year period. Figure 2.2.a includes China, while figure 2.2.b excludes China. We used lagged changes in tariffs for two reasons. First, using lags partially helps us to get around the endogeneity problems associated with examining the relationship between trade liberalization and labour market outcomes. Second, using the lagged five-year change in tariffs also, in part, helps us to address the fact that labour markets

¹³ A negative number indicates a reduction in tariffs, i.e. a more liberalized stance with respect to international trade.

Table 2.5: Total employment per region and year

Region	Employment ('000 workers)					
	1980	1985	1990	1995	2000	2005
East Asia and the Pacific	26'844	32'592	59'487	64'792	55'200	69'400
China	24'400	29'700	53'000	58'300	44'900	59'400
Rest	2'444	2'892	6'487	6'492	10'300	10'000
Europe and Central Asia	6'067	5'678	11'100	24'200	21'000	17'600
Latin America and the Caribbean	9'605	10'400	8'297	7'525	8'598	9'438
Middle East and North Africa	2'363	2'526	2'749	3'273	2'250	2'125
Sub-Saharan Africa	2'706	2'558	2'796	2'915	2'822	2'190
South Africa and Mauritius	1'435	1'497	1'640	1'551	1'422	1'275
Rest of SSA	1'271	1'061	1'156	1'364	1'401	916
No. countries in rest of SSA	21	17	16	15	11	5
South Asia	7'866	7'671	9'236	11'000	8'928	8'180
India	6'801	6'469	7'184	8'777	7'754	8'180
Rest of South Asia	1'065	1'202	2'052	2'209	1'174	na
Total developing	54'180	60'363	92'508	112' 341	97'397	108'018
Non-OECD, non-developing	1'844	2'058	2'636	2'178	1'902	1'642
OECD, non-developing	59'400	54'400	56'600	58'700	60'700	52'300
Total non-developing	61'244	56'458	59'236	60'878	62'602	53'942

Source: Authors' calculations based on data from UNIDO's INDSTAT2 2009.

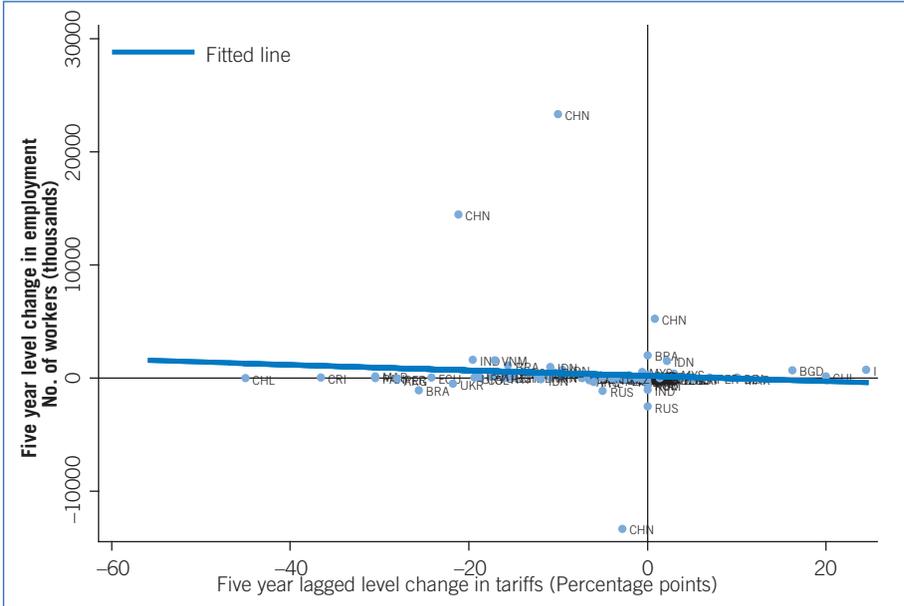
Note: Data for South Asia in 2005 is not available; data for 2004 is used instead.

might adjust slowly to changes in trade policy. Figure 2.2.a shows that, in the aggregate, the correlation between lagged five-year changes in tariffs and five-year changes in industrial employment is close to zero, with the exception of China.¹⁴ When we exclude China, we get a more nuanced story. On average, the correlation between changes in tariffs and changes in employment is zero, but the large number of points both above and below the regression line highlight the heterogeneity of experiences across countries and the need for more country-specific research to shed light on the various experiences.

¹⁴ While the slope is negative, this relationship is not statistically significant.

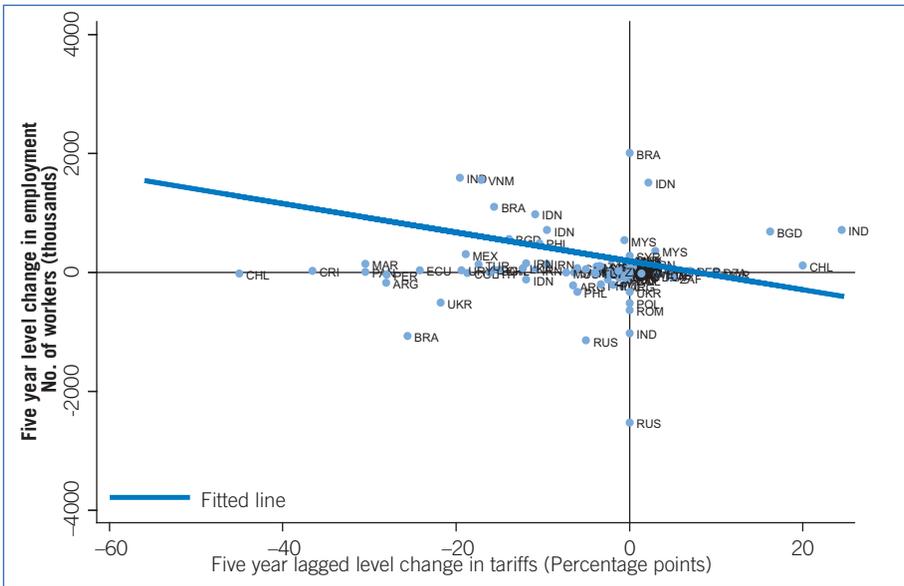
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Figure 2.2.a: Short-run association between lagged trade liberalization and employment, developing countries



Source: UNIDO INDSTAT2 (2009); *Economic Freedom of the World* (2009).

Figure 2.2.b: Short-run association between lagged trade liberalization and employment, developing countries (excluding China)



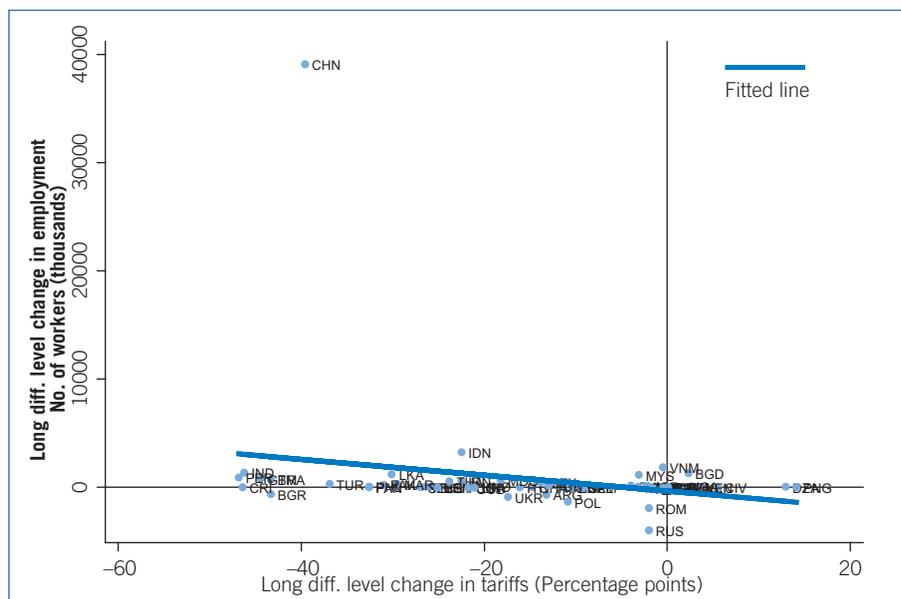
Source: UNIDO INDSTAT2 (2009); *Economic Freedom of the World* (2009).

Figures 2.3.a and 2.3.b repeat this exercise using long differences. For example, figure 2.3.a shows that, between 1980 and 2005, China reduced its industrial tariffs by 40 percentage points and increased the number of workers employed in the industrial sector by a little under 40 million. When China is excluded from the sample, the long-run correlation between tariffs and employment is statistically significant and negative indicating that a reduction in tariffs is positively correlated with industrial employment. However, the R-squared on this regression is only 0.05 and figure 2.3.b reveals once again a lot of heterogeneity in experiences across countries.

In figures 2.4.a and 2.4.b we examine the relationship between tariffs and real industrial wages. Both figures reveal a tremendous amount of variation in changes in tariffs with very little variation in real wages. The negative intercept of the regression line in figure 2.4.b is consistent with the trends shown in table 2.4: on average, real industrial wages in developing countries have fallen.

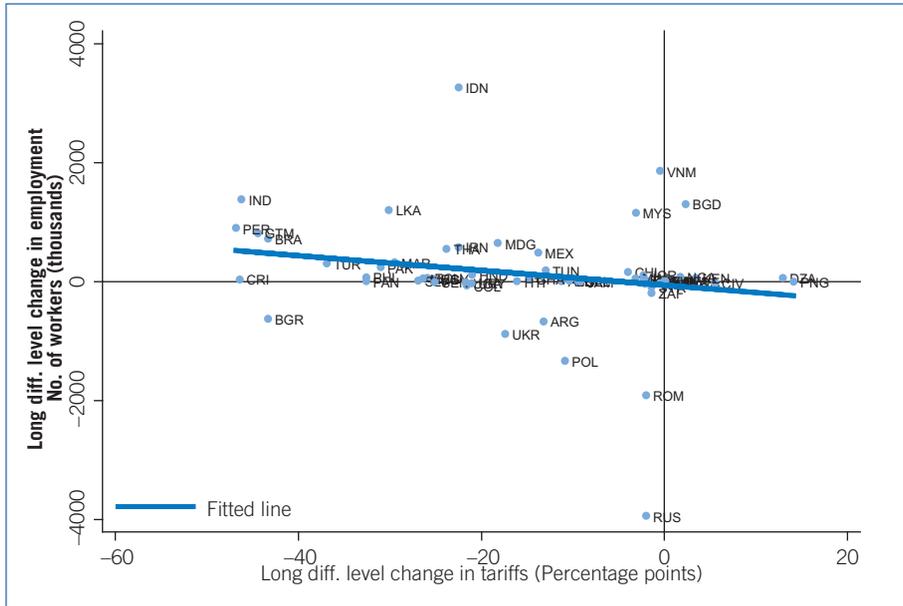
It is important to keep in mind that the revealed correlations do not rule out strong effects on individual countries. To the contrary, these figures raise a number of interesting avenues for further research. For example, China and India both experienced similar reductions in tariffs of around 40 percentage points over the long run. Why did industrial employment in China boom while in India, one of the most aggressive liberalizers of all, industrial employment only increased modestly?

Figure 2.3.a: Long-run association between trade liberalization and employment, developing countries



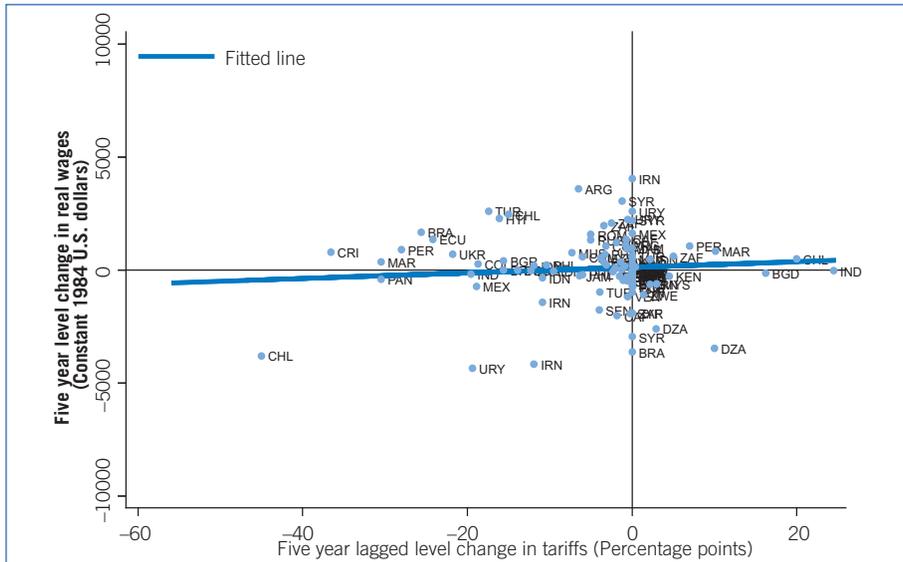
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Figure 2.3.b: Long-run association between trade liberalization and employment, developing countries (excluding China)



Source: UNIDO INDSTAT2 (2009); *Economic Freedom of the World* (2009).

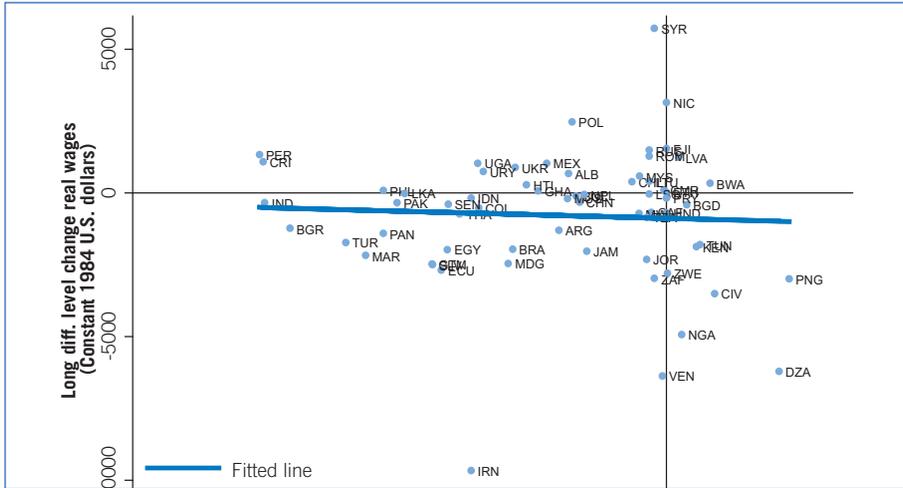
Figure 2.4.a: Short-run association between trade liberalization and real wages, developing countries



Source: UNIDO INDSTAT2 (2009); *Economic Freedom of the World* (2009).

Note: Wages refers to total annual compensation received by workers as defined by UNIDO's INDSTAT2 database

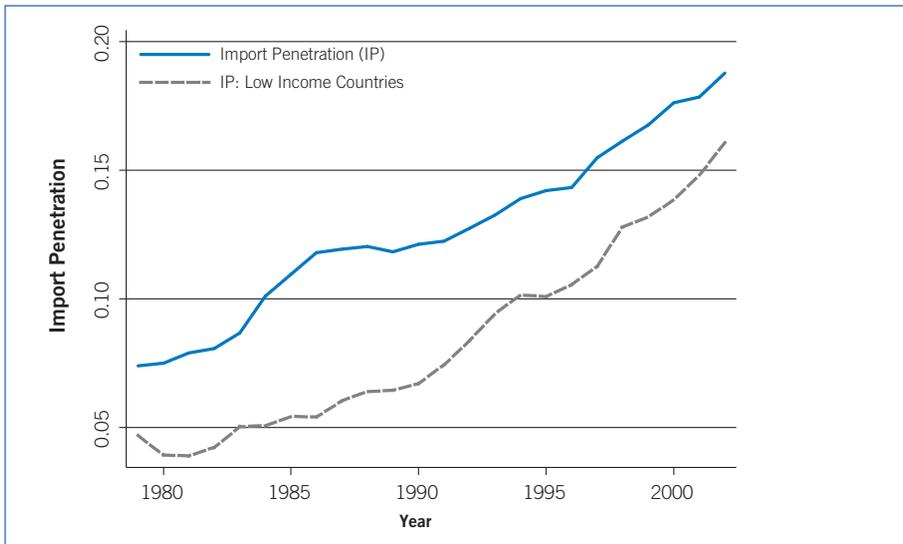
Figure 2.4.b: Long-run association between trade liberalization and real wages, developing countries



Source: UNIDO INDSTAT2 (2009); *Economic Freedom of the World* (2009).

Note: Wages refers to total annual compensation received by workers as defined by UNIDO's INDSTAT2 database.

Figure 2.5: Import penetration and import penetration from low-wage countries to the United States, 1979-2002



Source: Ebenstein et al. (2009).

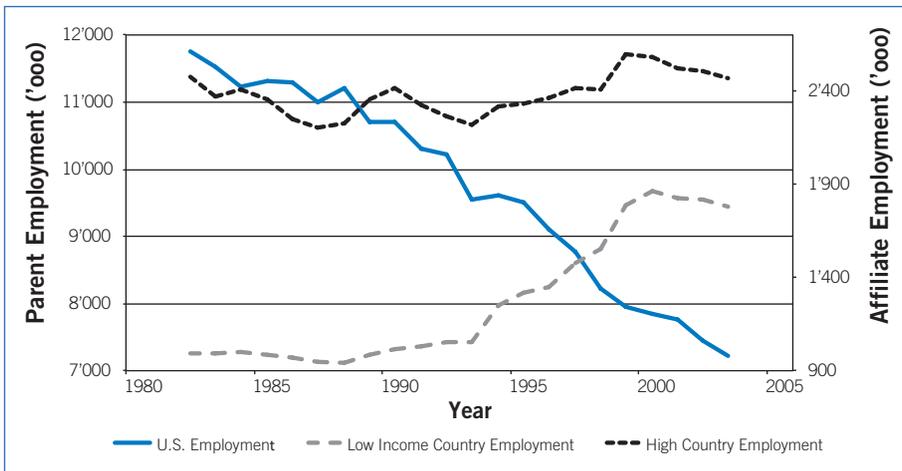
Note: Import penetration and import penetration from low-wage countries come from Bernard, Bradford Jensen and Schott (2006). We aggregate the industry-level data to an annual number using employment weights calculated from the Current Population Survey's Outgoing Rotation Groups 1979-2002.

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We hope that our discussion of these figures will help stimulate additional research at the country level designed to explain some of these puzzles.

Finally, as noted by Harrison and McMillan (2009) the revealed declines in real wages in developing countries partially help to explain the trends in offshoring. For US firms that invest offshore and for those that import intermediate inputs from abroad, it is primarily the US\$ value of these wages that are important. Figure 2.5, borrowed from Ebenstein et al. (2009), reveals that import penetration into the United States from developing countries jumped from only 1 per cent in 1980 to a little over 15 per cent in 2002. Trends presented in Grossman and Rossi-Hansberg (2008) reveal the high degree of correlation between imports and imported intermediate inputs, or what is commonly referred to as offshore outsourcing. Figure 2.6 from Ebenstein et al. (2009) shows that practically all of the increase in offshore employment between 1980 and 2005 occurred in low-income (low-wage) countries. However, they also note that almost all of the increase in employment occurred in two countries: Mexico and China.

Figure 2.6: Offshoring by US-based multinationals



Source: Ebenstein et al. (2009).

Note: Authors' calculations based on the most comprehensive available data and based on firm-level surveys on US direct investment abroad, collected each year by the Bureau of Economic Analysis (BEA) of the US Department of Commerce. Using these data, we compute the number of employees hired abroad by country by year and the aggregate of these numbers by low- (high-) income countries according to World Bank classifications.

2.3 TRADE AND EMPLOYMENT: FIVE LESSONS FROM RECENT EMPIRICAL WORK

In this section, we review some of the most recent and innovative country studies that examine the relationship between trade and employment. To make this section more reader friendly, we have grouped the evidence by the broad sub-themes men-

tioned in the introduction: trade and employment in general equilibrium; asymmetric bargaining power; trade liberalization when unemployment is already high; the quality of jobs; and trade in tasks.

2.3.1 The general equilibrium effects of trade on employment are significant

In a study of the South African economy, Rodrik (2006) notes that South Africa's unemployment rate (between 24 and 40 per cent) is one of the highest in the world. Many observers blame the unions for excessively high wages and thus unemployment. However, Rodrik finds that the root cause of high unemployment in South Africa is not the unions but the shrinkage of the manufacturing sector since the early 1990s. According to Rodrik, the weak performance of the export-oriented manufacturing sector has deprived South Africa of job creation at the relatively low end of the skill distribution. Econometrically, Rodrik shows that import penetration is one of the key factors behind weak performance of the export-oriented manufacturing sector.

In a study of the Brazilian economy, Menezes-Filho and Muendler (2007) combine insights from the Melitz (2003) model with worker heterogeneity providing a compelling empirical example of the importance of some of the more recent theoretical breakthroughs. These authors link worker-level panel data with firm-level data and industry-level data to obtain a rich dataset that allows them to test many implications of the most advanced trade models (for example, heterogeneous-firm models that incorporate heterogeneous labour) for Brazil. By doing this, the authors are able to assess the impact of Brazil's trade liberalization during the 1990s on jobs, while controlling for a number of worker-specific, firm-specific, industry-specific, and economy-wide structural reforms. Their dataset allows them to follow workers throughout the liberalization period and observe the path of their employment history in greater detail than previous studies. They are particularly interested in the effects of trade liberalization on employment status, type of employment (formal or informal), and job reallocations.

Their results show that firms in industries with a "comparative-advantage"¹⁵ and exporting firms¹⁶ shed workers more frequently. Moreover, firms with comparative advantage and exporting firms also hire workers less frequently than the average firm. Thus, on net, trade liberalization leads to net employment losses in these firms. This is surprising given the standard predictions of international trade models that would indicate that these sectors and firms would potentially hire more workers when liberalization occurs. Furthermore, they also show that tariff reductions and increased import penetration are associated with an increase in the likelihood of a

¹⁵ Those industries where Brazil has a comparative advantage with respect to the rest of the world. The authors use UN COMTRADE data from 1986–98 to calculate sectoral-level comparative advantage measures following Balassa (1965).

¹⁶ Which may or may not be firms in industries with a sectoral comparative advantage.

worker transitioning into informality and unemployment, as well as a lower probability of a transition from informality back to formal employment. They also find that trade liberalization in Brazil has been associated with longer reallocation times for workers moving from a formal-sector job to another formal-sector job. Their results are robust to different levels of exposure to trade, firm-level productivity and worker heterogeneity, as well as other general trends that occurred in the country during the period studied, such as skill-biased technological change and labour market reforms.

The findings by Menezes-Filho and Muendler (2007) are important given the rise in informal employment that has been observed in the recent decades and that, to a large extent, seems to have coincided with broad trade liberalization around the world. Moreover, they also point to important institutional and structural aspects of labour markets and the way in which these respond to trade liberalizations. However, it is difficult for the authors of this paper to provide insights on the relative importance of labour market rigidities since they focus on only one country, Brazil.

In a study of the United States, Ebenstein et al. (2009) make the point that when studying the impact of trade or offshoring on wages and employment, the industry level may be the wrong unit of analysis. If most of the downward pressure on wages occurs in general equilibrium, whereby wages equilibrate across manufacturing sectors very quickly but not necessarily across aggregate sectors (i.e. agriculture, industry and services), then industry-level analyses miss the most relevant effects of international trade on wages. This finding is particularly relevant for developing countries where much of the economic activity takes place outside of the formal sector. In fact, Ebenstein et al. (2009) find almost no industry-level wage effects. However, they do find significant employment reallocation in response to import competition and smaller employment responses to offshoring: import penetration and offshoring are both associated with job losses in manufacturing. Consistent with Kletzer (2001), they also find that workers who leave manufacturing to take jobs in the services sector experience average wage declines of between 6 and 22 percentage points.

To estimate the general equilibrium effects of trade and offshoring on wages, Ebenstein et al. (2009) calculate occupation-specific measures of offshoring, import competition and export activity. If labour market rigidities do not work through frictions in the reallocation of workers within manufacturing but, instead, between occupations (for example, if workers are more likely to remain in the same occupation when they switch jobs), then occupation-specific measures of international competition are more appropriate for capturing the effects of trade and offshoring on wages. Their results suggest that this is indeed the case, and that international trade has had large, significant effects on occupation-specific wages. This is an important result, and this kind of analysis has rarely been used when studying the effects of trade or offshoring on labour market outcomes.

If, as in the case presented by Ebenstein et al. (2009), labour market frictions operate more strongly through rigidities in changing occupations rather than industries or sectors, this could offer a plausible explanation as to why we observed little

association between trade liberalization and labour market outcomes at the industry level. This is an indication that, within the industrial sector, labour rigidities are not too strong and, thus, labour can relocate within manufacturing relatively easily. Ebenstein et al. (2009) go on to show that labour is not as mobile across occupations. Their results suggest, at least for the United States, that a 1 percentage point increase in occupation-specific import competition is associated with a 0.25 percentage point decline in real wages. While some occupations have experienced no increase in import competition (such as teachers), import competition in some occupations (such as shoe manufacturing) has increased by as much as 40 percentage points. The downward pressure on wages due to import competition has been commonly overlooked in the literature because it operates between and not within industries.

The magnitudes of the effects appear to be important. The authors report that total employment in manufacturing fell from 22 million to 17 million, with the steepest declines in the early 1980s. Total employment for the least-skilled workers (with a high-school diploma or less), declined over the entire period, while employment for workers with at least a college degree increased in all but the last three years of the sample. Additionally, real hourly wages fell for workers with a high-school education or less, while manufacturing workers with at least a college degree realized the largest wage gains. In terms of offshoring trends, offshore employment as a percentage of total employment of US multinational firms increased from 28 per cent in 1982 to 36 per cent in 2002; these increases occurred concurrent to a reduction in the US workforce for these firms, from 12 million workers in 1982 to 7 million in 2002. The authors find significant relocation of workers across industries due to import competition and smaller responses of employment to offshoring. Finally, the authors find that a 1 percentage point increase in import penetration is associated with a 0.6 percentage point decrease in manufacturing employment in the United States; they observe an increase of nearly 8 percentage point in import penetration for this country, which would explain almost 5 per cent of the reduction of employment in manufacturing. They also note that this effect has been felt more strongly by workers with a high-school education or less.

2.3.2 Labour has lost bargaining power relative to capital

Numerous reports in the popular press describe the decline in labour's share of income as an outcome of a struggle between capital and labour, with owners of capital winning at the expense of labour. These accounts typically present owners of capital as having greater bargaining power compared to labour, ostensibly because capital is footloose and can quickly relocate to wherever it can find the highest returns. For example, *The New York Times* quotes Stephen Roach of Morgan Stanley, who points out that "... the share of national income going to the owners of capital through corporate profits is surging. The share going to labour compensation is falling. This is not the way a democracy is supposed to work ...". Rodrik (1997) describes a similar type of bargaining game between capital and labour. Some observers have even suggested that this increase in capital mobility has made workers in both receiving and

sending countries worse off. As Kanbur (2001) points out, if instead of receiving a competitive return, capital and labour bargain over wages and employment, an increase in capital mobility is akin to increasing the bargaining power of capital in *both* labour markets. Despite these claims, however, there have been very few efforts to test the relationship between increased capital mobility and labour's share of income.

Work by the US Bureau of Economic Analysis (BEA) confirms that the foreign operations of US multinational corporations (MNCs) continue to grow at a rapid pace. One explanation offered by the BEA for the increase in overseas investment is the privatization of electric utilities and telephone companies as well as the liberalization of direct investment policies in foreign host countries. Harrison and McMillan (2004) show that expansion abroad has also been associated with an increase in the return to capital abroad relative to its return at home. In 1977, the return on capital¹⁷ for affiliates in developing countries, 8.84 per cent, was virtually indistinguishable from the return for parent firms, 8.82 per cent. However, between 1977 and 1999, the return to capital increased by 4.5 percentage points for parent companies while it increased by 55.7 percentage points for developing country affiliates. During this same period, real wages in these developing country affiliates fell by over 20 percentage points for both production and non-production workers. The divergence in returns to capital and labour in these developing country affiliates is striking. Furthermore, research by the BEA shows that the average return on capital for overseas affiliates has been consistently much higher than the return for similar US corporations without overseas affiliates (Mataloni, 1999). One outcome is likely to be upward pressure on returns to capital in the United States as firms shift real capital abroad; these increasing returns to capital are documented using aggregate US data in Poterba (1997).

Harrison and McMillan (2004) explore this issue in an econometric framework using confidential, firm-level data from the BEA, which collects detailed information on US multinationals and their affiliates abroad. Data are collected on employment, labour compensation, sales and other variables. What is unique about these data is that they include detailed information on the activities of the US affiliates located in other countries and their parent companies operating in the United States. With this information, supplemented by additional data on the operations of US firms operating in the United States, it is possible to test whether relocation by US firms abroad reduces wages for remaining workers in the US parent plant.

With these data, they also address whether US workers in *other* plants are being threatened by plant relocation. They call this the "neighbour" effect. For example, they test whether workers in US auto plants are forced to accept lower wages when other US plants relocate some of their auto operations abroad. Thus, they are able to distinguish between the threat effect of affiliate activity in Europe, where wages are comparable, with activity in Mexico or other developing countries. They hy-

¹⁷ Calculations of the return on capital and labour's share include net income, which may reflect the practice of transfer pricing. If firms report higher profits abroad for tax purposes, then net income will be measured with error. Harrison and McMillan (2004) find similar trends in horizontally- and vertically-integrated firms and conclude that transfer pricing is not driving these trends.

pothesize that firm relocation to developing countries is more likely to put downward pressure on US wages than relocation to other industrialized countries.

The framework for this research is based on a model of imperfect competition, where firms receive excess profits and firms and workers bargain over those profits. If firms find it easier to relocate to regions with lower labour costs, this gives them a bargaining advantage, resulting in lower wages for workers remaining in the United States. The theoretical framework leads to a set of estimating equations where they look at the determinants of labour compensation as a function of several variables. Those variables include factors such as fixed costs to plants of relocating abroad, and the number of other plants relocating in the same sector (the so-called “threat” effect). This research then leads naturally to a focus on the determinants of labour demand as a function of international factors. Their framework is consistent with Blanchflower, Oswald and Sanfey (1996) who find empirical evidence of rent sharing between labour and capital in the US manufacturing industry.

Their preliminary findings based on the operations of US multinationals in the manufacturing sector suggest that increased capital mobility may indeed be associated with negative labour market outcomes. Over the period 1977–99, multinational manufacturing firms shed close to 2 million jobs in the United States.¹⁸ They also document that labour’s share of income has fallen dramatically and real wages have remained flat. The loss of jobs in the United States has been partially offset by an increase in the number of jobs overseas. Although Brainard and Riker (1997a, 1997b) claim that these offsetting forces do not occur within the same firm, there is still the possibility that employment at home is being replaced by employment abroad through substitution across firms. Harrison and McMillan’s preliminary analysis suggests that substitution occurs as some parent firms reduce employment in the United States and other US parent firms increase employment abroad through the establishment and expansion of their affiliates. This kind of substitution is likely to be overlooked if researchers focus purely on within-firm effects.

This evidence is consistent with work by Bertrand (2004) who finds that import competition changes the nature of the employment relationship. Bertrand argues that wages are negotiated at the time a worker enters a firm and are thereafter shielded from external labour markets. Employers have an incentive to shield workers from external competition for three reasons: (1) it is an optimal way for risk-neutral firms to insure risk-averse workers against cyclical fluctuations; (2) previous studies have validated the relevance of such wage-setting arrangements; and (3) the empirical relevance of such arrangements is relatively easy to test. According to Bertrand, a low elasticity of wages to labour market conditions is an indication that such agreements persist. Because of the endogeneity between local labour market conditions and wage-setting practices, Bertrand focuses on foreign competition to identify the impact of product market competition on wage-setting practices. She shows that an increase in import penetration reduces the elasticity of current wages to the unemployment rate that was prevailing at the time the employee was hired.

¹⁸ See table 1 of Harrison and McMillan (2004).

2.3.3 Trade liberalization's efficiency gains can be cancelled out by unemployment

The experience in Mozambique's liberalization of its cashew industry shows a different side of the story. McMillan, Rodrik and Welch (2003) study the liberalization of Mozambique's cashew trade in the early 1990s, and explore how the drastic series of reforms had negative economic effects. Reform occurred in 1991–92, with the replacement of the export ban by export taxes, which were gradually lowered, and the privatization of the state trading company and the holding company of processing plants. In their empirical work, the authors establish a model whereby welfare changes (on all parties involved in the process) from changes in export taxes and other reforms are separated into export-quantity effects, terms-of-trade effects, unemployment effects, and traders' margin effects. They found that farmers did earn more and output rose, but nowhere near the magnitude estimated in previous studies. The surplus generated by cashew reform is estimated at US\$11.48 million, but the average increase for farmers amounted to US\$5.13 per household per year, or less than four days' average wage in Mozambique. Additionally, cashew processors were net losers from these reforms, incurring an average annual loss of US\$7.3 million, while traders and exporters of raw cashew benefited the most. The authors note that the closing of the processing plants caused large numbers of unemployed workers, who remained unemployed long after the closing of the plants. They mention that nearly 90 per cent of the displaced workers were still unemployed in 2001.

Box 2.1: Information sharing can reduce unemployment

Anirudh Krishna (2007) found that many poor Indians in dead-end jobs remain in poverty, not because there are no better jobs but because they lack the connections to find them. Any Bangalorean could confirm the observation: the city teems with labourers desperate for work, and yet wealthy software entrepreneurs complain endlessly about a shortage of maids and cooks.

Inspired by this paper, Sean Blagsvedt created a village-level LinkedIn, the professional networking site so popular in the United States. Blagsvedt quit Microsoft and, with his stepfather, Ira Weise, and a former Microsoft colleague, built a social-networking site to connect Bangalore's white-collar workers with blue-collar workers. To reach workers earning US\$2 to US\$3 a day presented special challenges. The workers would be unfamiliar with computers. The wealthy potential employers would be reluctant to let random applicants tend their gardens or their newborns. To deal with the connectivity problem, Babajob pays anyone, from charities to Internet cafe owners, who find job-seekers and register them online. Babajob covers its costs through employers' advertisements. Instead of creating an anonymous job bazaar, Babajob replicates online the process by which Indians hire in real life: through chains of personal connections.

The exact number of jobs created by Babajob and the impact this has had on the lives of the poor is not yet known. But Blagsvedt is exploring the possibility of working with collaborators to get answers to these questions. In the meantime, Blagsvedt has kept himself busy opening another such project in Indonesia.

McMillan, Rodrik and Welch (2003) hypothesize that the diminished magnitude of gains, particularly for farmers, is due to market asymmetries, specifically imperfect competition. For example, the number of unlicensed cashew traders increased after liberalization, and cashew-exporting firms that were created after reforms were few and thus had considerable power regarding the purchase of raw nuts and the prices that they demanded. Another factor that the authors suggest was involved in the disappointing results from Mozambique's liberalization was the regulated and protected cashew industry in India. After the export ban was removed, India was able to buy raw cashews for an average of US\$0.79 per kilogram from Mozambique, and earn an average of US\$1.79 per kilogram selling processed cashews in its protected sector. This implies a terms-of-trade loss for Mozambique. The authors conclude by discussing two additional disappointments: the costs of unemployment resulting from losses to Mozambique's processed cashew export sector and the lack of supply response among cashew growers to higher prices for their product and the ability to export raw cashews. In reference to the latter point, lack of credibility of government reforms and high sunk costs of planting cashews did not lead to a quick or substantial growth in planting and harvesting cashew trees. If the Government of Mozambique had sought to increase the credibility of its reforms, this would have mitigated the loss of jobs in cashew processing in relation to increased activity in growing of raw cashew, but supply did not increase since government policy was not seen as credible, and uncertainty in future cashew policies and prices persisted.

One important lesson that can be drawn from this case study is that in order to predict the impact of trade liberalization, it is imperative to understand the initial conditions. If Mozambique had full employment, then the efficiency gains from trade liberalization – small as they were – would not have been wiped out by the cost of unemployment. Additionally, if policy-makers had understood that farmers consume the majority of the cashew nuts that they grow, they would have realized that liberalization of the cashew sector would not have had a big impact on household income.

2.3.4 Trade can have an impact on the quality of jobs

Job quality is difficult to define. Broad definitions typically include wages, job security, hours worked and number of accidents on the job. More qualitative measures are available on a case-by-case basis but are difficult to quantify and compare across countries (Robertson, Brown and Le Borgne Pierre, 2009). The evidence on trade and the quality of jobs is mixed. If trade liberalization leads to a downsizing of the labour force in the industrial sector and if these workers take lower paid jobs in other sectors, then trade liberalization is likely to lead to a lower “average” quality of jobs even though the quality of the jobs for workers who remain in the industrial sector may increase. Additionally, if increased trade increases the options of capital relative to labour and/or increases the rate of job churning, then exposure to trade is also likely to lead to a reduction in the average job quality in the affected country.

However, as Artuç and McLaren (2010) point out, exposure to trade can actually raise the workers' option value, thereby increasing the quality of jobs in the long run. In what follows, we review some of the most recent evidence on this topic.

Robertson, Brown and Le Borgne Pierre (2009) provide a nice overview of the issues surrounding trade and the quality of jobs. The countries included are: Cambodia, El Salvador, Honduras, Indonesia and Madagascar. The primary focus of the country studies is the textile and garment industries. In all five country case studies, the authors show that exposure to international trade and investment in the textile and garment sectors is correlated with an expansion of the number of jobs in the industrial sector and a contraction of employment in the agricultural sector. Because working conditions in the textile and garment industries are generally better than those in agriculture, the case-study authors conclude that the movement of workers from agriculture to apparel is likely to have improved overall working conditions in these countries.

In addition, recent developments call into question the effectiveness of relying on textile and garment manufacturing as a first step towards industrialization. The chapter on Madagascar raises the important point that while increased exports in the textile and garment industry did raise wages and employment for a period of time, the final dismantling of the multi-fibre arrangement (MFA) customs quotas on 1 January 2005 put an abrupt end to these positive developments. Since 2005, exports have stagnated and wages and employment have declined. The chapter on Madagascar concludes on a disconcerting note, claiming that the success of Madagascar's export processing zone "added fuel to the idea that using EPZs to develop a productive manufacturing base and promote employment was a positive development path for African governments. This chapter shows that this strategy is no longer sustainable, as a result of the end of the MFA. Yet, no alternative growth model has been designed." A similar situation occurred in Indonesia as a result of the Asian financial crisis. Employment and wage growth in the textile and garment industries were reversed while employment in the agricultural sector increased. It has been argued, however, that the jobs in that sector generated through trade in developing countries are not lost for that country group and that they may have positive externalities such as the empowerment of women, even if they are temporary (see Chapter 5 in this volume).

Harrison and Scorse (2010) ask whether outsiders can influence the quality of jobs in developing countries. They analyse the impact of anti-sweatshop activity by US activists on wage and employment outcomes in Indonesia. They compare the wage growth of unskilled workers in foreign-owned and exporting firms in the textiles, footwear and apparel sectors before and after the initiation of anti-sweatshop campaigns. They find that anti-sweatshop activity in the United States induced large real wage increases in targeted enterprises. However, they also find that there were costs associated with this activity including reduced investment, falling profits and increased probability of closure for smaller plants. They find no significant effect on employment.

Much of the media has focused its attention on the exploitation of children by multinationals and their abysmal working conditions.¹⁹ According to Edmonds and Pavcnik (2005a, 2005b), the ILO estimates the proportion of children who work at 18 per cent, with the majority clustered in low-income countries, mostly Asia and sub-Saharan Africa. However, less than 3 per cent of children aged 4-15 work outside the home, so child workers are typically engaged in the economic activities of their parents, usually related to agriculture. Additionally, although working children devote considerable time to employment, an average of 16 hours per week, many still attend school. However, working has consequences for total completed schooling, and longer hours worked in particular leads to dramatic decreases in total educational attainment. In two related papers, Edmonds and Pavcnik (2005a, 2005b) and Edmonds, Pavcnik and Topalova (2008) find that poverty is the primary determinant of child labour. The implication is that if trade liberalization can reduce poverty, then trade liberalization can also reduce the incidence of child labour. Edmonds and Pavcnik (2005a, 2005b) show that because most households in Viet Nam are net exporters of rice, the liberalization of the rice sector that increased the price of rice increased household income and reduced child labour. To conclude, the authors emphasize the importance of the negative relationship between living standards and child labour.

Until very recently, the bulk of offshoring has been led by developed economies. In a chapter on trade and foreign direct investment, Harrison and Rodríguez-Clare (2010) review the literature on the impact of FDI on factor markets in developing countries. They report that almost all studies find that workers in foreign firms are paid higher wages, presumably because labour markets in developing countries are not perfectly competitive and because foreign firms tend to be more productive. Before controlling for firm and worker characteristics, the wage gap tends to be large. For example, Martins and Esteves (2007) report a wage gap of 50 per cent for Brazil, and Earle and Telegdy (2007) report a wage gap of 40 per cent for Hungary.

However, these wage gaps can be due to other factors. For example, if foreign firms attract more productive workers, then it would be reasonable to expect that these workers would demand higher wages to compensate for their higher productivity. In that case, the wage gap between wages in foreign and domestic firms would be explained by differences in the characteristics of the type of workers they hire. This seems to be the case; after controlling for firm and worker characteristics, the wage premium paid by foreign firms drops significantly. For example, Martins and Esteves (2007) follow workers who move to or leave foreign enterprises using a matched worker and firm panel data set for Brazil for the period 1995-99. They find that workers moving from foreign to domestic firms typically take wage cuts, while those that move from domestic to foreign firms experience wage gains. However, the wage differences are relatively small ranging from 3 to 7 per cent.

¹⁹ See, for example, the 2009 article by CNN's Olivia Sterns, available at: <http://edition.cnn.com/2009/HEALTH/09/25/child.tobacco.picking/index.html>.

The authors conclude that their results support a positive view of the role of foreign investment on labour market outcomes in Brazil.

Harrison and Rodríguez-Clare (2009) conclude that there is no evidence to support the view that foreign firms unfairly exploit foreign workers by paying them below what their domestic counterparts would pay. Further evidence supporting this view comes from Harrison and Scorse (2010) who find evidence that foreign firms are more susceptible to pressure from labour advocacy groups, leading them to exhibit greater compliance with minimum wages and labour standards. They find that foreign firms in Indonesia were much more likely than domestic enterprises to raise wages and adhere to minimum wage requirements as a result of anti-sweatshop campaigns. They also find that the employment costs of anti-sweatshop campaigns were minimal, as garment and footwear subcontractors were able to reduce profits to pay the additional wage costs without reducing the number of workers.

2.3.5 Trade in tasks has ambiguous implications for employment

Trade in tasks is commonly referred to as offshoring. The term “offshoring”, as used by Grossman and Rossi-Hansberg (2008), encompasses two different business configurations: the physical relocation of activities overseas through the establishment of overseas affiliates and offshore outsourcing. The first type of offshoring maintains the offshore activity within the boundaries of the firm while offshore outsourcing refers to the sourcing of intermediate inputs from overseas suppliers. Both types of offshoring are common. In what follows, we use the term “offshoring” to refer to the type of activity that maintains the offshore activity within the boundaries of the firm and the term “offshore outsourcing” to refer the sourcing of intermediate inputs from foreign suppliers.

Most of the evidence concerning the impact of offshoring on developing country labour markets is centred on estimating the impact of developed countries’ FDI on developing country labour markets. This work misses an important part of the story: trade in intermediate inputs or offshore outsourcing. Offshore outsourcing has become increasingly important for both developing and developed countries. The impact of offshore outsourcing on employment and wages has been especially difficult to get a handle on for a number of reasons. Most important is the fact that many statistical agencies do not differentiate between trade in final goods and trade in intermediate inputs. For example, the US Bureau of Economic Analysis only collects data on imports by US-based MNCs, making no distinction between final goods imports and imported intermediate inputs.

Some studies have managed to get around these data limitations. For example, Goldberg et al. (2010) find that trade reform might have benefitted Indian firms by providing them access to a less expensive array of imported intermediate inputs. Their goal is to link the increased access to imported intermediate goods to dynamic gains from trade. This is innovative and important work but the implications for employment are unclear. Using cross-country data, Estevadeordal and Taylor (2008) find that liberalization of tariffs on capital and intermediate goods has a positive

impact on economy-wide growth. “Liberalizers” have a 1 per cent higher annual growth rate. Again though, the implications for employment are ambiguous.

Understanding the employment effects of offshoring for developing countries is particularly important since unemployment in many of these countries tends to be very high. Indeed, the promise of job creation is one of the reasons developing countries set up investment offices and provide tax breaks to multinational corporations. Yet, we still know very little about the numbers and types of jobs created. The assumption is typically that jobs will be created and that this is a good thing, but this is not always the case. Take, for example, Chinese investors in Africa. Chinese construction projects in Africa are primarily carried out by state-owned enterprises that often employ imported Chinese workers. The reasons for this are discussed in greater detail in the next section. For now, it is sufficient to note that offshoring by “developing” countries is occurring at a rapid pace and we have very little hard evidence regarding its effect on recipient countries’ labour markets.

One of the few papers that does ask about the effects of production offshoring from developed to developing countries in the receiving developing country is Feenstra and Hanson (1997). They consider the effects of relocating manufacturing activities from the United States to Mexico on the demand for labour in Mexico. For nine industries located across multiple regions in Mexico, they find that the demand for skilled labour is positively correlated with the change in the number of foreign affiliate assembly plants, and that FDI increases the wage share of skilled labour relative to unskilled labour. While this might seem counter-intuitive, the reason for this is that tasks performed by unskilled labour in the United States are performed by relatively skilled labour in Mexico. In a separate piece (Bergin, Feenstra and Hanson, 2009), find that offshoring by the United States increases wage inequality in the United States. They do not consider wage inequality in Mexico but the implications are clear. To the extent that offshoring increases the demand for skilled labour in Mexico, it would also increase inequality in Mexico. Feenstra indeed confirms this in a recent lecture on globalization and labour (Feenstra, 2007).

From this we can conclude that, overall, the effects of production offshoring on labour market outcomes in developing countries are likely to be mixed, and we still know too little about this issue. In some cases, there seem to be slightly encouraging effects, with production offshoring to developing countries helping to create new jobs of similar or even better quality than those offered by local companies. In other cases, the effects do not seem to be as positive for local workers. Significantly more research is needed to understand this type of trade and its impact on labour market outcomes in developing countries. Furthermore, there is a growing trend in South-South production offshoring, and the availability of data and studies of this kind of trade are scarce.

The available literature on the impact of production offshoring on employment in developed countries can offer some guidance on the probable effects in labour markets on the home country. This issue has been extensively studied and the results have often been contradictory. In one of the most recent papers, Harrison and McMillan (2009) find that the insights derived from trade theory go a long way to-

wards explaining this apparently contradictory evidence on the relationship between offshoring and domestic manufacturing employment. For US parent firms primarily involved in horizontal activities, affiliate activity abroad substitutes for domestic employment. For vertically-integrated parent firms, however, the results suggest that home and foreign employment are complementary. Foreign wage reductions are associated with an increase in domestic employment. The results differ across high- and low-income affiliate locations, in part because factor-price differences relative to the United States are much more important in low-income regions. In low-income affiliate locations, a 10 percentage point reduction in wages is associated with a 2.7 percentage point reduction in the US parent company's employment for horizontal parents and a 3.1 percentage point increase in the parent company's employment for vertical firms.

Sethupathy (2010) also investigates the wage and employment effects of offshoring. Using a theoretical framework that combines heterogeneous firms with wage bargaining, Sethupathy predicts that offshoring firms increase their productivity and profitability at the expense of firms that do not offshore. For firms that offshore, the productivity effect boosts wages while wages at the firms that do not offshore fall. The predicted effect for employment for firms that offshore is ambiguous, while the predicted effect for employment at firms that do not offshore is unambiguously negative. Using two events in Mexico as exogenous shocks to the marginal cost of offshoring to Mexico, Sethupathy (2010) tests the implications of his model using firm-level data on US multinationals. His empirical results support the predictions regarding wages. However, the author finds no evidence that job losses are greater at firms that offshore than at firms that do not offshore.

Both of these studies share important limitations. First, by their very nature, they are partial equilibrium studies that focus only on the traded goods sector. But as Grossman and Rossi-Hansberg (2008) stress, the spillovers associated with offshoring require a general equilibrium framework in order to properly account for effects outside the traded goods sector. And second, since there are no details available on worker characteristics in the BEA data, it is difficult to know what to make of the results on wages. Harrison and McMillan (2009) do not use the BEA wage data for this reason. Ebenstein et al. (2009) get around both of these problems by matching data on offshoring from the BEA with data on wages and worker characteristics from the Current Population Surveys (CPSs). This has two advantages. First, in all of the wage regressions they are able to control for worker characteristics. And second, since the CPS encompasses workers from all sectors of the economy, they are able to ascertain whether trade and offshoring have been important drivers of the reallocation of labour across sectors. As discussed in great detail in section 2.3.1 of this chapter, they find that the effects of offshoring on wages and employment are small and that offshore outsourcing proxied for with import penetration does have significant effects on wages at the occupational level.

Over the past decade, trade economists have begun to study the implications of trade in services for employment and wages. Much of the work for developed countries has focused on defining a set of occupational characteristics that make oc-

cupations more or less offshorable. Jensen and Kletzer (2005) find that the total share of employment potentially affected by service trade is likely to be closer to 40 per cent. However, the empirical work that focuses on this issue generally finds that services trade has had a minimal impact on labour market outcomes in developed countries. This is partly due to the fact that previous studies have not used the most current data.

The work on the impact of services trade on labour markets in developing countries has been primarily anecdotal and focused on the cultural aspects of services trade. The publication by Messenger and Ghosheh (2010) is an exception to that rule. The authors examine and provide a historical context for the development of the business process outsourcing (BPO) industry, based on case study analysis of working conditions in four countries where this industry is large or growing – Argentina, Brazil, India and the Philippines. A mixed picture emerges from their analysis. On the positive side, and unlike previous assumptions, remote work jobs – such as jobs in BPO activities – are of a reasonably good quality by local standards. For example, wages of Indian workers are nearly double the average wages in other sectors of the Indian economy. In the Philippines, BPO employees earn 53 per cent more than workers of the same age in other industries. On the other hand, night work is common to serve customers in distant time zones in “real time” and work is generally stressful. BPO employees face heavy workloads backed by performance targets combined with tight rules and procedures, all this enforced via electronic monitoring. This type of high-strain work organization is well-known to produce high levels of job-related stress, according to the authors.

2.4 CAN GOVERNMENTS INFLUENCE THE RELATIONSHIP BETWEEN TRADE AND EMPLOYMENT?

Curiously, the most recent volume of the *Handbook of Development Economics* includes a chapter on trade, foreign investment and industrial policy for developing countries that completely side-steps the issue of unemployment.²⁰ The authors conclude that there is no strong case for tariffs, subsidies or tax breaks to protect industry in developing countries. Yet, as we noted in the introduction, unemployment is extremely high in many developing countries. This unemployment and underemployment is costly and the inefficiencies associated with the forms of industrial policy the authors focus on (tariffs and subsidies) must be weighed against the costs of potentially higher unemployment. This point is clearly made by McMillan, Rodrik and Welch (2003) who study the case of the Mozambique cashew sector. The efficiency gains of removing the export ban on raw cashew were almost completely offset by the costs of unemployment.

²⁰ See Harrison and Rodriguez-Clare (2010).

Nevertheless, Harrison and Rodríguez-Clare (2010) do envision a role for what they call “soft” industrial policy designed to shift attention from interventions that distort prices to interventions that deal directly with coordination failures. They go on to say that given the wide number of coordination failures, an exhaustive list of the appropriate industrial policies is impossible to provide. They do though suggest the following as possibilities: (i) policies to increase the supply of skilled workers; (ii) policies to encourage technology adoption; (iii) policies to improve regulation and infrastructure; (iv) public investment in infrastructure projects when there are strong investment complementarities; (v) policies to attract FDI that brings in “foreign” technologies; (vi) scholarships for study abroad in areas deemed important for growth; (vii) grants and prizes for innovation; and (viii) technical assistance. While some of this sounds good on paper, the key underlying assumption is that somehow these policies will stimulate growth and that *growth will lead to employment*. As we have argued above, and as Harrison and Rodríguez-Clare (2010) point out in section 4.2 of their paper, the link between trade and growth is not something that can be taken for granted. Even more tenuous is the link between growth and employment.

In what follows, we will argue that there is considerable scope for government policy to enhance the job-creation potential of trade and foreign direct investment in developing countries. To make this case, we focus on two recent, high profile, episodes of increased trade and investment in developing countries. First, we turn to the increased acquisition of land by foreign investors in developing countries across the globe and ask whether governments can use these investments to help create jobs. Then, we turn to the case of Chinese investment in Africa and ask: to what extent has this led to job creation and what can African governments do to enhance job creation in Africa by Chinese investors?

2.4.1 *Land grab? The race for the world's farmland*²¹

Nowhere is the scope for industrial policy more important than in the arena of foreign investment in agriculture. According to the World Bank (2007), agriculture provided jobs for 1.3 billion smallholders and landless workers in 2007. This number corresponds closely to the number of people living below the dollar a day poverty line. The process of modernization of the agricultural sector is likely to reduce the number of jobs in agriculture. Of course this does not mean that the process should be reversed; however, host country governments need to formulate strategies that incorporate the well-being of smallholders. Traditional trade policies such as tariffs and subsidies may be part of this strategy.

A case in point is Olam Nigeria. Olam Nigeria, a foreign affiliate of a Singapore-based multinational had been importing rice into Nigeria for years. Nigeria has the right conditions for rice cultivation but local production never satisfied local demand. Reasons for this had to do with low productivity due to inferior inputs and high

²¹ The title of this section is borrowed from the publication “Land Grab? The Race for the World’s Farmland”, which was published in 2009 by the Woodrow Wilson International Center for Scholars.

transportation costs. As a result, Nigeria imported around 60 per cent of its total rice consumption. In 2005, the Government imposed high tariffs on imported rice. As a result, Olam Nigeria leased a mill from the Government and began processing locally produced rice. By 2007, the company had invested US\$5 million in upgrading the mill and had doubled its capacity. To solve the problem of an insufficient supply of high-quality rice, the affiliate started an outgrowers programme for rice cultivation in Nigeria. Olam Nigeria provided credit to farmers, who used it to purchase inputs. eight thousand farmers participated in the programme during its first two years, and the number was expected to grow to 20,000 by 2009 (UNCTAD, 2009).

Figure 2.7 shows that 48 new land deals were signed between 2006 and 2009. It also shows that 27 of these deals took place in sub-Saharan Africa and that, of these 27, only five originated in China. One of the most pressing questions for policy-makers is how to harness these deals so as to maximize the welfare and employment gains to the host countries. It is too soon to tell what the effects will be but one thing is clear: the governments of the recipient countries are in the driver's seat. It is up to them to determine what, if any, impact on employment these investments will have.

According to Kugelman (2009), the magnitude of the effects could be huge. He notes that 15 to 20 million hectares of farmland in the developing world have been under negotiation over the past few years. According to *The Economist* (2009), this represents one-fifth of all the farmland in the European Union. Kugelman puts this in perspective when he writes:

“One of the largest and most notorious deals is one that ultimately collapsed: an arrangement that would have given the South Korean firm Daewoo a 99-year lease to grow corn and other crops on 1.3 million hectares of farmland in Madagascar – half of that country's total arable land. However, according to a German press account, similar mega-deals have either been finalized or are in the works. Sudan has leased 1.5 million hectares of ‘prime farmland’ to the Gulf states, Egypt and South Korea for 99 years; Egypt ‘plans to grow grain’ on 840,000 hectares in Uganda; and the president of the Democratic Republic of Congo ‘has offered to lease’ an incredible 10 million hectares to South Africa. To get a sense of the enormity of such deals, consider that most small farmers own two- or three-hectare plots.”

Considering the costs and benefits of these deals, a recent report by the Woodrow Wilson International Center for Scholars (2009) makes a number of important and sensible recommendations for host country governments. Most relevant to the issue at hand is their recommendation that governments uphold the right to food as a human right. To this end, they write, “host countries should impose tariffs or other protective measures to ensure local industries are not subjected to foreign investment that could jeopardize domestic food security or right-to-food measures.”

2.4.2 FDI inflows and development: The case of Africa

Unemployment and underemployment are a serious problem in most African countries, and not only in the poorest. For example, in Botswana, the so-called superstar of Africa, poverty, unemployment and inequality remain extremely high. Recent work by McCaig and McMillan (forthcoming) indicates that in 2002–03 (the latest year for which the Household Income and Expenditure Survey is available), the headcount poverty rate was 30.2 per cent, the Gini coefficient was 64.7 – making it the third most unequal society in the world – the overall unemployment rate was 24 per cent and the youth unemployment rate was closer to 50 per cent.²² These facts should make any economist convinced that good governance and institutions are the key to economic success take pause. Botswana has experienced rapid economic growth and is well known for its efficient and practically corruption-free bureaucracy. But this growth has been largely based on the diamond industry which employs only around 7,000 people or 2.3 per cent of the labour force. The Government of Botswana is well aware of these problems and has implemented numerous schemes dedicated to creating employment in an effort to alleviate poverty and reduce inequality. Botswana has an official Institute for Development Policy Analysis (BIDPA) which is generally oriented towards employment creation and diversification of the economy. Yet, to date, industrialization has been elusive. The reasons for this are unclear and warrant further investigation. For now, the point is that even in the so-called superstar of Africa, efforts to industrialize and generate employment have not met with much success.

Like Botswana, Nigeria has a serious unemployment problem. The World Bank (2009) notes the following:

“Public debate in Nigeria on the country’s progress has been dominated by two seemingly opposed themes. The first is the strong growth performance of the non-oil economy since the return to democracy in 1999, and especially since 2003, which ushered in a period during which the Federal Government of Nigeria undertook debt restructuring and fiscal, financial, infrastructure, and institutional reforms. Strong growth during this period has been manifested in sharp increases in agricultural production, wholesale and retail trade, and construction, and in the emergence of new industries, particularly in the financial, telecommunications, and entertainment sectors. The second, opposing theme is that Nigeria’s much improved economic performance seems to have done little to reduce unemployment, especially among the young. The consensus in society is that youth unemployment is on the rise, with an associated negative impact on public order and an increase in militancy.”

²² McCaig and McMillan’s calculations based on Botswana’s 2002–03 Household Income and Expenditure Survey.

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On the likelihood of creating jobs in manufacturing, the report contradicts itself. First, quoting Paul Collier, the authors write that countries like Nigeria cannot compete with China and that perhaps upgrading the skills of the labour force to make Nigeria attractive for outsourcing is the way to go. However, the impressive annexes of the report provide detailed lists of manufacturing investors in several free trade zones throughout Nigeria. These projects include the manufacturing and/or assembly of all sorts of consumer products.

Where does trade policy play a role in all of this? Hundreds of newspaper articles claim that cheap imports from China are responsible for the decline in industrial employment in Africa. However, as Brautigam (2010) points out, China has been engaged in sub-Saharan Africa for decades. Brautigam writes that it is quite likely that imports from China have displaced some African workers. And given the nature of exports from Africa, it is unlikely that the increase in exports made up for the jobs lost. However, she is also optimistic about China's ability to stimulate entrepreneurial activity and create jobs in Africa. This is because China's industrial policy – China's *zou chu qu* or “go global” policy, launched in 1999 – has provided enormous incentives for private firms from China to invest in Africa. This is a clear break from the past when it was primarily state-owned Chinese enterprises investing in Africa. Brautigam also provides several anecdotes of successful Chinese-African manufacturing joint ventures.

A second reason to be optimistic about China's role in Africa is that Chinese firms are likely to be better equipped than their western counterparts to deal with the working conditions in Africa (Buckley et al., 2010). For example, Chinese firms are adept at operating successfully in environments characterized by uncertainty, opaque regulatory conditions and weak market-enhancing institutions. Buckley also asserts that developing country firms may be better able than industrialized countries to adapt their technologies, products and processes to local market conditions because they entered the product markets more recently than their western counterparts and therefore have more recent experience with labour-intensive low-cost manufacturing.

A third reason to be optimistic about China's investment in Africa is that China's strategy in Africa reveals a willingness to diversify and work in many different countries, all with their own sets of priorities and investment rules. This is important because Africa is home to an enormous amount of untapped potential in a variety of areas. For example, Africa's agro-ecological potential is huge compared to its current output. More than one-quarter of the world's arable land lies in the continent, but it only generates 10 per cent of global agricultural output. And in most African countries, upward of 70 per cent of the population relies on agriculture for a living.

It is up to African governments to decide how they can best harness the enthusiasm of the Chinese investors for job creation. There is in our view no reason to rule out tariffs and subsidies as tools for directing investment into labour-intensive activities.

2.5 POLICY IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Recent advances in economic theory have highlighted three issues that have potentially important implications for policy-makers in developing countries. The three most important implications are: (1) the extent of the gains in allocative efficiency associated with trade liberalization depends critically on the institutional setting; (2) exposure to international trade can have an impact on aggregate employment and therefore the rate of unemployment; and (3) exposure to international trade can increase wage inequality in both rich and poor countries.

Our examination of aggregate data provided at the beginning of this chapter reveals interesting trends that do not, however, explicitly confirm the theoretical predictions highlighted in the previous paragraph. We find that: (1) developing countries have significantly reduced industrial tariffs over the past decade; (2) two-thirds of industrial employment is now located in developing countries and that China drives this trend; and (3) at least in the aggregate, trade liberalization is not correlated with changes in real wages or employment.

On the other hand, the overview of country-level studies that represent the bulk of the discussion in this chapter provides a more nuanced picture that often supports theoretical predictions. In particular, our review of the most recent empirical literature on trade and employment reveals that in Brazil, South Africa and the United States, trade liberalization has been associated with employment losses in the industrial sector according to general equilibrium studies. In addition, recent empirical work on trade in tasks and employment suggest that trade in tasks results in a reallocation of workers from manufacturing to services and puts downward pressure on wages in home countries measured at the occupational level. Host countries, however, appear to benefit. If the host country is a developing country, wages in multinational enterprises are usually higher than those in domestic firms.

Those recent findings suggest that previous micro-studies that focus only on labour market outcomes within the traded goods sector are likely to miss an important part of the story.²³ Employment contractions (expansions) in the traded goods sector imply either employment expansions (contractions) in the non-traded goods, or changes in unemployment, or both. These movements of labour across sectors are likely to be associated with wage changes that have been missed by studies that focus solely on the manufacturing sector. In fact, given what we know about the impact of trade reform on efficiency gains, wages for workers who remain in manufacturing after trade liberalization are likely to rise. However, focusing only on these workers can easily lead to the wrong conclusion about the effects of trade reform on wages and inequality.

²³ Others have made this point, noting that in many cases the issue is data constraints (see, for example, Lee, 2005).

Another finding that is supported by recent empirical literature is that the extent to which trade liberalization has had an impact on employment varies enormously across countries. The case of Mozambique, for instance, illustrates the importance of taking into account initial conditions when thinking about the impact of trade liberalization on labour market outcomes. Trade liberalization also appears to have ambiguous impacts on the quality of jobs in terms of wages and employment opportunities: while it can raise the wages of workers who remain employed in the traded goods sector or of those finding a new job, it can at the same time expose workers to more job insecurity.

Last but not least, we argue in this chapter that the shift in manufacturing employment from developed to developing countries has probably weakened the bargaining power of workers in developed countries. Indeed, the empirical evidence discussed in this chapter supports the hypothesis that the nature of the bargaining relationship between labour and capital has changed as a result of exposure to international trade.

These findings have potentially important policy implications. In particular, they give no reason for complacency about the relationship between trade and jobs in developing countries. Many of the workers in the poorest developing countries continue to squeeze a living from land that has limited potential for productivity improvements.²⁴ Private schemes – such as Babajob – that address labour market frictions in developing countries can contribute to providing employment opportunities for the poor. But such schemes are no replacement for government policies that aim at creating alternative means of employment.

We conclude this section by saying that, while some of the recent literature on the effects of trade and jobs has found mixed effects, where there are job gains in some sectors but important losses in others, the most recent and detailed empirical studies seem to be challenging many of the traditional ideas in the trade literature. Very recent theoretical advances in the field have shed light on previously unaccounted effects of trade liberalization that, along with more ambitious empirical tests of these models using individual-level and firm-level data as well as sectoral-level liberalization variables, are clearing the way for a better understanding of the effects of trade liberalization on labour market outcomes. Moreover, applied studies like those by Meneses-Filho and Muendler (2007) and Ebenstein et al. (2009) have found important negative effects of trade liberalization on labour market outcomes both in developed and developing countries.

While we cannot give a final verdict on the impact of trade liberalization on employment (and we will probably not be able to do so, at least in the near future) these recent studies do raise important doubts over the previously held view that trade liberalization would yield employment benefits even in the long run. Moreover, there is the need to better understand experiences in other countries and the structural environments that would allow to minimize or contain the potentially negative effects of trade liberalizations on employment. It would seem, from what is suggested

²⁴ Yu, You and Fan (2010).

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by the work of Rodrik (2006) and Meneses-Filho and Muendler (2007), that industrial policies, patterns of liberalization (for example, differences between liberalization in intermediate and final goods) as well as characteristics of the labour market (for example, how easy it is to reallocate workers) could have significant roles in determining whether workers in a country would be better off, which sectors would be affected and what policies could be pursued to smooth the transition.

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