HOW DOES TRADE OPENNESS AFFECT WOMEN'S JOB OPPORTUNITIES AND EARNINGS IN CAMEROON?

Simone Nadège ASSAH KUETE
Ministry of Trade, and University of Yaoundé II, Cameroon
Email: assahkuete1@yahoo.fr

Belmondo TANANKEM VOUFO
Ministry of Economy, Planning and Regional Development, Cameroon
Email: tanankemvoufo@yahoo.fr[*]

Abstract

This study empirically assesses the relationship between increased openness to international trade (resulting from trade liberalization) and changes in employment opportunities and earnings for men and women in Cameroon. More specifically, the study aims to answer the following two questions: (a) Does increased trade openness improve women's employment opportunities relative to those of men? and (b) What are the effects of increased trade openness on the wage gender gap? The empirical analysis uses two sources produced by Cameroon's National Institute of Statistics: the 2005 and 2010 waves of the Employment and Informal Sector Survey, and trade statistics from the Supply and Use Tables. The methodology consists of: (a) comparing the evolution of trade indicators and women's employment shares in different sectors of the economy, and (b) estimating wage equations for men and women, and then decomposing the wage gap in order to identify whether and how exposure to trade can account for the component not explained by observable differences in labour market characteristics. Three indicators were used to capture trade openness: import penetration, export intensity, and trade share. The results show that openness to trade did not lead to the expansion of exports in sectors where most women work, and seems not to have increased women's job opportunities. On the other hand, trade openness narrowed the gender wage gap. The study concludes by proposing specific measures that should be implemented to help women benefit from opportunities created by trade liberalization, and to head off threats posed by trade liberalization to development and poverty alleviation. These measures should take into consideration the important role played by the informal sector in Cameroon's economy.

Keywords: Trade openness, employment, gender wage gap, informal sector, Cameroon.

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1 Introduction

Over the past three decades, many developing countries have undertaken economic reforms that included trade liberalization policies, and there has been growing interest in the gender impact of these reforms. Indeed, trade policies, like any other economic policy, are likely to have gender-differentiated effects because of women's and men's different access to and control over resources, and because of their different roles in both the market economy and households (Fontana, 2003).

In research on gender effects of trade policies, there has been a relatively large emphasis on labour market outcomes. The impact of trade reforms and globalization on women's relative wages and employment opportunities has attracted particular attention. As highlighted by Horton *et al.* (1991), the focus on the labour market is apposite, as it generally provides the conduit through which reform policies affect a country's standard of living.

Trade theory (Hecksher-Ohlin/Stolper-Samuelson) suggests that increased openness to international trade in developing countries may provide new job opportunities in export-oriented industries, especially for low-skilled female workers. Moreover, Black and Brainerd (2004) argue that with increased competition in the local market due to a more open trade regime, companies can no longer afford to discriminate against women by paying a premium to male workers just because they are men – a result in line with Becker's (1971) theory of discrimination. However, trade liberalization may also bring about a deterioration of women's relative position in the labour market because in many developing countries women are concentrated in only a few sectors of economic activities, have limited geographic mobility, and have both labour market and household responsibilities that limit their availability to work and hence their ability to accept a number of demanding, high-paying job opportunities. Additionally, there has been a concern that women may lose out as export-oriented industries advance to higher-value-added segments and become more skill-intensive over time.

These mixed theoretical predictions suggest that the effect of trade liberalization on women in the labour market depends on the nature of the liberalization process and the structural composition of the economy concerned, and hence remains largely an empirical question (AlAzzawi, 2014).

In this context, the present study aims to contribute to the existing literature by examining the relationship between increased openness to international trade (resulting from trade liberalization) and the change in earnings and employment opportunities for men and women in Cameroon, a country largely open to trade and for which this question has not been previously researched. More specifically, the study aims to answer the following questions:

- Does increased trade openness increase women's employment opportunities relative to those of men?
- What are the effects of increased trade openness on gender wage gaps?

Cameroon started to liberalize its international trade in 1990. In the early 1990s, the country increased its degree of international integration through numerous waves of deregulation, reductions in tariffs, and elimination of import barriers. Cameroon's trade liberalization policy consists of three components: (a) reinforcement of regional and sub-regional integration; (b) consolidation of trade with traditional partners; and (c) opening towards emerging countries. The many trade agreements being negotiated or already implemented (such as the Economic

Partnership Agreement with the European Union, or trade agreements with Nigeria and Morocco) will lead to an increase in trade openness of Cameroon.

Moreover, since 2010, Cameroon has been implementing its 10-year development plan contained in the Growth and Employment Strategy Paper, which aims to promote strong economic growth and create decent jobs, especially for vulnerable groups such as women and youth (IMF, 2010). This strategy, which is gender-sensitive, insists on the inclusion of women in all activities related to trade. It is therefore essential for the government to have an analysis of the gender implications of trade openness.

There are at least two reasons why it is imperative to address gender inequality. First, gender inequality matters intrinsically because the ability to live the life of one's choosing and be spared from absolute deprivation is a basic human right that should be available to everyone, regardless of gender. Moreover, gender equality matters strategically, because greater equality contributes to economic efficiency and the achievement of other key development outcomes (World Bank, 2011: 3).

Second, as highlighted by Gamberoni and Reis (2011), gender inequality also matters and needs to be addressed in the context of trade. Trade policies and initiatives that do not meet the particular needs of women can aggravate existing inequalities and reverse previously achieved gains. In addition, women typically devote a larger portion of their incomes than men to the health and education of their families, thus enhancing human capital accumulation. Therefore, addressing gender-specific constraints to trade can have multiplier effects on the overall development impact.

Given that Cameroon has recently engaged in a major trade agreement with the European Union (the Economic Partnership Agreement), a further objective of this study is to identify possible complementary economic policy measures that may enhance the favourable effects and offset the unfavorable effects of this agreement, as well as other agreements concluded by the country, on gender disparities and ultimately household welfare.

The rest of the study is organized as follows. The next section reviews the main findings of the recent literature on trade and gender. Section 3 presents the evolution of trade policies in Cameroon, and provides a description of the main indicators of trade openness for the country since the 1990s. Section 4 describes the evolution of the main indicators of gender gaps in Cameroon's labour market. Section 5 explains the empirical methodology and the data used in the study, while Section 6 presents and discusses the results. Section 7 concludes and presents some policy recommendations.

2 Literature review

2.1 Theoretical discussion

The theoretical framework guiding the empirical analysis of trade and gender is based on the relative endowment theory of Hecksher-Ohlin-Stolper-Samuelson and on Becker's (1971) theory of discrimination. The Hecksher-Ohlin international trade theory looks at the impact of trade liberalization on labour markets in developing countries versus developed countries via relative factor prices, while Becker's theory considers the effect of trade liberalization on women's employment relative to men's via discrimination, and consequently the effect on their wage gap.

According to the Hecksher-Ohlin-Stolper-Samuelson theory, following trade liberalization a country specializes in the sector that uses a higher share of its relatively abundant production factor. From that follows an increase in the demand for that factor, and consequently an increase in its relative price. If women in developing countries (where less-skilled workers are abundant) are relatively less skilled than men, they should gain from trade through increased employment opportunities and higher relative wages, while women in developed countries (where skilled labour is the abundant factor) should lose.

Moreover, according to Becker's theory of discrimination, employers with market power are better able to engage in discriminatory practices over longer periods of time than those in competitive markets. Increased competition in the local market due to a more open trade regime then reduces the incentive of firms to discriminate against women by paying a premium to male workers just because they are men.

However, trade liberalization may also bring about a deterioration of women's relative position in the labour market if trade liberalization does not increase competition in the local market. According to Darity and Williams (1985) and Williams (1987), opening to trade can actually increase gender wage gaps in countries where female workers are segregated into lower-paying and lower-status jobs, and where they may have less bargaining power.

2.2 Review of related empirical studies

This section provides a brief synthesis of the existing literature on the impact of trade openness on women's job opportunities and earnings. We first present cross-country evidence, and then specific country evidence.

2.2.1 Cross-country evidence

Using the International Labour Organization's (ILO) October Inquiry database,[1] which covers more than 80 countries for the period 1983–1999, Oostendorp (2009) analyses the impact of globalization on the occupational gender wage gap. He finds that increased trade openness and net inflows of foreign direct investment have a significantly narrowing impact on the occupational gender wage gap for rich countries, but finds little evidence of such a narrowing effect for poorer countries.

Using aggregated data for 35 developed and developing countries from 1960 to 1985, Wood (1991) finds a strong relation between increased exports and increased female employment in manufacturing in the developing countries. However, Wood finds no counterpart reduction in the demand for female workers in developed countries.

Another study by Tejani and Millberg (2010), based on a sample of 60 high-income developed countries and middle-income developing countries over the period 1985–2007, finds that the relative employment of women in the manufacturing sector increased in developing countries but decreased in high-income countries as a result of increased exports. However, while Latin American countries continued to experience rising female intensity of employment (because of the initial low levels of female intensity and slower industrial upgrading in that region), most Southeast Asian and Pacific countries experienced a

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[1] The ILO October Inquiry (http://laborsta.ilo.org/applv8/data/labocte.html) is an annual worldwide survey of wages and hours of work relating to 159 occupations in 49 industry groups, and of retail prices of 93 food items.

"defeminization" of employment (due to initial high levels of female intensity and rapid industrial upgrading in the region).

Consequently, according to the cross-country studies, increased trade openness affects women's employment and earnings in different ways, depending on the income level of the country, skills, and the economic sector.

2.2.2 Country-specific evidence

The literature on developed countries and advanced emerging economies has found mixed results. For example, examining the effects of increased trade openness on the change in the wage gap in the United States, Black and Brainerd (2004) find that increased competition through imports improved women's relative pay in previously-highly-concentrated industries, but increased the wage gap in industries that were already competitive. Seguino (2000) and Berik (2000) studied the effect of trade liberalization policies on gender inequality in the Republic of Korea and Taiwan Province of China. While the first author reports that as a consequence of trade liberalization, gender wage differentials widened in Taiwan Province of China but narrowed in the Republic of Korea, the second author finds that greater export orientation in Taiwan Province of China did benefit women's relative wages.

A positive relation between trade liberalization and women's relative wages and/or employment is generally found in Asian developing countries, as well as in Latin American countries (see Fontana and Wood (2000) for Bangladesh, and Ozler (2000) for Turkey). A recent study by Banerjee and Veeramani (2015), which analyses the role of trade liberalization and technology-related factors in determining female employment intensity in selected manufacturing industries in India for the period 1998–2008, finds a negative effect of import tariff rates on female employment intensity. Further, while the relative demand for female workers increases when trade liberalization leads to more investment in unskilled, labour-intensive industries, greater use of new technology and capital-intensive production biases the gender composition of the workforce against women. Moreover, using Mexican manufacturing data between 1987 and 1993, Artecona and Cunningham (2002) find that trade liberalization is associated with higher wage gaps, largely due to an increased premium to men's higher experience and skills.

As far as African countries are concerned, Haouas *et al.* (2003) investigate the short- and long-term employment and wage effects of trade reforms (adoption of an export promotion strategy in 1970) in Tunisia using a panel-data estimation for 11 manufacturing industries from 1971 to 1996. They find that trade liberalization caused an increase in women's participation in the formal labour market (in both the exportable and importable sectors) as well as a rise in real wages. However, while employment and wages in exportable sectors increased in the short run, they decreased in the long run.

Arndt *et al.* (2006) and Cockburn *et al.* (2009) examine the effects of trade liberalization policies on gender inequality in Mozambique and Senegal for 2001 and 2004, respectively. Both studies use computable general equilibrium models. The studies find that trade reforms did not affect gender wage differences within skill categories in these countries, but negatively affected women's relative wages in the agricultural sector, where unskilled women represent a large share of the workforce.

Also using a CGE model, Lulit and Claude (2008) find a negative effect of trade liberalization on gender wage inequality in 2001 in South Africa and Ethiopia. Nicita (2008) reports a similar result for Madagascar, where unskilled female workers in the textile sector were most affected by export-led growth.

In Cameroon, to the best of our knowledge there is no study analysing the effects of trade openness on women's employment opportunities and earnings. Existing studies on the implications of trade openness and trade liberalization are related to the impact on poverty (Emini *et al.*, 2010), productivity growth (Njikam and Kouty, 2012), and labour demand (Cockburn and Njikam, 2011).

It emerges from this brief literature review that it is not feasible to draw a clear-cut conclusion about the relation between trade openness or trade liberalization and gender in developing countries. The effect of free trade on women depends on the sectoral composition of liberalizing countries, the liberalization process, and initial conditions (Fontana, 2003). It also depends on a host of country-specific factors such as resource endowment, labour market institutions, government institutions, and consumer preferences (Aguayo-Tellez, 2011), as well as on other socio-economic characteristics of the country concerned.

It also appears that studies on the impact of trade openness or trade liberalization have mainly focused on the manufacturing sector. Few studies have investigated the impact of trade openness on informal employment from a gender perspective, despite the fact that women tend to dominate the informal sector.

3 Evolution of trade policy and recent trade patterns in Cameroon

3.1 Evolution of trade policy in Cameroon

Trade and trade policies have always played an important role in Cameroon's development strategy. The country's trade policy has evolved in three main phases: (a) industrialization through an import-substitution strategy (1960–1970), (b) export promotion policy (1970–1990), and (c) trade liberalization (from 1990 onward).

3.1.1 Industrialization through an import-substitution strategy (1960–1970)

Like most developing countries after independence, Cameroon opted for a development strategy based on industrialization through import substitution. The objective of this strategy, as specified in Cameroon's first two five-year plans (1960–1965 and 1966–1971), was to locally produce the goods that were initially imported from developed countries. Tariff and non-tariff measures were applied to protect domestic production from foreign competition. Imports were subject to four taxes (customs duty, input tax, import turnover tax, and complementary tax), while exports were subject to a tax whose amount depended on the degree of processing of the product (with a higher rate for primary products than for locally processed products). Furthermore, non-tariff measures – quantitative restrictions, fixing of prices, and other direct incentives favouring local producers – were applied at the same time.

At the regional level, the Brazzaville Treaty signed in 1964 to establish the Central African Customs and Economic Union (CACEU) imposed a set of measures to protect the CACEU internal market.

During the same period, the Yaoundé I and Yaoundé II Conventions between African, Caribbean, and Pacific countries and the European Community allowed Cameroon to export its products duty and quota free to the European market.[2] At that time, Cameroonian exports were essentially agricultural products like cocoa, coffee, sugar, and bananas.

The strategy to industrialize through import substitution did not meet expectations, as the country continued to import manufactured products, while its exports of these products remained very low.

3.1.2 Export promotion policy (1970–1990)

Unlike import substitution, which aimed to satisfy local consumption through domestic production, the export promotion policy implemented starting in 1970 aimed to conquer foreign markets. The objective was to increase the production of exportable goods. To this end, the General Trade Programme adopted in 1972 set out a number of tariff and non-tariff measures to encourage industrialization through the processing of local products, but also to promote exports. These measures included subsidies for the production of exportable goods, removal of duties and taxes on exports of processed and semi-processed products while keeping an export tax on exports of unprocessed commodities such as logs, and removal of licenses on imports of intermediate products. This export promotion policy was supported by the income from oil exports.

The policy did not help develop Cameroonian exports and industries as expected. According to the Competitiveness Industrial Performance Index of the United Nations Industrial Development Organization (UNIDO, 2005), Cameroon was among a group of countries that did not succeed in orienting their production and export structures towards higher value-added and more technology-intensive products between 1970 and 1985. At the same time, the international environment, favourable to trade liberalization, encouraged Cameroon to adopt a different orientation of its trade policy, namely trade liberalization.

3.1.3 Trade liberalization (from 1990 onward)

At the beginning of this period, the World Bank and the International Monetary Fund (IMF) advocated for implementation of Structural Adjustment Programmes (SAPs), which set strict conditions for developing countries seeking new loans at lower interest rates. The trade liberalization policy was among the conditionalities set by the IMF for developing countries to access such loans,[3] as was the reestablishment of macroeconomic balances and the reduction of government expenditure. These measures were expected to bring about economic progress and make countries more competitive (Afeju, 2014).

The liberalization process in Cameroon was carried out unilaterally, regionally, bilaterally, and multilaterally. Unilateral liberalization mainly took place in the context of SAPs. In order to restore macroeconomic balance, Cameroon appealed to the Bretton Woods institutions, which imposed a set of economic policy measures, including trade and price liberalization, on the country. The trade and price liberalization was embodied in Law No. 89/011 of 8 July 1989 regarding restoration of a market economy, and Ordinance No. 90/001 of 29 January 1990 establishing the country's export processing zone regime. The restoration of the market

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[2] See http://www.epg.acp.int/fileadmin/user_upload/YaoundeI.pdf and
http://www.epg.acp.int/fileadmin/user_upload/YaoundeII.pdf, respectively.
[3] See Williamson (2004) for more information on the conditionalities.

economy meant reducing state intervention in the economy through privatization of public enterprises and price liberalization. Thus, price controls were eliminated for all products except petroleum products, drugs and other pharmaceutical products, school books, maritime transport, and port services. Non-tariff barriers on imports were removed, except those on petroleum products.

At the regional level, along with other CACEU members, Cameroon approved the tax and customs reform adopted in February 1994 at the CACEU level. The main element of the CACEU's trade policy that resulted from this reform – the common external tariff – included five bands: 0 per cent for cultural products and aviation-related products, 5 per cent for prime necessity products, 10 per cent for raw materials and capital goods, 20 per cent for intermediate goods, and 30 per cent for consumer goods.

A new General Trade Programme was adopted in June 1994 to consolidate import liberalization measures, provide economic operators with a legal framework to combat illegal trade practices and unfair competition, and improve export procedures. All of the measures aimed to benefit from the potential effects of improved competitiveness generated by the devaluation of the FCFA (Emini *et al.,* 2010).[4]

Liberalization at the bilateral level was carried out through the country's commitments under various trade agreements and economic partnerships. A case in point is the interim Economic Partnership Agreement with the European Union (EU) negotiated between the EU and Central Africa.[5] This agreement provides for duty- and quota-free access to the EU market for 100 per cent of Cameroonian exports. For its part, Cameroon is expected to gradually open its market to about 80 per cent of European exports (over a transitional period until 2023), while maintaining protection of its agricultural markets and industries that it regards as sensitive. The others bilateral agreements include preferential trade agreements with Nigeria, Morocco, and Brazil. A number of other agreements, especially with emerging economies, are still under negotiation.

Multilateral liberalization was carried out through Cameroon's membership in the World Trade Organization (WTO).The country is a founding WTO member and has participated in the Doha Development Round negotiations and other important negotiating fora.

Finally, Cameroon is eligible to benefit from the African Growth and Opportunity Act,[6] which represents unilateral preferences awarded by the United States to African countries.

3.2 Recent trade patterns in Cameroon

Figure 1 shows the evolution of Cameroonian trade from 1995 to 2014. Both exports and imports increased significantly during this period. On average, exports increased annually by

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[4] Cameroon and other countries using the Central African CFA (Financial Cooperation in Central Africa - *Coopération financière en Afrique centrale*) franc (FCFA) as their currency were subject to a 50 per cent devaluation in 1994.

[5] For more details, see the Economic Partnership Agreement fact sheet at http://trade.ec.europa.eu/doclib/docs/2009/january/tradoc_142190.pdf.

[6] See http://trade.gov/agoa/index.asp and http://agoa.info/about-agoa.html. The AGOA expands the provisions previously available under the US Generalized System of Preferences (GSP) to provide combined AGOA/GSP duty-free access to the US market for approximately 7,000 product tariff lines exported by eligible African countries. Among the newly added products are items such as apparel and footwear, wine, some motor vehicle components, a variety of agricultural products, chemicals, and steel.

3 per cent while imports increased by 6 per cent. In particular, since 2003, imports have grown faster than exports.

Figure 1: Cameroon's imports and exports, 1995–2014 (in constant 2005 US dollars)
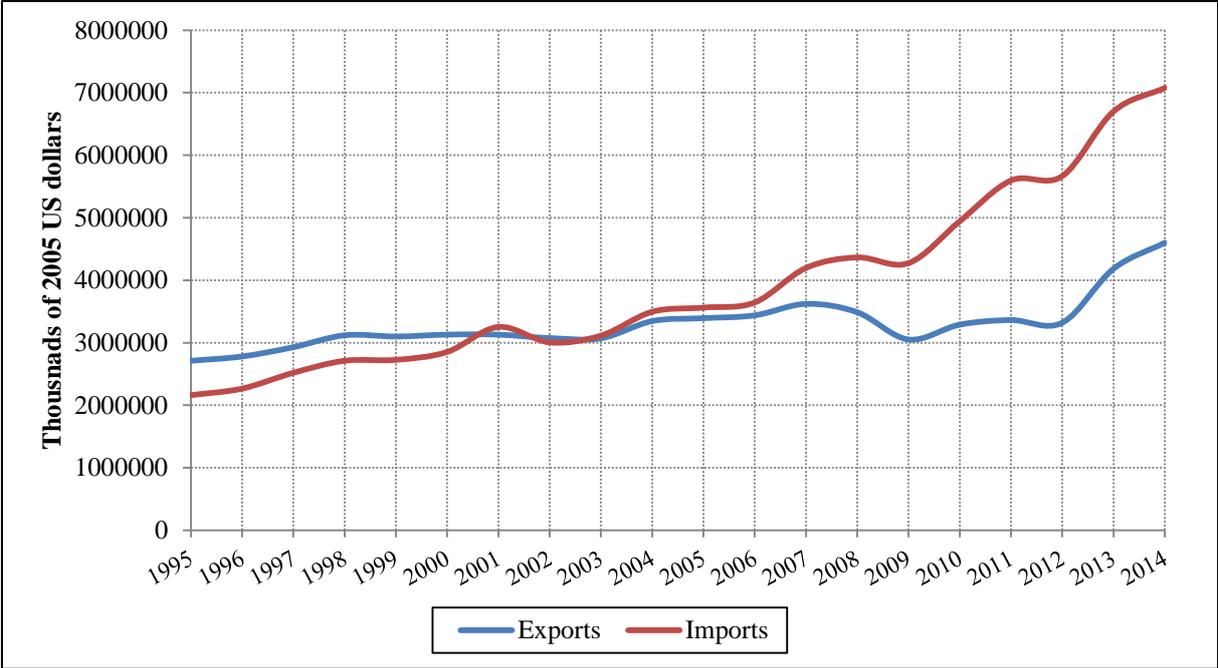
Source: Authors' elaborations based on the World Bank's World Development Indicators.

Consequently, as shown in Figure 2, the steady increase of imports has progressively led to a sharp decline of the coverage ratio of imports by exports from 109.7 per cent in 2000 to 65 per cent in 2014.[7] Apart from 2000 and 2002, when there was a trade balance surplus, the deficit of the trade balance deepened over time, reaching US$2,477.5 billion in 2014.

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[7] This indicator represents the ratio between exports on imports in per cent. If the ratio is less than 100, the country has a trade balance deficit, and if the ratio is greater than 100, the country has a trade balance surplus.

**Figure 2: Evolution of the trade balance and the coverage ratio of imports by exports, 2000–2014**
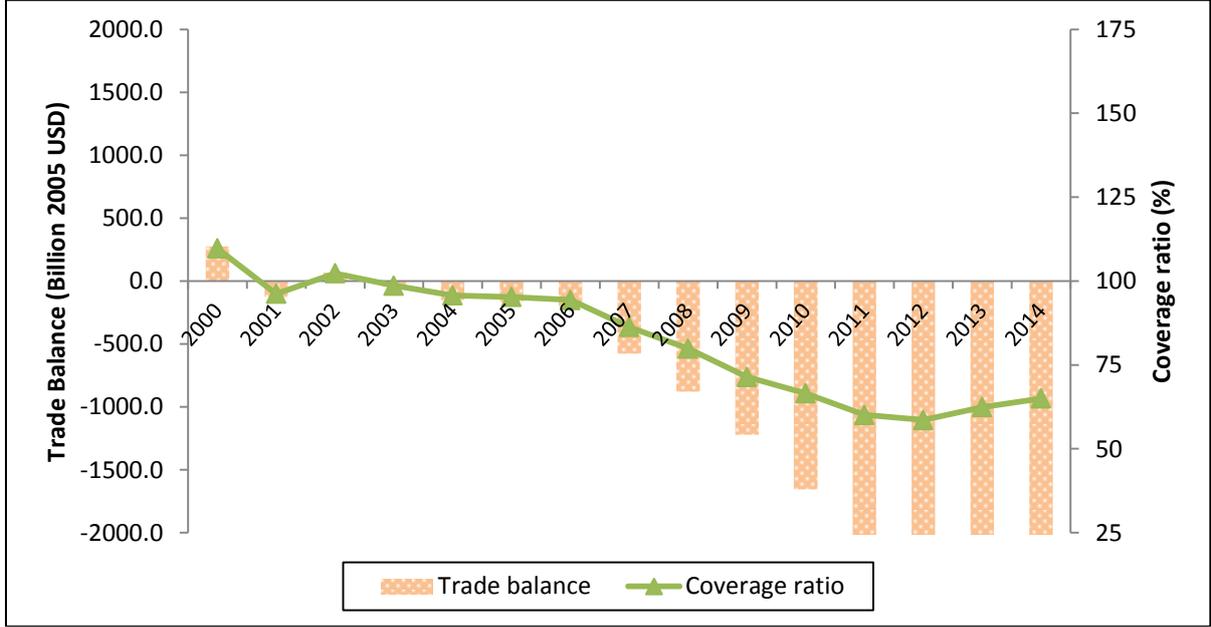
Source: Authors' elaborations based on the World Bank's World Development Indicators.

As shown in Figure 3, Cameroon has a low level of export diversification. The figure presents the main products exported and imported by Cameroon for 2003 and 2013. The structure of imports and exports in these years shows no major change over time. In the two years considered, the main exported products were agricultural products or products derived from natural resource exploitation (raw wood, crude oil, refined petroleum products). The main imported products were hydrocarbons, electrical and mechanical machines, chemical products, vehicles, and cereals. In sum, Cameroon mainly imports manufactured products and exports raw products.

Figure 3 : Main Cameroonian imports and exports in 2003 and 2013 (as a percentage of total imports and exports)
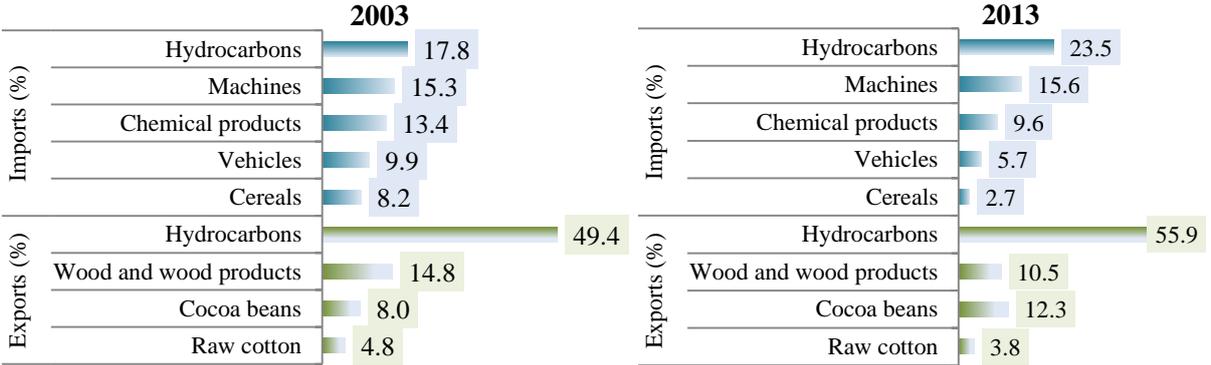
Source: Authors' calculations based on data from the National Institute of Statistics.

4 Evolution of labour gender gaps in Cameroon

This section outlines the main stylized facts about recent changes in gender gaps in labour participation rates, unemployment, sector specialization (segregation), and labour earnings in Cameroon.

As shown in Table 1, Cameroon's labour market is characterized by a high participation rate among both men and women. However, women have a lower labour participation rate than men: 73.6 per cent for women compared with 82.8 per cent for men in 2010. In addition, the gender differentials in labour force participation rates have increased over time (7.1 percentage points in 2005, and 9.2 percentage points in 2010).[8] While the unemployment rate decreased from 7.1 per cent in 2005 to 6.5 per cent in 2010, women generally have a higher unemployment rate than men – the rate in 2010 was 8.7 per cent for women and 4.4 per cent for men.[9] In addition, the gap between female and male unemployment has increased slightly over time, from 2.6 percentage points in 2005 to 4.3 percentage points in 2010.

Table 1: Labour participation and unemployment rates in 2005 and 2010 (in per cent)

		2005	2010
Participation rate	Male	84.3	82.8
	Female	77.2	73.6
	Total	**80.5**	**78.0**
Unemployment rate	Male	5.8	4.4
	Female	8.4	8.7
	Total	**7.1**	**6.5**

Source: Authors' calculations based on data from the Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010).
Note: The calculations use weighted data.

In terms of the distribution of workers by occupation, it appears from Table 2 that self-employment represents the largest component of Cameroon's labour market. However, the share of self-employment decreased from 69.5 per cent in 2005 to 64.7 per cent in 2010. The self-employment category was constantly dominated by women: 84.1 per cent and 78 per cent of women were self-employed in 2005 and 2010, respectively, compared with 57.8 per cent and 54.9 per cent of men in the same years. Moreover, the percentage of women among high-ranking officials or skilled workers was in general lower compared to that of men (8.4 and 9.9 per cent for women, respectively, in 2010, versus 14.9 and 20.1 per cent for men in the same year).

Concerning the sectoral breakdown of employment (Table 2), it is important to note the preponderant role of agriculture as an employment generator in the country, as it represented 46.7 per cent of all jobs in 2010. In contrast, the share of extractive activities as an employment generator was very low (about 0.2 per cent of all jobs in 2010), confirming the low labour intensity of this Cameroonian export sector (see Figure 3 for the main Cameroonian exports). The sectoral structure of employment thus shows the predominance of agriculture, trade, and other services, which are generally labour-intensive, as the main sources of employment for the Cameroonian population.

Looking at the distribution of workers by institutional sector in 2010 (Table 2), almost nine workers out of ten were in the informal sector, including 92.9 per cent of working women and 85.6 per cent of working men. The informal sector is thus the main means of making a living for most of the Cameroonian population, and even more so for the country's female workforce.

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[8] Calculated as the difference between male and female labour participation rates.
[9] According to the International Labour Organization, an unemployed person is someone who (a) does not have a job, (b) has not worked even for one hour during the week before the survey, (c) is available to work, and (d) has actively searched for a job (ILO, 1983). Given the situation of the labour market in Africa in general and in Cameroon in particular, where many jobless persons become discouraged and stop actively searching for a job, the fourth condition is not taken into account.

The findings above clearly show that the assessment of the gender impact of trade and trade policies must be centered on informal employment. The description of female employment intensity as well as gender wage gaps at the sectoral level in this study will therefore focus on the informal sector, and particularly on activities related to agriculture, agro-industry, the clothing and shoe industry, and other industries. These sub-sectors are those for which enough observations are available in the datasets used, and for which it is possible to measure trade variables (i.e. trade variables cannot be measured for sectors like commerce, transport, and construction).

Table 2: Distribution of workers by institutional sector, socio-professional status, and sector, 2005 and 2010 (in per cent)

	2005			2010		
	Male	**Female**	**All**	**Male**	**Female**	**All**
Institutional sector						
Public	9.3	5.0	8.5	8.5	4.9	6.8
Formal private	10.3	3.0	8.3	6.0	2.1	4.2
Non-agricultural informal	39.8	47.0	52.5	42.6	38.9	40.8
Agricultural informal	40.6	45.1	30.7	43.0	54.0	48.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Occupation						
High-ranking official	12.7	5.8	9.7	14.9	8.4	12.2
Skilled worker	16.5	6.8	12.1	20.1	9.9	15.8
Labourer	12.9	3.2	8.6	10.0	3.6	7.3
Self-employed	57.8	84.1	69.5	54.9	78.0	64.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Sector						
Agriculture	20.4	31.0	24.9	40.1	53.9	46.7
Extractive activities	0.4	0.1	0.3	0.3	0.0	0.2
Farming, forestry, hunting and fishing	3.1	0.3	1.9	3.9	0.7	2.4
Agro-industry	4.4	13.6	8.3	2.7	7.0	4.7
Clothing and shoe industry	1.8	5.4	3.4	0.9	5.1	2.9
Other industries	6.5	1.0	4.1	4.9	0.6	2.4
Construction	6.5	0.2	3.8	4.9	0.2	2.6
Commerce	19.8	19.6	19.7	13.9	12.1	13.0
Transport	11.2	0.6	6.7	8.7	0.2	4.6
Hotels and restaurants	2.0	9.2	5.1	1.6	6.1	3.7
Other services	24.1	19.0	21.9	18.2	14.2	16.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Authors' calculations based on data from the Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010).
Note: The calculations use weighted data.

Tables A1 and A2 in the Annex provide details on the gender gaps in hourly wages and working hours. Regarding the allocation of working hours per week, men tend to devote more time to work than their female counterparts. Except for the agricultural sector, where the gap in working hours (measured as the ratio of male and female working hours) decreased from 1.17 in 2005 to 1.14 in 2010, the gap increased in other sectors (from 1.13 to 1.20 in agro-industry, from 1.38 to 1.50 in the clothing and shoe industry, and from 1.20 to 1.45 in other industries). Moreover, the wage differential (also measured as the ratio of male and female hourly wages) in favour of men persisted, though it decreased in all sectors (from 1.49 to 1.28 in agriculture, from 1.49 to 1.42 in agro-industry, and from 2.14 to 1.81 in other industries), except in the clothing and shoe industry, where it increased from 1.02 to 2.05.

The gender wage gap is further illustrated in Figure 4, which shows the distribution of wages by gender and by sector. In general, the female wage distribution lies almost entirely to the left of the corresponding male wage distribution.

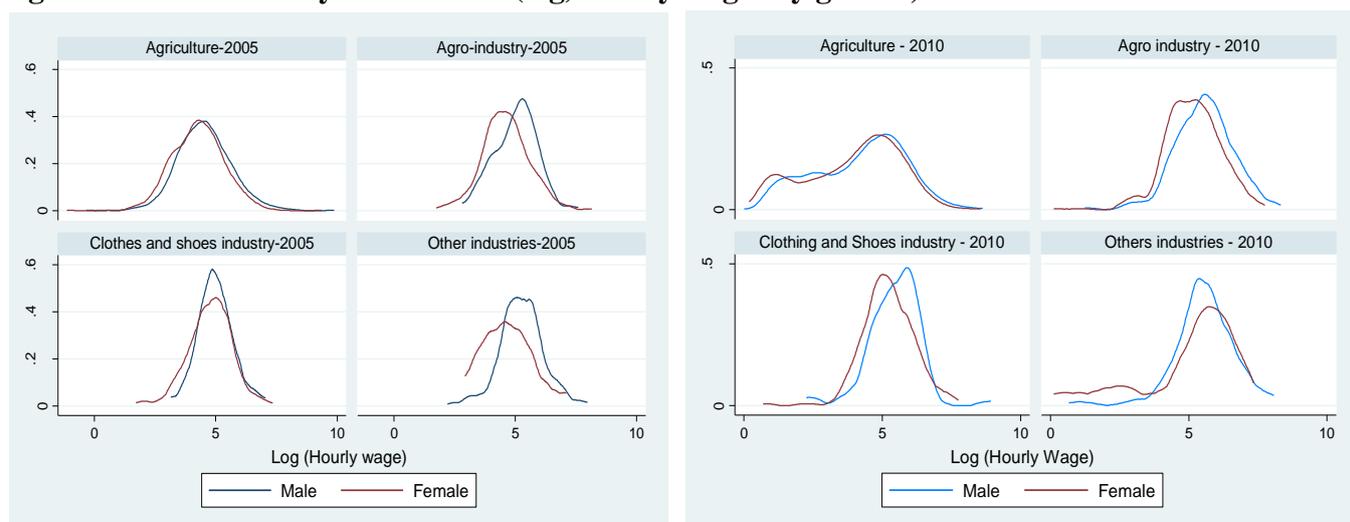**Figure 4: Kernel density estimates of (log) hourly wages by gender, 2005 and 2010**

Source: Authors' calculations based on data from Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010).
Note: The calculations use weighted data.

5 Methodology and data

The previous section described the levels and changes in employment and gender wage gaps in Cameroon. This section attempts to identify whether these gender gaps are somehow associated with trade openness.

5.1 Methodology

5.1.1 Measures of trade openness

Broadly, trade openness measures can be divided into two categories: measures of openness in practice and measures of openness in policy (UNCTAD, 2010). Measures of openness in practice indicate the actual importance of trade in the economy, while measures of openness in policy indicate the extent of policy measures that aim to restrict or enhance trade. While the former mostly refer to trade-intensity ratios, the latter include import tariff rates, export taxes on international trade, and indices of non-tariff barriers. From a policy point of view, a comprehensive form of trade barriers appears to be best suited to ascertain the impact of trade policy (Harrison and Hansen, 1999; Yanikkaya, 2003). Unfortunately, data about such measures of openness in policy are rarely available for developing countries. In this study, we therefore consider three measures of openness in practice: import penetration, export intensity, and trade share.

Import penetration in industry k (IP_k) is calculated as imports in industry k as a proportion of domestic consumption in that industry ($IP_k = \frac{Imports_k}{(Output_k + Imports_k - Exports_k)}$). Export intensity ($EI_k$) is calculated as exports in industry k as a proportion of output in that industry ($EI_k = \frac{Exports_k}{Output_k}$), while the trade share (TS_k) is measured as the sum of imports and exports divided by total output ($TS_k = \frac{Imports_k + Exports_k}{Output_k}$).

5.1.2 The effect of trade openness on women's job opportunities

To ascertain the effect of trade openness on women's job opportunities, the approach adopted in several studies consists of regressing women's employment shares on trade-related variables (AlAzzawi, 2014). This approach requires the availability of time series data on women's employment shares, which are not available in our case. So, in this study, to have an idea of the effect of trade openness on women's employment opportunities, we will resort to a descriptive analysis of the evolution of trade variables and women's employment shares at the sectoral level for the two years (2005 and 2010) for which labour survey data are available.

5.1.3 The effect of trade on the gender wage gap

An approach commonly used in the literature to analyse the effect of trade openness on the gender wage gap is to proceed in a two-step process (Reilly and Dutta, 2005; AlAzzawi, 2014). First, male and female earnings equations are estimated using a Mincer specification. The difference between the average male and female log wages in each industry is then decomposed into two components: a component explained by observable differences in labour market characteristics (the explained part) and a residual component potentially due to gender labour market discrimination (the unexplained part). Second, this unexplained part (commonly referred to as the discrimination component) is used as the dependent variable in regressions that control for exposure to trade openness. This approach requires the availability of labour survey data sufficiently disaggregated at the sectoral level in order to have enough observations in the regression of the second step. Such data are not available for our case.

In this study, we will therefore adopt another approach also used in the literature (Pham *et al.*, 2008) consisting of (a) adopting the standard Mincerian earnings equation, augmented with the inclusion of trade openness indicators to capture the impact of changes in trade openness on men's and women's earnings; and (b) reporting the Oaxaca-Blinder decomposition (Blinder, 1973; Oaxaca, 1973).

We first estimate separate male and female wage equations of the form:

$$\ln w_{ji} = X'_{ji}\beta_j + \theta_j\lambda_{ji} + T'_{ki}\delta_{ji} + u_{ji}, \tag{1}$$

where the subscript j ($j = m, f$) denotes males and females, respectively; and w_{ji} and X_{ji} represent, respectively, the hourly wage and the $n \times 1$ vector of observable characteristics (including experience and its square, as well as binary variables for the highest level of education attained, sector of employment, and region of residence) for individual i who belongs to gender group j ($j = m, f$). The β_j are $n \times 1$ vectors comprised of the set of unknown wage equation parameters, while the θ_j are the unknown selection parameters, and λ_{ji} is the standard selection parameter calculated for each group as the inverse of the Mills ratio term using estimates from gender-specific probit models following Heckman (1979). T_{ki} represents trade openness indicators for the sector where individual i is employed, while δ_{jk} is a $n \times 1$ vector of trade effects. Finally, u_{ji} is the independent and identically distributed (i.i.d.) random regression error term with a mean of zero and a constant variance.

The male and female mean wage differential is then estimated as follows:

$$\widehat{\ln W_m} - \widehat{\ln W_f} = \overline{X'_m}\hat{\beta}_m - \overline{X'_f}\hat{\beta}_f, \tag{2}$$

where $\overline{X'_j}$ contains the mean characteristics of a worker of gender group j, mean values for trade variables, and the selectivity coefficient (for notational simplification purposes, the selectivity term and trade variables are all included in the vector X).

Following the Oaxaca-Blinder decomposition, the difference in average earnings can be further decomposed as follows:

$$\widehat{\ln W_m} - \widehat{\ln W_f} = \left(\overline{X'_m} - \overline{X'_f}\right)\hat{\beta}_f + \overline{X'_f}\left(\hat{\beta}_m - \hat{\beta}_f\right) + \left(\overline{X'_m} - \overline{X'_f}\right)\left(\hat{\beta}_m - \hat{\beta}_f\right). \tag{3}$$

This is a "threefold decomposition," meaning that the differential is divided into three parts indicated on the right-hand side of equation (3):

$$\text{Gender Wage Gap} = E + U + I \tag{4}$$

The first term

$$E = \left(\overline{X'_m} - \overline{X'_f}\right)\hat{\beta}_f \tag{5}$$

is the part that is due to differences in characteristics between males and females (the explained part of the differential).

The second term

$$U = \overline{X'_f}\left(\hat{\beta}_m - \hat{\beta}_f\right) \tag{6}$$

is the contribution of differences in coefficients (the discrimination component, or the unexplained part of the differential).

The third term

$$I = \left(\overline{X'_m} - \overline{X'_f}\right)\left(\hat{\beta}_m - \hat{\beta}_f\right) \tag{7}$$

is the interaction component accounting for the fact that differences in characteristics and coefficients exist simultaneously between the two groups.

It is essential to note that this approach provides both the aggregate decomposition and the detailed decomposition for each group of variables, including trade openness indicators. In this way, it allows us to detect the impact of trade openness on the gender wage gap. This study applies this framework in order to analyse the male-female wage differential in Cameroon for 2005 and 2010, and to identify whether and how trade openness can account for the unexplained portion of the differential.

5.2 Data

Our empirical analysis employs data from the Employment and Informal Sector Survey (EISS) carried out in 2005 and 2010 by the National Institute of Statistics (NIS). This nationwide survey is comprised of two phases. The first phase is an employment survey that collects data on socio-demographic characteristics of individuals and on employment. The second phase is a survey of the types of "enterprises" in the non-agricultural informal sector

identified during the first phase. The EISS is a variant of the 1-2-3 system of surveys for which phase 3 on poverty is not carried out. Within the framework of this study, it is phase 1 that is used.

The EISS collects information on the activity status of the population, including information on individual characteristics such as gender, age, work experience, and education, but also employer and job characteristics, such as the company size, industry, ownership status, occupation, and working conditions. Importantly for this study, the EISS includes information on monthly wages for the main job and hours of work performed per week. Our sample consists of individuals aged 15 to 64. We restrict our analysis to the informal sector and to four sub-sectors (agriculture, agro-industry, clothing and shoe industry, and other industries), for the reasons stated in Section 4.

Data on trade openness used in the study come from National Accounts (Supply and Use Tables) produced by the NIS.

6 Results and discussions

6.1 The evolution of trade openness indicators and women's employment shares

It is worth noting that the manufacturing sector recorded the highest values of the import-penetration ratio, as can be seen in Figure 5. While the import-penetration ratio increased over the period 2000–2010 in the clothing and shoe industry (by an annual average of 7.07 per cent), agro-industry (5.08 per cent), and other industries (1.48 per cent), it decreased in agriculture (by 8.92 per cent). The increase in the import-penetration ratio has thus been more pronounced in the clothing and shoe industry as well as in agro-industry.

Export-intensity indicators have shown an evolution opposed to that of import-penetration ratios. Indeed, the export-intensity ratio in agriculture increased by an average annual rate of 1.53 per cent over the period 2000–2010, while agro-industry, the clothing and shoe industries, and other industries had average annual decreases of 8.25 per cent, 6.41 per cent, and 1.59 per cent, respectively. Hence, the decrease in the export-intensity ratio has been more pronounced in agro-industry and in the clothing and shoe industry.

Graphs for trade share indicators show almost the same evolution as those for import-penetration indicators, even if trade share values are relatively higher than import penetration ones. Trade share indicators increased at an annual average rate of 3.59 per cent, 1.73 per cent, and 1.39 per cent in agro-industry, other industries, and the clothing and shoe industry, respectively. Agriculture had the lowest annual average increase (0.85 per cent).

Regarding women's employment shares at the sectoral level, women's employment structure did not significantly change over the period 2005–2010. Women's employment shares in agriculture and in other industries remained almost stable at around 47–48 per cent and 11–12 per cent, respectively. A slight decrease in women's employment share of about 6 percentage points was seen in agro-industry, while an increase of the same size occurred in the clothing and shoe industry.

An econometric analysis should be performed to come to a conclusion about the relationship between increased trade openness and changes in women's employment shares. Such an analysis was not possible in this study due to data constraints. Nevertheless, from the previous

description, one can say that openness to trade has not led to the expansion of exports in sectors where most of women are concentrated (agro-industry, and the clothing and shoe industry, which registered decreases in export-intensity indicators). Therefore, it seems that increased trade openness has not increased women's jobs opportunities in these sectors.

Figure 5: Evolution of trade openness indicators and women's employment shares, 2000–2010
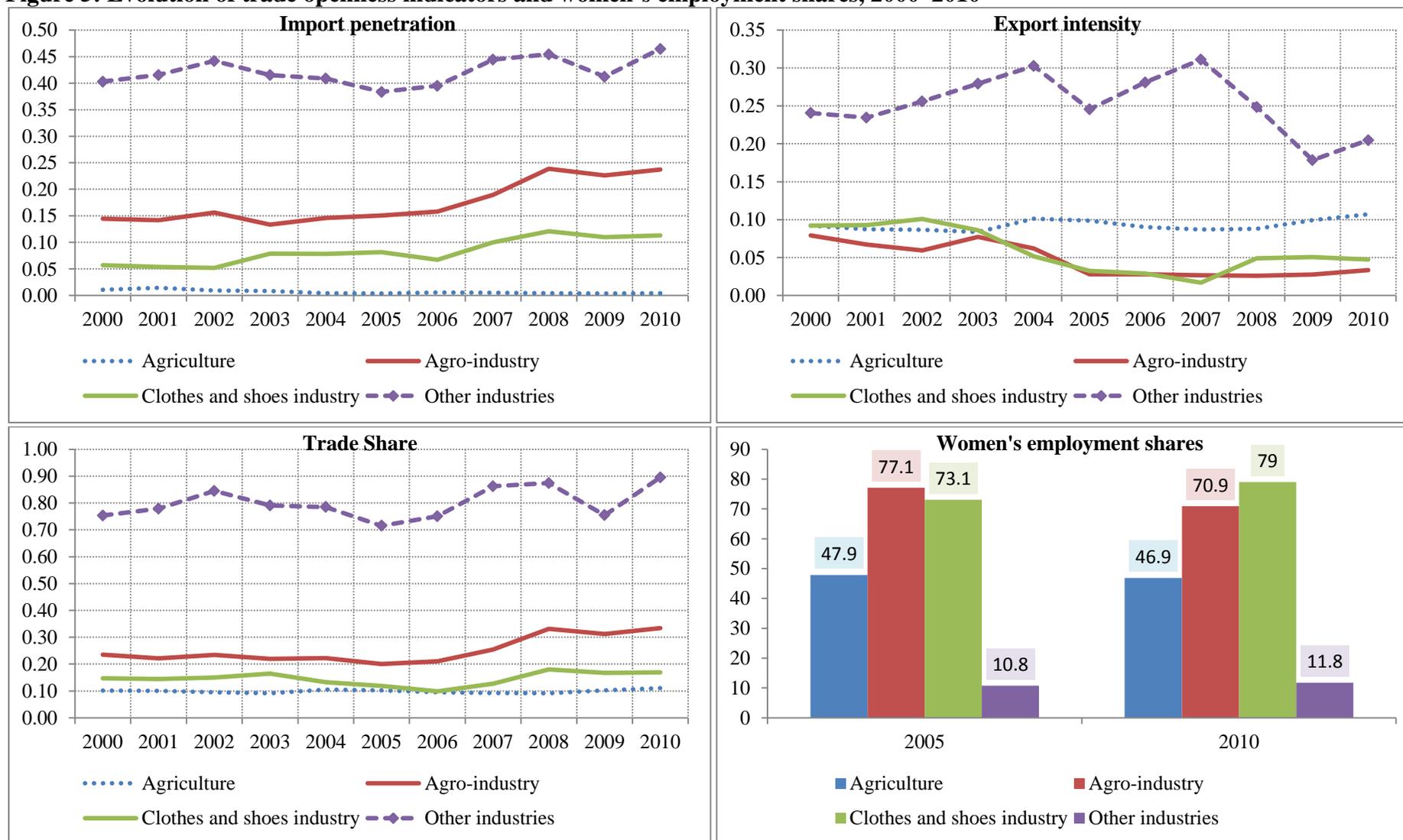
Source: Authors' calculations using data from Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010), and from the National Institute of Statistics' Supply and Use Tables.

6.2 The effect of trade openness on the gender wage gap

6.2.1 Wage equations

Table 3 displays the pooled ordinary least square wage regression results for 2005 and 2010[10] for the three different trade openness indicators: (a) import penetration, (b) export intensity, and (c) trade share. Probit regression results for selection into employment are displayed in Table A3 in the Annex. As in the standard labour economics literature, most of the relevant explanatory variables (age, tenure, and education) are significant with the expected sign. The effect of age is significant in most estimations. Age, a proxy for potential experience, is associated with higher wages for both men and women in all estimations. Age and its squared term (though the latter is non-significant) seem to describe the expected inverted-U shaped relationship between wage rates and potential experience.

Table 3: Regression results of earnings equations by gender

Dependent variable: Log of hourly earnings	Male (1)	Female (1)	Male (2)	Female (2)	Male (3)	Female (3)
Age	0.031**	0.020	0.031**	0.020*	0.032**	0.021*
	(0.014)	(0.012)	(0.014)	(0.012)	(0.014)	(0.012)
Age squared	-0.018	-0.017	-0.018	-0.018	-0.018	-0.018
	(0.016)	(0.015)	(0.016)	(0.014)	(0.016)	(0.015)
Education (reference: none/primary)						
Secondary	0.241***	0.390***	0.246***	0.379***	0.242***	0.383***
	(0.052)	(0.060)	(0.052)	(0.059)	(0.052)	(0.060)
Tertiary	0.588***	1.196***	0.603***	1.185***	0.590***	1.209***
	(0.189)	(0.268)	(0.200)	(0.267)	(0.185)	(0.268)
Tenure	0.011***	0.004***	0.011***	0.005***	0.011***	0.005***
	(0.010)	(0.012)	(0.010)	(0.012)	(0.010)	(0.012)
Tenure squared	-0.023***	-0.013***	-0.023***	-0.015***	-0.023***	-0.014***
	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)
Married	-0.026	-0.069	-0.029	-0.067	-0.027	-0.068
	(0.059)	(0.043)	(0.059)	(0.043)	(0.059)	(0.043)
Firm size (reference: ≤10)						
More than 10	0.420***	0.186	0.421***	0.255	0.423***	0.205
	(0.096)	(0.192)	(0.097)	(0.196)	(0.096)	(0.193)
Occupation (reference: high-ranking official)						
Skilled worker	-0.798***	-0.831***	-0.802***	-0.809***	-0.797***	-0.841***
	(0.102)	(0.168)	(0.103)	(0.175)	(0.102)	(0.169)
Labourer	-0.709***	-0.755***	-0.728***	-0.794***	-0.710***	-0.767***
	(0.106)	(0.188)	(0.107)	(0.190)	(0.106)	(0.189)
Self-employed	-0.840***	-0.801***	-0.850***	-0.805***	-0.841***	-0.801***
	(0.094)	(0.118)	(0.094)	(0.120)	(0.094)	(0.118)
Branch: Agriculture	-0.412***	-0.240***	-0.583***	-0.371***	-0.483***	-0.407***
	(0.075)	(0.078)	(0.056)	(0.057)	(0.065)	(0.054)
Urban area	0.268***	0.262***	0.276***	0.252***	0.269***	0.256***
	(0.074)	(0.059)	(0.074)	(0.059)	(0.074)	(0.059)
Capital	0.315***	0.477***	0.37***	0.453***	0.316***	0.466***
	(0.083)	(0.085)	(0.083)	(0.085)	(0.083)	(0.085)
Trade openness indexes	0.006***	0.015***	0.012**	0.023***	0.003**	0.005*
	(0.002)	(0.004)	(0.003)	(0.007)	(0.001)	(0.003)
Year 2010	0.202***	0.118***	0.199***	0.110***	0.199***	0.097***
	(0.043)	(0.040)	(0.043)	(0.040)	(0.042)	(0.039)

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[10] The wage regression results for each year are available upon request.

Constant	5.058***	4.949***	5.247***	5.286***	5.103***	5.046***
	(0.290)	(0.292)	(0.290)	(0.295)	(0.290)	(0.292)
Mills	-0.456***	-0.458***	-0.469**	-0.465***	-0.458***	-0.459***
	(0.154)	(0.147)	(0.154)	(0.147)	(0.154)	(0.147)
Number of observations	**3,752**	**4,633**	**3,752**	**4,633**	**3,752**	**4,633**
F Stat	**57.60**	**43.79**	**57.13**	**43.21**	**57.55**	**43.65**
(Prob > F)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
R-squared	**0.161**	**0.117**	**0.160**	**0.117**	**0.161**	**0.116**

Source: Authors' calculations based on data from Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010).
Note: The trade variable is related to import penetration in (1), export intensity in (2), and trade share in (3). Robust standard errors in parentheses. *Significant at 10 per cent level; **Significant at 5 per cent level; ***Significant at 1 per cent level.

The more individuals are educated, the higher are their earnings. For both males and females, higher levels of education have an increasing positive impact on wages, and university degrees tend to be highly rewarded. The impact of education, especially a university degree, seems to be stronger (higher coefficients) for females than for males. These findings are supported by Psacharopoulos (1985), who reviewed the rate of return to education for 56 countries. He noted that in developing countries the rate of return for women generally exceeds that for men.

Tenure has a positive effect and tenure squared has a negative effect on wages. In addition, tenure tends to be highly rewarded for males. The effect of marital status is non-significant for both females and males, while the effect of firm size is significant only for males, and this variable is positively associated with wages.

An interesting finding emerges when looking at the effects of industry affiliation. The coefficient of the industry dummy suggests that there are important wage differentials per sector of activity. In all the regressions, workers in agriculture tend to earn less than those in manufacturing and related activities (agro-industry, clothing and shoe industry, and other industries). In addition, this negative effect of affiliation with agriculture seems to be more pronounced for men, indicating that men earn more when they are in manufacturing and related activities than women.

It is worth nothing that in our regressions, we considered only one industry dummy (taking the value 1 for those working in agriculture and 0 for the others) to deal with the multicollinearity that we faced when controlling for all the industries. The collinearity arises because all persons from a given industry also have the same trade openness indicator value for a given year.

Moving to trade openness indicators, all the indicators considered have a positive and significant effect on both male and female earnings. The positive effect of trade openness seems to have benefited women more. A 1 per cent markup in the import-penetration ratio corresponds to increases of 0.6 per cent and 1.5 per cent in male and female earnings, respectively. As far as the export-intensity ratio is concerned, the reported effects are increases of 1.2 per cent and 2.3 per cent in male and female earnings, respectively. Looking at the effect of trade share on earnings, a 1 per cent markup in the trade share corresponds to increases of 0.3 per cent and 0.5 per cent in male and female earnings, respectively.

Results seem to indicate that trade openness increases women's wages more than men's. This positive effect is more pronounced in the case of export intensity. This result gives a first,

albeit rough, indication that increased trade openness has a narrowing effect on the gender wage gap. These findings are in line with those of Greenaway and Nelson (2000). The estimated coefficients for the selection terms are relatively large and significant in all equations.

6.2.2 Decomposition analysis

Table 4 presents the results of the Oaxaca-Blinder decomposition. As shown in the table, the male-female wage differential for the overall period is about 0.11 log points regardless of the trade openness indicator.

Table 4: Oaxaca-Blinder decomposition of the gender earnings gap

	(1)	(2)	(3)
w_m (predicted male earnings in log points)	4.577 (0.023)	4.577 (0.023)	4.577 (0.023)
w_f (predicted female earnings in log points)	4.469 (0.046)	4.472 (0.046)	4.470 (0.046)
Gender earning gap	**0.107 (0.051)**	**0.105 (0.051)**	**0.107 (0.051)**
Explained part	**0.011 (0.030)**	**0.008 (0.032)**	**0.012 (0.032)**
Of which trade	0.024 (0.009)	-0.064 (0.022)	0.024 (0.015)
Unexplained part	**0.066 (0.053)**	**0.069 (0.054)**	**0.068 (0.054)**
Of which trade	-0.046 (0.033)	-0.021 (0.078)	-0.029 (0.048)
Interaction effect	**0.030 (0.033)**	**0.032 (0.035)**	**0.027 (0.036)**
Of which trade	-0.013 (0.009)	-0.016 (0.064)	-0.010 (0.016)

Source: Authors' calculations based on data from Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010).
Note: The trade variable is related to import penetration in (1), export intensity in (2), and trade share in (3). Robust standard errors are in parentheses. A positive number indicates male advantage while a negative number indicates female advantage.

When decomposing this differential it can be observed that 0.07 log points correspond to differences in coefficients (the unexplained part, or discrimination component) and 0.01 log points correspond to differences in characteristics (the explained part). This means that the major part of the differential (at least 64 per cent)[11] remains unexplained (without considering the interaction effect).

Trade openness, as measured by import penetration, export intensity, and the trade share, narrowed the wage gap, resulting in the negative signs attached to both the unexplained part and the interaction effect of the trade openness variable.

However, we should be cautious in interpreting these results and keep in mind that we are working on the informal sector. The narrowing effect of trade openness on the gender wage gap can to some extent be the result of disloyal competition towards the formal sector, that is, fraud and counterfeiting. Indeed, according to the results of the Business Climate Survey conducted in 2014 by the Ministry of Economy on formal enterprises, 66.7 per cent of formal businesses declared that competition from the informal sector had a negative effect on their businesses. This effect was more pronounced in agro-industry (81.6 per cent). The survey also questioned firms about the effect of counterfeiting on their businesses, and 72 per cent responded that the effect was negative. Counterfeiting affected all industries, but the penetration of counterfeit products was more pronounced in the clothing and shoe industry (86 per cent) and agro-industry (77 per cent).

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[11] The unexplained component as a share of the overall wage gap.

7 Conclusions and policy implications

There are many studies in the current labour economics literature devoted to identifying gender differentials in the labour market. Trade openness is an important channel for increased competition, with direct implications for how women are treated in the labour market relative to men. According to Becker's (1971) theory of discrimination, trade openness, as a channel for increased competition, would drive down profit margins and decrease the ability of employers to discriminate against women. Other authors, such as Darity and Williams (1985) and Williams (1987), argue that more openness to trade can increase the gender wage gap in countries where female workers have less bargaining power and are segregated into lower-paying, lower-status jobs.

This study has empirically assessed the effect of trade openness on women in the Cameroonian labour market and, more specifically, attempted to answer two questions: (a) Does increased trade openness increase women's employment opportunities relative to those of men? and (b) What are the effects of increased trade openness on gender gaps in earnings?

For the empirical analysis, we used individual-level data from the Employment and Informal Sector Survey conducted by Cameroon's National Institute of Statistics (NIS) in 2005 and 2010. Trade statistics were gathered from the Supply and Use Tables produced by the NIS. We focused our analysis on the informal sector, because this sector is the main means of making a living for most of the Cameroonian population. The informal sector also represents the main source of gainful occupation for the female workforce in Cameroon. Indeed, in 2010, regardless of gender, almost nine workers out of ten worked in the informal sector. In addition, in 2010, 92.9 per cent of working women were in the informal sector, compared to 85.6 per cent of their male counterparts. We also restricted our analysis to four sub-sectors (agriculture, agro-industry, clothing and shoe industry, and other industries) for which enough observations are available in the datasets used.

Our methodology consisted of (a) comparing the evolution of trade openness indicators and women's employment shares at the sectoral level, and (b) applying the Oaxaca-Blinder decomposition approach to the earnings gap to identify whether and how increased trade openness can account for the unexplained portion of the differential. Three ratios were used to capture trade openness: import penetration, export intensity, and the trade share.

Our results show that openness to trade has not led to the expansion of exports in sectors where most women are engaged, and seems not to have increased women's job opportunities. However, trade openness, as measured by import penetration, export intensity, and the trade share, has narrowed the gender wage gap.

In the actual context of the Cameroonian economy's considerable openness to international trade, which will be further expanded by the entry into force of the interim Economic Partnership Agreement with the European Union, specific measures should be envisaged to help the country benefit from the opportunities created by globalization and to mitigate the threats it poses to development and poverty alleviation. These measures should take into consideration the important role played by the informal sector in the economy.

It is worth noting that, according to the results of the Business Climate Survey conducted in 2010 by the Ministry of Economy on formal enterprises, 49 per cent of firms indicated that competition from imported goods negatively affects their businesses. Sectors that suffered

most from import competition are agriculture (75 per cent), agro-industry (70 per cent), and the clothing and shoe industry (65.5 per cent). These sectors are those where most women are employed.

In this context, this study formulates the following recommendations to maximize the positive impact of increased trade openness while minimizing its potential adverse effects on women's job opportunities and earnings in Cameroon.

- **Organize informal production units (especially in sectors like agro-industry and the clothing and shoe industry, where most women are employed) into sectoral clusters**

The grouping of a larger number of enterprises in the same location favours the exchange of information and sharing of experiences. With time, it can also encourage specialization in given aspects of the production process. Clusters may attract customers, traders, qualified workers, suppliers of goods and services, and new enterprises that wish to benefit from the market created.

At the moment, clusters are being created in the wood industry under the Chain Competitiveness Growth Project, with technical and financial assistance from the World Bank. In the textile industry, efforts are envisaged to raise awareness among the relevant stakeholders and help them organize themselves into professional associations. This action should also be pursued in other industries, such as agro-industry. Organization into clusters and professional associations could facilitate dialogue with the government and help shape intervention directed towards the industry (training, incentives, etc.) to suit stakeholders' specific needs.

- **Provide technical training to workers in these sectors (with special attention to female workers) in order to increase their productivity**

The Ministry of Employment and Professional Training has already been organizing training sessions for young entrepreneurs. This training should be expanded. In addition, the training will have a greater impact if the stakeholders in various industries are organized into professional associations or grouped into clusters.

- **Facilitate women's access to productive resources such as micro-credit and land**

Reports on the Business Climate in Cameroon (MINEPAT, 2015) show that the difficulty of accessing finance is one of the major constraints faced by small and medium-size enterprises (SMEs). In 2015, the government established the Cameroon Bank for Small and Medium-sized Enterprises. In performing its activities, this bank should pay particular attention to funding requests from women entrepreneurs. Moreover, the government should continue financial support for SMEs. For example, in September 2009, it granted a subsidy of 11 billion FCFA to SMEs in all 10 regions of the country that are involved in processing and preserving local products for mass consumption.

Land is a fundamental resource for agriculture and production in general terms, and for the productivity of a country. In Cameroon, land acquisition is mainly through inheritance, purchase and, at times, distribution by the state. Property rights of women remain a serious concern, and women do not always have the purchasing power to acquire land. Policymakers should therefore enforce the rule of law and consider gender-sensitive land reforms.

- **Establish mechanisms to mainstream the informal sector into the formal sector**

Most of the government's interventions directed towards the private sector benefit formal enterprises. However, the informal sector accounts for the largest share of jobs in the country. Measures should therefore be envisaged to encourage the formalization of informal production units. Some actions have already been initiated in this regard, namely the creation of Enterprise Creation One-Stop-Shops, reduction of business registration costs, tax reductions for startups, etc. However, the rate of informality remains high. The strategy should be to educate informal business owners about the benefits of formalization, and encourage them to organize themselves into professional associations. Support (in terms of training, incentives, etc.) could then be granted to organized enterprises to increase their productivity and facilitate their migration to the formal sector.

Annex

Table A1: Monthly and hourly earnings, and average working hours by gender, in agriculture and agro-industry, 2005 and 2010

		2005	2010
Agriculture			
Monthly earnings (in FCFA)	**All**	**18,301 (51,308)**	**22,956 (35,391)**
	Male	22,033 (38,750)	26,984 (42,366)
	Female	14,317 (19,822)	18,349 (24,340)
	Wage gap (Male/Female)	1.54	1.47
Hourly earnings (in FCFA)	**All**	**145.45 (581.24)**	**190.31 (390.17)**
	Male	173.07 (756.47)	212.21 (428.05)
	Female	115.97 (267.13)	165.26 (340.02)
	Wage gap (Male/Female)	1.49	1.28
Average working hours per week	**All**	**38.44 (14.79)**	**36.64 (15.43)**
	Male	41.33 (15.72)	38.94 (16.21)
	Female	35.35 (13.03)	34.01 (14.03)
	Gap (Male/Female)	1.17	1.14
Agro-industry			
Monthly earnings (in FCFA)	**All**	**18,324 (18,890)**	**45,205 (70,143)**
	Male	31,756 (27,035)	69,755 (104,488)
	Female	15,948 (15,908)	35,093 (45,816)
	Wage gap (Male/Female)	1.99	1.99
Hourly earnings (in FCFA)	**All**	**174.66 (320.47)**	**304,24 (370,26)**
	Male	242.01 (288.91)	384.31 (485,57)
	Female	162.74 (342.29)	271.25 (304,48)
	Wage gap (Male/Female)	1.49	1.42
Average working hours per week	**All**	**35.62 (20.00)**	**40.73 (20.32)**
	Male	39.38 (19.26)	46.23 (20.11)
	Female	34.95 (20.05)	38.47 (19.98)
	Gap (Male/Female)	1.13	1.20

Source: Authors' calculations based on data from Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010).
Note: The calculations use weighted data.

Table A2: Monthly and hourly earnings, and average working hours by gender, in the clothing and shoe industry and in other industries, 2005 and 2010

		2005	2010
Clothing and shoe industry			
Monthly earnings (in FCFA)	**All**	**24,568 (25,135)**	**53,708 (84,679)**
	Male	32,617 (29,812)	103,609 (149,721)
	Female	21,786 (22,645)	40,558 (48,211)
	Wage gap (male/female)	1.50	2.55
Hourly earnings (in FCFA)	**All**	**172.00 (174.58)**	**341.16 (705.53)**
	Male	174.15 (162.14)	575.00 (1,382)
	Female	171.25 (178.68)	279.54 (327.27)
	Wage gap (male/female)	1.02	2.05
Average working hours per week	**All**	**38.16 (18.70)**	**41.74 (19.00)**
	Male	48.08 (16.62)	56.77 (17.39)
	Female	34.73 (18.14)	37.77 (17.35)
	Gap (male/female)	1.38	1.50
Other industries			
Monthly earnings (in FCFA)	**All**	**41,338 (42,685)**	**84,134 (102,832)**
	Male	44,004 (44,248)	88,036 (104,146)
	Female	20,569 (16,635)	48,524 (81,762)
	Wage gap (male/female)	2.14	1.81
Hourly earnings (in FCFA)	**All**	**302.01 (386.74)**	**423.02 (500.99)**
	Male	300.60 (385.38)	439.49 (512.43)
	Female	312.94 (396.96)	272.77 (346.57)

	Wage gap (male/female)	0.96	1.61
Average working hours per week	**All**	**41.92 (19.06)**	**45.47 (18.21)**
	Male	42.75 (18.69)	46.91 (17.94)
	Female	35.45 (20.61)	32.34 (15.16)
	Gap (male/female)	1.20	1.45

Source: Authors' calculations based on data from Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010).
Note: The calculations use weighted data.

Table A3: Probit regression results for selection into employment

	Male	**Female**
Age	0.082*** (0.013)	0.082*** (0.012)
Age squared	-0.093*** (0.017)	-0.046** (0.017)
Education (reference: none/primary)		
Secondary	-0.473*** (0.057)	-0.650*** (0.049)
Tertiary	-1.477*** (0.111)	-1.746*** (0.159)
Professional training	0.279*** (0.066)	0.340*** (0.060)
Married	0.238*** (0.071)	0.372*** (0.052)
Household head	0.753*** (0.077)	0.331*** (0.069)
Household size	-0.010 (0.007)	0.007 (0.007)
Urban area	-0.890*** (0.061)	-0.864*** (0.051)
Capital	-0.533*** (0.070)	-0.697*** (0.057)
Constant	-0.484** (0.233)	-0.878*** (0.199)
Number of observations	**4,824**	**6,313**
Wald Chi 2 (Prob > Chi 2)	**1,320 (0.000)**	**1,690 (0.000)**
Pseudo R2	**0.3975**	**0.4043**

Source: Authors' calculations based on data from Employment and Informal Sector Survey (EISS) 1 (2005) and 2 (2010).
Note: Robust standard errors in parentheses. *Significant at 10 per cent level; **Significant at 5 per cent level; ***Significant at 1 per cent level.

References

Afeju BJ (2014). Does the Impact of Trade Liberalization on the Informal Sector Have a Gendered Dimension? A Re-examination of the Evidence. *International Journal of Economics, Commerce and Management* 2(10).

Aguayo-Tellez E (2011). The Impact of Trade Liberalization Policies and FDI on Gender Inequalities: A Literature Review. Gender Equality and Development Background Paper for the *World Development Report 2012*. World Bank, Washington, DC

AlAzzawi S (2014). Trade Liberalization, Industry Concentration and Female Workers: The Case of Egypt. *IZA Journal of Labor Policy* (3)20.

Arndt C, Robinson S, and Tarp F (2006). Trade Reform and Gender in Mozambique. *Nordic Journal of Political Economy* 32(1): 73–89.

Artecona R, and Cunningham W (2002). Effects of Trade Liberalization on the Gender Gap in Mexico. Policy Research Report on Gender and Development No. 21. World Bank, Washington, DC.

Banerjee P, and Veeramani C (2015). Trade Liberalization and Women's Employment Intensity: Analysis of India's Manufacturing Industries, Indira Gandhi Institute of Development Research Working Paper-2015-018. Available at: http://www.igidr.ac.in/pdf/publication/WP-2015-018.pdf (accessed on 10 March 2016).

Becker G (1971). *The Economics of Discrimination.* Chicago: University of Chicago Press.

Berik, G (2000). Mature Export-Led Growth and Gender Wage Inequality in Taiwan. *Feminist Economics* 6(3): 1–26.

Black SE, and Brainerd E (2004). Importing Equality? The Impact of Globalization on Gender Discrimination. *Industrial and Labor Relations Review* 57(4): 540–59.

Blinder AS (1973). Wage Discrimination: Reduced Form and Structural Elements. *Journal of Human Resources* 8(4): 436–55.

Cockburn J, and Njikam O (2011). Trade Liberalization and Productivity Growth: Firm-Level Evidence from Cameroon. *The Journal of Developing Areas* 44(2): 279–302.

Cockburn J, Decaluwe B, Fofana I, and Robichaud V (2009). Trade, Growth, and Gender in Developing Countries: A Comparison of Ghana, Honduras, Senegal, and Uganda. In *Gender Aspects of the Trade and Poverty Nexus: A Macro-Micro Approach,* edited by Bussolo M, and De Hoyos RE. Washington, DC: Palgrave MacMillan and the World Bank.

Darity W, and Williams R (1985). Peddlers Forever? Culture, Competition, and Discrimination. *American Economic Review* 75(2): 256–61.

Emini A, Kamgnia Dia B, Nembot Ndeffo L, Cockburn J, Decaluwe B, and Fofana I (2010). Libéralisation commerciale et pauvreté en Afrique: le cas du Cameroun. In *Libéralisation commerciale et pauvreté en Afrique,* edited by Cockburn J, Decaluwé B, and Fofana I. Quebec: Presses de l'Université de Laval.

Fontana M (2003). The Gender Effect of Trade Liberalization in Developing Countries: A Review of the Literature. Department of Economics, University of Sussex Discussion Paper No. 101.

Fontana M, and Wood A (2000). Modeling the Effects of Trade on Women, at Work and at Home. *World Development* 28(7): 1173–190.

Gamberoni E, and Reis J (2011). Gender-Informing Aid for Trade: Entry Point and Initial Lessons Learned from the World Bank. *Economic Premise* 62 (July): 1–4.

Greenaway D, and Nelson RR (2000). The Assessment: Globalization and Labour Market Adjustment. *Oxford Review of Economics Policy* 16.

Haouas I, Yagoubi M, and Heshmati A (2003). The Impacts of Trade Liberalization on Employment and Wages in Tunisian Industries. IZA Discussion Paper No. 688. Institute for the Study of Labor, Bonn.

Harrison A, and Hanson G (1999). Who Gains from Trade Reforms? Some Remaining Puzzles. *Journal of Development Economics* 59(1): 125–54.

Heckman JJ (1979). Sample selection bias as a specification error. *Econometrica 47(1): 153-161*.

Horton S, Kanbur R, and Mazumdar D (1991). Labor Markets in an Era of Adjustment: Evidence from 12 Developing Countries. *International Labor Review* 130: 531–58.

International Labour Organization (ILO) (1983). Thirteenth International Conference of Labour Statisticians, Resolution Concerning Statistics of the Economically Active Population, Employment, Unemployment and Underemployment. *ILO Bulletin of Labour Statistics* 1983-3: 11–15.

International Monetary Fund (IMF) 2010. Cameroon: Poverty Reduction Strategy Paper. IMF Country Report No. 10/257. International Monetary Fund, Washington, DC. Available at: http://www.imf.org/external/pubs/ft/scr/2010/cr10257.pdf

Lulit M, and Claude B (2008). L'impact de la liberalisation commerciale sur le travail des femmes. Une analyse comparative entre l'Afrique du Sud et l'Ethiopie a l'aide d'une approche en Equilibre General Calculable. *Panoeconomicus* 55(1) : 69–88.

Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire (MINEPAT) (2015). Rapport sur le climat des affaires au Cameroun en 2014.

Nicita A (2008). Who Benefits from Export-led Growth? Evidence from Madagascar's Textile and Apparel Industry. *Journal of African Economies* 17(3): 465–89.

Njikam O, and Kouty M (2012). Foreign Competition and the Demand for Labour: Evidence from Cameroon. CSAE 2013 Conference Paper 224, Centre for the Study of African Economics, St. Catherine College, Oxford, 17–19 March.
Oaxaca R (1973). Male-Female Wage Differentials in Urban Labor Markets. *International Economic Review* 14(3): 693–709.

Oostendorp, RH (2009). Globalization and the Gender Wage Gap. *World Bank Economic Review* 23(1): 141–61.

Ozler S (2000). Export Orientation and Female Share of Employment: Evidence from Turkey. *World Development* 28: 1239–248.

Pham TH, Le Thai TQ, Nguyen TTV, and Ngo QT (2008). Gender Inequality and Labour Market Segmentation under Trade Reform: Evidence of the Gender Wage Gap from Vietnam, 1993-2004. PEP Research Report No. 11029.

Psacharopoulos G (1985). Returns to Education: A Further International Update and Implications. *The Journal of Human Resources* 20(4): 583–604.

Reilly B, and Dutta PV (2005). The Gender Pay Gap and Trade Liberalization: Evidence for India. PRUS Working Paper No. 32, Poverty Research Unit at Sussex, University of Sussex.

Seguino S (2000). The Effects of Structural Change and Economic Liberalisation on Gender Wage Differentials in South Korea and Taiwan. *Cambridge Journal of Economics* 24(4): 437–59.

Tejani S, and Milberg W (2010). Global Defeminization? Industrial Upgrading, Occupational Segmentation and Manufacturing Employment in Middle Income Countries. SCEPA Working Paper 1010-1, Schwartz Center for Economic Policy Analysis, The New School, New York.

United Nations Conference on Trade and Development (UNCTAD) (2010). Virtual Institute Teaching Material on Trade and Poverty. UNCTAD, New York and Geneva.

United Nations Industrial Development Organization (UNIDO) (2005). Industrial Performance and Capabilities of Cameroon: Analysis of the Industrial Sector. Ministry of Mines, Industry, and Technological Development (MINMIDT), Republic of Cameroon, December.

Williams R (1987). Capital, Competition, and Discrimination: A Reconsideration of Racial Earnings Inequality. *Review of Radical Political Economics* 19(2):1–15.

Williamson J (2004). The Washington Consensus as Policy Prescription for Development. Practitioners of Development Lecture, World Bank, Washington, DC, January 13.

Wood A (1991). North-South Trade and Female Labour in Manufacturing: An Asymmetry. *Journal of Development Studies* 27(2): 168–89.

World Bank (2011). *Gender Equality and Development. World Development Report 2012.* Washington, DC: World Bank.

Yanikkaya H (2003). Trade Openness and Economic Growth: a Cross-country Empirical Investigation. *Journal of Development Economics* 72(1): 57–89.