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Sarra Ben Yahmed, Pamela Bombarda



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Sarra Ben Yahmed[†] and Pamela Bombarda[‡]

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Abstract

We study how trade liberalisation affects formal employment across gender. We propose a theoretical mechanism to explain how trade liberalisation generates labour reallocation in formal jobs differently for men and women. Linking the Mexican labour force survey with data on tariffs at the 4-digit level from 1993 to 2001, we find that tariff reductions increase the probability of holding a formal job for both men and women within industries. Constructing a regional tariff measure, we find that the impact of regional exposure to Mexico's trade liberalisation on formal employment differs across gender. At the regional level, trade liberalisation increases the probability of working formally only for highly educated women. Controlling for sectoral differences, we find that manufacturing sectors experience a formalisation of jobs for both men and female, and in particular for highly educated men. While in the service sectors, men and low-skilled women have higher probabilities to work informally.

JEL classification: F11, F16, F63, O17

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[†]ZEW Centre for European Economic Research, Mannheim, Germany email: benyahmed@zew.de

[‡]Université de Cergy-Pontoise, THEMA, 33 Boulevard du Port F-95011. Tel.: +33 1 34 25 67 59, email: pamela.bombarda@u-cergy.fr

1 Introduction

Trade integration episodes, by reallocating resources towards more productive sectors and firms, are expected to foster economic development. But the impact of international trade on labour markets is controversial, as it can also contribute to an increase in inequality (see [Goldberg and Pavcnik \(2007\)](#) and [Hanson \(2007\)](#) among others). Labour markets in developing countries are characterised by low female labour force participation and a dual system where formal and informal jobs coexist. Informal jobs tend to offer lower earning opportunities, worse working conditions and little social safety nets compared to formal jobs. Gender differences in labour force participation depend on culture and social norms, but those differences can also respond to economic incentives, in particular following reforms in trade policies. However, so far the potential impact of trade liberalisation on gender differences in formal employment has been overlooked. This is the focus of the present paper, which investigates the impact of Mexico’s trade liberalisation on gender-specific formal employment.

In Mexico, the gender gap in employment to population ratio has been around 40 percentage points for decades. At the same time, informal employment is an important phenomenon since it affects more than 50 percent of all workers [Jütting and De Laiglesia \(2009\)](#). Analysing jointly informal labour and its gender composition is necessary to improve our understanding of the impact of globalisation on the labour market, and it is motivated by several observations. Firstly, sectors have different female labour shares as well as different shares of formal jobs. As trade integration benefits some sectors at the expense of others, it is likely to change formal employment shares, and differently for men and women. Secondly, trade liberalisation is likely to generate a “formal-biased technological change” since it favors most productive firms, which, because of their size and technology, are more intensive in formal labour. Finally, there is evidence in support of a stronger complementarity between capital and female labour than between capital and male labour.¹ Gender differences in substitution with capital also affects the pattern of labour allocations across sectors following macroeconomic changes such as trade.

Our analysis is developed in three steps. First, we present some facts on employment patterns in Mexico over the period 1993 and 2001. Considering both manufacturing and service industries, we observe that: (i) employment and formal employment shares have declined in service sectors while they increased in manufacturing;

¹[Black and Spitz-Oener \(2010\)](#) show how technological change can increase women’s productivity relative to men’s through a decline in routine task inputs. [Juhn et al. \(2014\)](#) develop a model where firms upgrade their technology with trade integration which lowers their need for physically demanding tasks and thus increase their demand for female labour.

(ii) formal labour shares are greater for women than men both in manufacturing and in service sectors; and (iii) the female intensity in formal jobs has increased only in the manufacturing sectors.²

In the second step, we develop a general equilibrium model where trade liberalisation affects the formal labour share of employment. We follow [Blum \(2008\)](#) and [Kovak \(2013\)](#) and use a multi-sector Ricardo-Viner model with labour reallocation across tradable and non-tradable sectors in a set up with regional economies. We extend this framework to allow for formal and informal jobs and introduce sectoral heterogeneity in formal job intensity. We derive the conditions under which the formalisation of jobs at the regional level differs across men and women. More specifically, we find that trade liberalisation increases by a larger amount the demand for male relative to female labour in formal jobs if comparative advantage sectors are relatively more intensive in formal jobs, and if male labour is relatively more substitutable for capital than female labour.³

Finally, we analyse empirically how the probability to hold a formal job has evolved differently for men and women as a result of the Mexican trade liberalisation. Mexico represents an interesting case study for at least three reasons. First, among NAFTA members, Mexico was the country with the highest tariffs and experienced the largest cut during the NAFTA phase in. Over the period 1993-2001, Mexican import tariffs on U.S. products declined on average by 14 percent. Second, Mexico has a large informal sector which increased in the 1990s. Finally, female labour force participation is extremely low in Mexico, it was below 40 percent in the early 1990s and remained below 50 percent in the early 2000s.

We use individual data from the Mexican labour force survey which is the Encuesta Nacional de Empleo Urbano (ENEU). This survey enables us to identify whether working individuals belong to the formal or informal segment of the labour market. To characterise the informal segment, we first focus on wage employment and define informal employees as those who do not have access to health insurance and social security coverage that are mandated benefits of legal labour contracts. A broader definition of informality, used in a robustness check, also includes self-employed individuals. Additionally, the ENEU provides information on individual industry affiliation at the 4-digit level, and location at the municipality level. This enables us to match precisely individuals to tariff changes at the sectoral level and also to construct a measure of local exposure to trade liberalisation at the municipality level. This local approach allows us to disentangle the effects of trade liberalisation across tradable

²We consider both manufacturing and service industries. These are also called tradable and non-tradables industries respectively.

³This is a common assumption since the seminal article of [Galor and Weil \(1996\)](#).

