



# Labour mobility and wage inequality in the presence of endogenous foreign investment<sup>☆</sup>

Sajid Anwar<sup>a,\*</sup>, John Rice<sup>b,1</sup>

<sup>a</sup> Faculty of Business, University of the Sunshine Coast, Maroochydore DC, Queensland 4558, Australia

<sup>b</sup> Business School, University of Adelaide, Adelaide, SA 5005, Australia

## ARTICLE INFO

### Article history:

Accepted 22 April 2009

### JEL classification:

F21  
F22

### Keywords:

Wage inequality  
Foreign investment  
Labour inflow  
Welfare

## ABSTRACT

This paper examines the impact of labour mobility and increased competition on skilled–unskilled wage inequality and foreign investment. Unlike the existing literature this paper considers a model where foreign investment is endogenously determined. The paper shows that in the shortrun, inflow of either skilled or unskilled labour has no effect on wage inequality but increased competition increases wage inequality. Inflow of either type of labour increases foreign investment but the impact of increased competition on foreign investment cannot be unambiguously determined. Inflow of skilled labour increases wage inequality in the longrun and its effect on foreign investment is positive. Increased competition in the longrun increases wage inequality, foreign investment and welfare.

© 2009 Elsevier B.V. All rights reserved.

## 1. Introduction

While the world economy has experienced significant growth in recent years, the gains from this growth have not been equally shared. Empirical studies summarised by Feenstra and Hanson (2003) have reported a link between skilled–unskilled wage inequality and globalisation. In a recent empirical study Blum (2008) has argued that drivers of globalisation can lead to changes in the sectoral composition of the economy that have implications for wage inequality. A number of theoretical studies have attempted to identify the determinants of wage inequality. For example, by making use of a standard Heckscher–Ohlin model, Kremer and Maskin (2003) have argued that trade liberalisation increases wage inequality in developed countries, while its effect on wage inequality in developing countries is the opposite. Ethier (2005) has shown that outsourcing arising from increased globalisation can result in increased wage inequality. Marjit and Kar (2005) have shown that, depending on the relative size of the income share of capital, emigration of either skilled or unskilled labour can increase wages or decrease wage inequality. Marjit and Kar (2005) have shown that the impact of international

factor mobility on the skilled–unskilled wage gap depends on relative factor intensities. Grenier and Tavakoli (2006) have argued the R&D spending and union density can significantly affect the level of wage inequality.

Anwar (2006) has shown that labour mobility can increase wage inequality even if the income share of capital were identical across industries. Chaudhuri and Yabuuchi (2007) have shown that, in the presence of labour market imperfections, a reduction in import tariff on the low-skilled manufacturing sector leads to an unambiguous increase in wage inequality. Yabuuchi and Chaudhuri (2007) have extended the work of Marjit and Kar (2005) by demonstrating that the impact of international migration of labour on wage inequality depends not only on relative capital but also on the institutional nature of the labour markets. Wälde and Weiß (2007) have argued that globalisation has led to increased competitive pressures that have in turn contributed to downsizing. They have shown that downsizing has implications for wage inequality.

Chaudhuri (2008) has extended this result in an important direction by demonstrating that in the presence of unemployment, the impact of international factor mobility on the wage gap does not always depend on relative factor intensities. Chaudhuri utilises an interesting model of a small dual economy where the rural sector produces an agricultural good by means of unskilled labour and land and the urban sector produces both a high-skilled as well as a low-skilled manufactured good. The high-skill manufactured good is produced by means of skilled labour and capital whereas the low-skilled manufactured good is produced by means of unskilled labour and capital. While capital is fully mobile within the dual economy, the

<sup>☆</sup> The authors are extremely grateful to an anonymous referee for very helpful comments and suggestions. All remaining errors and omissions are the responsibility of the authors.

\* Corresponding author. Tel.: +61 7 5430 1222.

E-mail addresses: [Sanwar@usc.edu.au](mailto:Sanwar@usc.edu.au) (S. Anwar), [John.Rice@adelaide.edu.au](mailto:John.Rice@adelaide.edu.au) (J. Rice).

<sup>1</sup> Tel.: +61 8 8303 4368.

unskilled labour is sector specific. An interesting feature of the model is the presence of unemployment of unskilled labour within the urban sector through a Harris–Todaro type mechanism. The model is used to derive several interesting results.

By making use of a dynamic model, Fang et al. (2008) have considered the impact of technology spillover on wage inequality. Fang et al. have utilised a model where an expanding variety of capital goods contributes to technology spillover from skilled to unskilled workers. They have argued that technology spillover affects the size of the wage premium in the longrun.<sup>2</sup>

Almost all available studies have focused on the issue of wage inequality by utilising models that can be viewed as longrun models. It is well-known that shortrun effects can be substantially different from longrun effects (see Chao and Yu, 1997; Das, 2002). In addition, the present day world economy is characterised by significant capital mobility across international boundaries, which is in turn dependent on a number of factors such as the availability of cheap unskilled labour in China and cheap skilled labour in India. However, almost all available studies assume that international capital flows are exogenous. By making use of a stylised model where foreign investment is endogenous, this paper examines the impact of increased competition and labour mobility on wage inequality in the shortrun as well as the longrun.

The rest of the paper unfolds as follows. A simple general equilibrium model of a small open-economy is presented in Section 2. The impact of labour mobility and increased competition on wage inequality and foreign investment in the shortrun as well as the longrun is examined in Section 3. The last section offers some concluding remarks.

## 2. A simple general equilibrium model

Consider a small open-economy that produces two traded goods ( $Y$  and  $Z$ ).  $Y$  is an industrial good whereas  $Z$  is an agricultural good. The industrial good is produced by means of capital, skilled labour and a CES composite of non-traded monopolistically-competitive producer services.<sup>3</sup> Each variety of the producer services is produced by means of capital and skilled labour. The agricultural good is produced by means of capital and unskilled labour. Due to free international capital mobility, foreign investment takes place in all sectors. This paper captures differences in factor intensities across sectors in an extreme manner – the industrial good is skilled labour intensive whereas the agricultural good sector is unskilled labour intensive. The production functions for  $Y$  and  $Z$  are as follows:

$$Y = (L_y^{1-\beta} K_y^\beta)^{1-\alpha} \left( \sum_{i=1}^n x_i^\delta \right)^{\frac{\alpha}{\delta}}$$

$$Z = L_z^{1-\gamma} K_z^\gamma$$

Where  $\alpha, \beta, \gamma$  and  $\delta$  are parameters in the range  $[0,1]$ ;  $x_i$  is the output of the  $i$ th variety produced by the services sector;  $n$  is the number of varieties produced;  $L_y$  and  $L_z$  respectively are skilled and unskilled labour used in the production of  $Y$  and  $Z$ ;  $K_y$  and  $K_z$  respectively are capital used in the production of  $Y$  and  $Z$ .

<sup>2</sup> Other studies that consider the issue of wage inequality include Beyer et al. (1999), Das (2002), Feenstra and Hanson (2003), Marjit and Acharyya (2003), Marjit et al. (2003), Das (2005) and Long et al. (2007). It is perhaps worth pointing out that since this and a number of related studies do not explicitly regard the type of wage inequality examined in this paper as good or bad, some authors prefer to use a neutral term such as “skill premium”.

<sup>3</sup> Producer services include consulting, auditing, engineering, architectural and legal services. These services are primarily utilised by the industrial sector and therefore they do not enter as input in the production of non-industrial goods. A number of existing studies such as Marrewijk et al. (1997), Markusen and Venables (1999) and Reddings and Venables (2004) have highlighted the role played by the services sector in real economies. Eswaran and Kotwal (2002) have examined the role of services produced under monopolistic competition on the process of economic development.

Production of both final goods is subject to constant returns to scale, which implies that the average cost equals the marginal cost. On the other hand, the producer services sector is subject to internal economies of scale. Accordingly, each firm specialises in the production of a single variety. The cost function of the  $i$ th variety is as follows<sup>4</sup>:

$$c(w_s, r, x_i) = [\mu + \lambda x_i] w_s^{1-\theta} \bar{r}^\theta$$

Where  $\bar{r}$  and  $w_s$  respectively are the international price of capital and the domestic skilled wage rate;  $\theta$  is a parameters in the range  $[0, 1]$ ;  $\lambda$  and  $\mu$  are positive constants; due to free international capital mobility,  $\bar{r}$  is determined in the international market.

Following the existing literature, this paper focuses on a symmetric equilibrium where all varieties produced are equally priced. In a symmetric equilibrium, the aggregate production of the services sector,  $X$ , equals  $nx$  and hence the industrial good production function can be written as follows:

$$Y = L_y^{(1-\alpha)(1-\beta)} K_y^{\beta(1-\alpha)} X^\alpha n^{\frac{\alpha(1-\delta)}{\delta}}$$

From the point of view of each firm in  $Y$  industry, the number of varieties supplied is given. As is common in economic-geography and endogenous-growth models, the CES composite means that the industrial sector is characterised by external economies. The degree of external economies is measured by  $\frac{\alpha(1-\delta)}{\delta}$  which is positive but less than unity. Because the producer services sector produces a large number of varieties, the price elasticity of demand for each variety is  $\frac{1}{1-\delta}$ .<sup>5</sup> Varieties of producer services are produced under conditions of monopolistic competition. It is assumed that, due to free entry and exit of firms, each firm earns zero economic profit in the longrun. On the other hand, in the shortrun the number of firms is exogenous and hence the economic profit may not be zero.<sup>6</sup>

### 2.1. Shortrun equilibrium

The shortrun equilibrium is characterised by the possibility of non-zero economic profit in producer services sector. The following condition determines the equilibrium output of the industrial good industry where  $p$  is the price of producer services.

$$1 = \theta [w_s^{(1-\alpha)(1-\beta)}] [\bar{r}^{\beta(1-\alpha)}] \left[ \frac{p^\alpha}{n^{\frac{\alpha(1-\delta)}{\delta}}} \right] \tag{1}$$

Where  $\theta = \alpha^{-\alpha} \beta^{-\beta(1-\alpha)} (1-\alpha)^{-(1-\alpha)} (1-\beta)^{-(1-\alpha)} (1-\delta)^{\alpha}$ .

The right-hand side of Eq. (1) is the unit cost of production whereas the left-hand side is the price of the industrial good. The price of the industrial good has been set equal to unity. An increase in the number of varieties decreases the effective price of producer services and hence the average cost of the industrial good decreases.

The output of the agricultural good is determined by the following zero profit condition where  $q$ , which is the price of the agricultural good, is determined in the international market.

$$q = [\gamma^{-\gamma} (1-\gamma)^{-(1-\gamma)}] w_u^{1-\gamma} \bar{r}^\gamma \tag{2}$$

<sup>4</sup> It is well-known that the production function corresponding to the specified cost function is non-homogenous; otherwise the system of equations that describes equilibrium would be over determined (see Helpman, 1981; Das, 1982).

<sup>5</sup> These assumptions are used by a number of existing studies. For example see Helpman and Krugman (1985), Markusen (2002) and Rivera-Batiz and Rivera-Batiz (2003) and references therein.

<sup>6</sup> For a discussion of the shortrun and longrun equilibria, see Chao and Yu (1997) and Das (2002).

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات