



# Secular Changes in the Gender Composition of Employment and Growth Dynamics in the North and the South

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**Summary.** — In a simple theoretical exercise, the paper shows that gender relations matter in the standard analysis of trade liberalization and economic growth. It utilizes a model with the two differential equations, phase diagram technique which enables us to examine the cumulative interaction between economic growth and changes in the female share of employment. The model shows that changes in the gender composition of employment caused by a new global division of labor between the North and the South can thwart the economic benefits customarily associated with trade liberalization in both regions. © 2000 Elsevier Science Ltd. All rights reserved.

**Key words** — trade liberalization, gender relations, female share of employment, North and South

## 1. INTRODUCTION

The push toward trade liberalization in developing countries has been a salient aspect of the international economy since the early 1980s. It is by now widely recognized that these policies had asymmetric gender effects in many of the countries where they were implemented. For instance, numerous case studies from the developing world have shown that the adverse welfare effects of structural adjustment policies on women in poverty, one of whose main objectives has invariably been trade liberalization, were more severe than their impact on poor men.<sup>1</sup> Mainstream economists have uniformly maintained, however, that trade liberalization and integration with the world economy in general, benefit all countries involved both in the North and the South, promoting convergence in per capita levels of income among countries at different levels of development.<sup>2</sup> It has also been argued that increased openness to the world economy tends to reduce all kinds of discriminatory labor

market practices, including those based on gender (Black & Brainerd, 1999).

In contrast, research by nonmainstream economists suggests that gender inequalities in pay and working conditions generally have remained persistent in the face of increased female participation in paid employment following trade liberalization in developing countries (Standing, 1999). More recently, the focus of attention among some feminist economists has shifted onto exploration of possible feedback effects of gender inequalities on economic performance at the macro level.<sup>3</sup> It is argued that gender inequalities, and more broadly gender relations, can have ramifications for macroeconomic variables at the national and as well as at the level of international economy. For instance, a wide body of evidence suggests that gender inequalities have

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played an important role in foreign direct investment flows and in the export-led growth performance of many of the newly industrializing countries.<sup>4</sup>

The objective of this paper is to contribute to this literature by means of a simple theoretical exercise that highlights the importance of taking gender relations into consideration in the standard analysis of trade liberalization and economic growth. We develop a heuristic framework for further research on the possible gender feedback effects at the macro level. Using a simple two-equation model, the paper looks at the implications of the possible interaction between economic growth and changes in the gender composition of the labor force.

Based on the premise that gender relations on growth dynamics differ between countries at different levels of development, we find that benefits from trade liberalization between the North and the South can be offset by changes in the female share of employment caused by a new global division of labor brought about by changing trade relations. Thus, the conclusion of the exercise is that gender relations possibly can thwart the economic benefits customarily associated with trade liberalization.

The following discussion is organized into two sections: the model and its conceptual background are discussed in Section 2; its assumptions and dynamic properties are evaluated in Section 3.

## 2. THE MODEL

The conceptual orientation and the assumptions we employ in the model draw from a stylized reading of the empirical trends reported in the gender and development literature. The discussion focuses on two of the channels through which gender relations can affect long-term economic growth: (a) unpaid female labor within the household shoulders the social cost of reproducing the labor power in the economy, and (b) paid female labor outside the household performs the same work men do for lower pay.

In our discussion, the economic impact of increasing feminization of the labor force works through these two linkages. In relation to the first, *ceteris paribus*, increasing female participation of the labor force has a negative effect on output. For the extent to which the cost of reproducing the labor power is subsidized by unpaid female labor is likely to

diminish as women are drawn in large numbers into paid employment. In relation to the second, *ceteris paribus*, women's increasing labor force participation is likely to have a positive effect on output due to lower wage costs.

The relative weight of these two gender effects are likely to differ among countries that are at different levels of development. It is plausible that in the South the first effect is stronger, especially given the low level of public services; while in the North the second effect is likely to be more important. By contrast, both effects are likely to be operative in an increasing number of newly industrializing countries which are generally, but not exclusively, middle-income.

For our purposes, the stylized distinction between the North and the South can be drawn in connection with the U-shaped, long-term relationship found between the female labor force participation rate and economic development. The evidence for this U-shaped pattern is based on both the historical experiences of developed countries and from several studies that utilized crosscountry data in cross-section. For instance, in the United States, female labor force participation fell during the initial stages of economic growth, thereafter it began to rise, exhibiting a U-shaped pattern (Goldin, 1994). Likewise, crosscountry data show that the poorest and richest countries, identified as such by the manner of the World Bank's classification scheme of high-income (North) and low-income (South) countries, have the highest female labor force participation rates, while middle-income countries have the lowest (Pampel & Tanaka, 1986; Goldin, 1994; Cagatay & Ozler, 1995).

In our discussion, the South refers to the group of countries on the left arm of the U-curve; and the North refers to the countries on the right. The South constitutes countries where a significant share of gross domestic product, say 25% or more, is devoted to agriculture, and where a considerably greater share of the labor force, say 40% or more, is engaged in agriculture. In contrast, the Northern countries are those where the predominant economic activities, as a proportion of gross domestic product, are industrial/technical/professional services. In the North, agriculture constitutes a low share of gross domestic product, typically less than 10%, and the share of the labor force in agriculture is even smaller, typically less than 5%.

Our mode of inquiry utilizes the two differential equations, phase diagram technique, which enables us to explore how cumulative processes unfold over the complete span of time required for them exercise their full effects. The immediate effects of a policy such as trade liberalization may be quite different from its long-term effects as the dynamics of the process of impact unfold over time. Phase diagrams enable us to characterize the ultimate rather than the immediate impact.

We also load the dice in favor of trade liberalization with our assumptions about its immediate impact. In other words, our analysis demonstrates grounds for reservations about trade liberalization under conditions most favorable for the consequences of this type of policy reform.

We assume a model which takes the general form:

$$\dot{x} = f(x, y),$$

$$\dot{y} = g(x, y)$$

that can be applied to countries in both the North and the South, where  $x$  is per capita income and  $y$  is the rate of feminization of employment.<sup>5</sup> The functional relations posited in the two equations refer to slow-changing, long-term variations, while short-term movements in the state variables caused by changes in policy orientation or other exogenous forces are treated as discrete shifts. Treating trade liberalization as one possible example of such a shift, we explore its dynamic implications by means of assessing the likely sign of the four partial derivatives involved in our equation system (i.e.,  $f_x$ ,  $f_y$ ,  $g_x$ ,  $g_y$ ), without, however, specifying any explicit functional form, on the basis of two sets of assumptions.

One set of assumptions draw from the standard claims made on behalf of trade liberalization as an agent of growth. Along with mainstream theory, for the purposes of the theoretical exercise here, we take it for granted that (a) as a first effect, trade liberalization increases the per capita level of output in both the North and the South, (b) countries that have different levels of per capita income tend to converge, (i.e., the so-called convergence thesis), and (c) the possible effects of demand on long-term growth are negligible. These assumptions constitute the package of beliefs imbedded in our analysis that are most favorable towards a policy stance that favors trade liberalization. In our model, the first assump-

tion is treated as a "one-time" shift in per capita output for all levels of feminization of employment, while the second is incorporated into the first equation as a slow-changing, long-term effect.

The second set of assumptions draws from the gender and development literature described above. Again, fast-changing, short-term effects are distinguished from slow-changing, long-term variations in the state variables. For instance, the often observed increase in the female share of employment in developing countries that liberalized their trade is treated as a "one-time" shift in the rate of feminization of labor for all levels of per capita output, while long-term changes in the gender composition of labor—which can be hypothesized on the basis of the U-shaped feminization curve—are incorporated into the second equation as a slow-changing, long-term effect.

We make the following assumptions with respect to the signs of the partial derivatives specified above:

(i) In the first equation, it is assumed that  $f_x < 0$  in both the North and the South. This means that the rate of change in per capita level of output is inversely related to its level. The assumption follows from the convergence thesis, and implies that the impact of the level of output on the rate of change of output is negative.<sup>6</sup> It can also be argued that rising per capita income is generally associated with rising real wages and indirect costs of labor which can thwart economic growth to the extent that investment behavior is more sensitive to production costs than to demand (Darity, 1982).

(ii) The impact of the level of feminization of the labor force on the rate of change of output is assumed to be positive in the North ( $f_y > 0$ ) and negative in the South ( $f_y < 0$ ).

In the South, the process of modernization and industrial growth usually takes place in the absence of a developed infrastructure for public services. In these economies, women's unpaid labor within the household plays an invisible role by shouldering the cost of reproducing labor. Thus, women's *en masse* incorporation into paid employment outside the household is likely to put upward pressure on the cost of living, giving rise to increased demands for higher real wages. Rising real wages are, *ceteris paribus*, assumed to check economic growth.<sup>7</sup>

By contrast, in the North, where a more extensive infrastructure and network of public services exist, increased employment of women outside the household need not imply rising

labor costs. On the contrary, to the extent that women are the preferred labor supply, either because they do the same work men do for lower pay or because they are more compliant as workers, increased feminization of employment is likely to have a positive effect on the rate of change of output.

(iii) The impact of the level of per capita output on the rate of change of the feminization rate is negative in the South ( $g_x < 0$ ) and positive in the North ( $g_x > 0$ ).

Following the seminal work by Boserup's (1970), the consensus in the 1970s was that industrialization marginalized women, in the sense of curtailing their rate of participation in paid employment (Pearson, 1998). This is also consistent with the empirical regularity represented by the U-shaped feminization curve (Figure 1). On the left side of the U-curve, the feminization rate falls as per capita income rises, and on the right-hand side the feminization rate rises as per capita income goes up.

The historical and crosscountry evidence do not in themselves suffice to conclude that past trends will continue to hold in the future or that the South will follow in the footsteps of the North. Most notably, the increased participation of women in industrial employment in the South in the context of export-led growth in the 1980s might be thought to invalidate the hypothesis of a longitudinal relationship drawn on the basis of the feminization U.

However, given the widespread evidence of defeminization of labor in the many of the first-tier export-industrializing countries in more recent years (Acevedo, 1990; Berik, 1995; Joeke & Weston, 1994) it might be safer to treat the increased feminization of labor asso-

ciated with export-orientation/trade liberalization as a "shorter term" shift superimposed onto the long-term relationship implied by the feminization U. Increased employment of women in the North due to the changing composition of output toward services, generally agreed to be associated with technological change, can likewise be superimposed as a short-term shift onto the secular trend of increasing feminization of employment.

(iv) We assume that the rate of change of feminization of labor might be inversely related to its level in both regions, ( $g_y < 0$ ).

Evidence from around the world suggests that the share of women's employment in relation to the total labor force varies in the context of three different modalities (Ertürk & Cagatay, 1995). First, women enter the labor force during times of expansion and exit during downturns, acting as a buffer. Second, changes in the composition of output towards sectors where women are concentrated increases their employment in relation to men. Third, women replace men in jobs that are traditionally held by men. While the first two mechanisms by which the rate of feminization rises need not encounter much resistance from men, the third—which is likely to be more prevalent in the long run—might. For instance, it might be plausible that the conservative backlash against various affirmative action programs in the North is in part be a reflection of such resistance.

To recap then, we make the following assumptions about the sign of the partials.

In the South :  $f_x < 0$ ;  $f_y < 0$ ;  $g_x < 0$ ;  $g_y < 0$ ,

In the North :  $f_x < 0$ ;  $f_y \geq 0$ ;  $g_x > 0$ ;  $g_y < 0$ .

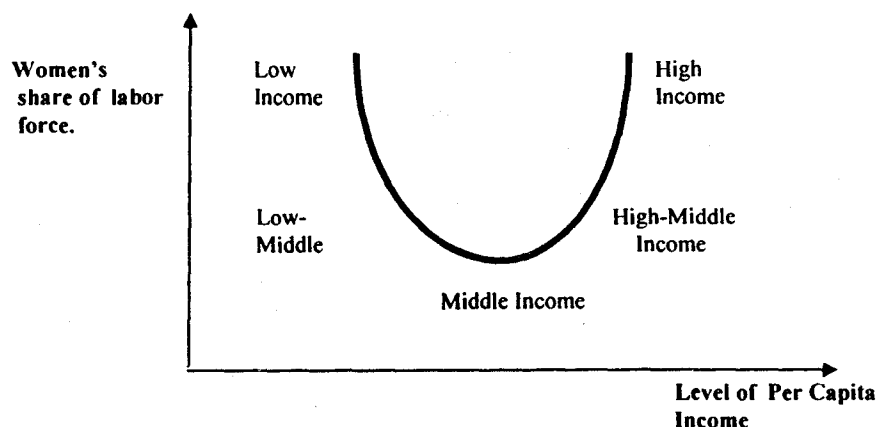


Figure 1. *Feminization U.*

### 3. EVALUATION OF THE MODEL

It is possible to evaluate the dynamic properties of the equilibrium positions these assumptions yield by means of drawing phase diagrams for both regions. Depending on the relative magnitude of the partial derivatives  $f_y$  and  $g_y$ , the equilibrium points that emerge for both regions are either stable *nodes* or *saddle points*. Because it is difficult to draw inferences about *saddle point* solutions in the absence of explicit functional forms, save some cursory remarks (see below), we focus on cases that involve stable *nodes* in what is to follow. Thus, we assume that the relative magnitudes of the partial derivatives are such that Case (a) holds in Figures 2 and 3.

The effect of shifts in policy orientation or other exogenous forces which might raise per capita income for all levels of feminization of employment can be depicted by a rightward shift in the  $\dot{x} = 0$  locus, while the effect of those that raise the feminization rate for all levels of per capita income can be depicted by an upward shifts in the  $\dot{y} = 0$  locus.

In numerous countries in the South, trade liberalization/export orientation have led to increased feminization of employment in the 1980s. Given our earlier assumption that trade liberalization enhances per capita output, we can show this by a simultaneous shift in both demarcation curves. Just as  $\dot{x} = 0$  locus shifts to the right,  $\dot{y} = 0$  locus shifts up. As depicted in Figure 4, the level of per capita income increases from  $x_0$  to  $x_1$  following the rightward shift in the  $\dot{x} = 0$  locus. But, it should be noted that the simultaneous upward shift in the  $\dot{y} = 0$  locus at least partially offsets this increase as the level of per capita output is reduced to  $x_2$ .

A similar result also holds in the case of the North, where import penetration from poor countries has led to defeminization of labor in low-wage sectors where women are concentrated (see Kucera & Milberg, 2000). In this case, the rightward shift in  $\dot{x} = 0$  locus, depicting the beneficial impact of trade liberalization is accompanied by a downward shift in the  $\dot{y} = 0$  schedule (see Figure 5). Again, the increase in per capita income from  $x_0$  to  $x_1$  due to trade liberalization is at least partially offset

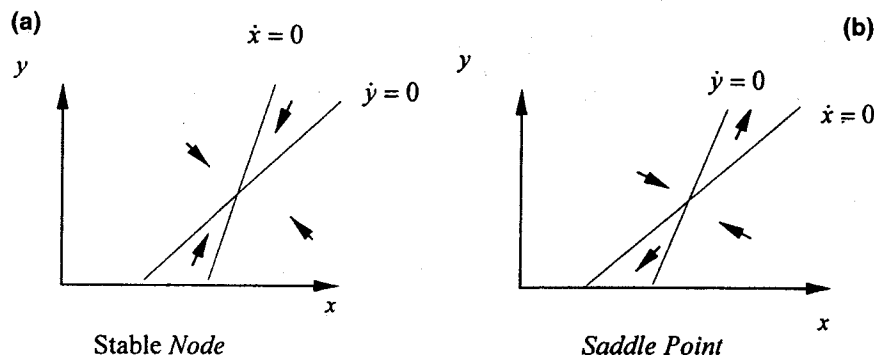


Figure 2. Possible types of equilibrium in the North.

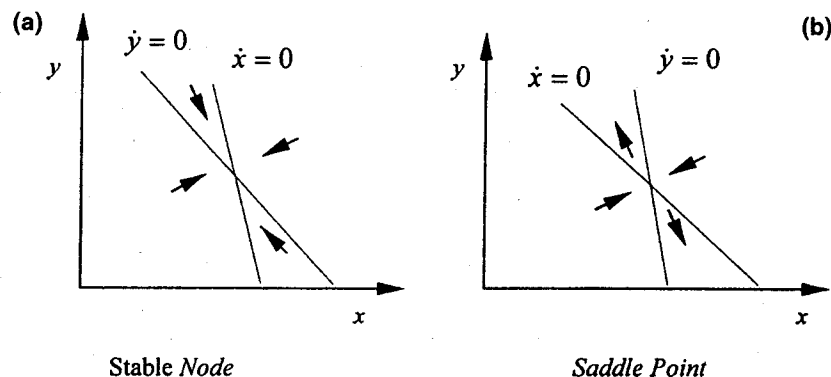


Figure 3. Possible types of equilibrium in the South.

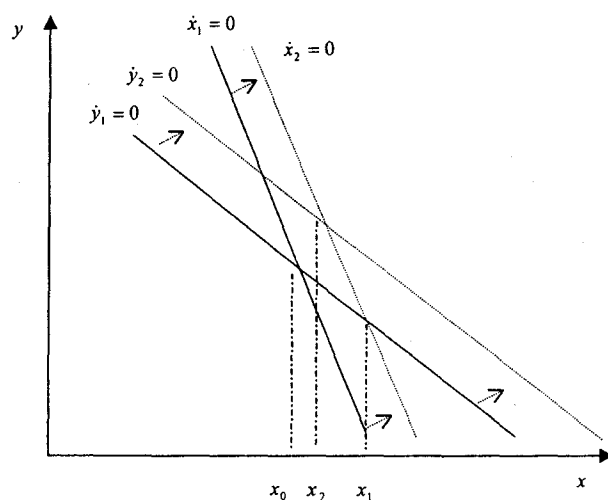


Figure 4. Impact of trade liberalization in the South.

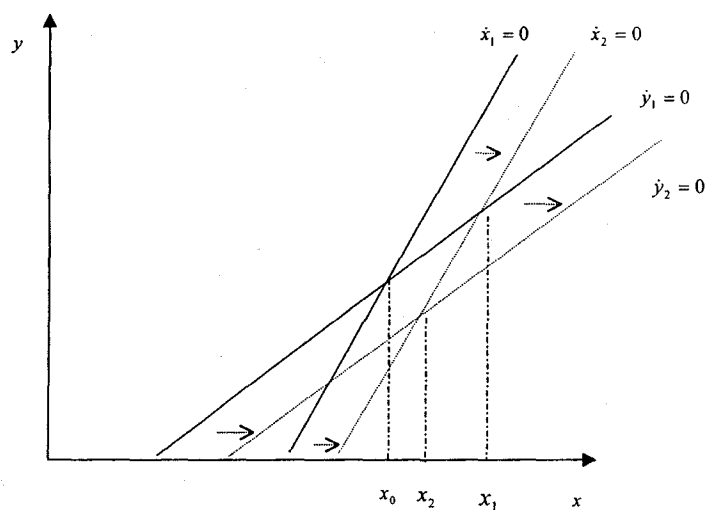


Figure 5. Impact of trade liberalization in the North.

by the reduction in the rate of feminization of labor. As depicted in Figure 5, with the downward shift in the  $\dot{y} = 0$ , the equilibrium level of per capita income is reduced to  $x_2$  from  $x_1$ .<sup>8</sup>

Finally, a few comments can be made about the possibility of a saddle point solution. A saddle point means that only a unique set of trajectories converge to the equilibrium position and that all other trajectories eventually become divergent if they are not so from the outset. Given the absence of explicit functional forms in our equation systems, it is possible to specify neither the stable adjustment path nor the exact parameters that yield a saddle point. Two general comments can be made, however. First, a marked contrast exists between the

North and the South in terms of the dynamics implied by the saddle point solution. In the North, depicted in Figure 2(b), the two possible outcomes for divergent time paths are either a cumulative increase in both per capita output and feminization rate or a cumulative decrease in both variables. Thus, any deviation from the unique time path convergent to equilibrium leads to a runaway movement in one or the other direction, which we might call a *win-win* or a *lose-lose* outcome. Thus, trade liberalization possibly can give rise to either outcome.

In contrast, in the South, depicted in Figure 3(b), the two possible divergent time paths are either increasing per capita output along with a falling feminization rate, or a rising feminization rate along with decreasing per capita

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