Monitoring Gender Impacts of Trade

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In the light of increased attention to trade impacts on labour conditions, poverty, and the environment, this paper focuses on trade impacts on gender [in]equality. Gender impacts of trade have received hardly any attention so far from policy makers. At the same time, however, gender equality has increasingly been accepted as an important objective in a variety of policy areas, reflecting a trend towards gender mainstreaming. This paper will provide a tool for policy makers to mainstream gender into trade policies. The tool consists of a set of gender and trade indicators, which will be constructed on the basis of available literature on gender and trade relationships. The indicators will relate trade performance variables to variables measuring gender inequality. Together, the set of indicators provides policy makers with a sketchy but simple tool to monitor consistency between trade policies on the one hand and gender policies on the other hand.

INTRODUCTION

Recently, a renewed interest has emerged in the analysis of trade impacts on labour conditions, poverty, and the environment. Critique is no longer limited to demonstrators at meetings of the

WTO, World Bank, IMF and G-8, expressing their concerns about negative effects of globalisation. Increasingly, their voices are joined by those of critical researchers and policy makers who question the commonly held view that trade liberalisation is necessarily in the best interest of everyone, boosting GDP growth and reducing poverty[1]. At the same time, the assumed positive relationship between liberalised trade and democracy has come under debate [*Noreena Hertz, 2001*]. Some UN organisations raise cautious concerns about effects of WTO rules on human rights [*UN, 2000*] and on labour standards [*ILO, 1998*]. Critical economists demonstrate methodological and statistical inconsistencies in analyses that favour rapid trade expansion [*Jan Kregel, 2000; Dani Rodrik, 2000*]. Dissident policy makers challenge the trade favouring policies of World Bank, IMF, and WTO, because of their unfounded dogma's as well as their political biases [*Joseph Stiglitz, 2000*]. More concretely, the European Union develops a Sustainability Impact Assessment [SIA] for the monitoring of its bilateral trade agreements [*EU 2002*].

Although concerns are raised about negative impacts of trade on a wide variety of issues, there is very little attention to and documentation on trade impacts on gender relations, that is, differentiated trade impacts on men and women[2]. And even less so on the two-way relationship between gender and trade, with the exception of a few articles to be discussed in this paper and a summary report on gender and trade for UNDP by Nilüfer Cagatay [*2001*]. As I will argue in this paper, gender *is* importantly related to trade, influenced by trade negotiations, trade patterns, and trade volumes, and at the same time gender relations influence trade outcomes. At least two arguments would justify the inclusion of gender in the analysis of impacts of international trade. First, the well-known fact that with increased exports, female labour force participation increases in developing countries. The female employment share in export industries in developing countries that specialise in manufacturing exports is around 75 per cent. For example, in South Korea 75 per cent of the labour force in export industries is female, in Mauritius 80 per cent and in Malaysia 86 per cent [*Adrian Wood, 1994: 96*]. Second, research on gender effects of

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Structural Adjustment Programmes [SAP's] during the 1990's has indicated that SAP measures have affected women differently from men while at the same time an increase in women's labour time appeared crucial for the success of SAP's. Negative gender effects of SAP's, that is, a worsening of the gender gaps, have been found in variables such as unemployment rates, wages, unpaid labour time, health care access, female school enrolment, as well as a rise in the share of female headed households [*Isabella Bakker, 1994; Pamela Sparr, 1994*]. Interestingly, feminist economists have also found that gender inequalities in society and the economy have had negative consequences for the success of SAP's including in the area of trade. For example, studies have indicated that gender distortions in markets [wage discrimination, limited access to credit, biased land property rights], as well as in public services [male-biased educational systems, male-biased agricultural extension services] have reduced the impact of a SAP policy measure such as a currency devaluation on export growth [*Nilüfer Cagatay, Diane Elson and Caren Grown, 1995; Mark Blackden and Chitra Bhanu, 1999*]. Given these findings on links between SAP's and gender inequality, and the close relationship between SAP's and trade liberalisation, it is not unlikely to expect a relationship between gender and trade as well, and in both directions.

Moreover, most governments, in the North as well as in the South, have adopted policies on gender equality over the past decade. Since the UN Women's conference held in Beijing in 1995, gender policies are more and more integrated in other policy areas, rather than being regarded as a separate set of policy measures. This so called *mainstreaming* of gender into a variety of policy areas reflects the acknowledgement that gender equality cannot be achieved separate from labour market policy, fiscal policy or educational policy for example. Why then, should we assume it could be achieved separate from trade policy? The Platform for Action of the Beijing conference explicitly refers to trade policies as an area of concern for gender mainstreaming. One paragraph urges governments to ensure that trade agreements will not have

negative impacts on women, while another paragraph advises governments to closely monitor

trade and other policies, in order to prevent that negative impacts might arise [*UN, 1996*]. In these

two paragraphs, governments are advised to:

para 165 k: 'Seek to ensure that national policies related to international and regional trade agreements do

not have an adverse impact on women's new and traditional economic activities'

para 165 p: 'Use gender-impact analyses in the development of macro and micro-economic and social

policies in order to monitor such impact and restructure policies in cases where harmful impact occurs'

But UN recommendations need to be turned into concrete policies in order to generate effect. In

the European Union for example, recommendations on mainstreaming gender equality in a

variety of policy areas have led to a European Council regulation on gender equality in

development co-operation in 1998. In this regulation, micro, meso, and macro policies are

mentioned including Structural Adjustment Policies [SAP's], which should take women's and

men's roles into account. At the same time, the European Commission has embarked on an

internal gender mainstreaming approach, which should lead to the incorporation of equal

opportunities for women and men into all EU policies and activities[3]. In practice however, only a

few policy areas include gender objectives, whereas for the area of trade, only an intention is

mentioned to mainstream gender [*European Commission 2000: 26*]. The development of a SIA

provides a clear opportunity for the European Union to mainstream gender concerns in its trade

reviews.

　　　　Based on the trend of gender mainstreaming of policies and acknowledging indications in

the literature that trade and gender are not unrelated, the objective of this paper is to develop a

tool for policy makers to mainstream gender equality goals in trade policies. The proposed tool

will consist of a set of gender and trade indicators. The next section will discuss the methodology chosen for the development of gender and trade indicators, as well as the methodological limitations that have to be faced with.

METHODOLOGY AND METHODOLOGICAL LIMITATIONS

A policy tool, even for a complex task as the monitoring of trade impacts, should be clear in its formulation and user-friendly in its application if it is to be of any use for policy makers, or for others who may be interested in the monitoring of trade impacts, such as NGO's. Hence, any set of indicators for the purpose of monitoring trade policies should satisfy the following criteria, that is, the indicators should be:

- *simple*, for they should be a ready-made tool to be used for decision making

- *comparable*, to allow comparisons over different trading partners

- *dynamic*, to enable the monitoring of gender impacts of trade over time

- *feasible*, that is, constructed of variables for which data is available in national or international statistical sources

Among various other options, there is one type of indicator commonly used in microeconomics, which seems to be a candidate for satisfying these criteria: an elasticity. An elasticity is a quantitative indicator that measures changes in a particular variable in reaction to changes in another variable, such as a decrease in demand for oil in reaction to an increase in the oil price. Trade elasticities of gender inequality would likewise bring together trade and gender variables in a ratio, in which the denominator measures changes in trade volumes, whereas the numerator

measures changes in gender inequality. This would lead to the formulation of, for example, a trade elasticity of the gender wage gap, or a trade elasticity of occupational segregation.

Quantitative indicators formulated as elasticities clearly have some attractions because they are relatively simple to calculate and to apply. But they suffer from serious limitations as well. In particular, elasticities do not imply any causal relationship, not even a correlation, between the two variables expressed in the numerator and denominator. The implied relationship should be derived from theory as well as empirical research, assessing statistically significant relationships between trade and gender inequality. That is why in the next section, each elasticity will be derived from theoretical insights, model simulations as well as empirical statistical research, in order to justify the particular formulation of a gender and trade indicator as an elasticity. The major methodological limitation of an elasticity is even aggravated when applied to trade impact analysis. The problem we face here is twofold. First, it is very difficult to distinguish between effects of trade and effects originating from other factors[4]. Changes in gender [in]equality may arise from a variety of policies and trends, such as labour supply trends, labour market policies, structural adjustment policies, technological change, investment choices or fluctuations in aggregate demand. In addressing this problem, I share the position taken by Michael Burda and Barbara Dluhosch [*1999*] as well as by Mary Gregory [*2000*] who argue that trade and technology factors are not mutually exclusive explanations for labour market changes, but are part and parcel of the same phenomenon. It depends on the actual labour market institutions and policies to what extent both factors will have an impact on employment and wage levels for each trading partner. Hence, when I refer to trade, I imply trade in the broadest sense, including related capital flows and institutional changes. Second, it is almost impossible to distinguish between the impacts of trade among two trading partners on the one hand and impacts of trade with third parties on the other hand. This difficulty can be reduced a bit by focusing on

trade effects for major trading partners only, focusing on relatively high volumes of trade, ignoring trade relationships with minor trading partners.

A final methodological limitation of using trade elasticities of gender inequality is to be found in the data. To begin with, databases world-wide suffer from a serious lack of gender disaggregation. Almost all trade data is gender-blind, while many social and economic indicators are only to a limited extent gender disaggregated [for example, school enrolment and life expectancy are gender disaggregated for most countries, but data on savings or sector wages are often not]. Gender disaggregation of labour market data needs to be treated with caution. The reliability of the data on women's labour market position is often doubtful since women's work tends to be more informal, part-time, and flexible compared to men's work [*Guy Standing, 1999*], leading to under-estimations of women's contribution in the labour market. Finally, the measurement of gender inequality in social and economic life sometimes requires data of non-traditional variables, that are absent in most statistical sources, for example data on unpaid labour time.

Taking all these methodological limitations into account, the gender and trade indicators to be presented in this paper should be treated with considerable caution.

Now, what are the relevant variables for the elasticities? Let us first consider the possibilities for the denominator, that is, the trade variables. The denominator can be calculated in three different ways [in which $_i$ refers to a country or a region and $_j$ refers to a bilateral trading partner, or a trading block, or to all trading partners]:

- trade volumes as a share of GDP of a country or a region: $[EX_{ij} + IM_{ij}]/GDP_i$
- bilateral or regional trade volumes as a share of total trade of a country or region: $[EX_{ij} + IM_{ij}]/[EX_i + IM_i]$

- openness measured in tariff reductions of x per cent[5].

In the indicators to be presented in the next section, I will use the first type of trade variable, that is, trade [import and export volumes] as a share of GDP.

For the numerator, there is a potential wide variety of variables available for measuring gender inequality, but data limitations as well as limited availability of research on gender effects of trade leaves only a small number of variables to be included in the indicators. These are variables measuring poverty, employment, wages, time use, childcare, and household food security. These variables are for many countries unfortunately only available at the aggregate level, while trade impacts can be expected to differ between sectors of the economy, in particular between export sectors, import competing sectors and the domestic sector. Nevertheless, they may provide a rough picture of the state of the art of gender inequality among trading partners, and may point out areas for in-depth research at the sector level.

GENDER AND TRADE INDICATORS

In this section, gender and trade indicators will be developed in four clusters of gender impacts as these appear to be the four areas for which at least some literature is available. I will rely in particular on Nilüfer Cagatay, Diane Elson and Caren Grown [*1995 and 2000*], two special issues of *World Development* on relationships between gender and macro economic policies, including trade policies. The four clusters of gender impacts to be discussed below are: poverty, employment, wages, and the care economy.

Poverty

In the literature, there are only very few analyses of the relationship between trade and poverty. The dominant position, advanced by mainstream economics and international organisations like the WTO, World Bank, and IMF, is that trade liberalisation has a positive effect on poverty reduction, which is assumed to run through the intermediate variable of economic growth. But this hypothesis is not widely tested, it is almost taken for granted. Critics of the dominant position on the relationship between trade and poverty point out on the basis of empirical research that, first, trade does not always lead to faster economic growth, and hence, there are no trickle down effects to be expected from trade to poverty reduction, and second, trade may increase inequalities, and hence, deepen [relative] poverty rather then reduce it. An insightful paper is by Dani Rodrik [*2001*] in which he indicates with cross-country correlations that trade liberalisation does not show a systematic positive relationship between trade liberalisation on the one hand and economic growth on the other hand, the regressions actually indicate that the reverse may be true. 'The only systematic relationship is that countries dismantle trade restrictions as they get richer.'[*Rodrik 2001: 22*] So, only after countries have created a firm institutional environment and experience economic growth, they are able to benefit from trade and they open up their markets, Rodrik argues, but not before. We see a similar pattern in the flow of investment: richer countries receive far more capital flows than poorer countries - capital and trade seem to follow economic development rather than to proceed it.

What about the gender dimension of poverty? From the vast literature in the area of women and development, it is well-known that the majority of the poor is female[6]. So, if there is a positive effect of trade on poverty reduction, this may as well contribute to a reduction in gender inequality at the aggregate level of wellbeing. In the literature, we find only one model simulation on the relationship between trade liberalisation and female poverty, by William Darity [*1995*]. He has constructed a macro economic model for a low income economy that specialises

on agricultural exports - cash crops - combined with a gender division of labour in which men grow and reap the earnings from cash crops and women specialise in growing food crops but also work on men's plots [this gender division of labour can be found, for example, in many countries in sub-Saharan Africa]. Darity's macro economic model includes an important micro economic variable referring to gender inequality within the household, expressing male control over female labour. With a model exercise of a currency devaluation, Darity is able to show that such an export-stimulating measure does not necessarily lead to increased agricultural exports, since women may not want to offer their labour to men's plots if they do not receive a fair share of the returns from the cash crops. Thus, in such a gender unequal economic structure, trade promoting policies may have little effect upon export volumes, resulting in a so-called 'low supply response', with little effect on economic growth. At the same time, income inequalities between men and women will increase if cash crop returns flow to men only. Hence, Darity's model suggests that trade stimulating policies, such as a currency devaluation, might increase female poverty.

In order to measure the gender dimension of poverty, there are two variables available. First, the female income share, that is, the proportion of GDP earned by women, $[Y^f/Y]$ which measures women's relative income poverty compared to men. Second, the gender-related human development index [GDI], listed in the Human Development Reports published annually by UNDP. The GDI measures gender inequalities in the components of the well-known human development index [HDI], school enrolment, literacy, life expectancy and GDP [hence, this last component is the female income share of the first indicator]. Alternatively, the variable RSW [Relative Status of Women][7] may be used instead of GDI since this variable does not depend on the absolute GDP level of a country as do the HDI and GDI and hence RSW measures gender inequalities separate from levels of GDP.

From these variables, we can construct two gender and trade indicators related to poverty.

[1] trade elasticity of the gender gap in earned income

$d[Y^f/Y]/d[EX_{ij} + IM_{ij}]/GDP_i]$

[2] trade elasticity of the gender gap in human development

[2a] $dGDI/d[EX_{ij} + IM_{ij}]/GDP_i]$ or

[2b] $dRSW/d[EX_{ij} + IM_{ij}]/GDP_i]$

Employment

Nilüfer Cagatay and Sule Özler [*1995*] have shown empirically, with cross-country data, that with an increasing export orientation [related to structural adjustment, leading to a worsening of the income distribution], the share of women in the labour force increases. Their model includes a variable measuring feminisation of the labour force and controls for the well-known U-shaped relationship between women's labour force participation and GDP per capita[8]. This would lead to the following gender and trade indicator, with the numerator variable reflecting the female share in the labour force.

[3] trade elasticity of the gender gap in labour force participation

$d[L^f/L]/d[EX_{ij} + IM_{ij}]/GDP_i]$

Apart from an increase in female labour force participation, researchers also found increases in female employment shares with trade liberalisation, in particular in the export sector. Susan Joekes and Ann Weston [*1994*] find employment gains of trade for women in developing countries, both in export manufacturing as well as in the services sector. Moreover, they hold that

'[…] manufacturing export employment generally provides women in developing countries with better opportunities than alternative employment even if the conditions are poor compared to those available for men in the same country, or for women in manufacturing industries in developed countries' [*Joekes and Weston, 1994: 82*].

Adrian Wood has studied employment effects of trade between developed and developing countries and he argues that increased trade has decreased manufacturing employment for unskilled workers in developed countries. On the gender distribution of this employment loss in OECD countries, Wood [*1991*] has a remarkable statement: while female manufacturing employment has increased in absolute terms as well as relative to men in developing countries, it has not fallen, as a share of total manufacturing employment, in developed countries. Wood is able to attribute the stable female share in manufacturing employment in developed countries to trade because his indicator controls for economy-wide trends in female intensity [including the U-shaped curve of female labour force participation with income per capita][9]. One of Wood's own explanations for this asymmetry in the female employment share is that developed countries might have replaced male labour with cheaper female labour in import substituting industries. Robert Lawrence [*1996*] finds that outsourcing of low skill production by OECD based multinationals leads to employment losses or to stagnating employment growth in OECD manufacturing. His findings seem to confirm the Wood asymmetry, since his results suggest that the biggest employment loss due to outsourcing is in female intensive sectors, such as textiles.

Others, however, challenge Wood's research findings on empirical grounds, and argue that the female share of manufacturing employment did go down in OECD countries, as predicted by trade theory. David Kucera and William Milberg [*2000*] have applied a factor content analysis to gender effects of trade between OECD and non-OECD countries, challenging the Wood asymmetry. They found that in most of the ten OECD countries included in their study [particularly Australia, Canada, Japan, the Netherlands and the United States] trade-related

employment losses disproportionately affect women workers. This result is calculated over a longer period of time than Wood did in his study. Kucera and Milberg introduce three indicators to measure gender effects and correct for technological change as well as for trade volume volatility and increased female labour force participation. The explanation they provide for the gender bias in employment losses in the OECD because of trade with non-OECD countries lies in the type of industries that suffer from import penetration from developing countries. These industries are, among others, textiles, apparel, leather, and leather goods industries.

Bartholomew Armah [*1994*] has studied trade effects on women's employment in the services sector in the US in more detail. His study begins by distinguishing trade sensitive service industries, like finance, transportation, wholesale and retail trade, as well as health, education, and social welfare, which are all relatively skill intensive. From these US data it appears that women are more often employed in trade sensitive services sectors than men, even more so for black and hispanic women. Hence, women appear to be more vulnerable to employment losses due to international trade than men, with minority women being most vulnerable. In a follow-up article, Armah [*1995*] found that male workers benefited more from employment gains in the services sector than female workers, even though men in this sector were less educated and less skilled compared to female employees. He also assessed that the trend is worsening: employment gains of trade in the services sector are decreasing, while women's gains, particularly minority women's gains, decrease fastest. In his conclusions, Armah notes that apparently not just comparative advantage explains trade in services, with high skill levels being the US comparative advantage, but also other factors, such as economies of scale. These may explain why low skill jobs in the US did gain rather than lose in international trade in services.

Among such other factors, like economies of scale, are also labour market policies and social policies, which are the object of a study by Mary Gregory [*2000*]. She has studied the consequences of trade and other macroeconomic trends for the labour market position of the low

skilled in Europe. She concludes that on average labour market policies and social policies in the EU have helped to protect the disadvantaged workers, but in doing so, they benefited women less than men. Despite women's increased educational attainments, in many European countries now equal with men, women earn lower wages, are more likely to be employed in low skilled jobs and experience higher unemployment rates. This makes women in Europe more vulnerable to trade than men.

Relationships found in the literature between trade and female employment share can be described with the following two indicators:

[4] trade elasticity of gender inequality in export employment

$$d[L^f_{ex}/L_{ex}]/d[EX_{ij} + IM_{ij}]/GDP_i]$$

This indicator uses the female employment share in the export sector $[L^f_{ex}/L_{ex}]$, but may just as well, if data permits, measure more detailed sectoral female employment shares in agricultural export production $[L^f_{ex-agr}/L_{ex-agr}]$, in manufacturing export production $[L^f_{ex-man}/L_{ex-man}]$, or in the exports in services $[L^f_{ex-ser}/L_{ex-ser}]$.

[5] trade elasticity of gender inequality in employment in import competing sectors

$$d[L^f_{imc}/L_{imc}]/d[EX_{ij} + IM_{ij}]/GDP_i]$$

Indicator number five is the mirror image of indicator number four, since it does not focus on export but on import competition. The gender variable for this elasticity $[L^f_{imc}/L_{imc}]$ measures female intensity in employment in import competing sectors. Again, this variable could be further disaggregated: $[L^f_{imc-agr}/L_{imc-agr}]$, $[L^f_{imc-man}/L_{imc-man}]$, and $[L^f_{imc-ser}/L_{imc-ser}]$.

[6] trade elasticity of the gender gap in unemployment rates

$d[U^f/U^m]/d[EX_{ij} + IM_{ij}]/GDP_i]$

The gender variable in this elasticity measures the female unemployment rate over the male unemployment rate $[U^f/U^m]$, and may also be disaggregated over export or import competing sectors. This indicator seems to be relevant given the simultaneous increases in female labour supply and female labour demand with a country's increasing export orientation. Hence, if supply grows even faster as demand, female unemployment rates may go up as Jayati Ghosh [*1996*] indicates for Asia over the 1980's and early 1990's.

A final indicator in the category of employment related gender and trade indicators is similar to the above listed indicators on female intensity of employment, but uses a specific variable for the measurement of gendered job segregation. This is the Index of Dissimilarity [ID][10], which might be disaggregated over export and import competing sectors.

[7a] trade elasticity of gendered job segregation

$dID/d[EX_{ij} + IM_{ij}]/GDP_i]$

[7b] trade elasticity of gendered job segregation in the export sector

$d[ID_{ex}]/d[EX_{ij} + IM_{ij}]/GDP_i]$

[7c] trade elasticity of gendered job segregation in the import competing sector

$[ID_{imc}]/d[EX_{ij} + IM_{ij}]/GDP_i]$

Wages

In the literature and in particular in the two special issues of *World Development* referred to
regularly in this paper, there are various contributions on the relationship between trade and the
gender wage gap. Stephanie Seguino [*2000a and 2000b*] provides an insightful analysis of the
relationship between gender inequality, investment, and growth. In these two articles, Seguino
challenges a recent World Bank study by David Dollar and Roberta Gatti [*1999*], who argue that
gender inequality is bad for growth. Dollar and Gatti use differences in school attainment
between men and women and differences in male and female life expectancy as variables that
influence GDP growth. They conclude that the wider the gender gap in these variables,
particularly in education, the slower economic growth, because human resources are wasted,
which is inefficient. Hence, their policy advise to developing countries is to reduce gender
inequality in order to stimulate economic growth. Seguino however, uses a different variable to
measure gender inequality: the male/female wage gap. In her cross-country regression analyses
Seguino shows that wage inequality and GDP growth are positively correlated. In other words,
the wider the wage gap, the higher growth. Comparing her variable with those of Dollar and
Gatti, Seguino finds that wage inequality has a much stronger [and positive] effect on growth than
inequality in the educational and health variables analysed by Dollar and Gatti. She provides two
explanations for the unfortunate relationship she found between gender inequality in wages and
economic growth: [1] low female wages represent an important comparative advantage for export
industries which employ predominantly women, and [2] a lower total wage bill in an industry
increases the profit rate, and hence, resources available to import the latest technology.

In a structuralist model, Elissa Braunstein [*2000*] assesses gender effects of open
economies with high capital mobility. Braunstein's model indicates, parallel to Seguino's model,
that if women's relative wages would rise, output would decline. Hence, two very different
models indicate that the gender wage gap is positively related to export-led growth. In a model

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exercise, Braunstein analyses the possible effect of more gender equality in the household through the division of labour over paid and unpaid work. She suggests that if women would gain more autonomy from men in terms of a more equal sharing of housework, output would increase, because women would have more time available for a labour market supply increase. So, in Braunstein's model, export oriented economic growth benefits from more gender equality in the household but not from increased female bargaining power vis-à-vis capital, and subsequent higher wages. The studies by Seguino and Braunstein hence suggest that gender inequality influences trade, in particular through the gender wage gap, while in a dynamic perspective, trade may reinforce women's low wages compared to men's wages, in particular when export sectors employ predominantly female labour.

In order to further analyse the wage effects of female intensive export manufacturing, Marzia Fontana and Adrian Wood [*2000*] have constructed a model for a single country, Bangladesh. They developed a computable general equilibrium model [CGE] which distinguishes between male and female labour as well as unpaid labour and leisure. As a model exercise, the effects of female intensive exports are measured [in Bangladesh mainly garments]. Hence, female employment rises more than men's, both in manufacturing as well as on average. Women's wages will rise, whereas men's wages will decrease, reducing the gender wage gap, and contributing to a large increase in the female wage bill. So, the CGE model suggests, as expected from neoclassical price theory, that female wages will rise with increased female intensive exports. But this type of model ignores the institutional factors that press for low female wages as these were pointed out by Seguino.

On the US economy, Robert Baldwin [*1995*] finds that wage differences among women have increased twice as much compared to wage differences among men, and also in the UK and France wage inequality increased more among women compared to men. Contrary to the 'Wood asymmetry', this may indicate a trade-off caused by trade between the US and developing

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countries, in which women workers in developing countries gain and women workers in the US lose in terms of relative wages. For Japan, Yumiko Yamamoto [*2000*] found a similar disadvantage for women as Baldwin found for the US. Her preliminary conclusion from analysing data over the period 1970-1994, is that in relatively female intensive sectors, both men and women see their wages decline, but women more then men. Greater capital intensity seems to improve earnings for both sexes, but more so for men than for women. Finally, Gunseli Berik [*2000*] focuses on the experience of Taiwan, a country that exposes a continuous success of the export-led growth strategy. Her case study shows that with time, women's employment share in export manufacturing decreases while the gender wage gap reduces, but only because men's wages suffer more than women's wages.

This brief literature review on the relationships between trade and the gender wage gap suggests that the relationship may be different for developed countries compared to developing countries, whereas the type of model one chooses suggests whether the relationship is positive or negative. So, whatever the relationship may be, it seems plausible to expect some effect of trade on the female wage gap. This leads to the formulation of the following indicators:

[8] trade elasticity of the gender wage gap

$$d[W^f/W^m]/d[EX_{ij} + IM_{ij}]/GDP_i]$$

This indicator may be disaggregated for various sectors as well as for export and import competing sectors of the economy.

[9] trade elasticity of relative women's wages in the export sector compared to other sectors

$$d[W^f_{ex}/W^f]/d[EX_{ij} + IM_{ij}]/GDP_i]$$

This indicator measures the difference in women's wages in the export sector compared with average women's wages across sectors.

Care economy

Gender impacts of trade on the care economy involve impacts on women's and men's unpaid labour time [in housework, childcare, health care for family members, subsistence production, and voluntary work in communities], as well as impacts on livelihoods, in particular food security. As a residual variable of paid and unpaid labour time the variable of leisure time comes into the picture, an indicator for women's wellbeing addressing the problem of female time poverty. Korkut Ertürk and Nilüfer Cagatay [*1995*] present an empirical analysis of the relationships between feminisation of the labour force, unpaid housework, and economic growth through export orientation. Their Post-Keynesian model assumes feminisation of the labour force to be included in the investment function [women earn lower wages than men so more female labour implies a cost advantage for a firm], and intensity of female household labour as part of the savings function [unpaid production of household goods and services saves on household consumption expenditures]. In an application of their model to Turkey, the gender variables in the savings function appear to be inversely related to household income, whereas the gender variable in the investment function is positively related to GDP growth. The authors expect a different effect for high income and low income countries: in low income countries, feminisation of the labour force is less likely to support export-oriented economic growth than in high income countries.

William Darity's [*1995*] model as discussed earlier, suggests that with an increase in exports, women's unpaid labour time as well as their leisure time reduces, and more so the more

control men have over women's labour. Also Fontana and Wood [*2000*] looked at consequences in their model exercise of female intensive export growth in Bangladesh for women's unpaid labour time and leisure time. They conclude, like Erturk and Cagatay and Darity, that the increase in women's paid employment in the export sector is at the cost of women's leisure time and unpaid labour time, more so than for men. The negative consequences of such increases in women's paid and upaid labour time have been reviewed by Maria Sagrario Floro [*1995*]. She has analysed a variety of case studies on combined effects of structural adjustment and export orientation of developing countries on women's unpaid labour. The studies that Floro reviews show that structural adjustment as well as export orientation require not only changes in the labour market behaviour of households, but also adaptations in unpaid tasks, use of public services, food consumption, and the strategies to combine paid labour with childcare, housework and community work. Floro concludes from these studies that it is in particular women who bear the burden of these adjustments in households, which shows from their increased paid and unpaid labour time and their increased work intensity. Floro finds studies that indicate that these increases in female time use have negative effects on women's wellbeing as well as on child wellbeing.

In order to capture the effects of trade on gender inequality on the care economy, the following four indicators can be derived from the literature:

[10] trade elasticity of the gender gap in unpaid labour time

$$d[UNPT^f/UNPT^m]/d[EX_{ij} + IM_{ij}]/GDP_i]$$

[11] trade elasticity of the gender gap in leisure time

$$d[LT^f/LT^m]/d[EX_{ij} + IM_{ij}]/GDP_i]$$

The gender variable in these indicators measure women's unpaid labour time relative to men's [$UNPT^f/UNPT^m$] and women's leisure time relative to men's [LT^f/LT^m].

[12] trade elasticity of women's purchasing power for food

$$d[[Y^f/\text{female population}]/P_{food}]/ d[EX_{ij} + IM_{ij}]/GDP_i]$$

The gender variable in this elasticity measures women's purchasing power for food [[Y^f/female population]/P_{food}]. This variable reflects women's gender role in some cultures to provide their household with food from their own income or production [particularly relevant for sub-Saharan Africa as well as for female headed households in urban areas across the world]. This indicator may be relevant only in the case of a substantial share of agricultural exports in a country's trade volume, since only then a crowding out of food production, and hence increasing food prices, might be expected.

[13] trade elasticity of children's wellbeing

[13a] $dCHILDMALN/d[EX_{ij} + IM_{ij}]/GDP_i]$

[13b] $dCHILCAREWAIT/d[EX_{ij} + IM_{ij}]/GDP_i]$

The gender variable in these last two indicators is, like in the former one, actually an indirect gender variable: it does not measure gender differences but consequences of women's gender roles resulting from a particular gender division of labour in the household on children's wellbeing. This variable might have different shapes for developed and developing economies. For developing economies the relevant variable might be the rate of child malnutrition [variable named CHILDMALN], while for developed economies, the relevant variable might be the length of waiting lists for [quality] childcare [variable named CHILDCAREWAIT]. In both cases, there

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are two options for the denominator: either, as in the indicators above, trade variables, or women's employment share in export industry corrected for trends in female labour force participation $[L^f_{ex}/L_{ex}]/L^f$.

CONCLUSIONS

The literature reviewed in this paper for the development of gender and trade indicators shows that mainstreaming gender into trade policies is not an unimportant matter: trade does appear to impact upon gender relations in a variety of ways. The set of thirteen gender and trade indicators presented above is constructed in such a way that the indicators are able to reflect such impacts. However, the indicators need to be further substantiated by detailed research, at regional level, country level, and sector level, taking into account the peculiarities of each trade relation and institutional setting in which trade takes place. As the literature indicates, gender impacts may be positive or negative, depending on the pattern of trade, the volumes of imports and exports, the sectoral distribution of exports and import competition, the skill level of male and female employment, labour market policies and institutions, laws and the enforcement of anti-discrimination laws, the gender division of labour in households, and the cultural definition of male and female roles in the economy at large, including the unpaid care economy. Although research on gender and trade is still very limited, the available research points at contradictory gender impacts of trade. Some studies suggested that the gender wage gap reduces with trade, whereas other studies have argued that competition in export markets urges employers to keep women's wages low. Some authors found a trade-off of female manufacturing employment between North and South, while others did not find such a North-South divide, or they suggest there is a simultaneous shift of female employment from export production to import competing

sectors in the North. But most model exercises and empirical case studies discussed above suggested that an increase of female employment in exports has a negative impact on the care economy, in particular on the leisure time of women and on children's wellbeing.

If the indicators proposed here are to be used as a tool for gender mainstreaming in trade policy, more efforts will be needed also in the collection of data. Employment and wage data need to be collected with gender disaggregation at the sector level, and distinguishing export sectors from domestic and import competing sectors. Data on the care economy need to be collected beyond the case study level and into standard socio-economic statistical databases. In particular, data on women's and men's unpaid labour time and leisure time is needed, as well as data on formal and informal childcare arrangements, household food security and nutritional status of children in regions with intensified trade activities.

The application of the indicators for the monitoring of particular trade agreements and trade relations are expected to provide insights into possible negative impacts of trade on gender equality. This information might then be used to inform policy measures that would bring consistency between trading partners' trade policies and gender policies. Two types of measures might be thought of: direct and indirect trade policy measures. Direct policy measures to prevent or to redress negative gender impacts would include actions such as the inclusion of gender expertise in trade delegations, stimulation of investment into particular sectors of a trading partner, or technical support in the enforcement of labour laws on equal pay for equal work in export sectors. Indirect policy measures are not part of trade policies but would be implemented in other policy areas which form the institutional setting in which trade takes place, such as labour market policies in particular addressing the problem of gendered job seggregation, social policies including child care policies, fiscal policies, and policies in the area of human resources development.

The set of gender and trade indicators presented in this paper is however only one way to address possible negative linkages between trade and gender. They need to be integrated into a wider set of policy tools, such as a broader trade impact analysis, agenda setting for WTO ministerial meetings, and discussions about the relationships between trade and social and environmental issues within bilateral trade negotiations.

NOTES

[1] At the same time, mainstream economists keep on defending the position that free trade is the best option, as it appears from recent titles such as 'Free Trade Today' by Jagdish Bhagwati [*2002*], 'Free Trade Under Fire' by Douglas Irwin [*2002*], 'Why the Preaching Must Never Stop: Henry George's and Paul Krugman's Respective Contributions to the Free Trade Debate' by Laurence Moss [*2001*], or 'How Nations Grow Rich: the Case for Free Trade' by Melvyn Krauss [*1997*].

[2] Mainly women's networks of activists and researchers have pointed at the gender dimension of trade impacts. For example, the International Gender and Trade Network [IGTN] and the Informal Working Group on Gender and Trade [IWGGT] with members in Africa, Asia, Latin America, Europe and North America have lobbied the WTO on gender issues since the start of the WTO halfway the 1990's [*WIDE, 1996; 1997; IWGGT 1998; WIDE and other NGO's 1999; Angela Hale and Jennifer Hurley 2001; IGTN, 2001; IWGGT 2001*]. But also the UN has expressed concerns towards the WTO about gender inequality in trade liberalisation through the UN Economic and Social Council [2000], noting for example, that women were largely excluded from the WTO decision-making structures, and that the rules evolved by WTO are largely gender-insensitive.

[3] The progress of gender equality in the EU is well documented, for example in European Commission [*2000*]. The mainstreaming efforts are developed in a 'Community Framework Strategy on Gender Equality' for the period 2001-2005.

[4] Some authors hold that they are able to separate these factors. For example, Robert Baldwin [*1995*] argues that shifts in employment and wages depend less on international trade than on technology, labour supply, and the demand for goods and services. Also Robert Lawrence [*1996*] notes that it is not so much trade which is responsible for the loss in employment for low skilled labour in developed countries, but technological developments that reduce the ratio of blue collar to white collar labour everywhere, in OECD countries as well as in developing countries. Others argue that trade factors and other factors cannot be separated in the models used so far. For example, Edward Leamer [*1999*] admits that models based on the Heckscher-Ohlin theory as well as the Stolper-Samuelson theorem are simply not able to disentangle trade and technological change as underlying causes of changes in relative wages for low skilled labour between developed and developing countries.

[5] For arguments in favour of this measure, see Dani Rodrik [*2000*].

[6] See, for example, Elson [*2000*], who provides an overview with quantitative and qualitative data on the status of the world's women.

[7] See for the calculation of the RSW index Geske Dijkstra and Lucia Hanmer [*2000*].

[8] The U-shaped relationship between female labour force participation and economic growth reflects a global trend that with increasing levels of economic development, female labour force participation first decreases with the transition from a least developed country to a middle income country, but then starts to increase again when countries further increase their GDP per capita. For literature on this phenomenon, see, for example, Rekha Mehra and Sarah Gammage [*1999*].

[9] Although within the group of developed countries, there are countries that show a decline in female intensity, like Germany by 10 per cent and the UK by 15 per cent.

[10] ID values range between 0 [no segregation] to 1 [total segregation]. ID is calculated in its most simple version as the female share in occupation x over the female share in the labour force minus the male share in occupation X over the male share in the labour force. See Richard Anker [*1998*] for a comprehensive analysis of gendered job segregation.

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