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Trade and Gender: Quantitative Approaches

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Introduction

- UNCTAD (Geneva, 1999 and Cape Town 2001) argued that gender dimensions should be mainstreamed into development strategies, including trade strategies. The reason given why this is important is that "women tend to be more vulnerable to the negative effects of trade liberalization and less able to benefit from the positive effects"
- Trade led growth may not be poverty alleviating until gender dimension of international trade was not taken duly into account. Women and poor people may be cluster in the low-skilled end of employment and in the lower end of the income scale.
- Greater gender equality can promote growth by increasing female productivity, which in turn increases the productive capacity of the economy as a whole (World Bank).

Introduction

- General trade theory tells us that in the process of opening up to trade, labour-abundant countries will experience job creation in these industries and over time a rise in the relative wage of unskilled labour will occur. Many of the labour-intensive industries are dominated by women, and consequently job creation will largely benefit women.
- The Heckscher-Ohlin model points to the factor-price equalization effect of trade. Countries abundant in unskilled labour tend to specialize in unskilled labour-intensive exports. Demand for lower-skilled labour will therefore rise.
- Trade led growth may be associated positively with *GDI*. It also seems intuitively correct because trade liberalization is a neutral productivity induced mechanism of selection and here women's advantages are used.

Differential Impact: Main Reasons

- Emerging from their double role in the economy: Productive sector and Reproductive sector. Reproductive role influences and shapes the way women can participate in the productive sector.
- Trade policies and trade liberalization could affect the ability of the government to finance social sector expenditures and a decrease in expenditures usually increases the work load of women;
- Existing gender inequalities may affect the outcome of trade policies since they often affect the women's ability to be efficient producers or eligible for new employments created by trade liberalization;

Differential Impact: Main Reasons

- Women and men have different access to economic resources (property, credits, training etc) which affects the efficiency of women's activities and their mobility within the economy.
- Limits their capacity to adapt to changing economic opportunities. This may make them more likely to be un- or under-employed or employed in sectors that offer less stability and remuneration

Trade and Gender Equality

Trade can affect gender equality in different ways, through (Anh-Nga Tran-Nguyen , 2004)

- A positive or negative impact on growth and employment opportunities;
- Competitive pressures, which may reduce or encourage gender discrimination, in particular wage differentials;
- Facilitating or raising barriers to access by women to resources and services; and
- Multilateral trading rules, which may facilitate or constrain governments in applying policies or regulations that address gender inequality.

Channels Through Which Trade Affects Women and Men

- Main mechanisms or channels can be identified:
- (1) Relative price of goods (+ve or -ve)
- (2) Employment (+ve or -ve)
- (3) Wages (+ve or -ve)
- (4) Flow of Information (+ve)
- (5) Real income (+ve or -ve)
- (6) Consumption (+ve or -ve)
- (7) Government revenue-Group Specific effect on size and composition of expenditure (+ve or -ve)

Potential Trade Impact on Employment

Potential Positive Effects	Potential Negative Effects
<ul style="list-style-type: none">• Increase in job opportunities and possibilities of alternative employment• Greater access to income and better work conditions• Opening of new markets for goods and crafts.	<ul style="list-style-type: none">• Poor quality of opportunities due to growing competition• Insecurity of employment• Casualisation• Loss of traditional sector activities because of foreign competition

Potential Trade Impact on Public Service availability

Potential Positive Effects

- **More efficient services adapted to women's specific demands**

Potential Negative Effects

- **Decrease in service availability in some areas because not deemed profitable**
- **Increase in the cost of services and medicines**

Potential Trade Impact on Price effects

Potential Positive Effects	Potential Negative Effects
<ul style="list-style-type: none">• Growing availability of cheaper foodstuff and goods	<ul style="list-style-type: none">• As local production is displaced, gradually rising price of goods, and greater sensitivity to fluctuating exchange rates

Potential Trade Impact on Wage Gap

Potential Positive Effects	Potential Negative Effects
<ul style="list-style-type: none">• Trade liberalization can decrease the wage gap between men and women as both work to their comparative advantages .	<ul style="list-style-type: none">• Competitive pressure may drive wages down as firms seek to minimize costs .• This cost may be disproportionately borne by women.

What does research indicate?

- Research indicates an increase in female wage employment due to increase in exports.
- Wage employment has improved their position in society.
- Women are integrated at the low end of the global market
- The most common view seems to be that while the employment consequences of increased trade are negative in the North, the South is likely to benefit from trade expansion.
- However, not all regions of the South have been affected in the same way, with major gains concentrated in South East Asia while Africa appears to have been unable to take advantage of these international developments.

What does research indicate?

- Working conditions are poor. However, numerous studies have found that wages earned in MNCs, including in export processing zones generally exceed the alternative sources of income for women (Joeke, 1999).
- The impact on gender depends on the division of labour between men and women in the society. In some poor countries women play an important role in distribution and sales of the products from farms and fisheries, a role that is enhanced with the openness to trade.

Some of the constraint in gender Research

- Widely prevalent view of gender neutral trade effects.
- Lack of gender disaggregated data
- Lack of motivation in the mainstream economic research.
- Lack of expertise in taking into account the gender dimensions of international trade.
- Lack of informed stakeholders, particularly in informal and unorganized sector.

Types of Research

- Opinion expressed by experts (Journalistic).
- Some Cases Studies based on some interviews.
- Descriptive studies analysing employment and wages in exporting industries from a gender perspective
- Based on econometric analysis of data
- Gendered SAM based multiplier models
- Based on Gendered CGE modeling
- Most of the research, lacking multi-dimensionality in treatment. Urgent need to undertake trade and gender links in multidimensional framework based on hard statistical reasoning.

Trade and Gender-Brief Summary of UNCTAD India studies

- Trade openness and Gender empowerment has been found to be positively associated.
- Women employment has increased due to increase in trade flows due to trade liberalization.
- Reinforced from primary survey where increase in export demand has been identified by 34% of the respondents as the major factor, which contributed to the increase in employment in recent years.
- Trade has poverty reducing impact on gender poverty due to its positive effect on women employment and wages.
- Trade has found to have differential effect in different sectors in India.
- The study on “Impact of Trade and Globalization on Gender in India” indicates an increase in women employment to the extent of about 5-10%.
- The study of Women Workers in Fisheries Sector reveals that women’s employment in recent years as a whole has increased in this sector due to export growth. Majority of female workers (58.6%) in fisheries sector were of the view that over the last few years, there has been an increase in the wage rate in the range of 5-10%.

Trade and Gender-Brief Summary of UNCTAD India studies

- Textiles and wearing apparel, Plantation Sector, services (particularly IT sector), fisheries sector and handicrafts it is the export demand that contributed to increase in women employment.
- For instance, Exports of Indian natural rubber increased from US\$ 295 million to US\$ 662 million during during 1998-99 to 2004-05, about 124 percent in value terms. The employment of women in this sector has risen by 14.4% while employment of men has risen by 4% over the same time period. Also the share of female employment in total employment in this sector has risen from 38.08% to 40.37% in 2000
- During 2002-2005, approximately 200 percent increase has been recorded in the export of service sector from India. Women share in health services, financial intermediation and computer aided services has increased in the range of 12 to 26 percent

Trade and Gender-Brief Summary of UNCTAD India studies

- In handicraft sector, particularly carpet, the present study reveals that 62.5% of male and 71.3% of female workers observe positive change in their employment and wages in the consequence of increased exports of carpets to the world market.
- In Carpet handicraft sector, more than 81% of total respondents say that employment has increased in recent years and increase in export is the important factor. In the span of five years since 1994-95, exports of handicrafts grew by 89 percent in rupee terms and 41 percent in dollar terms; from a level of Rs. 3,738 crore in 1994-95, they touched Rs. 7,072 crore in 1998-99. Export of carpet handicraft items has increased by 70 percent during the period of 1998-99 to 2004-05.

Trade and Gender-Brief Summary of UNCTAD India studies

- Gender specific employment effects also reveal that women have borne the major brunt of fall in employment in case of decline of exports.
- For instance, a sharp fall was witnessed in the tea exports from \$542 million in 1998 to \$209 million in 2003, approximately 159 percent in value terms. Average daily total employment in tea plantations has declined by 12% while there was 15% fall in the average daily employment of women. The rate of decrease in employment of women is relatively more compared to the rate of decrease in employment of men at the all India level.
- Similar trend seems to emerge in coffee plantation. The effect of declining exports has been one of the causes of falling employment. The major decline has been observed in the average daily employment of women (11.5%). Also the share of women in total employment has fallen from 53.82% to 47.79% in 2000

Trade and Gender-Brief Summary of UNCTAD India studies

- The studies reveal that paid wage employment is positively affected the intra-household dynamics. Increase in female wage employment has improved their position in society as well.
- However, casualisation of labour has been reported to increase by majority of the respondents for both gender categories.
- Given the low opportunity cost, any incremental employment may be welfare generating.
- Still beneficial in counterfactual sense.
- The study further reports that the working conditions remained, by and large, unaffected during the last five years.

Data and Methodologies

- Both primary and secondary is required.
- Following Techniques may be applied:
- Descriptive Analysis of quantitative and qualitative variables.
- Correlations/Partial Correlations
- Parametric Test (ANOVA)/Non-Parametric Test for comparing mean income, wages between men and women
- Regression Approach-Cross Section, Time Series and Panel Approach
- Cross Section analysis can be based both on primary and secondary data. Secondary data is needed for time series and panel regressions.
- SAM based Models
- Computable General Equilibrium (CGE or AGE)-Welfare Implication and Inter Sectoral Dynamics

Possible data Sources

- Primary Data based on a questionnaire
- Focused Group Discussions and extract relevant information
- Secondary Data Sources: UNCTAD for Trade and Tariff Statistics.
- UNDP for some empowerment measures
- ILO/KILM for Gender Specific Employment Trend
- Country Survey of Industries

Possible data Sources

- World Development Indicators, World Bank
- Country Social Accounting Matrix
- Published and Unpublished (raw) data from National Sample Surveys
- Report of Sectoral Ministries.
- Economic Survey of Each Country
- *Gender Development Report* (Each Country)
- *Occupational Wage Surveys*
- *Statistical Profile on Women Labour, Labour Bureau, Ministry of Labour*

Analysis Based on Secondary Data-Few Illustrations

Pair-Wise Correlations

Correlations	GDI-TRADE	GDI- EXP	GDI-IMP	EXP-IMP
1997	0.30	0.38	0.20	0.82
1998	0.27	0.38	0.14	0.77
1999	0.29	0.40	0.16	0.80
2000	0.31	0.41	0.18	0.82
2001	0.33	0.43	0.20	0.85
2002	0.32	0.42	0.19	0.85
2003	0.28	0.39	0.14	0.82
2004	0.26	0.36	0.13	0.81
2005	0.33	0.40	0.23	0.82

Source: Shahid Ahmed (2008)

Pair-Wise Correlations

- The correlation coefficient between GDI and trade openness has been estimated for each year starting from 1997 to 2005.
- Results reveals that Export to GDP Ratio and Import to GDP ratio are positively associated as the correlation between them varies in the range of 0.77-0.85 during the period of 1997-2005. It is not possible to categorize economies as export oriented or import oriented. It also reflects that increasing export while restricting imports is not possible.
- The result also indicates that GDI and Trade Openness are positively associated.
- The result indicates that both export and imports are positively associated.
- However, there are strong associations between Exports to GDP ratio and GDI compared to Imports to GDP ratio and Trade openness.

Regression Results

Dependent Variable: GDI (Panel Regression)

Log GDI	Coef.	Std. Err.	z
Log(Trade (% of GDP))	0.067	0.009	6.97
Log(Share of women employed in the nonagricultural sector (% of total nonagr. employment))	0.002	0.0002	9.23
Dummy Variable	-0.124	0.011	-10.37
_cons	-0.292	0.021	-13.5
R-sq: within	0.2249	Wald chi2(3)	299.5 2
Between	0.4973	Prob > chi2	0
Overall	0.5058		

Source: Shahid Ahmed (2008)

Results of Panel Regression

- GDI values are regressed on Trade to GDP ratio, Share of women employed in the nonagricultural sector (% of total nonagr. employment) and Dummy variable for developing and developed countries.
- Share of women employed in the nonagricultural sector is taken as proxy for the industrial and service sector employment or indirectly for education and skill.
- The expected sign of coefficients of Trade to GDP ratio and Share of women employed in the nonagricultural sector is positive.
- The result also reveals that mean GDI is significantly different in developed and developing countries.
- The coefficient of trade openness and Share of women employed in the nonagricultural sector (% of total nonagr. Employment) is positive and significant at 5 percent level of significance.

Effects of export shares as % of GDP.

Dependent Variable: GDM			
Variable	Coefficient	t-Statistic	Prob.
C	-0.215541	-2.567421	0.0247
Export shares	0.032373	2.765054	0.0171
R-squared	0.389174	F-statistic	7.645521
Adjusted R-squared	0.338272	Prob(F-statistic)	0.017118

Source: Shahid Ahmed (2008)

Effects of export shares as % of SDP and SDP Growth Rate

Dependent Variable: GDM			
Variable	Coefficient	t-Statistic	Prob.
C	-0.49072	-2.11	0.058
Export shares	0.029172	2.49	0.03
Growth Rate of SDP	0.059993	1.27	0.232
R-squared	0.4668	F-statistic	4.82
Adjusted R-squared	0.3699	Prob(F- statistic)	0.0315

Source: Shahid Ahmed (2008)

Effects of Export Shares- Country Analysis

- The correlation between gender development index and export orientation of the states is positive (0.624) and significant.
- Growth rates of state domestic product does not improve status of female, probably SDP do not trickle down symmetrically across men and women.
- Trade led growth seems to lead to gender empowerment.

Impact of Total Demand Change, Exchange rate and Capital Formation on Trade in Fisheries

Source: UNCTAD India, 2008

Dependent Variables >>>	Pre 1991 Period		Post 1991 period	
	Change in Export Quantity	Change in Value of Export	Change in Export Quantity	Change in Value of Export
Constant	0.09 (0.07)	0.04 (0.09)	0.05 (0.18)	-0.10 (0.21)
World Demand for Fishery Products	-1.40** (0.83)	-3.17* (1.12)	3.19* (1.50)	2.78 (1.76)
Real Effective Exchange Rate	-1.42* (0.56)	-3.71* (0.76)	-0.19 (0.93)	-0.38 (1.09)
Gross Capital Formation in Fisheries Sector in India	-0.12 (0.34)	0.72** (0.46)	-0.311 (1.10)	1.105 (1.28)
Adjusted R ²	0.337	0.58	0.12	0.004
F-Values	4.23	9.74	1.56	1.01

Macroeconomic Model (Thirlwall Analysis of Trade) for Export Function

- The following estimating equations may be estimated.
- $EXPVCH = Y1 + y11 DEMCHt + y12 REERCH + y13 GCFCH + U1$ ---- (f)
- $EXPQCH = Z1 + z11 DEMCHt + z12 REERCH + z13 GCFCH + U2$ ---- (g)
- $EXPVCH = Y2 + y21 DEMCHc + y22 REERCH + y33 GCFCH + U3$ ---- (h)
- $EXPQCH = Z3 + z31 DEMCHi + z32 REERCH + z33 GCFCH + U4$ --- (i)
- $EXPQCH = Z2 + z21 DEMCHc + z22 REERCH + z23 GCFCH + U5$ ---- (j)
- $EXPVCH = Y3 + y31 DEMCHi + y32 REERCH + y33 GCFCH + U6$ --- (k)
- Where,
- $EXPQCH$ = Change in volume of exports
- $DEMCHt$ = Change in the total demand for fish and fishery products
- $DEMCHc$ = Change in the consumption demand for fish and fishery
- $EXPVCH$ = Change in value of exports products
- $DEMCHi$ = Change in the industrial demand for fish and fishery products
- $REERCh$ = Change in the real effective exchange rate
- $GCFCH$ = Change in the Gross Capital Formation in Fisheries Sector
- Regression on the above equations (f to k) was run on the data series for 1970–2004, 1970–90 and 1991–2004 separately.

Employment Functions-Indirect Approach

$REGEMP = F(FCPU, EXPVPU, VALOPO, D, DF CPU, DEXPVPU$
and $DVALOPU)$

Where,

$REGEMP$ = Per Unit Employment Regular,

$FCPU$ = Fixed Capital per Unit

$EXPVPU$ = Value of Export per Unit

$VALOPU$ = Value of Output per Unit

D = Dummy Variable, 0 for pre 1991 period and 1 for Post 1991 period

Remaining three variables, namely $DF CPU$, $DEXPVPU$ and $DVALOPU$ are the dummy variables multiplied by respective explanatory variables.

Unit = Per Enterprise

Employment Functions-Indirect Approach

- The same equation has been fitted to see the effect on Per Unit Employment Casual (CASEMP), Employment Ratio Casual and Regular (CASEMPREG), Per Worker Wage Regular in Rs per annum (REGWAG), Per Person Emolument Casual (CASWAG) and Average Wage Per Worker (AVGWG).
- In the absence of relevant gender disaggregated data for wages and employment, the above model helps us in drawing inferences on the impact of modernisation and trade on the dynamics of casualisation of the labour force. With this understanding that a larger chunk of the casual labour force constituted women and children at least in the sector we are concerned with, such an analysis will also help us in understanding the gender impact of trade and modernisation. Here, FCPU or fixed capital per unit of enterprise is considered as an index of modernisation, EXPVPU or export value per unit of enterprise is considered as an index of trade and, VALOPU or value of output per unit of enterprise is considered as an index of productivity of the sector.

Trade Effects on Employment and Wages

Source: UNCTAD India, 2008

Dependent Variable>>	1	2	3	4	5	6
	REGEMP	CASEMP	CASEMPREG	REGWAG	CASWAG	AVGWG
	Per Unit Employment Regular	Per Unit Employment Casual	Employment Ratio Casual and Regular	Per Worker Wage Regular in Rs per annum	Per Person Emolument Casual	Average Wage Per Worker
Constant	32.90* (3.41)	11.14* (0.74)	0.32* (0.01)	2475.55* (785.9)	8537.6* (2500.8)	3764.01* (988.3)
FCPU: Fixed Capital per Unit in Lakh	0.65 (0.59)	0.02 (0.13)	-0.003 (0.0031)	-280.075* (136.886)	-789.4* (435.6)	-386.58* (172.1)
EXPVPU: Value of Export per Unit in lakh	-0.049 (0.064)	-0.03* (0.01)	-0.0003 (0.0003)	-12.143 (14.810)	28.9 (47.1)	-2.83 (18.62)
VALOPU: Value of Output per Unit	0.090 (0.089)	0.04* (0.02)	0.0004 (0.0005)	71.194* (20.42)	21.1 (65.0)	59.73* (25.68)
D: Dummy Variable assumed to take value-1 after 1991	39.56* (11.497)	7.76* (2.50)	-0.0645 (0.0595)	3642.94* (2645.24)	1278.5 (8417.2)	2987.17 (3326)
DFCPU	-0.56 (0.60)	0.03 (0.13)	0.0031 (0.0031)	295.814* (138.98)	902.8* (442.3)	420.29* (174.78)
DEXPVPU	0.015 (0.06)	0.02* (0.01)	0.0004 (0.0003)	23.661** (15.476)	-18.4 (49.2)	13.88 (19.46)
DVALOPU	-0.056 (0.092)	-0.05* (0.02)	-0.0005 (0.0005)	-72.728* (21.068)	-44.5 (67.0)	-64.85* (26.49)
Adjusted R2	0.93	0.892	0.588	0.987	0.768	0.976
Residual DF	17	17	17	17	17	17
N	24	24	24	24	24	24
F	51.89	29.346	5.894	255.4	12.356	140.55

Trade Effects on Employment and Wages

- Trade and output had a differential impact on casual employment in the two periods.
- Modernisation seems to have no impact on casual employment.
- Though the trade impact of liberalisation is marginally negative in both the periods, the post-liberalisation phase has been in favour of casual employment compared to the pre-liberalisation phase.
- Output impact of trade liberalisation on casual employment was positive in the pre-1991 phase, but turned negative in post-1991 period.
- There was significant negative impact of modernisation on regular wage in the pre-liberalisation phase; indicating that before 1991, modernisation (FCPU) would entail a decline in the per person wage employed in the sector.

Employment Functions-Direct Approach

- $WOM = f(\text{Prod}, \text{Export}, \text{Wages and some other variables})$
- Where WOM is the female share of total employment,
- The key variable of interest is export in total output.
- Annual Survey of Industry (ASI) (code 262 for carpet and 263 for embroidery) in conjunction with export figures of textile products from Directorate General of Commercial Intelligence and Statistics (DGCI&S) were used.
- Analysis adopted a multivariate regression framework.
- Factory level data has been used here

Dependent Variable: Share of Female in Total Employment (WOM)

(Source: UNCTAD India, 2008)

Independent variables	Coefficients
Constant	-0.21 (-1.90)
log (prod)	-0.98** (-3.84)
log (export)	0.23** (4.13)
log (wage)	0.85** (6.48)
D	0.21** (4.91)
Adjusted R ²	0.98
D-W	2.40
N	16

Social Accounting matrix (SAM) Based Approach

- Macro Analysis
- “Circular flow of income” is captured, from production to value added (factor income) to household incomes to household demand and back to production.
- If gender disaggregated data is available, it is possible to simulate impact exports and imports on employment.
- SAM constructed here is for the financial year 2003-04 and consists of 46 sectors (UNCTAD India Study).

Inter-linkages in services: Direct and Indirect Impact

- This study makes an attempt to estimate the direct and indirect impact of exports of services on gender employment in 46 disaggregated sectors, which include 15 services sectors using Social Accounting Matrix (SAM).
- Direct impact of rise in 20% exports of services in six disaggregated services sectors from 2003-04 level on gender employment is estimated. To capture the indirect impact employment multipliers are generated for 46 sectors of rise in one unit (Rs. 0.1 million) exports of services.

Impact of Trade in Services on Gender Employment: Results

- Direct impact on women employment is found to be maximum in communication services and tourism along with 'other services'
- However, the results also show that in communication services, which is the fastest growing export sector, the difference in the employment generated for men and women is significantly high.

Results from other quantitative Research

Dependent variable, woman's share in employment
(Source: Nordås, 2003)

	Mauritius	Mexico	Peru	Philippines	Sri Lanka
Constant	3.20** (5.40)	-1.30 (-1.78)	2.33* (2.91)	-2.15 (-1.72)	-3.88** (-7.88)
ln exports	0.277** (12.72)	0.285** (3.95)	0.20** (3.75)	0.50** (5.83)	0.473** (17.20)
ln imports	-0.605** (-13.76)	-0.242** (-2.77)	-0.45** (-5.71)	-0.36 (-4.37)	-0.095** (2.94)
N	160	196	84	44	128
adjusted R ²	0.74	0.07	0.27	0.46	0.70

Dependent variable, In woman's employment
(Source: Nordås,2003)

	Mauritius	Mexico	Peru	Philippines	Sri Lanka
Constant	0.94* (2.07)	-2.48** (-4.87)	-0.668 (-0.76)	-1.58 (-1.97)	-1.908** (-3.72)
ln exports	0.32** (8.27)	0.11 (1.90)	-0.004 (-0.08)	0.272** (3.43)	0.25** (5.74)
ln imports	-0.49** (-10.50)	-0.05 (-0.92)	-0.06 (-0.75)	-0.259** (-3.63)	-0.182** (-4.57)
ln total employment	0.90** (14.6)	1.03** (19.86)	0.975** (10.89)	1.123** (10.33)	1.08** (18.40)
N	160	197	87	44	128
adjusted R ²	0.88	0.74	0.67	0.83	0.86

Results from other quantitative Research

- Nordas (2003) has demonstrated that there is clearly a positive correlation between women's share of employment and export in countries such as Mauritius, Mexico, Peru, Philippines, and Sri Lanka. The correlation stems from variations between sectors rather than within sectors over time, indicating that export-competing industries tend to employ women while import-competing industries tend to employ men. However, the statistical test yields a general result from which only a broad trend can be deciphered.

Effects of tariff abolition on employment and wages, Bangladesh (percentage changes from base case)

Source: Fontana, 2003

	F no ed	F prim ed	F sec ed	F post ed	Total female	Total male ¹⁴
Employment						
All market sectors, of which:	1.4	3.1	3.4	2.2	2.1	0.3
Grains	-1.7	-2.0	-1.9	-1.7	-1.8	-1.4
Commercial crops	1.7	0.0	1.5	1.7	1.6	2.0
Livestock and horticulture	0.2	-0.1	0.0	0.2	0.1	0.5
Fishing	0.6	0.3	0.3	0.6	0.5	0.8
Food processing	-2.8	-3.1	-3.0	-2.8	-2.9	-2.6
Garments	36.8	36.4	36.5	36.8	36.6	37.1
Other textiles	10.5	10.2	10.2	10.5	10.4	10.7
Other manufacturing	-13.0	-13.3	-13.2	-13.0	-13.1	-12.9
Infrastructure	0.2	-0.1	-	0.2	0.2	0.4
Trade	0.5	0.2	0.2	0.5	0.4	0.7
Transport	0.7	0.4	-	0.7	0.6	0.9
Public services	0.2	-0.1	-0.1	0.2	0.1	0.3
Financial services	-	-0.1	0.0	0.2	0.1	0.3
Domestic services	0.0	-0.4	-0.3	-0.1	-0.1	0.1
All social reproduction	-0.2	-0.4	-0.4	-0.2	-0.3	-0.1
All leisure	-0.3	-0.5	-0.5	-0.4	-0.4	-0.3
Hourly wages						
Absolute	1.8	2.9	2.5	1.7		
Relative to males*	0.9	1.8	1.4	0.5		

Source: Simulation results

*This is the difference between the absolute percentage change for females and the absolute percentage change for males. A positive value indicates that the female/male wage gap has narrowed.

Effects of tariff abolition on employment and wages, Zambia (percentage changes from base case)

Source: Fontana, 2003

	F no ed	F prim ed	F sec ed	F post ed	Total female	Total male
Employment						
All market sectors, of which	1.1	0.4	1.1	0.6	0.7	1.1
Groundnuts & horticulture	0.0	0.1	-	-	0.1	-0.2
Commercial crops	6.7	0.0	-	-	6.7	6.4
Food & livestock	-0.4	-0.3	-	-	-0.3	-0.6
Fishing & forestry	0.6	0.8	1.0	0.7	0.8	0.5
Maize	2.3	2.4	-	-	2.4	2.1
Infrastructure	5.7	5.8	6.0	5.7	5.9	5.5
Mining	13.8	14.0	14.2	13.9	14.1	13.7
Intensive-intensive manufacturing	0.8	0.9	1.1	0.8	0.8	0.5
Capital-intensive manufacturing	-1.8	-1.7	-1.5	-1.8	-1.6	-2.0
Market services	0.9	1.0	1.2	0.9	1.1	0.7
Trade & Transport	0.5	0.6	0.8	0.6	0.6	0.3
Public services	0.1	0.2	0.4	0.1	0.3	-0.1
All social reproduction	-0.5	-0.4	0.0	-0.1	-0.4	-0.4
All leisure	-1.1	-0.9	-0.4	-0.2	-0.8	-0.8
Hourly wages						
Absolute	1.0	0.8	0.4	1.0		
Relative to males	-0.8	-0.5	-1.1	-0.3		

Source: Simulation results

Gendered CGE Results

Source: Fontana, 2003

- Elimination of tariffs on traded market goods raises the average demand for market goods relative to non-market goods, female market employment rises in Zambia too, and so does the female wage rate, but by a smaller proportion than in Bangladesh.
- An important difference, however, is that in Zambia the gender wage gap widens, instead of narrowing as in Bangladesh.

Primary Data

- Based on detailed, interactive field level investigation of specific work locations where female work force is employed in abundance.
- These survey locations have been identified based on detailed analysis of secondary sources of information and also interactions with government officials dealing with concerned sectors.
- Some important variables discussed subsequently.

Primary Data: Few Illustrations

- **Level of education**
- **Job status** (1= Permanent, 2= Temporary, 3=Casual, 3=Contractual)
- **Change in your job status** in recent years? (1=Yes, 2=No)
- **Causes of changes in your job status?**
- **Gross family income** from all sources?
- **Period of Working/ employed at the present workplace?**
- **Shifted your job in the last five years?** (Numbers)
- **Approximate days employed in an year** (days)
- **Earning in a day** (Rupees)

Primary Data: Few Illustrations

- **Last five years the number of days for which you are able to get employment in a year** has (1=increased, 2=decreased, 3=remained unchanged)
- **Income level per month**
- **Causes of wages increase/ decrease in recent years?**
- **Degree of stress experienced at workplace**
(1=Increased, 2=Decreased, 3=Remain unchanged)
- **Most important reason for work (female worker only)**
(1=For supporting family, 2=To have a higher economic status, 3=For a sense of security, 4=To have financial independence, 5=To utilize my education, 6=To have my own status & positions, 7=To escape from domestic chores, 8=Any other, specify)

Primary Data: Few Illustrations

- **Overall employment**
- **Women's employment**
- **Possible reasons for increase/decrease in employment**
- If **women are benefited** by increased employment opportunities, which layer of women education are benefited most (1=Illiterate, 2=upto 5 standard, 3=6-10 standard, 4=Senior secondary, 5=Highly educated)
- The **casualisation of labour** in recent years has (1=Increased, 2=decreased, 3=No change, 4=Don't know)
- **Overall wages**
- **Women wages**
- **Discrimination** at work place
- Can you rate your **standard of living** during the last five years (1=Improved, 2=Deteriorated, 3=Remained the same)
- **Work conditions**

Impact of Economic Empowerment on Intra-Household Dynamics

- Eighteen different questions were asked to each female respondent that directly reflected her economic freedom and influence in the decision making process. These eighteen questions were repeated twice in the schedule. The first set of questions referred to the present situation while the second set pertained to the situation five-six years earlier. Each question had five possible answers, such as, (1) I decide (*code 1*); (2) I consult and decide (*code 2*); (3) We discuss and decide together (*code 3*); (4) I am consulted (*code 4*); and (5) I am not consulted (*code 5*). Taking a simple average of the responses for each female worker we calculated the *empowerment score* both for the present as well as five years in the past. The difference in the two empowerment scores is indicative of the direction and magnitude of change in female empowerment.
- How does your changed economic status affect **intra-household dynamics**? (1=Positively, 2=Negatively, 3=Remain unaffected)

Framework for Analysing Primary Data

- $Y_m = f(WOM, EDU, EMP, GLB)$
- $EMP = f(WOM, EMPS, EDU, GLB, FAM Y)$
- $Wages = F(WEI, WE, NHPD, NDPJ)$
- *Where Y_m : income of the women workers,*
- *WOM : women's employment measured by days of employment per year,*
- *EDU : education standard achieved by the women worker,*
- *EMP : number of counts of total responses on empowerment measured through 'yes' response to particular set of questions.*
- *$EMPS$ =Employment Status*
- *$FAM Y$: family income*
- *GLB is the globalization indicator, measured through responses to certain 'yes/ no' types of questions included in questionnaire.*
- WEI = Women's empowerment index
- WE = Women's education level attained
- $NHPD$ = Number of hours at work per day
- $NDPJ$ = Number of months in the present job

Dependent Variable: Empowerment of the Women Workers (EMP)

Independent Variables	Coefficients
Constant	-1.03 (-2.28)
days worked/year (WOM)	2.38** (4.68)
Employment status (EMPS)	1.92** (3.41)
education (EDU)	-1.03 (-2.22)
Globalization (GLB)	0.34** (2.01)
R^2	0.37
<i>F-statistics</i>	10.7
<i>N</i>	80

*Note: * and ** - statistically significant at 10 per cent and 5 per cent level respectively; figures in parenthesis indicate t-statistics.*

Dependent Variable: Income of the Women workers (Ym)

Independent Variables	Coefficients
Constant	25.64** (3.87)
days worked/year (WOM)	4.00** (1.77)
education (EDU)	-0.57** (-1.42)
empowerment (EMP)	-3.34 (-1.61)
globalization (GLB)	1.82* (2.26)
impact of export (IMPACTX)	1.78* (1.98)
effect of education (EEDU)	-0.33 (-3.38)
family income (FAMY)	0.4 (1.11)
R^2	0.6
<i>F-statistics</i>	12.7
<i>N</i>	45

Note: * and ** - statistically significant at 10 per cent and 5 per cent level respectively; figures in parenthesis indicate t-statistics.

Framework for Analysing Primary Data

- $E = F(\text{Gender, Region, Education, Employment Status, Sector, Age, Globalisation})$
- $E = \text{Daily Earnings}$
- $\text{Education} = \text{Measured in Years of education}$
- $\text{Age} = \text{Years}$
- Remaining Variables are measured using dummy variables
- $\text{CES} = f(\text{sector, region, location, employment status, effect of trade on female employment, marital status, daily earning, gross family income, years of education})$
- CES denotes the changes in the empowerment score for women.

Dummy for the Categorical Independent variable and the Base Categories

Categorical Variable	Dummy	Base
Industry (sector)	Tea, coffee, rubber, cashew, horticulture products, dairy, Textiles and clothing (including Handlooms), Handicrafts and Fisheries and marine products.	Chillies
Region (region)	1.Region 2 (Region 2) 2.Region 3 (region3)	Region 1(region1)
Employment Status (wrk_sts)	1.Temporary/casual/contract workers (temp) 2.Self-employed (self_emp)	Permanent workers (prmnt)
Gender (gender)	Female (female)	Male (male)
Effect of Globalisation on Overall Labour Market (empl_all)	1.Employment has decreased (all_decr) 2.Employment has remained unchanged (all_same)	Employment has increased (all_incr)

Dependent variable: Daily Earning (Male & Female).

Independent	Female		Male	
	Model I	Model II	Model I	Model II
Tea	13.993	14.032	-49.421	-49.484
	(2.36)*	(2.35)*	(12.14)**	(12.28)**
coffee	14.775	14.803	-43.612	-43.191
	(2.50)*	(2.50)*	(10.73)**	(10.31)**
rubber	47.711	47.694	-14.140	-14.046
	(7.84)**	(7.80)**	(2.35)*	(2.33)*
cashew	11.147	11.131	-27.127	-27.017
	(1.85)	(1.84)	(6.88)**	(6.85)**
horticlt	59.532	59.592	16.279	16.124
	(8.69)**	(8.66)**	(2.66)**	(2.66)**
diarie	47.506	47.527	18.383	18.256
	(6.82)**	(6.79)**	(2.59)**	(2.58)*
Textile	48.549	48.568	37.054	37.136
	(6.67)**	(6.65)**	(5.56)**	(5.58)**
hndicrft	18.125	18.125	7.384	7.409
	(2.83)**	(2.82)**	(1.20)	(1.21)
fish	34.663	34.653	-10.887	-10.892
	(5.51)**	(5.49)**	(2.57)*	(2.58)**

Dependent variable: Daily Earning (Male & Female).

Region 2	-2.978	-3.058	-29.454	-29.266
	(1.04)	(1.06)	(5.85)**	(5.80)**
Region 3	-14.847	-14.898	-23.599	-23.464
	(5.52)**	(5.46)**	(5.46)**	(5.44)**
temp	-20.191	-20.188	-23.604	-23.461
	(12.60)**	(12.58)*	(7.94)**	(7.92)**
self_emp	-22.103	-22.107	-24.079	-23.928
	(6.56)**	(6.56)**	(5.31)**	(5.29)**
All_decr	-2.983	-2.978	-9.011	-8.929
	(1.41)	(1.40)	(2.17)*	(2.15)*

Dependent variable: Daily Earning (Male & Female).

All_same	22.674	22.672	-0.168	-0.172
	(9.60)**	(9.60)**	(0.05)	(0.05)
Age	0.561	0.466	0.672	1.178
	(5.86)**	(0.92)	(4.35)**	(1.36)
Age ²		0.001		-0.007
		(0.18)		(0.58)
Yrs_edu	0.976	0.971	0.941	0.939
	(3.78)**	(3.78)**	(2.84)**	(2.83)**
Constant	35.925	37.673	102.793	93.708
	(5.35)**	(3.45)**	(15.27)**	(5.61)**
Observations	1,597	1,597	863	863
R ²	0.40	0.40	0.41	0.41

Robust t statistics in parentheses

**significant at 5 per cent; ** significant at 1 per cent*

Gender Sensitization of Trade Policy and International Trade Agreements

- Trade policies are neither gender neutral nor gender blind – they need to be sensitized to enhance gains for women.
- The focus of domestic trade policy, WTO agreements and FTAs should be on development as the end objective, not trade per se, and in this regard to promote gender empowerment.
- Trade and gender mainstreaming at the national and international levels is possible only when gender sensitization in trade policy is complemented by sensitization of and holistic efforts in all policy interventions, and not just trade.
- Effective gender-sensitive actions must be taken into consideration in devising trade policy measures such as tariffs and export and import taxes. For example, tariffs on intermediate inputs into productive sectors with high female employment should be reduced.
- Export-oriented sectors with high female employment should be encouraged and supported by the Government so as to strengthen opportunities for gender empowerment through these sectors.

Gender Sensitization of Trade Policy and International Trade Agreements

- WTO agreements and bilateral and regional free trade agreements, must feature gender-sensitive aspects. Necessary policy space could be provided to developing countries in trade agreements to provide specific support to women-oriented sectors. Trade liberalization should be paced in a way that more vulnerable sectors are liberalized slowly, or excluded from liberalization commitments, keeping in mind the possible fallouts for women workers employed in these sectors.
- Gender criteria should be introduced in international trade agreements allowing and promoting positive measures under Aid for Trade, development support, investment, and/or mitigating and accompanying stipulations that are designed in a way that explicitly addresses gender-specific measures. These include, for example, safety nets, provisions that promote women entrepreneurs, regulations that encourage supply capacity-building, and control over productive resources.
- There is need to reach common understanding among nations regarding definition of disproportionate gender impact, gender-sensitive sector, etc., and criteria of evaluation.

Gender Sensitization of Trade Policy and International Trade Agreements

- Careful attention is needed to avoid the mandatory integration of core labour standards into trade agreements as these can become sources of non-tariff barriers to exports. Incentive-based schemes as in some preferential trading arrangements could be considered in ensuring job creation with good labour standards. An example is the Cambodian experience with the “Better Factories Cambodia” scheme. Such trade incentive schemes should be part of a complementary set of policies to promote productivity and fairness, as well as ensure monitoring of compliance.
- Countries granting trade preferences could consider deepening the preference in sectors having significant employment of women in the exporting country. This would be particularly relevant for Generalized System of Preferences (GSP) schemes.
- Comprehensive gender assessments should be undertaken as integral parts of trade impact assessment of outcomes of liberalization under the WTO and free trade agreements. Comprehensive assessment of gender effects from trade reform is required to deepen the understanding of gender-specific effects of particular trade policy, accordingly and proactively providing for gender-sensitive negotiating strategies and policies.

Concluding Remarks

- Gender discrimination is less of economic issue and more of social and cultural nature.
- The forces of modernization reduce gender biases and process of globalization strength and speed up this force.
- Recent studies have revealed that women interact with and are impacted upon by international trade in their capacity as workers -whether rural or urban, as consumers and managers of households, as entrepreneurs and producers and buyers of goods and services.
- It is explicit from literature that trade liberalization has positive impact as well as negative impact. The nature and extent of impact may be attributed to sectoral and regional settings of women.
- Awareness programmes in gender sensitive sectors may be useful. State level intervention for the promotion of female education and health status in the state to reap the benefit of trade liberalization.
- Gender issues need to be integrated with the larger perspective of reforms. Need to recognize that women are stakeholders.
- Gender Sensitization of Trade Policy and International Trade Agreements is required to uplift the women.

Summing up

- Gender biases are multidimensional concepts and can only be corrected by multidimensional approaches.
- Trade and Gender links are complex and not linear. Sound research based on hard core reasoning is required to have positive agenda.
- Impact assessment require holistic approach.
- Academia, Civil Society and Development agencies need to play proactive role in examining gender specific effect and suggest appropriate policy.
- There is also a need to take a gendered approach in counterfactual context when examining international trade.

UNCTAD's Approach

- UNCTAD as the focal point for the UN-Inter-agency Task Force on Gender and Trade
- UNCTAD emphasize specific areas where gender should be specifically addressed includes:
 - 1-Gender in relation to the policy space debate,
 - 2-Gender impact assessment in respect of trade policies and trade liberalization,
 - 3-Data collection, especially disaggregated data reflecting differences between men and women in terms of economic opportunities,
 - 4-Analysis and research taking into account the gender dimension, and
 - 5-Empowering women as actors and as beneficiaries of trade policies aiming at economic growth.
- UNCTAD-XII acknowledged Trade and Gender as a key plank and will be focus area of its work in next four years

Thank You

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