Trade Reform and Gender in Mozambique[1]

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Abstract: This paper uses an economywide computable general equilibrium (CGE) model to study the impact of trade policy reform on male and female labor in Mozambique. It explores links between trade reform, product prices and wages by gender in an empirical trade framework that incorporates Stolper-Samuelson effects and sector-specific factors. The results indicate that trade reform has little effect on gender differences within skill categories but substantial effects on wage differentials across skills. Since a large share of women work as unskilled agricultural labor in Mozambique, women are strongly affected by any policy change that affects agriculture. Sensitivity analysis with respect to various elasticities indicates that these results are robust. From a policy perspective, the results suggest that it is far more important in Mozambique to be concerned with upgrading the skill endowment of the female labor force, which is well below that of men, than with the differential gender impact within labor categories of trade policy.

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1 Introduction

The growing mass of microeconomic evidence supporting the key role women play in the development process has led to repeated calls for carefully considering gender issues in economic policymaking. This debate extends into macro policy issues including structural adjustment programs and trade reforms, which require the inclusion of gender issues in economywide, multisectoral and macro models. For example, Çağatay, Elson, and Grown (1995) and Grown, Elson, and Çağatay (2000) argue that gender should be introduced into computable general equilibrium (CGE) models, and there are some examples of adding such a gender lens, including Arndt and Tarp (2000), Fontana (2003), and Fontana and Wood (2000).

Arndt and Tarp (2000) developed a CGE model of Mozambique that distinguished female labor in the agricultural sector, focusing on cassava as a low-risk insurance crop. They found that improvements in cassava technology greatly favor women, especially when risk is considered. This paper extends that model to support the analysis of trade policy reform, including changes in both the structure of protection and the balance of trade. The extension involves expanding the data on the gender composition of the labor force across the economy in order to capture the sources of female labor income.

In Mozambique, women have substantially lower educational attainment than men and tend to represent a larger share of the rural population. They are far more likely to work as unskilled agricultural labor than men, and the overwhelming majority of women in the labor force work in the agricultural sector. Consequently, the implications of trade policy reform for agricultural labor, especially unskilled agricultural labor, are particularly important for women. The CGE model is designed to capture these features of the labor market.

The analysis will focus on female wages, not household income. Issues of intra-household income distribution and female welfare are not addressed here. There is extensive work that indicates that, if female wages increase, the situation of females and children within households is improved (Haddad, 1999; Haddad, Hoddinott and Alderman, 1997; Quisimbing, 2003). A focus on female wages is therefore an important dimension of any comprehensive analysis of how females are affected by economic reform.

This paper explores the impact of traditional causal channels in trade theory. Trade theory suggests two mechanisms by which trade reform would differentially affect female and male wages. The first are Stolper-Samuelson effects whereby changes in the prices of traded goods potentially have a magnified impact on relative wages given sectorally differentiated factor proportions. The second is the specific-factors model which assumes that some factors are sectorally immobile and therefore their wage depends on prices of sectoral output. Both effects should be at work in Mozambique where agricultural labor can be viewed as sector-specific, and there are significant differences in the gender composition of employment across sectors.

The paper is structured as follows. Section 2 describes the gender features of the labor market in some detail, and Section 3 discusses how these features are incorporated into the CGE model. Section 4 presents model simulations and results, while Section 5 summarizes and concludes.

2 Economic Structure, Gender and the Labor Market

Data from the 1997 Mozambique census indicate that women have significantly lower educational attainment than men (NIS, 1999). According to the census, women represented about one of three persons who had completed upper primary school (EP2) and only about one in four persons who had completed any level of secondary school. While current enrolment rates paint a slightly more favorable picture, enrolments of boys still substantially exceed enrolments of girls especially at higher levels in the school system. This implies that gender inequalities in educational attainment (and hence human capital) are likely to endure for a considerable period of time (MINED, 2001). The 1997 census also picked up continued strong demographic effects of the civil war (which ended in 1992) and work-related migration. Due to these effects, women represented 55% of the working age population (defined as the population greater than 15) in rural areas in 1997.

Arndt (2003) used census data, national accounts data, labor force data, and education data to break the labor force in Mozambique into skill categories. Building on this work, we employed the same sources augmented by cross checks with the 2001 QUIBB survey (NIS, 2001) to disaggregate these categories by gender. The results are presented in Tables 1 to 3. The skill categories correspond to functionally illiterate and enumerate (unskilled), literate and numerate up to secondary or technical school level (skilled), and tertiary educated (highly skilled). The Tables illustrate an economy with an extremely thin human capital base, especially for women.[2]

Mozambique is an agricultural economy and women account for a major share of the labor force in this sector. From Table 1, 83% of the total labor force is employed in agriculture, and most are unskilled. Of the unskilled agricultural laborers, women represent 59%, which corresponds to 88% of total female employment. The fortunes of women in Mozambique are, for the foreseeable future, strongly linked to the performance of the agricultural sector.

The wage differentials by skill in Mozambique are substantial. From Table 1, skilled agricultural labor earns 64% more than unskilled agricultural labor, and unskilled non-agricultural labor earns four times as much as unskilled agricultural labor. The high skilled labor wages are 15 and 35 times the wage of unskilled agricultural labor. Given the preponderance of females in unskilled agricultural labor, there is great scope for improving the status of female labor by skills upgrading.

[2] More detail on gender issues can be found in UNDP (2002).

Tables 2 and 3 describe the structure of factor remuneration, including labor by gender, skill and sector. From Table 2, the preponderance of agriculture in factor returns mirrors the above observations on the distribution of employment. Most female income is from unskilled agricultural labor, and most agricultural income goes to females. After agriculture the next most important sector for unskilled female income is commerce, which represents 9% of their aggregate wage bill. However, commerce is important to skilled females, representing respectively 22% and 25% of income of skilled and highly skilled females, the largest single sector for both.

In terms of technology, Table 3 shows that the agriculture, forestry and livestock sectors are extremely intensive in their use of unskilled female labor. These sectors are also much less capital intensive than manufacturing, but more so than the service sectors. While commerce represents a large share of skilled and highly skilled female income, they represent relatively low shares of sectoral income, under half the shares for men.

The impact of trade policy on the economy depends strongly on the initial sectoral structure of the economy and on production technologies. Table 4 presents the sectoral structure of trade as well as rates of tariff protection. Of the sectors important to women, commerce is a completely non-traded sector and agriculture has modest trade shares in both exports and imports. Due to official exemptions and smuggling, average tariff rates, defined as total tariff revenue divided by the value of imports, differ substantially from posted tariff rates. Since the marginal import is assumed to be tariff laden, published tariff rates drive prices within the system and the resource allocation implications of trade reform will depend primarily on the published rates. More detail on the treatment of these differential published and average rates is provided in the following section as well as in Arndt and Tarp (2003).

Based on the trade shares, one would *a priori* expect that trade reform which favors the highly traded sectors should be less favorable to women than to men. Actual outcomes will also depend strongly on various elasticities, including factor substitution elasticities in production and trade substitution elasticities in export supply and import demand—the degree of tradability matters as well as trade shares. The impact of trade reform also depends on the sectoral structure of protection,how the reform is implemented, and initial rates of protection. Ultimately, the impact of trade policy on female labor is an empirical question.

3 Modeling Approach

The basic purpose of trade liberalization is to alter relative prices, including factor prices, in order to expand production in sectors with comparative advantage, attracting factors of production (labor, and capital) from other sectors. Similarly, reducing the trade deficit involves changing the volume of exports and imports. In both cases, the resulting changes in the structure of production and employment must be analyzed from an economywide perspective. In modeling this process, we link trade reform to the operation of factor markets with a particular focus on gender impacts.

We start from a standard, trade-focused CGE model, which contains three basic elements: (a) behavioral specification of economic actors; (b) operation of markets; and, (c) macro closure.[3]

Behavioral Specification

The model assumes profit maximization by producers under a sectoral translog technology. This treatment allows specification of separate substitution elasticities of male and female labor in production independently of substitution elasticities with respect to capital.

Consumers and government are assumed to demand commodities according to fixed expenditure shares, which is consistent with maximizing a Cobb-Douglas utility function. Investment expenditure is allocated in a Leontief fashion, with fixed real coefficients rather than fixed expenditure shares.

The model also incorporates the division of labor types by sex, as shown in Table 2. These labor types, differentiated by sex, constitute separate inputs into the translog production function. Elasticities of substitution between male and female labor of the same class were set at the fairly high level of three. Elasticities across labor classes employ the values used by Arndt (2003) regardless of sex.[4] In addition, skilled and unskilled agricultural labor categories are assumed to be immobile in that they cannot move (migration) to work in the non-agricultural sector.

This approach formally captures the concentration of female labor in the agricultural sector, and explicitly brings the implications of trade policy reform for female labor into consideration. Arndt and Tarp (2000) employed a similar approach to examine the interactions between agricultural technology, risk, and gender. More detailed formulations have been developed. For example, Fontana and Wood (2000) present a stylized model for Bangladesh, which explicitly considers household work (and leisure) along with the division between male and female labor.[5]

Foreign trade is specified using the Armington assumption.[6] There are constant elasticity of transformation (CET) functions for sectoral exports and constant elasticity of substitution (CES) functions for sectoral imports. The sectoral import substitution and export transformation elasticities used in this paper were estimated econometrically by Arndt, Robinson and Tarp (2002). For the crops and livestock sectors the import substitution elasticities are four while the export transformation elasticities are 1.5. For the non-agricultural sectors they are lower, ranging from 0.8 to 1.8 for imports and equal

[3] Löfgren, Harris and Robinson (2001) and Tarp, Arndt, Jensen, Robinson and Heltberg (2002) provide detailed explanations of the basic CGE model that was revised for the purposes of this analysis.

[4] We also do sensitivity analysis with respect to these elasticities.

[5] Our model does not consider intra-household distribution issues. This is an important area of research where much can be accomplished. For the case of Mozambique, a major constraining factor is a dearth of information on how resources are allocated within the household (Bell, 2003).

[6] See Armington (1969).

to 0.8 for exports. These numbers appear reasonable for low-income African countries, where agriculture is a large share of economic activity.

Strictly speaking, the Stolper-Samuelson theorem applies to an economy with only tradable goods. The theorem is weakened in the presence of non-traded goods. The properties of the theorem in Armington models have been worked out by Thierfelder and Robinson (2003), and they show that the magnification effect is considerably smaller or eliminated in models with imperfect substitutability for traded and domestically produced goods sold on the domestic market. Therefore, we would not expect to find as dramatic gender wage effects in empirical models as would be predicted by the simple theoretical model.

Operation of Markets

A CGE model simulates the operation of product and factor markets, solving for market-clearing prices and wages. It is a closed general equilibrium system, incorporating all elements of the circular flow of income and expenditure, and the corresponding real flows. Characteristic features of this type of model include:

a) Households must respect their budget constraint;
b) The domestic price of imports equals the CIF price multiplied by the exchange rate and the prevailing tariff rate plus any marketing margins or additional domestic sales taxes;
c) The value of imports cannot exceed the availability of foreign exchange;
d) Supply of commodities must equal demand for commodities (with inventory accumulation counted as demand);
e) Firms collectively cannot use more of any factor than the total availability in the economy;
f) Investment must be financed via foreign or domestic savings; and,
g) Government consumption must be financed through tax revenue, foreign grants (aid), or borrowing on domestic or foreign markets.

In this model, aggregate employment of all labor types is exogenous and wages adjust to clear labor markets. The model also accounts for marketing margins as described in Arndt, Jensen, Robinson, and Tarp (2000) and Jensen and Tarp (2002).

The structure of tariff protection in Mozambique is complicated by the existence of many exemptions, leading to a significant amount of trade entering the country free of tariffs. We capture this phenomenon in the model by differentiating between average and marginal tariff rates (see Arndt and Tarp, 2003). In this environment, tariff reform is complex and depends on what happens to exemptions as well as rates. In the model, the value of the tariff exemption is treated as a rent, some of which accrues to consumers of exempt imports and some of which is treated as a pure rent captured by re-sellers (people who import duty free and sell on the domestic market).

Finally, the model numeraire is the consumer price index.

Macro Closure

All economywide models incorporate macro balances. How equilibrium is achieved between savings and investment, the government deficit, and the trade deficit constitutes the "macro closure" of the model. Aggregate investment is determined by savings (private plus government plus foreign) so the model is "savings driven". Private savings are endogenous, depending on fixed savings rates by households and enterprises. Government expenditure is set as a fixed share of aggregate absorption in the economy, and the government deficit is endogenous. Foreign savings and aid are fixed exogenously and the real exchange rate adjusts to achieve external balance through changes in aggregate exports and imports.

4 Simulations and Results

Table 5 describes the simulations undertaken with the model. There are two sets of simulations. The first set is a tariff reform scenario where all non-exempt tariffs are set at a uniform rate (17%) which maintains total tariff revenue (see Table 4 for the tariff rates). The second and third simulations redo the tariff reform scenario assuming respectively low substitution elasticities between labor (both male and female) and capital and low substitution elasticities between male and female labor in the same skill category. The second set involves a macro shock, cutting foreign aid to government by 50%, and the same sensitivity analysis as in the first set.

4.1 Tariff scenario

The tariff scenarios yield a modest depreciation of the real exchange rate (1.4%) and virtually no change in aggregate trade flows (Table 6). They also have a modest impact on the structure of production (Table 7), with agriculture gaining and mixed results in the manufacturing and services sectors. In the first tariff reform experiment all wages rise but agricultural wages rise substantially more, consistent with agriculture gaining in value added.[7] The relative wage of male and female labor within skill categories does not change at all. Overall, female labor gains relative to male labor (Table 9) because there are more women in agriculture which is the sector that gains from the tariff reform.

The sensitivity analysis indicates that the impact of tariff reform on relative wages by skill category is sensitive to assumptions about substitutions elasticities in production. As one would predict from trade theory, reducing the substitution elasticity increases the impact on relative wages. If quantities cannot adjust, prices will. However, the relative

[7] All wages rise even though GDP is almost constant. While government tariff revenue is held constant, the value of tariff exemptions falls with the imposition of a uniform tariff. The effect is that total rents fall. Since they are included in the price system, average wages must rise to account for the lost rent income. See Robinson and Thierfelder (1999) for an explanation of the mechanism at work in a general equilibrium framework.

wages of male and female labor within skill categories are essentially unaffected by different values of substitution elasticities.

4.2 Aid cut scenario

The aid cut scenario forces an adjustment in the trade balance which requires a major depreciation of the real exchange rate (7.3%, Table 6). The depreciation induces an increase in exports, a decrease in imports, and substantial changes in the structure of production and employment (Table 7). The cut in aid to government is assumed to lead to a fall in government investment and a corresponding 17.5% fall in aggregate real investment. So the scenario combines a trade shock and a change in macro aggregates.

Agriculture gains, both because it is an exporting sector and because the fall in investment increases the relative share of consumption demand in total national income. Other exporting and import substituting sectors also gain relative to non-traded sectors (compare Tables 4 and 7). Agricultural wages rise slightly and all other wages fall considerably (Table 8). Total wage payments to women fall, but by half as much in percentage terms as men. As in the previous scenario, there is no change in the relative wages by gender within skill categories.

The sensitivity experiments have no effect on the macro results, but yield significantly different effects on real wages by skill but not by gender within skill categories. Reducing substitution elasticities in production increases the impact of the scenario on relative wages. Women gain in the low labor-capital substitution experiment, and their position is not affected by assuming low male-female substitution elasticities within skill categories.

5 Conclusions

The aim of this paper was to analyze the impact of trade policy on male and female labor in Mozambique and identify any gender differential impacts, motivated by the need to view macroeconomic policy reform through a gender lens. The results indicate that trade reform has little effect on gender differences within skill categories but substantial effects on wage differentials across skills. Since a large share of women work as unskilled agricultural labor in Mozambique, they are strongly affected by any policy change that affects agriculture.

Given the dramatic gender differentiation of the labor force in Mozambique, the small differential impact on men and women of tariff reform is surprising. Stolper-Samuelson effects appear to be empirically very small in the case studied here. This result is, however, theoretically consistent with the Stolper-Samuelson theorem extended to apply to models with non-traded goods and imperfect substitutability between goods sold on domestic and international markets.

Female and male agricultural workers are similarly affected by policy changes, since both are tied to the agricultural sector. This result is consistent with the specific-factors trade model, which predicts that all sector-specific factors fare similarly.

The above results reflect important features of the Mozambican labor market:

- In the non-agricultural sectors, differences in gender proportions by skill are not large enough to generate significant Stolper-Samuelson effects.
- For unskilled agricultural workers, where gender differences are significant, the labor market is segmented between agriculture and the rest of the economy. Stolper-Samuelson effects are dominated by the effect of sector-specific factors.

These results are sensitive to assumptions about labor migration. Assuming free migration would bring Stolper-Samuelson effects into play. In addition, if there are differential migration opportunities for men and women in partially segmented labor markets, gender differences in wage changes would be evident. However, any analysis of migration raises complex issues such as nature of migrants, remittances, time horizon etc., which go well beyond the scope of this paper.

Sensitivity analysis with respect to substitution elasticities in production indicates that the results are robust. Assuming lower male-female substitution elasticities makes little difference, which is not surprising given that the major effect at work is sector-specific agricultural labor. Assuming lower elasticities of substitution between labor (both female and male) and capital does make a difference to relative wages by skill but not to male-female differentials within skill categories.

From a policy perspective, our results indicate that it is far more important to be concerned with upgrading the skill endowment of the female labor force in Mozambique, which is well- below that of men, than with the differential gender impact of trade policy.

Table 1: Skill and gender composition of the labor force

	Gender shares by skill		Skill shares by gender			Wage
	Female	Male	Female	Male	Total	Index
Unskilled Ag Labor	59.0	41.0	88.2	67.0	78.1	100
Skilled Ag Labor	25.3	74.7	2.4	7.8	5.0	164
Unskilled Non-Ag Labor	30.1	69.9	7.1	18.0	12.3	430
Skilled Non-Ag Labor	25.2	74.8	1.8	5.8	3.7	1474
Highly Skilled Non-Ag Labor	25.3	74.7	0.4	1.4	0.9	3509
Average/Total	52.2	47.8	100.0	100.0	100.0	225

Sources: Arndt (2003); 1997 census data; 1997 national accounts data; and authors' calculations.
Notes: Agriculture includes livestock and forestry.

Table 2: Factor composition of sectoral value added

	Unskilled		Skilled		Highly Skilled		Capital
	Female	Male	Female	Male	Female	Male	
Agriculture	43.6	30.3	1.9	5.8	0.0	0.0	18.5
Livestock	43.3	30.2	2.2	6.0	0.0	0.0	18.4
Forestry	41.0	28.5	2.0	5.6	0.0	0.0	22.9
Extraction and fish	4.4	10.1	5.2	15.2	2.9	8.5	53.6
Food processing	10.3	23.8	5.6	16.5	3.2	9.2	31.4
Beverage and tobacco	2.7	5.3	2.6	6.4	1.7	3.9	77.4
Primary product processing	6.4	14.7	6.5	18.9	3.7	10.6	39.1
Chemicals	3.0	5.9	4.4	11.3	2.8	6.7	65.8
Other manufactures	5.5	12.0	7.6	21.6	4.4	12.3	36.6
Other services	12.1	28.4	6.5	19.5	3.6	10.8	19.0
Construction	3.6	8.4	4.9	14.6	2.8	8.1	57.6
Commerce	8.6	20.2	5.3	16.0	3.0	8.9	38.0
Transport and communication	6.5	15.0	6.5	19.6	3.6	10.9	37.9
Insurance and finance	3.5	8.0	5.7	16.9	3.2	9.4	53.3
Public administration and defens	6.5	14.9	12.6	37.5	7.0	20.9	0.6
Education	6.2	14.0	11.2	33.0	6.4	18.5	10.7
Health	7.2	15.2	12.7	35.7	7.5	20.4	1.4
Labor intensive services	6.7	15.0	12.7	37.5	7.2	21.0	0.0

Notes: rows sum to 100%.

Table 3: Sectoral composition of factor earnings

	Unskilled		Skilled		Highly Skilled		Capital
	Female	Male	Female	Male	Female	Male	
Agriculture	62.5	39.0	10.8	10.8	0.0	0.0	16.3
Livestock	5.0	3.1	1.0	0.9	0.0	0.0	1.3
Forestry	6.8	4.3	1.3	1.2	0.0	0.0	2.4
Extraction and fish	1.0	2.1	4.5	4.5	5.3	5.2	7.5
Food processing	1.8	3.7	3.8	3.8	4.4	4.3	3.4
Beverage and tobacco	0.1	0.2	0.5	0.4	0.6	0.5	2.2
Primary product processing	0.7	1.5	2.9	2.9	3.4	3.3	2.8
Chemicals	0.1	0.2	0.6	0.5	0.8	0.6	1.4
Other manufactures	0.3	0.6	1.8	1.7	2.1	2.0	1.3
Other services	5.3	11.1	11.0	11.1	12.6	12.7	5.1
Construction	1.2	2.6	6.5	6.6	7.5	7.5	12.1
Commerce	9.1	19.1	21.9	22.2	24.9	25.4	24.7
Transport and communication	3.0	6.3	11.8	12.0	13.5	13.7	10.9
Insurance and finance	0.8	1.7	5.4	5.4	6.2	6.2	8.0
Public administration and defens	0.9	1.9	7.1	7.2	8.2	8.2	0.1
Education	0.5	1.1	3.8	3.8	4.4	4.3	0.6
Health	0.2	0.4	1.3	1.2	1.6	1.5	0.0
Labor intensive services	0.5	1.1	3.9	3.9	4.6	4.5	0.0
Sum	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 4: Sectoral structure of imports and exports as well as tariff protection rates

	Sectoral Composition		Sectoral Trade Ratio		Tariff Protection	
	Exports	Imports	Exports	Imports	Avg.	Posted
Agriculture	10.1	5.6	6.2	9.6	9.0	10.0
Livestock	0.1	0.7	0.4	7.2	7.0	10.0
Forestry	1.9	0.0	10.3	0.7	46.1	46.1
Extraction and fish	28.7	0.7	54.4	7.3	12.1	12.5
Food processing	12.9	15.3	11.0	29.8	6.5	35.0
Beverage and tobacco	0.1	2.5	0.3	27.4	5.8	35.0
Primary product processing	11.0	8.8	25.9	44.9	5.9	35.0
Chemicals	0.6	17.1	4.3	77.5	8.2	15.0
Other manufactures	3.2	35.6	12.5	82.0	9.1	15.0
Other services	1.3	1.4	1.3	4.1	0.0	0.0
Construction	0.0	0.0	0.0	0.0	NA	0.0
Commerce	0.0	0.0	0.0	0.0	NA	0.0
Transport and communication	23.5	1.2	14.2	2.4	0.0	0.0
Insurance and finance	6.6	11.0	9.9	34.9	0.0	0.0
Public administration and defens	0.0	0.0	0.0	0.0	NA	0.0
Education	0.0	0.0	0.0	0.0	NA	0.0
Health	0.0	0.0	0.0	0.0	NA	0.0
Labor intensive services	0.0	0.0	0.0	0.0	NA	0.0
Sum/Average	100.0	100.0	7.5	18.9	6.9	17.9

Notes: The export trade ratio is the share of exports in total production. The import trade ratio is the share of imports in total domestic demand.

Table 5: Simulations

Label	Description
Base	Base data in billions of 1997 meticais.
Tariff reform (TR)	revenue neutrality. The share of products imported duty free remains constant.
TR low all	The tariff reform scenario with elasticities of substitution set to 0.33 across all factors.
TR low M/F	The tariff reform scenario with elasticities of substitution in production set to 0.33 between factors of the same skill level but different gender.
Aid cut (AC)	Cut in foreign aid delivered to the government of 50% with all other parameters set at base levels.
AC low all	The aid cut scenario with elasticities of substitution set to 0.33 across all factors.
AC low M/F	The aid cut scenario with elasticities of substitution in production set to 0.33 between factors of the same skill level but different gender.

Table 6: Macroeconomic results (base and percentage change from base)

	Base	Tariff reform	TR low all	TR low M/F	Aid cut by 50%	AC low all	AC low M/F
Exchange Rate	1.00	1.4	1.4	1.4	7.3	7.3	7.3
Real GDP	40,636	0.1	0.1	0.1	-0.6	-0.5	-0.6
Total Absorption	48,380	0.4	0.5	0.4	-3.7	-3.5	-3.7
Imports	11,823	0.0	0.2	0.0	-8.7	-8.3	-8.7
Exports	4,079	0.1	0.7	0.1	14.4	15.5	14.4
Investment	8,169	-0.3	0.1	-0.3	-17.5	-17.3	-17.5

Note: All metical figures are in billions. Also, the levels of some macroeconomic aggregates differ slightly from published values due to more explicit accounting for the rents associated with duty-free importation.

Table 7: Real value added by sector (base and percentage change from base)

	Base	Tariff reform	TR low all	TR low M/F	Aid cut by 50%	AC low all	AC low M/F
Agriculture	9,959	0.8	0.3	0.8	1.4	0.6	1.4
Livestock	797	0.3	-0.1	0.3	1.9	1.1	1.9
Forestry	1,158	0.1	0.1	0.1	-0.3	-0.2	-0.3
Extraction and fish	1,572	0.5	1.2	0.5	9.2	11.2	9.2
Food processing	1,202	-1.2	-1.3	-1.2	0.5	0.6	0.5
Beverage and tobacco	318	-3.1	-3.1	-3.1	-0.1	-0.1	-0.1
Primary product processing	806	-3.2	-2.7	-3.2	3.5	4.3	3.5
Chemicals	236	0.4	0.8	0.4	1.8	2.6	1.8
Other manufactures	415	0.6	1.4	0.6	-5.9	-5.0	-5.9
Other services	3,016	-0.4	-0.2	-0.4	-0.9	-0.7	-0.9
Construction	2,376	-0.2	0.2	-0.2	-15.1	-14.9	-15.1
Commerce	7,328	-0.2	-0.2	-0.2	-0.4	-0.3	-0.4
Transport and communication	3,235	-0.2	-0.1	-0.2	0.2	0.5	0.2
Insurance and finance	1,684	0.1	0.7	0.1	4.3	5.4	4.3
Public administration and defense	1,009	0.0	0.0	0.0	0.0	0.0	0.0
Education	603	-0.2	-0.2	-0.2	-0.3	-0.4	-0.3
Health	184	-0.1	-0.2	-0.1	-0.2	-0.3	-0.2
Labor intensive services	552	0.1	0.5	0.1	4.7	5.2	4.7

Table 8: Percentage change in real (CPI deflated) wages

	Base	Tariff reform	TR low all	TR low M/F	Aid cut by 50%	AC low all	AC low M/F
Unskilled Ag Labor	Female	2.1	4.5	2.1	0.5	5.1	0.5
	Male	2.1	4.5	2.1	0.5	5.1	0.5
Skilled Ag Labor	Female	2.2	4.5	2.2	0.7	5.1	0.7
	Male	2.2	4.5	2.2	0.7	5.1	0.7
Unskilled Non-Ag Labor	Female	0.4	-0.9	0.4	-2.3	-3.7	-2.3
	Male	0.4	-0.9	0.4	-2.3	-3.8	-2.3
Skilled Non-Ag Labor	Female	0.3	-0.6	0.3	-2.5	-3.5	-2.5
	Male	0.3	-0.6	0.3	-2.5	-3.5	-2.5
Highly Skilled Non-Ag Labor	Female	0.3	-0.6	0.3	-2.5	-3.4	-2.5
	Male	0.3	-0.6	0.3	-2.5	-3.5	-2.5
Capital	-	0.9	0.6	0.9	-1.9	-3.3	-1.9

Table 9: Aggregate wage payments to male and female labor (base and percentage change from base)

	Base	Tariff reform	TR low all	TR low M/F	Aid cut by 50%	AC low all	AC low M/F
Female	9,599	1.4	2.2	1.4	-0.8	1.3	-0.8
Male	15,588	0.8	0.7	0.8	-1.6	-1.2	-1.6

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