Morocco-EU FTA

Presented by

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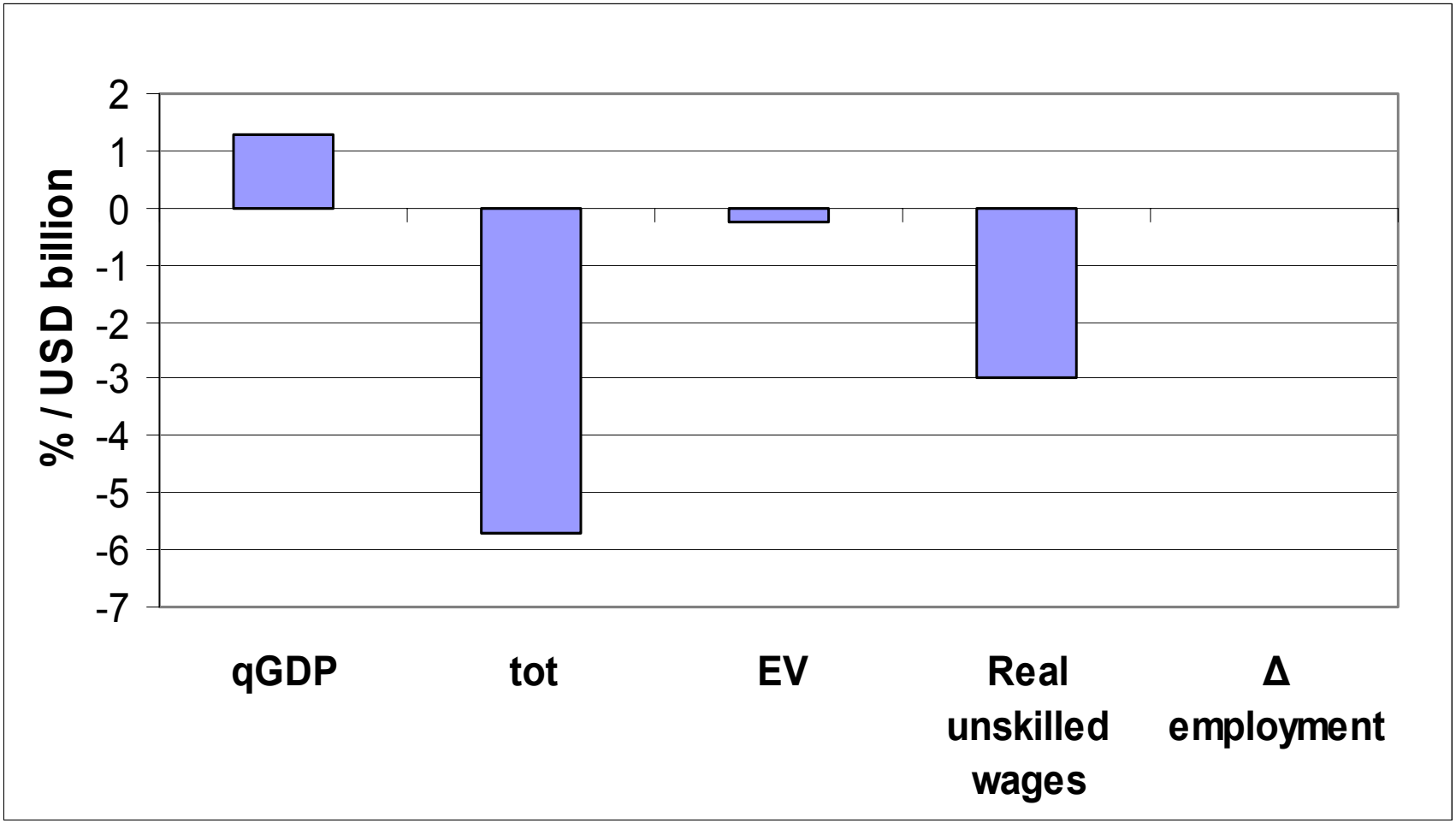
Introduction

- Monopoly/Oligopoly/Market distortions
  - High concentration ratios
  - Barriers to entry
    - Public Investment and Overcapacity
    - Government licensing prior to liberalization in 1996
    - Domestic distribution control
- Unexploited Scale Economies
  - Small Domestic Market
- Unemployment
  - Urban (18.3%), Rural (11.6%) in 2002
  - Mostly Unskilled labor
- FTA with EU: Effects on
  - Sector productivity and competitiveness
  - FDI
  - Economic growth

FTA EXPERIMENT: Elimination of all tariffs on non-food manufacturing products from EU to Morocco

PRODUCTS	MOR	EU	ROW
Meat products	0	-38.8	0
Vegetable oils & fat	0	-8.4	0
Dairy products	0	-32.8	0
Sugar	0	-57.5	0
Other food products	0	-20.4	0
Beverages & Tobacco	0	-22.8	0
Textiles	0	-23.2	0
Wearing apparel	0	-24.9	0
Wood products	0	-32.8	0
Paper & Publishing	0	-28.6	0
Chemical products	0	-23.3	0
Metal products	0	-23.5	0
Motor vehicles	0	-21.2	0
Light manufacturing	0	-10.6	0
Other manufacturing	0	-29.7	0

AGGREGATE EFFECTS OF TRADE LIBERALIZATION ON MOROCCO



WELFARE EFFECTS OF TRADE LIBERALIZATION ON MOROCCO: PERFECT COMPETITION-CRTS

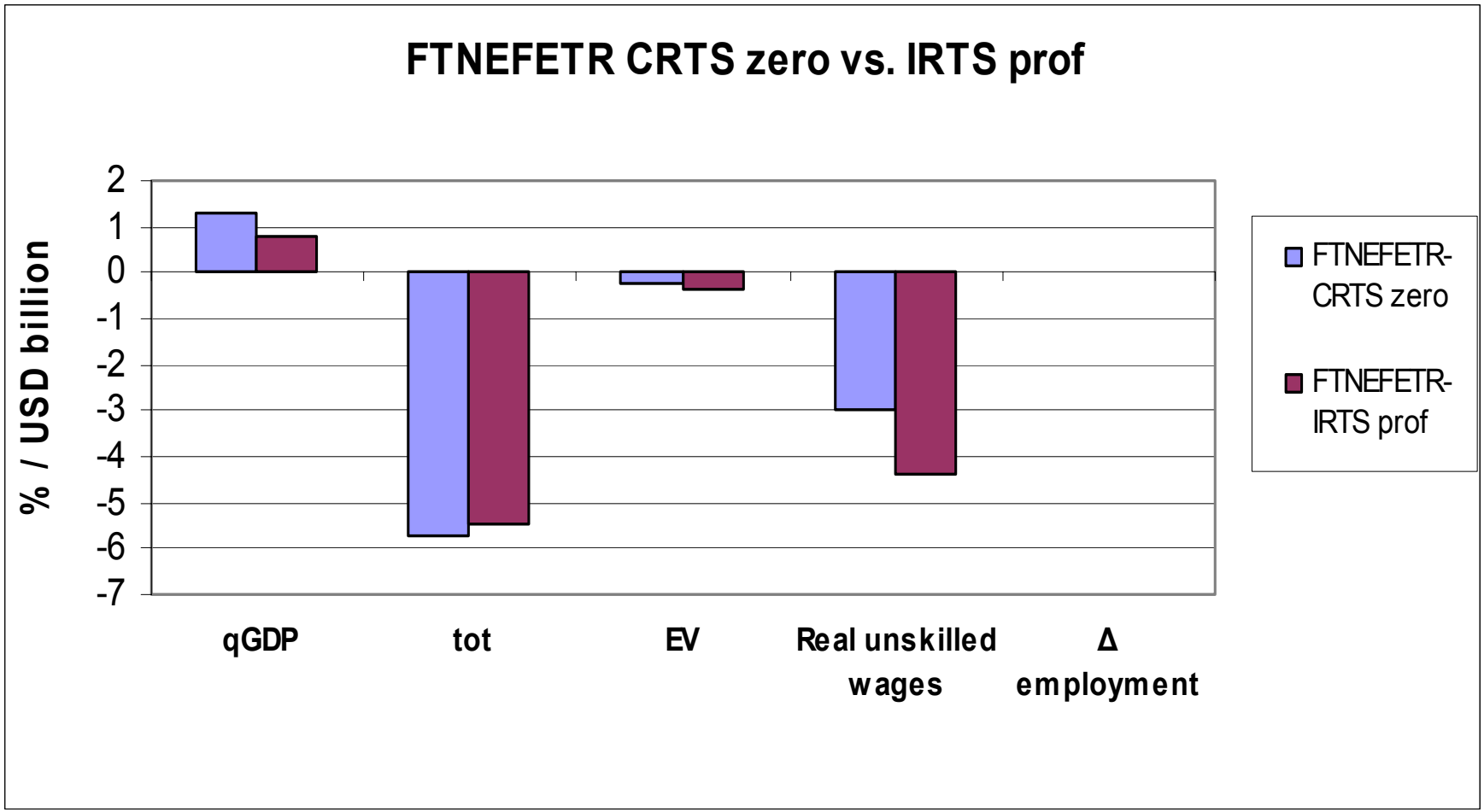
Welfare

Total Welfare	-235.2
Allocative Efficiency alloc_A1	507.9
Labor Endownments endw_B1	0.0
Scale economies tech_C1	0.0
Terms of Trade tot_E1	-743.1

Allocative Efficiency Components

Allocative Efficiency	507.9
Profit shifting_A211	0.0
Input tax_inputtax	-40.0
Consumption tax_contax	-51.2
Export tax_xtax	140.6
Import tax_mtax	458.6

Introducing increasing returns to scale and non-zero profits (still no entry, full employment, and tax replacement)



Scale and profit shifting effect

$$dV/V_E = tdm - mdp + [p + t - a]dX - Xa_x dx$$

Total EV	USD bill.
Allocative efficiency	424.7
Scale effect	**-115.7**
Terms of trade	-692.7
Total EV	-383.8

Allocative eff.	USD bill.
Profit shifting	**-29.8**
Input tax	-27.6
Consumption tax	-84.4
Export tax	124.7
Import tax	441.8
Total allocative eff.	424.7

Scale and profit shifting effect by sector

Sector	P/AC	Output % change	Scale effects USD bill.	Profit shifting USD bill.
mtp	0.87	-15.02	-0.3	0.2
vof	1.01	0.49	0.1	0
drp	1.15	-19.43	-6.8	-6.8
sgp	1.3	-1.43	-0.9	-3.6
ofp	0.97	-0.45	-1.2	0.5
btp	**1.62**	**1.74**	**0.4**	**3.2**
txt	0.89	-2.2	-4.4	3.5
wal	**0.87**	**6.75**	**81.8**	**-77.3**
wdp	1.08	-22.97	-15.8	-6
pap	0.99	-14.41	-30.6	5.7
chm	1.06	-4.24	-18.0	-6.4
mmp	1.06	-12.55	-35.9	-23.9
mvt	**0.86**	**-37.9**	**-104.9**	**87.7**
lmn	0.99	11.41	26.0	-1.8
omn	1.15	-11.96	-5.3	-4.8
Total			-115.7	-29.8

Armington parameters

Aggregate effects of trade liberalization on Morocco

Closure	Arm	2xArm
GDP(%)	0.81	2.72
Aggregate Imp.(%)	32.21	83.38
Aggregate Exp.(%)	37.96	95.87
Terms of trade (%)	-5.44	-5.43
Welfare effects		
Allocative efficiency	424.666	1222.504
Export taxes	124.65	298.782
Import taxes	441.774	1144.526
Labor endowment	0	0
Scale economies	-115.684	-186.317
Terms of trade	-620.239	-743.024
Total Welfare	**-383.765**	**223.232**

- Double Armington elasticities (ESUBD & ESUBM)
- Significant increase in imports and exports
- Total welfare is now positive
- Welfare component due to scale economies is decreasing – due to decreasing output.
- Import and export taxes have the main contribution

Price linkage

- Intuition: Reduce tariffs => Decrease in price of imports => Decrease in domestic mark-up => Decrease in price of domestic products => Increase in exports
- Chemical Industry (Morocco):
  - ppm = -11.55, **ppd = 1.66**, pxw = -7.1, qo = -4.24
  - ppd(i,r) = atpd(i,r) + pm(i,r)
  - pm is not low enough
  - The industry use high share of imported products (chemicals).

Systematic Sensitivity Analysis

- For total welfare and allocative efficiency standard deviation is high

	Arm	2xArm	1.5xArm	Mean	Std. Dev.
EV	-383.765	223.232	-106.02	-97.85	186.07
Allocative efficiency	424.666	1222.504	833.16	827.29	246.9
Export tax	124.65	298.782	206.47	208.47	53.87
Import tax	441.774	1144.526	765.74	774.86	214.76
Terms of trade	-620.239	-743.024	-687.21	-684.98	38.96

Why Is Fiscal Discipline Important?

- Initial Budget Deficit of Morocco is $3.1 billion (prior to implementation of an FTA).
- An FTA with the EU is potentially beneficial for Morocco for many reasons—Could provide imports to consumers at a lower price.
- Implementation of the FTA results in a larger budget deficit—tax revenue falls sharply. In the base data, tariff revenue is 68 percent of total tax revenue. This proportion is probably overstated, since income taxes are omitted.
- As a result of an FTA between Morocco and the EU, Morocco's budget deficit increases by about $1.8 billion! Welfare falls by $286 billion, largely due to adverse terms-of-trade effects.
- Need to address increase in deficit—it can't persist in the long run. Deficit must be financed.

How to Deal With Larger Budget Deficit?

- One option for Morocco is to participate in FTA, but adjust the consumption tax on both domestic and imported goods to keep revenue to GDP constant.
- In general, tax reform that encompasses a shift from trade taxes to a broader-based taxes (abstracting from TOT effects) would be desirable.
- There is a slight reduction in the budget deficit compared to the initial situation: the higher revenue from the consumption tax is offset to some degree by the negative scale effects.
- The welfare loss is larger with tax replacement: 383.8 compared to 286.9 with no replacement. This is because the rise in the consumption tax is distorting. Note that it reduces real wages, as a result of an increase in the CPI.
- Are there other options that preserve fiscal discipline, while maximizing the benefits from the FTA?

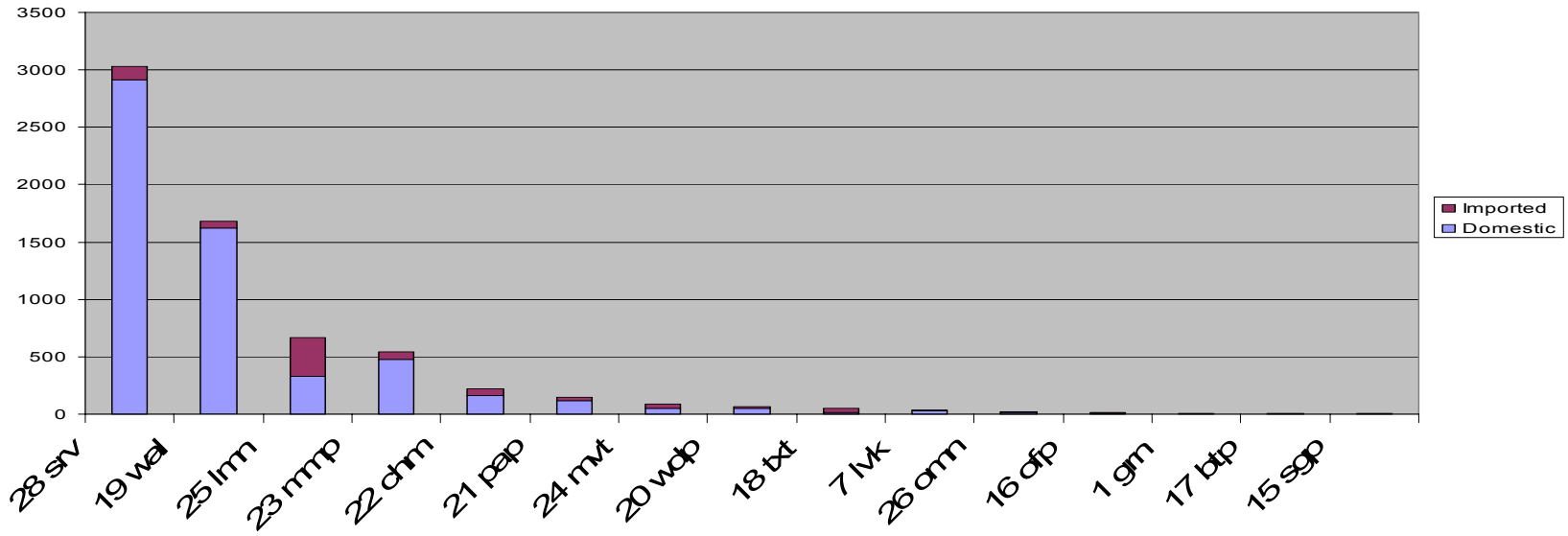
Capital Inflows

- One possibility would be for Morocco to borrow from abroad. Not promising since it is not possible to model a foreign transfer in an satisfying way.
- Alternative is to assume that the FTA induces direct foreign investment—the capital stock increases in Morocco.
- Modelled a 10 percent increase in the capital stock. In this scenario, Morocco would enjoy a substantial welfare gain as a result of the increase in the endowment of capital, despite the TOT loss. (Capital infusion raises the marginal product of labor.) However, the government budget deficit actually widens further, to $4.7 billion (from the initial deficit of $3.1 billion). Government spending rises with income, but with no income taxes, not much revenue gain. In addition, Morocco loses tariff revenue.
- There is a consumption tax in place, but revenue from this source only partially compensates for the increase in government spending because of the pattern of sectoral output changes. Output of some highly taxed sectors actually contracts, while some expand.
- Does not seem like a promising approach. Therefore the next two presentations will examine two other alternatives: the possibility of introducing income taxes and changes in government spending.

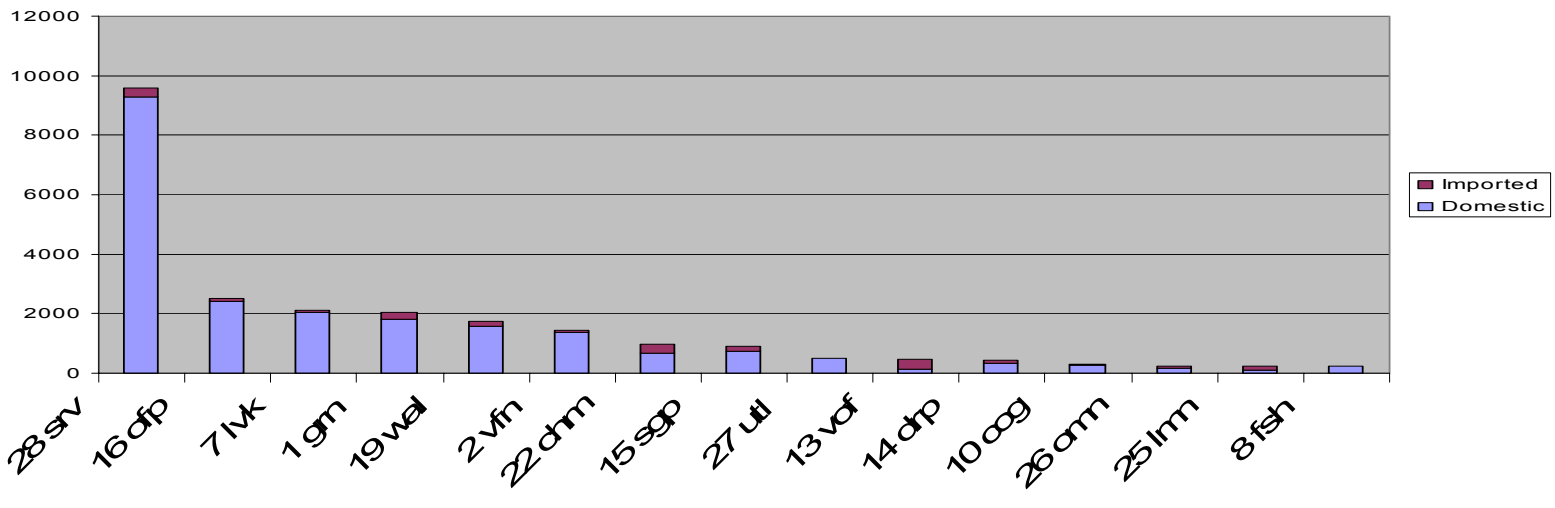
Reduction in Government Spending

- Closure
  - No tax replacement
  - Real government expenditure exogenous
- Experiment
  - Shock ug by -10%
- Results: +Welfare (Allocative efficiency)
  - Consumption taxes
    - Income shifts from government to private sector
    - Gov. consumption not taxed, private consumption taxed
  - Profit-shifting
    - Sectoral composition of priv. consumption differs from gov. consumption
    - Most profit-making sectors expand and loss-making contract
- Reference experiment: No liberalization, shock ug by -50%
  - Less positive allocative efficiency effect (Mtax!)
  - Less negative scale effect
  - No terms of trade effect

Government Consumption by Sector



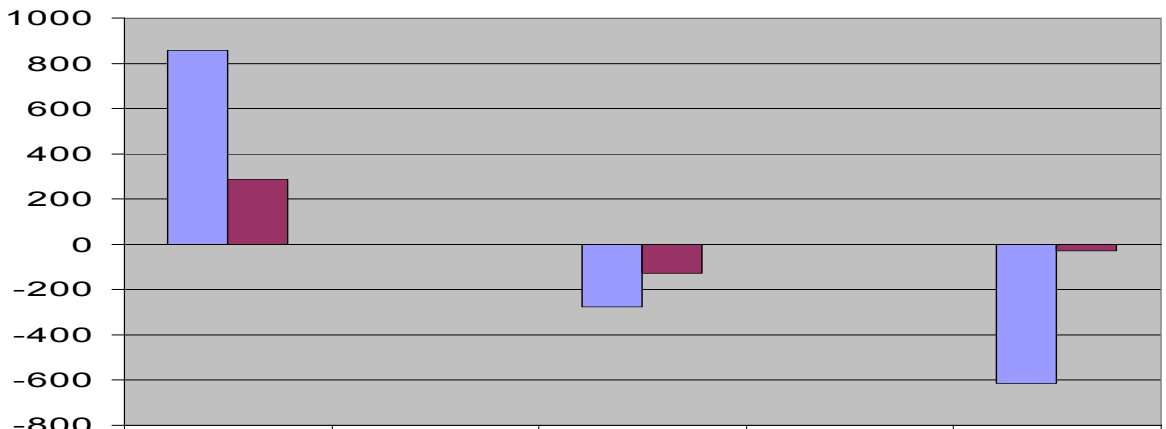
Private Consumption by Sector



Profit-Shifting

mtp	0.25	loss
vof	0.95	prof
drp	0.92	prof
sgp	1.33	prof
ofp	0.99	loss
btp	0.06	prof
txt	-0.4	loss
wal	-1.67	loss
wdp	-0.08	prof
pap	-0.52	prof
chm	0.14	prof
mmp	-0.99	prof
mvt	-0.15	loss
lmn	-1.1	loss
omn	0.45	prof
utl	0.87	prof
srv	0.05	prof

No liberalization



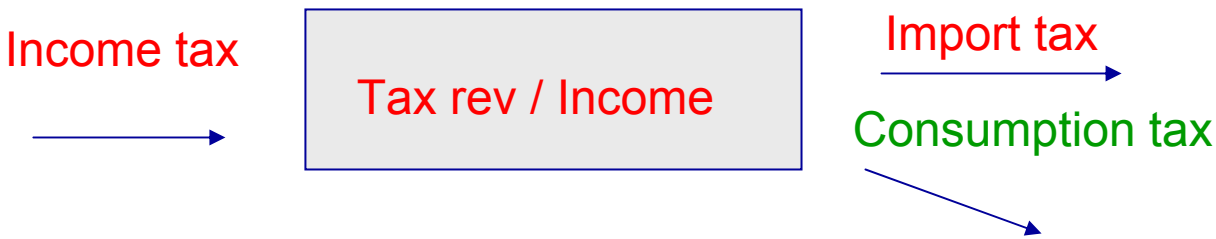
	1 alloc_A1	2 endw_B1	3 tech_C1	4 pop_D1	5 tot_E1
Liberalization	856.23	0	-277.44	0	-613.26
No liberalization	288.32	0	-126.82	0	-29.63

Tax replacement: consumption vs. income tax?

- FTA reduces welfare but even more so with consumption tax replacement…
- Assume we care about tax replacement
- Why welfare falls?
- In FTA tariff revenue replaced with uniform increase in power of consumption tax (*9.43%*)
- Initial cons tax rates differ by sector → percentage increase in tax higher in sectors with initially higher taxes
- Allocative welfare loss of *US$ 132mln*
- Any better ways of tax replacement in this version of GTAP?

Idea

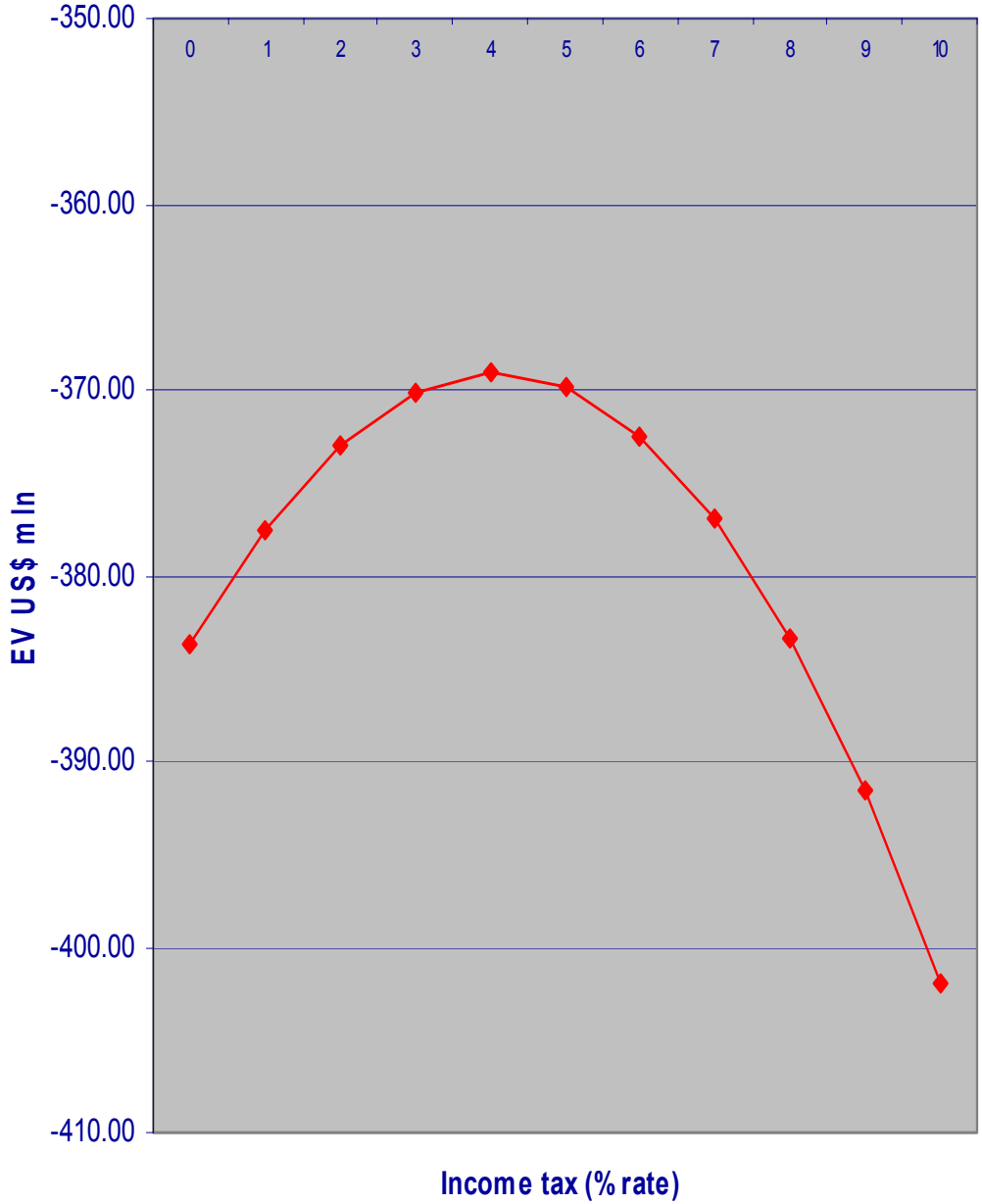
- Keep ratio of tax revenue to income fixed
- Gradually replace consumption tax with a uniform income tax on all primary factors



- Income tax of 1%, 2%, … crowding out consumption tax
- What are welfare implications of new replacement policy?
- What do we expect? …
- Gradual removal of initial distortion associated with replacement by consumption tax – here income tax "taxes" the whole economy equally (no new distortion)

Conclusions

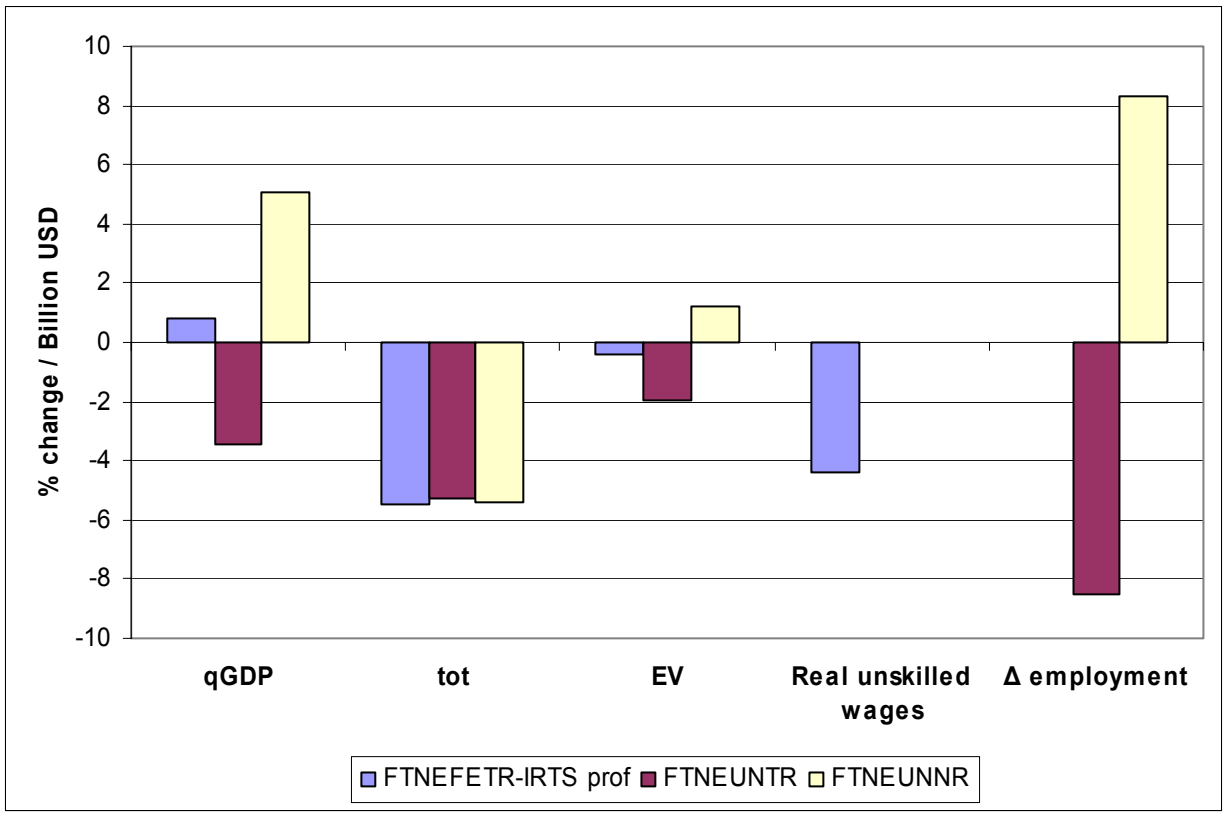
- We can do better with uniform income tax!
- But it is not directly the income tax that improves allocation
- It crowds out the consumption tax preserving revenue
- Smaller consumption tax smaller distortions within economy (to do with cons tax change specification)
- But careful of subsidizing consumption
- We still cannot do better than without tax replacement
- Replacement comes at a cost but design of replacement matters!



Introducing unemployment to unskilled labour (no entry/exit of firms)

Three cases:

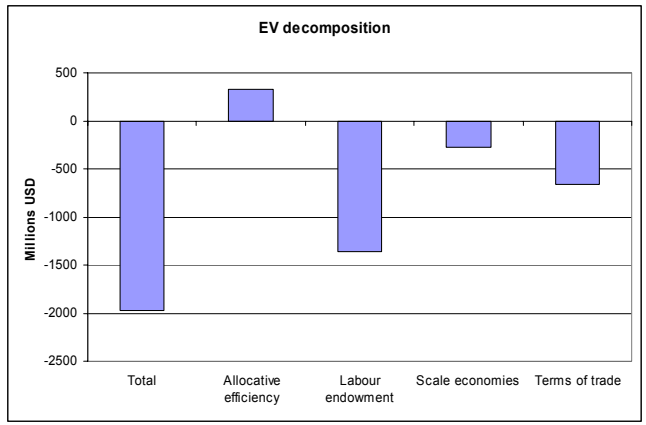
- The benchmark with full employment (FTNEFETR-IRTS prof)
- Tax replacement (FTNEUNTR)
- No tax replacement (FTNEUNNR)



Unemployment with tax replacement

Unemployment of unskilled workers is high in Morocco due to policy-induced minimum real wage => fix real wage and remove full employment assumption for the unskilled

- GDP = -3,4% = large decline & change of sign
- Terms of trade = minor change
- EV = large decline
  - primarily due to labour endowment
- Real factor returns = decreasing
  - Land = - 16,3%
  - Unskilled labour = 0 (exog.)
  - Skilled labour = -7,9%
  - Capital = -8,8%
  - Natural resources = -6,5%
- Government budget is balanced through a consumption tax
- Employment change (unskilled) = -6,9%

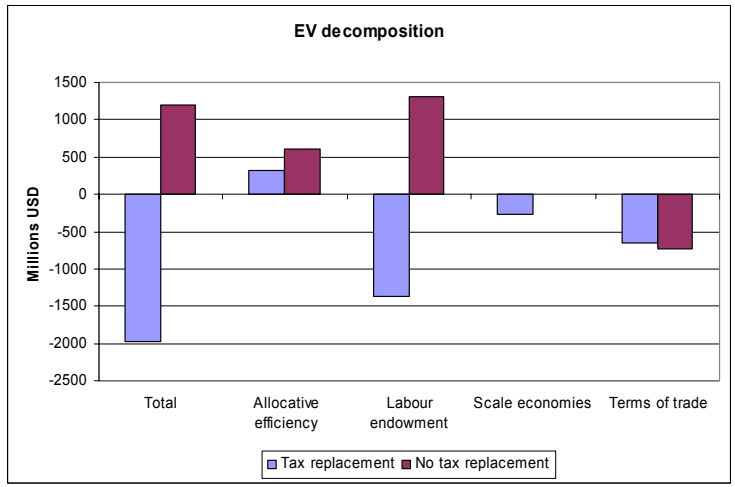


So, the shock cannot effect the real wage – instead it increases the unemployment rate. The demand for unskilled labour is going down in almost all sectors leading to a lower return from the other endowment factors. All together the rigidities in the labour market is leading to a worse situation than with full employment / flexible wages.

Unemployment with NO tax replacement vs. tax replacement

The solution to all problems……..

- GDP = 5,0% = large increase & change of sign
- Terms of trade = minor change
- EV = large increase
  - primarily due to labour endowment
- Real factor returns = increasing
  - Land = 17,3%
  - Unskilled labour = 0 (exog.)
  - Skilled labour = 8,1%
  - Capital = 7,7%
  - Natural resources = 12,5%

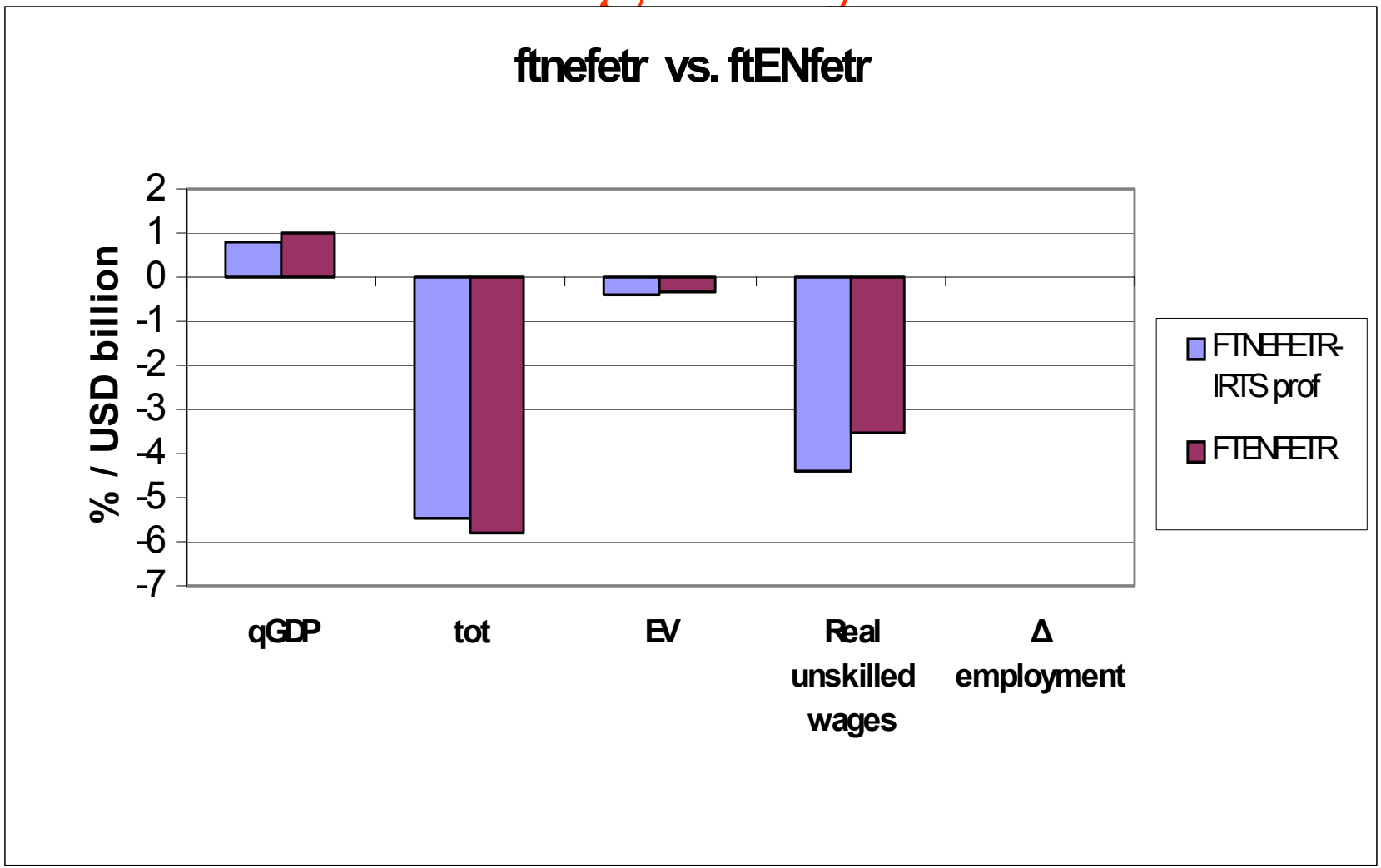


- Government budget is not balanced, i.e. the loss of income from import tariffs leads to a budget deficit
- Employment change (unskilled) = 8,3%

Compared to the case with tax replacement the government is now doing a fiscal expansion. Furthermore the wage to unskilled workers compared to other countries declines. So, this is the solution to Morocco's problems!

……..or, might the World Bank have a second opinion on that?

Introducing entry and exit



Devaluation versus Scale

	No entry	Entry
GDP (%)	**0.8**	**1.0**
Aggregate imports (%)	**32.2**	**33.4**
Aggregate Exports (%)	**38.0**	**41.6**
Terms of Trade (%)	**-5.4**	**-5.8**
Real factor returns (%)		
Land	-5.3	0.2
Unskilled labor	-4.4	-3.5
Skilled labor	-4.2	-4.0
Capital	-4.8	-4.5

Exploiting Scale with Entry

	No entry	Entry
EV: total scale effect ($)	**-116**	**83**
Key sector: motor vehicles		
EV: scale effect ($)	-105	-17
Sectoral output level (%)	-37	-60
Change in number or firms (%)	n.a.	-55
Change in markups (%)	-1.7	2.4
Market share (%)	-48	-62

$$\frac{P - MC}{P} = (1 - M^{-1}) = \frac{1}{n\varepsilon}$$

Version: IRTSZERO, Entry, Full Employment, No tax replacement
Aggregate effects

GDP:	1.73
Effects of Investment (1.51)	
Best allocative efficiency (581.2)	
Terms of trade:	-5.44
Decrease of psw due to expanding exports (Wearing Apparel)	
EV:	-64.78
Real Unskilled wages:	3.79
Employment:	0

Version: IRTSZERO, Entry, Full Employment, No tax replacement
Sectoral effects

Sector	p_Zeta	N	qof
Dairy Prod	-26.81	-25.17	-2.44
W. Appar	-45.11	-14.88	32.41
Wood Prod	-36.23	-34.8	1.42
Motor V	-57.18	-43.91	-14.84

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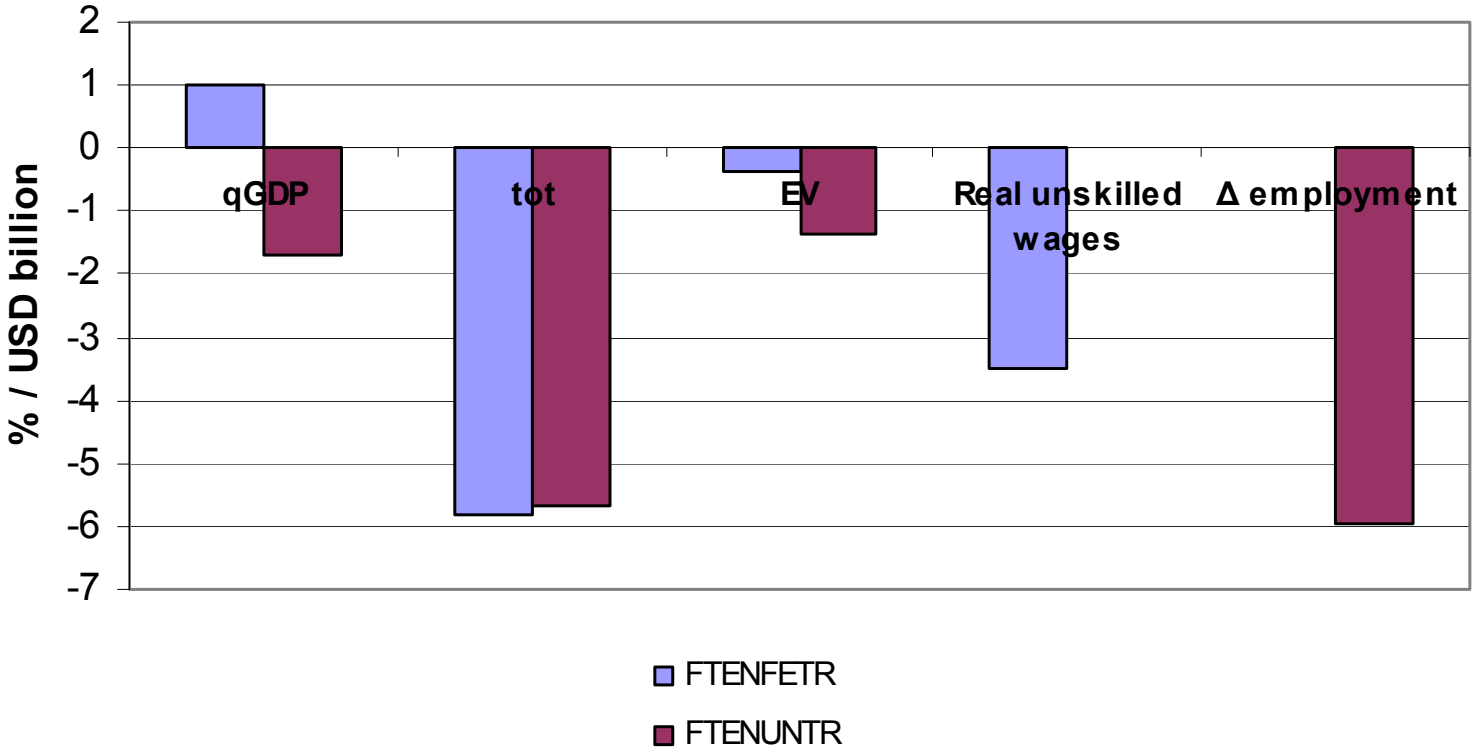
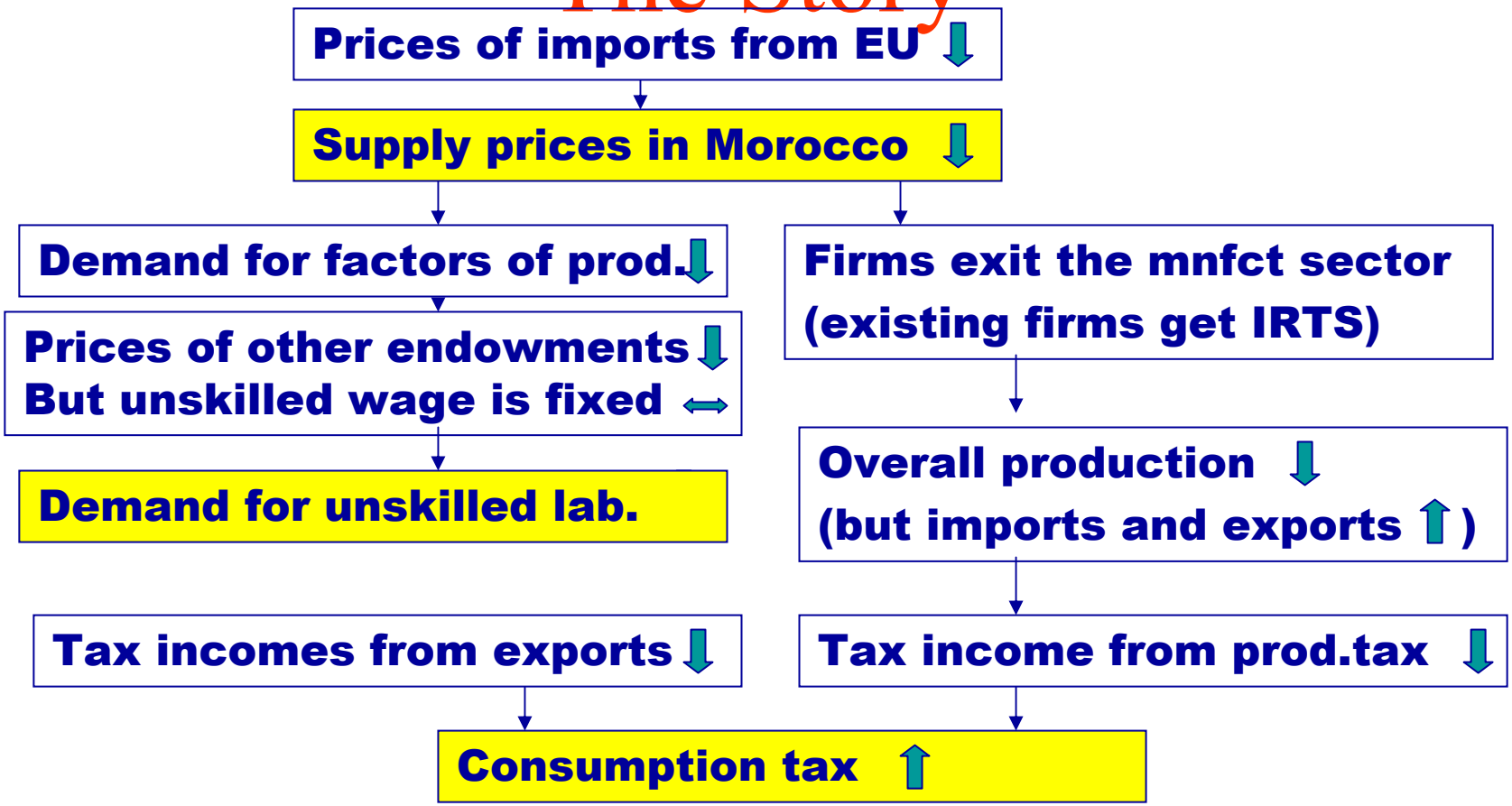


Welfare decomposition

	FE	UN
Allo. eff.	314	258
Endowment	0	-955
Scale effects	82.9	60
Population	0	0
ToT	-672	-655
IS	-72.4	-69
Total	**-347.3**	**-1361**

The Story



Main causes of welfare loss in Morocco

Morocco-EU FTA

That's the end! Thank you!!

Questions? Comments?