

Some answers for the tariff cut simulation

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1 Running the tariff cut simulation

What variable is shocked and by what value? $t0imp("ClothingFtw") = -10\%$

What type of closure is used? *standard shortrun*

1.1 A first look at the results using ViewSOL

What happened to imports of ClothingFtw? $x0imp("ClothingFtw") = 9.68\%$

What other import changed, and by how much? $x0imp("Textiles") = -1.17\%$

Now have a look at the industry outputs, x1tot.

What happened to output of ClothingFtw? $x1tot("ClothingFtw") = -3.51\%$

What happened to output of Textiles? $x1tot("Textiles") = -0.23\%$

Can you see a pattern in the other industry outputs?

Traded (upper half) expand, non-traded (lower half) static.

Summary: The results for “ClothingFtw” are as you would expect. You have decreased the tariff on Clothing and Footwear, so the imports of Clothing and Footwear increase and the domestic output of Clothing and Footwear decreases. We need to look more closely at “Textiles” to see what is causing the textiles results above.

The **Fan decomposition** variable *fandecomp* shows how the change in demand for a locally-produced commodity, say, textiles, may be divided between:

- local market effect: change in non-export demand for textiles *domestic plus imported*;
- domestic share effect: change in dom/imp ratio for textile demand.
- export effect: change in demand for textile exports

Examine the *fandecomp* variable and fill in the table below:

<i>fandecomp</i>	LocalMarket	DomShare	Export	Total
Textiles	-0.70	0.15	0.27	-0.28
ClothingFtw	0.16	-5.38	1.70	-3.515

Summary: You should see that, for Textiles, increased exports and weakened import competition failed to offset a shrinking local market, leading to a small output decline. For ClothingFtw, increases in both export and local demand were overwhelmed by increased import penetration, leading to a larger output decline.

Description	Variable	Value
Real household consumption	$x3tot$	0
Real investment	$x2tot_i$	0
Real government demands	$x5tot$	0
Export volume	$x4tot$	0.42
Import volume CIF	$x0cif_c$	0.22
Real GDP	$x0gdpexp$	0.03
Aggregate capital stock	$x1cap_i$	0
Aggregate employment	$employ_i$	0.05
Absorption price index*	$p0gne$	-0.18
GDP price index	$p0gdpexp$	-0.19
CPI	$p3tot$	-0.21
Exports price index	$p4tot$	-0.05
Real devaluation*	$p0realdev$	0.19
Average nominal wage	$p1lab_io$	-0.21
Average real wage	$realwage$	0
Contribution of BOT to real GDP	$contBOT$	0.033
Terms of trade*	$p0toft$	-0.05
Change in aggregate tariff revenue	$delV0tar_c$	-223.47

Summary: As expected, the tariff cut caused the ClothingFtw and Textiles industries to contract, and imports to increase—all bad for GDP. Yet, employment and real GDP expanded—why? And why did imports of textiles go down? Next you will use AnalyseGE to investigate the simulation in more detail.

2 Investigating results, data, and equations with AnalyseGE

2.1 Some features of AnalyseGE

2.2 The tariff shock and duty-paid import prices.

Write down the initial ad valorem tariff rate for ClothingFtw: 19.6%

Note: the power of the tariff [t0imp] is defined as *one plus the ad valorem rate*.

Write down the initial power of the tariff for ClothingFtw: 1.196

Write down the percentage change in t0imp("ClothingFtw"): -10%

Use the Windows calculator to compute the post-simulation power of the tariff for ClothingFtw:
1.0764

Write down the post-simulation ad valorem rate: 7.64%

Write down the percentage change in p0("ClothingFtw","imp"): -10%

Summary: The ad valorem tariff rate fell from an initial value of 19.6% to 7.64% post simulation. This caused the basic price of imported ClothingFtw to fall by 10%.

2.3 Effect of the tariff cut on imports

Fill in the following delSale values:

delSale (c,"imp",u)	Intermediate	Household	Rest
Textiles	-35.5	-1.5	tiny
ClothingFtw	48.3	204.7	tiny

Summary: You should see that households account for most of the change in ClothingFtw imports. For textiles, most of the decrease is in intermediate use. Why did households increase their imports of ClothingFtw? [You will find out in the next section.]

2.4 Strategy for remainder of analysis

3 Analysing results for ClothingFtw

3.1 Import-domestic substitution : Household demand for ClothingFtw

Fill in the table below

	1 dom	2 imp
1 x3_s	0.55	0.55
2 SIGMA3	-5.77	8.57
Total	-5.22	9.13

	x3 (c,"dom")	x3 (c,"imp")	x3_s	p3 (c,"dom")	p3 (c,"imp")	p3_s	SIGMA3	S3 (c,"imp")
ClothingFtw	-5.220	9.124	0.552	-0.746	-4.801	-2.378	3.537	0.402

Summary: For ClothingFtw, the household purchasers price has changed by -0.75% (domestic) and by -4.80% (imported). This causes the household demand x3 to change by -5.22% (domestic) and 9.12% (imported) via a substitution away from the domestic good to the imported good.

3.2 Explaining purchasers' prices: Household imports of ClothingFtw

$(all,c,COM)(all,s,src)$

$$V3PUR(c,s) = V3BAS(c,s) + V3TAX(c,s) + \sum\{m,MAR, V3MAR(c,s,m)\};$$

Right click and select **Decompose the RHS of this Formula**. In ViewHAR, set the combo boxes to "All IntDec3", "ClothingFtw", "All SRC" and choose Column Shares.

Fill in the table below.

	1 dom	2 imp
V3BAS	0.483	0.471
V3TAX	0.001	0.003
V3MAR	0.516	0.526
Total	1.000	1.000

Summary: Because of local distribution costs, a 10% fall in the duty-paid price of a Chinese teeshirt leads to just a 4.8% fall in the retail price. The detailed treatment of margins is distinctive of the

ORANI type of CGE model—and quite important to simulation results. ORANI-G includes a data summary matrix summarizing the proportions of BAS, MAR, and TAX in purchasers' prices.

Search for and evaluate the SALEMAT2 matrix.

Set combos to "All COM", "All FLOWTYPE", "imp", "HouseH". Which commodity has the highest rate of distribution margin, and why? *NonMetlMinrl: 66% [cement, gravel]*

What if you look at domestic commodities? [change "imp" to "dom".]

3.3 Estimating household demand elasticities

Use the changes in price and quantity to write down an estimate of the elasticity of household demand for ClothingFtw:

	x3_s	p3_s	demand elasticity = %x / %p	B3LUX
ClothingFtw	0.554	-2.378	-0.233	0.25

Search for and evaluate B3LUX("ClothingFtw") and fill the final column of the table above.

Is the value close to the previous estimate of demand elasticity? *Yes*

Why are the two estimates not identical ? [hard] *w3lux not fixed, slutsky income effect terms.*

3.4 Total demand for domestic ClothingFtw

To see the sizes of the changes, search for the variable delSale and Evaluate it. Set the combo boxes to ClothingFtw/All SRC/All DEST.

Complete the following table (in which we ignore the columns which are all zero):

delSale ClothingFtw	Interm	HouseH	Export	Total
dom	-62.7	-178.5	78.8	-162.5
imp	48.3	204.7	0	253.0
Total	-14.3	26.2	78.8	90.6

3.5 Why did domestically-produced ClothingFtw get cheaper ?

Find and evaluate the variable p0 (basic prices) and fill in the two values below.

	s=dom	s=imp
p0("ClothingFtw",s)	-1.416	-10

3.5.1 Relation between commodity prices and industry costs

The price of the domestic ClothingFtw *commodity* is nearly equal to the output price of the ClothingFtw *industry*, p1tot.

What is the value of the output price for the industry, p1tot ? *-1.382%*

What fraction of ClothingFtw commodity is made by the ClothingFtw industry? *99.6%*

What fraction of ClothingFtw industry output is ClothingFtw commodity? *97.1%*

Summary: You can see that if the ClothingFtw industry made *only* the ClothingFtw commodity, the share [MAKE(c,i)/MAKE_C(i)] would = 1, and so the prices p1tot and p0com for ClothingFtw would be identical.

Conclusion: We will have explained why domestically-produced ClothingFtw becomes cheaper if we explain why the output price $p1_{tot}$ ("ClothingFtw") decreases. We do this in section 3.6 below.

3.6 Why did the output price $p1_{tot}$ ("ClothingFtw") decrease?

Evaluate the $p1_{cst}$ variable and check that

$$p1_{cst}(\text{"ClothingFtw"}) = p1_{tot}(\text{"ClothingFtw"}) = ? -1.382$$

Now left-click within equation $E_{p1_{cst}}$, then right-click. Select **Decompose Part of this Equation**.

Fill in the table below:

ClothingFtw contribution	
1 p1	-0.442
2 p1oct	-0.003
3 p1cap	-0.893
4 p1lnd	0
5 p1lab	-0.045
Total p1cst	-1.382

You should see that p1 (material inputs) and p1cap (capital rentals) are much the largest contributors.

3.6.1 Breaking down the reduction in intermediate input prices?

What share of the p1 contribution comes from price change in domestic ClothingFtw? 15%

What share of the p1 contribution comes from price change in imported ClothingFtw? 68%

What share of ClothingFtw sales go to the ClothingFtw industry? [Hint: $V1BAS/SALES$] 4.78%

3.6.2 Why did the capital rental $p1_{cap}$ ("ClothingFtw") decrease?

Why is land irrelevant here? [Hint: Decompose RHS of formula for $V1PRIM$]

$$V1LND(\text{"ClothingFtw"}) = 0$$

For which industries would land be relevant? *BroadAcre, OtherAgric*

What's more, the equations above give a pretty good estimate as to how much this price must fall. Suppose for the minute that $p1_{lab_o}$ does not change. [This is not correct, as the figures in the worksheet below show. However it is true that the $p1_{lab_o}$ is small] Then, from (a):

$$x1_{lab_o} = (1/SL) * x1_{prim} = (1/SL) * (-3.5).$$

Then, (c) above can be rewritten as

$$p1_{cap} = x1_{lab_o} / SIGMA1PRIM + p1_{lab_o}.$$

Ignoring the tiny $p1_{lab_o}$ change, we get:

$$p1_{cap} = x1_{lab_o} / SIGMA1PRIM = (1/SL) * (-3.5) / SIGMA1PRIM.$$

The SL value is about 0.7 (this is easily calculated from the base data) and the SIGMA1PRIM value for ClothingFtw is 0.5 (as is easily seen from AnalyseGE). This gives the rough estimate that

$$p1_{cap}(\text{"ClothingFtw"}) = (1/0.7) * -3.5 / 0.5 = -10.$$

This is very close to the exact result of -10.171 (see the worksheet below).

Fill in the worksheet below to validate equations (a) to (c) above. Your Excel sheet with industry results may save time. For the Factor shares SL and SK, find and evaluate the coefficient FACTOR, then use ViewHAR's shares view.

SL = labour share	0.705
SK = 1 - SL	0.295
x1cap	0
x1lab_o	-4.979
RHS(a) = SL.x1lab_o + SK.x1cap	-3.510
LHS(a) = x1prim	-3.508
x1tot	-3.508
p1lab_o	-0.214
p1cap	-10.171
RHS(b) = SL.p1lab_o + SK.p1cap	-3.151
LHS(b) = p1prim	-3.155
SIGMA1PRIM	0.500
RHS(c) = -SIGMA1PRIM * [p1lab_o-p1cap]	-4.9785
LHS(c) = x1lab_o	-4.979

Summary: Output (x1tot) of ClothingFtw has changed by -3.5%, resulting in a change in labour input (x1lab_o) of -4.97% since capital is fixed (x1cap). The price of capital (p1cap) changes by -10.1% (which is roughly equal to x1lab_o/SIGMA1PRIM). [Note that the price of labour (p1lab_o) only changes by -0.2%, a small amount.]

3.6.3 Slope of the shortrun supply schedule

In your simulation, output (x1tot) of ClothingFtw has fallen by 3.5%, resulting in a fall in labour input (x1lab_o) of 4.97% since capital is fixed (x1cap). The price of capital (p1cap) falls by 10.1% (which is roughly equal to x1lab_o/SIGMA1PRIM). This causes the price of value-added (p1prim) to fall by 3.1%. The output price p1tot falls by about 1.4%. This confirms the upwardly sloping shortrun supply schedule in your simulation.

3.6.4 Movements OF the supply curve and ALONG the supply curve

Which industry has most elastic short-run supply? and why ? *GovAdminDfnc 11.9 high labour share*

Which industry has least elastic short-run supply? and why ? *OwnerDwellng 0.0 high capital share*

Find the equation for variable p1var which calculates average variable costs. Then fill in the table below, for the industry ClothingFtw .

SUPPLYELAST	4.016
x1tot	-3.508
p1tot	-1.382
p1var	-0.541
x1tot/[p1tot-p1var]	4.171225

The last line above, "x1tot/[p1tot-p1var]" estimates the supply elasticity from simulation results.

How close are the 2 estimates of short-run supply elasticity ? *Pretty close*

Why are the two numbers not identical [hint: up-itself] ? *The SUPPLYELAST formula does not allow for "own-sales" which allow output price to affect input costs.*

3.7 Why did exports of ClothingFtw increase ?

You saw in section 3.4 above that exports of ClothingFtw increase. You will explain this in this section.

Check to find how much exports of ClothingFtw increased. *The variable is x4("ClothingFtw"), the result for which is 13.16. So exports of ClothingFtw increase by 13.16%.*

Find the equation in ORANIG03.TAB which "explains" exports x4. [Hint. Gloss on x4 and look for an equation with x4 on the LHS. When you find it, are you surprised at the name?]

There are two equations, namely E_x4A and E_x4B. This naming follows the usual pattern that the equation "explaining" variable xx is called E_xx. The A and B here are because there are two such equations.

Is ClothingFtw in the set TRADEXP? Yes

Note that the variables f4p and phi are exogenous and not shocked.

How can you tell this? What does that mean about their values?

They are shown in red italics. Their values are zero.

What is the value of EXP_ELAST("ClothingFtw")? -10.0

3.7.1 The export price p4 of ClothingFtw

What happens to the export price p4 of ClothingFtw? *It falls by -1.32*

Decompose the equation E_p4 (Intelligent decomposition). Complete the table below for ClothingFtw.

V4BAS	-848.1
V4MAR	-4.4
Total	-852.5

Summary. The export price p4 for ClothingFtw falls because the basic price of domestically-produced ClothingFtw falls. How much p4 falls can be calculated from the fall in p0 and knowledge of the non-margins share in V4PUR.

3.7.2 Why exports of ClothingFtw increase and by how much

Given that p4 falls by about -1.31%, it is clear that exports x4 must increase by about 10 times that, namely by about 13.1%. [The exact result is 13.16%.]

4 Why did Textiles output shrink?

To check that, look at the $x3(\text{"Textiles","dom"})$ and $x3(\text{"Textiles","imp"})$ results.

$$x3(\text{"Textiles","dom"}) = 0.08, x3(\text{"Textiles","imp"}) = -0.19$$

The SalesDecomp variable breaks down the percent change in output between main sources of demand.

Find and evaluate SalesDecomp and fill in the table below:

SalesDecomp("textiles")

Interm	-0.57
HouseH	0.02
Export	0.27
Total	-0.28

You should see that although export and household demand contribute positively to demand, the overall output change is dominated by a large fall in intermediate demand.

Investigate further by looking at the values of the SALEMAT2 Coefficient, which shows the sales of each commodity. Here it is convenient to work with Basic values, so set the combo boxes to Textiles/Basic/All SRC/All SALECAT2.

Which category is the main user and what percent of use goes there?

Intermediate usage (3015) out of total sales 5691. This is about 53%.

Which firm uses most of Textiles and what percentage of intermediate usage does it take?

[Hint. Look at V1BAS and set combos to Textiles/dom/All IND. Take column shares.]

ClothingFtw 38.6%

Thus 0.386×0.53 (about 20%) of total sales of Textiles goes to the ClothingFtw industry. The output of the ClothingFtw industry ($x1_{tot}$) contracts by 3.5% (see section 3.4). The ClothingFtw industry uses a fixed share of composite Textiles (since top nest is Leontief – see equation E_{x1}).

From this information, how much would you expect the fall of 3.5% in output of ClothingFtw to decrease the demand for Textiles? *About $0.386 \times 0.53 \times 3.5 = 0.7\%$.*

In fact total demand for Textiles does not fall by as much since household demand is up by a little (0.08%) and exports are up significantly (1.2%) on a significant base. [Look at the $x3$ and $x4$ results. To see the export base, look at SALEMAT2 as above to see that 21.5% of Textiles is exported.]

You will see in section 4.1 below that the price of domestic Textiles falls.

Given this information about the price of domestic Textiles, which earlier section contains the argument which explains why exports of Textiles increase? *Section 3.7*

The FanDecomp variable breaks down the percent change in output between three main causes.

fanDecomp("textiles")

LocalMarket	-0.70	change in non-export demand for textiles <i>domestic plus imported</i>
DomShare	0.15	change in dom/imp ratio for textile demand
Export	0.27	change in demand for textile exports
Total	-0.28	

4.1 Why did domestically-produced Textiles get cheaper?

What happens to the basic price p_0 ("Textiles", "dom") of domestic Textiles? *It falls by 0.24%.*

Why does the price of domestically-produced Textfiles fall?

What percentage of total intermediate usage by the Textiles comes from imported ClothingFtw?

Only 0.04%. [Look at the V1BAS matrix for industry Textiles, and look at matrix shares.]

So the Textiles industry using cheaper imports of ClothingFtw is not the reason.

5 Which industries gained, and why?

Table 1: Summary of sectoral outputs and characteristics

Commodity	Output x0dom	Fan decomposition			Coefficients			Industry	Variable cost p1var	SUPPLY ELAST
		Local Market	Dom Share	Export	EXPSHR	IMPSHR	INDIV EXP			
WoolMutton	0.00	-0.05	0.00	0.05	0.58	0.00	1.00			
GrainsHay	0.03	0.04	0.00	-0.01	0.44	0.01	1.00			
BeefCattle	0.07	0.05	0.00	0.02	0.03	0.00	0.00	BroadAcre	-0.06	0.21
OtherAgric	0.04	0.03	0.00	0.01	0.10	0.04	1.00	OtherAgric	-0.08	0.35
ForestFish	0.11	0.02	0.00	0.09	0.13	0.03	1.00	ForestFish	-0.10	2.19
Mining	0.05	0.03	0.00	0.02	0.56	0.20	1.00	Mining	-0.10	0.29
MeatDairy	0.05	-0.03	0.00	0.09	0.34	0.02	1.00	MeatDairy	-0.02	3.81
OthFoodProds	0.11	0.00	0.00	0.10	0.21	0.14	1.00	OthFoodProds	-0.08	2.00
DrinksSmokes	0.06	-0.01	0.00	0.07	0.08	0.10	0.00	DrinksSmokes	-0.08	1.04
Textiles	-0.28	-0.70	0.15	0.27	0.22	0.41	1.00	Textiles	-0.12	2.18
ClothingFtw	-3.52	0.15	-5.37	1.70	0.13	0.39	1.00	ClothingFtw	-0.54	4.02
WoodProds	0.13	0.04	0.01	0.08	0.09	0.18	0.00	WoodProds	-0.10	3.13
PaperPrint	0.06	0.02	0.02	0.02	0.03	0.18	0.00	PaperPrint	-0.11	1.45
Petrol_CoalP	0.06	0.01	-0.01	0.06	0.08	0.15	0.00	Petrol_CoalP	-0.01	0.31
Chemicals	0.09	0.02	0.01	0.06	0.14	0.38	1.00	Chemicals	-0.08	1.46
RubberPlastc	0.09	0.03	0.03	0.04	0.04	0.32	0.00	RubberPlastc	-0.10	2.00
NonMetlMinrl	0.05	0.02	0.01	0.02	0.03	0.13	0.00	NonMetlMinrl	-0.09	1.43
BasicMetals	0.13	0.06	0.00	0.06	0.39	0.14	1.00	BasicMetals	-0.06	1.87
FabMetalPrd	0.10	0.04	0.02	0.04	0.04	0.15	0.00	FabMetalPrd	-0.12	2.79
TransportEqp	0.13	0.02	0.05	0.05	0.11	0.41	1.00	TransportEqp	-0.09	1.95
OthMachnEqp	0.12	0.01	0.01	0.10	0.19	0.62	1.00	OthMachnEqp	-0.09	1.68
MiscManuf	0.09	-0.01	0.03	0.08	0.09	0.25	0.00	MiscManuf	-0.14	2.98
ElecGasWater	0.01	0.01	0.00	0.00	0.00	0.00	0.00	ElecGasWater	-0.11	0.23
Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Construction	-0.12	1.08
Trade	0.06	0.06	0.00	0.00	0.00	0.00	0.00	Trade	-0.15	1.42
Repairs	0.02	0.02	0.00	0.00	0.00	0.00	0.00	Repairs	-0.13	0.59
Hotel_Cafe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Hotel_Cafe	-0.14	2.81
Transport	0.07	0.01	0.00	0.06	0.16	0.12	1.00	Transport	-0.10	0.74
CommunicSrvc	0.05	0.01	0.00	0.04	0.05	0.06	0.00	CommunicSrvc	-0.13	0.61
FinanceInsur	0.03	0.01	0.00	0.01	0.02	0.02	0.00	FinanceInsur	-0.17	0.68
OwnerDwelling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	OwnerDwelling	-0.12	0.00
PropBusSrvc	0.05	0.03	0.00	0.02	0.03	0.03	0.00	PropBusSrvc	-0.15	1.43
GovAdminDfnc	0.01	0.00	0.00	0.00	0.00	0.00	0.00	GovAdminDfnc	-0.16	11.94
Education	0.04	0.00	0.00	0.04	0.04	0.01	0.00	Education	-0.20	7.19
HealthCommun	0.00	0.00	0.00	0.00	0.00	0.00	0.00	HealthCommun	-0.18	3.73
CultuRecreat	0.01	0.00	0.00	0.00	0.00	0.01	0.00	CultuRecreat	-0.14	1.63
OtherService	0.00	0.01	0.00	0.00	0.00	0.16	0.00	OtherService	-0.16	5.00

Questions:

Why did Hotel_Cafe output not increase? *Sells mainly to consumption*

Why did OwnerDwelling output not increase? *Sells mainly to consumption: inelastic supply*

Why is the LocalMarket component of DrinksSmokes and MeatDairy negative? *Export sales held prices up...households switched to other goods.*

5.1 Why did industry costs decrease?

The chief mechanism by which cheaper TCF (both domestic and imported) leads to cost reductions elsewhere is via the assumption that wages for all sectors are indexed to the CPI. This works as follows:

- (a) Cheaper TCF reduces the CPI directly; we call this the *impact effect*.
- (b) Wages everywhere go down with the CPI.
- (c) Reduced wages reduce costs (and output prices) for all the other sectors.
- (d) Generalized reduction in output prices further reduces both the CPI and all sectors input costs: we call this the *second-round effect*.
- (e) The further reduction in the CPI reduces all wages.....go back to (c).

The general equilibrium effect will be produced by an endless repetition of steps (c) to (e).

To measure the impact effect of cheaper TCF on the CPI, find the appropriate equation:

```
E_p3tot # Consumer price index #
  p3tot = sum{c,COM, sum{s,SRC, [V3PUR(c,s)/V3TOT]*p3(c,s)}};
```

What is the value of p3tot? *-0.21*

Next select and **Evaluate** the phrase above "[V3PUR(c,s)/V3TOT]*p3(c,s)" to see the contributions of each commodity (dom and imp) to the CPI change.

What is the total contribution to the final change in p3tot from Textiles and ClothingFtw, domestic and imported (add 4 numbers together)? *-0.11*

You should see that the direct or impact effect of cheaper TCF is responsible for just over half the CPI change.

Assertion: The remaining drop in the CPI is due to second-round effects [steps (c) to (e) above].

How can we test the assertion above? One way would be to reason as follows. A 1% direct reduction in the CPI will reduce wages 1%. Let S be the share of wages in GDP. The 1% wage reduction will cause costs generally *and the CPI* to fall by $S\%$. So CPI and wages fall by another $S\%$. This in turn reduces costs by $S^2\%$, and so on. The total eventual reduction in the CPI would be:

$$1 + S + S^2 + S^3 + \dots = T\%$$

We can add up the infinite series by noting:

$$ST = S + S^2 + S^3 + S^4 + \dots = T - 1$$

So $T = 1/[1-S]$

Find and evaluate the coefficient INCGDP. What is the share of wages in GDP, S ? *0.456*

So what is T ? *1.84*

You should find that the total effect T is just under double the initial 1% CPI rise. This means that indirect or second-round CPI falls will be slightly less than half the impact effect—which agrees with the assertion above.

Summary: the benefits of the tariff cut arise mainly¹ from the effect of the tariff cut on the CPI, and on the link between the CPI and wages. If we dropped the wage indexation assumption, or we reduced

¹ A small amount of ClothingFtw is sold directly to other industries, so providing another route for cheaper ClothingFtw to benefit other sectors.

tariffs on goods sold mainly to some other final demander (say, investment) we would not expect to see expansion in the other sectors.

Our argument, that lower wages are the main cause of non-TCF expansion seems to explain why p1var fell more for the nontraded industries at the bottom of Table 1: for these industries labour accounts for a larger share of costs.

Decompose the RHS of equation E_p1var to find out whether wages (p1lab_o) or materials (p1mat) make the bigger contribution to reduced input costs for non-traded sectors? for traded sectors? *Wages make a bigger contribution than materials for non-traded sectors, for traded sectors wage and material contributions are of similar size.*

6 Macro results

We will not analyse macro results at length here, since results analysis from the macro point of view is the focus of a later exercise: analysis of a wage-cut simulation. Nevertheless, AnalyseGE can make a useful contribution.

What happened to real GDP? *up 0.0331%*

Which expenditure aggregates contributed to this change? *contGDPexp*

Exports *0.0726%*

Imports *-0.0395%*

Now find equation E_x0gdpinc and decompose the RHS by variable

How much did employment and taxes respectively contribute to real income-side GDP?

employment contributed: *0.0224%*

taxes contributed: *0.0106%*

of taxes, tariffs contributed: *0.0088%*

What is the terms-of-trade loss as a percent contribution to GDP? *-0.0079*

How does the terms-of-trade loss compare with the allocative efficiency gain? *About the same !*

6.1.1 Sector-specific shocks have tiny macro effects

Sometimes it is embarrassing to report the tiny GDP % effects that result from shocks to one small sector. To avoid this, you can report results, not in per cent terms, but in base-period-dollars-worth. For example, **Bring AnalyseGE to Front**, clear the expression box, and type in:

```
0.01*sum{i,ind:employ(i)<0, employ(i)*V1LAB_O(i) };
```

Then press the **Evaluate** button.

This gives the value² of employment losses. What is it? *-54.07 base-period-million-dollars*

Use a similar method to find value of employment gains. What is it? *149.99 base-period-million-dollars*

² It gives the value in base-period-currency units. The initial data is measured in million 93-4 dollars.