3 Trade policy without trade facilitation: Lessons from tariff pass-through in Tunisia

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Abstract

This chapter evaluates the extent to which changes in tariffs and in international prices were transmitted into consumer prices in Tunisia over the period 2000–2008. A pass-through equation is estimated using sectoral panel data at the retail product level and controlling for unobserved sectoral heterogeneity. The main results show that, on average, tariff pass-through (TPT) is 10 per cent and it varies across sectors. In particular, agricultural products seem to be driving the results. In summary, the change in Tunisian tariffs has affected local prices, but the effect is lower in magnitude than that found for other developing countries. This is in part due to imperfect competition and state interventions by means of subsidies and

3.1 Introduction

In the past two decades, an increasing number of developing countries have started unilateral or regional trade liberalization processes in most regions of the world. In particular, many countries in the North African region have intensified their participation in regional trade agreements, such as the pan-Arab Greater Arab Free Trade Area (GAFTA) and the Euro-Mediterranean Agreements (EUROMED), and have also engaged in unilateral trade liberalization policies. Recently, Tunisia adopted the Agreement on Trade Facilitation (TFA) at the 2013 WTO Bali Ministerial Conference. The main aim of the TFA is to reduce trade costs in general and to tackle "red tape" that is hampering trade across borders in particular. As underlined in the World Trade Report 2015 (WTO, 2015), full implementation of the TFA will decrease trade costs by 14.3 per cent and developing countries will benefit the most. To date, Tunisia has notified provisions under Category A of the TFA.

The main underlying goal of these trade policies is improving market access and paving the way towards increasing trade, as well as entering into or increasing WTO members' participation in global production networks. An important question for economic development is whether these policies help to reduce poverty and to increase the welfare of citizens. It could be that, in reducing trade costs, national producers would be displaced by more productive foreign firms that are able to export to the region and this could eventually translate into losses for domestic producers and overall welfare losses. It could also be possible that increasing international competition would reduce domestic prices and this could translate into increasing consumption and welfare for most consumers. For this reason, it is important to evaluate the net welfare effects of such policies in specific countries. A first step to accomplish this task is to analyse the extent to which changes in international prices and in trade and non-trade barriers are transmitted to changes in domestic prices.

This chapter focuses on the Tunisian case for two reasons. First, this is the first attempt to evaluate the pass-through of international prices into domestic prices in this country using data from the 2000s, a period in which Tunisia witnessed important economic and institutional changes. Second, Tunisia still has relatively high tariffs and a large number of non-tariff barriers, despite the fact that the average tariff rate has been reduced in recent years. For instance, the average MFN tariff for manufactured products was reduced from 19 per cent in 2006 to 12 per cent in 2013 (the corresponding tariffs for agricultural goods were 54 per cent and 19 per cent respectively).

Table 3.1 Import shares by category of goods, 2002–2008

Category of goods	2002 (%)	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)	2008 (%)
Bread and cereals	4.87	3.14	2.77	2.9	2.77	4.97	4.97
Clothing and footwear	14.53	14.67	12.35	11.29	9.55	9.2	7.29
Fish and seafood	0.19	0.28	0.22	0.28	0.3	0.26	0.27
Fresh and dried fruits	0.11	0.08	0.17	0.08	0.07	0.07	0.05
Furniture, household articles	3.99	3.81	3.78	4.17	4.18	3.76	3.57
Housing, water, gas, electricity	9.49	10.55	9.92	13.14	14.08	12.32	16.06
Meat and poultry	0	0.04	0.22	0.21	0.14	0.11	0.1
Milk, cheese and eggs	0.28	0.32	0.36	0.28	0.2	0.22	0.27
Oil and fats	1.12	1.47	1.37	1.48	1.57	1.24	1.91
Salt and condiments	0.03	0.03	0.03	0.04	0.03	0.02	0.03
Sugar, jam, tea, coffee and chocolate	1.33	1.05	1.08	1.12	1.46	1.09	0.99
Tobacco	0.45	0.47	0.47	0.52	0.47	0.43	0.34
Vegetables	0.29	0.25	0.26	0.25	0.19	0.39	0.13
Drinks	0.12	0.13	0.09	0.1	0.08	0.09	0.07
Health	2.03	1.96	1.97	2.01	1.78	1.69	1.54
Transport	12.29	13.13	13.67	14.79	15.2	13.58	15.22

Source: Authors' calculations using data from the United Nations Commodity Trade Statistics (UN-Comtrade) database

Table 3.2 Average applied tariffs by sector and tariff type, 2006 and 2013

Table 3.3 Simple average effectively applied tariff rate by category of goods, 2002–2008

Category of goods	2002 (%)	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)	2008 (%)
Bread and cereals	19.37	18.8	18.4	17.03	16.99	16.99	15.63
Clothing and footwear	15.78	15.67	16.06	12.35	14.42	14.42	15.39
Fish and seafood	7.88	7.88	7.85	6.7	6.69	6.69	7.95
Fresh and dried fruits	23.4	22.92	22.55	19.84	19.78	19.78	18.22
Furniture, household articles	13.15	12.92	12.83	8.86	11.42	11.42	12.53
Housing, water, gas, electricity	7.89	7.4	7.28	4.63	6.68	6.68	6.94
Meat and poultry	5.17	5.13	5.07	4.96	4.96	4.96	4.77
Milk, cheese and eggs	16.12	15.48	15.68	15.92	15.96	15.96	13.83
Oil and fats	8.24	8.15	7.97	6.82	7.53	7.53	6.8
Salt and condiments	15.87	15.75	15.66	11.71	12.11	12.11	13.43
Sugar, jam, tea, coffee and chocolate	12.84	12.38	12.28	10.64	11.23	11.23	11.56
Tobacco	9.2	9.07	8.73	7.43	7.57	7.57	7.45
Vegetables	19.35	18.97	18.63	13.61	13.61	13.61	13.62
Drinks	17.01	16.97	16.93	15.44	17.37	17.37	16.87
Health	6.77	5.57	5.41	3.16	4.73	4.73	4.98
Transport	11.08	11.14	10.98	7.95	10.02	10.02	10.57

Source: Authors' calculations using trade statistics from the UN-Comtrade database.

Weighted averages, reported in Table 3.4, show an average decrease, from about 52 per cent in 2000 to 31 per cent in 2008. The values are, in many cases, considerably higher than those in Table 3.3, indicating that tariffs on goods in categories with a high import share are relatively large. For many products, the evolution of weighted averages over time is more pronounced, which indicates that higher tariffs have been subject to greater reductions.

Table 3.4 Weighted average effectively applied tariff rate by category of goods, 2002–2008

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Figure 3.2 Products affected by more than 50 NTMs, 2002 and 2005 (number)

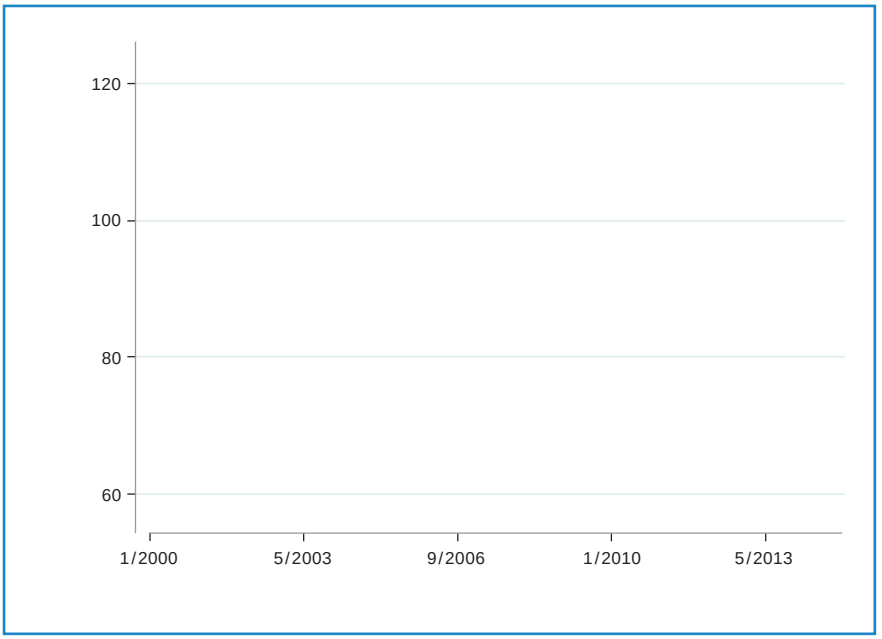
Source: Authors' calculations using WITS Database, World Bank.

Figure 3.3 Products affected by more than 20 NTMs, 2002 and 2005 (number)

Source: Authors' calculations using WITS Database, World Bank.

Most of these NTMs correspond to sanitary and phytosanitary (SPS) regulations (Type A – 54 per cent) followed by technical barriers to trade (TBT) (Type B – 16 per cent) and pre-shipment inspections and other formalities (Type C – 14 per cent), as reported in Ghali et al. (2013).

Figure 3.4 Evolution of Tunisian monthly effective exchange rate, 2000–2013



Source: Central Bank of Tunisia (exchange rate); International Monetary Fund (IMF) (CPI); UNCTAD (import share).

depreciation (Figure 3.4)[5]. The depreciation was the consequence of a number of shocks affecting the country, namely, the events of September 2001 and several severe droughts that affected agriculture production.

With respect to other policies that also influence consumer prices, the use of administered prices and consumer food subsidies must be mentioned. There are fixed producer buying prices for wheat and other domestic support for barley, milk, olive oil and sugar beet. Tunisia had used price controls since 1986 on agricultural inputs and producer prices, although the former have since been completely removed; there are still guaranteed public prices for grain and milk. With respect to consumer subsidies, since 2000, grain, vegetable oil and milk are covered by subsidies (Minot et al., 2010).

where:

imp_{jpt} are Tunisian import values of product p (combined harmonized system HS-6 digit disaggregation level) from exporter j at time t; GDP_{jt} is exporter GDP; τ_{jpt} are bilateral weighted tariff rates; NTM_{jpt} is a vector of NTM dummies; α_{NTM} is the corresponding vector of coefficients, both of 7 dimensions – one for each type of NTM (Types A to F); γ_j are exporter fixed effects that capture all the other trade cost and gravity variables, such as distance and all other time-invariant bilateral dummies; bt are year fixed effects that proxy for all time-varying factors common for all exporters and products (Tunisian GDP, business cycle); and ε_{jpt} is an iid error term.

Note that β_2 is interpreted as (1- m), where m is the elasticity of substitution (Anderson and van Wincoop, 2004). In accordance with Bacchetta et al. (2012), the tariff equivalent by type of NTM can be calculated as follows:

$$\delta_{NTM} = \exp(\alpha_{NTM} / \beta_2) - 1 \qquad (5)$$

Similarly, the compound AVE for all types of NTMs is calculated for each product k and year t:

$$\delta_{kt} = \sum_p D_{pkt} \sum_j s_{jpt} [\exp(\alpha_{NTM} NTM_{jpt} / \beta_2) - 1] \qquad (6)$$

where:

s_{jpt} is the share of imports of HS-6 product p imported from country j, and s_{pkt} is the share of imports of good k due to import of HS-6 product p. Note that $\alpha_{NTM} NTM_{jp}$ is a scalar product.

Including NTMs, equation (3) becomes:

$$\ln P_{kt} = \gamma_0 + \gamma_1 \ln PP_{kt} + \gamma_2 \ln PI_{kt} + \gamma_3 \ln(1 + \tau_{kt}) + \gamma_4 NTM_{kt} + \gamma_j + \beta_t + \varepsilon_{kt} \qquad (7)$$

where NTM_{kt} is either the coverage ratio or $\ln(1+\delta_{kt})$, i.e. the log-transformed ad valorem tariff factor equivalent (AVE) of the NTMs.

3.5 Data, variables and empirical model

Data and variables

Bilateral tariff data are taken from the World Bank's TRAINS database, which covers the period 2002–2008.[9] Because tariff data for 2007 are missing, it is

Main results

The gravity model in equation (4) is estimated using simple ordinary least squares

The TPT is 9 per cent in column 1 (without product dummies) and 6.4 per cent with both sets of dummies; the international and production prices coefficients present the expected positive sign and are statistically significant, whereas import unit values are not statistically significant. The degree of TPT is considerably lower in comparison with that found in studies for other developing countries. Including the coverage ratio in columns 3 and 4 leaves results practically unchanged. Unlike the coverage ratio, the inclusion of AVE shows a significant positive impact on prices, but only in column 5. However, including product dummies in column 6, the coefficient becomes less significant. The inclusion of AVE induces only minor changes in the other coefficients[43]. The TPT is now 6.2 per cent.

The model was also estimated including a dummy that takes the value of 1 for the goods subject to subsides and price controls. The results concerning the TPT remain the same and the dummy coefficient is negative and significant, indicating that retail prices are, in general, lower for these products.

In Table 3.10, the model is augmented with a proxy for market power. In particular, use is made of the Herfindahl Index of concentration, which measures the average market shares that firms have in a given industry.

The new variable is also interacted with the weighted tariff to see whether the TPT varies with market power. Indeed, the results show that the tariff elasticity is statistically significant and of higher magnitude in Table 3.10 than in Table 3.9. Calculation of the marginal effects of the combined effect of the level and the interaction factors indicates that the average effects are similar to those in Table 3.9.

Table 3.10 shows that imperfections in the market mechanism reduce TPT substantially. Indeed, the interaction between tariffs and weighted Herfindahl Index shows that, for industries in which firms have sizeable market power, prices are not decreasing in response to tariff cuts: quite the contrary, in some cases – in high concentration sectors – where the effect goes in the opposite direction. Thus, one potential reason for the low TPT in Tunisia is low competition: firms with strong market power are capturing a part of the tariff. Therefore, tariff changes could not possibly translate into price reductions and improvement in consumer welfare.

GLS estimations with product dummies and with time dummies are also presented for broad categories (Table 3.11) and for more disaggregated categories (Table 3.12).

Table 3.10 Tariff pass-through interacted with market power

Variable

Table 3.11 Tariff pass-through for broad categories (addition of Herfindahl Index)

Table 3.12 Tariff pass-through for specific categories

Bread and cereals	-0.0229	0.487	0.472***	-113.9***	456	6
Clothing and footwear	0.122	2.127***	-12.44	-235.2***	44	2
Fish and seafood	0.0126	-0.156	0.126	-9.595	574	8
Fresh and dried fruits	-0.0126	3.865***	-0.0507	66.16	290	7
Furniture, household articles	0.00320	0.184***	0.0123	-40.38***	526	7
Housing, water, gas, electricity	0.00395	0.355***	0.0615	-48.65***	520	7
Meat and poultry	0.0194	0.531**	0.346	-48.59	119	2
Milk, cheese and eggs	-0.0175**	0.391**	0.242***	-219.4***	324	5
Oil and fats	-0.00328	-0.0594	-0.0176	-77.01***	168	2
Salt and condiments	0.000150	0.00742	0.00148	-5.695**	252	3
Sugar, jam, tea, coffee and chocolate	-0.00850	-0.133	0.0830	0	181	3
Tobacco						

Table 3.13 present the results, without interaction in columns 1 and 2, and with interaction with the Herfindahl Index in columns 3 and 4. Column 1 shows that reductions in trade costs decrease local prices substantially. However, the effect is lower in industries in which firms enjoy important market power (column 3). In any case, the pass-through is much higher than for tariffs, indicating that other trade costs translate more directly into local prices.

Table 3.14 adds the real effective exchange rate (the simple mean _t and the geometric mean _tg) to the model. Addition of the exchange rate does not change the results.

Table 3.13 Trade costs pass-through

Table 3.15 Without industrial prices/instruments for industrial prices

Variable	No production

Table 3.16 Interaction of tariffs and NTMs

Variable	All goods	All goods	All goods	All goods	All goods	All goods
Weighted unit value per kg	-0.00275	0.00285	-0.00140	0.00341	-0.00151	0.00329
	[0.00439]	[0.00410]	[0.00492]	[0.00470]	[0.00495]	[0.00471]
Weighted tariff	0.0769	0.152*	0.210	0.353***	0.650***	0.293
	[0.108]	[0.0875]	[0.142]	[0.119]	[0.232]	[0.182]
Industrial price	0.229**	0.163**	0.206*	0.155**	0.236**	0.152**
	[0.105]	[0.0725]	[0.105]	[0.0720]	[0.107]	[0.0722]
AVE of NTM	0.187*	-0.0949	-0.0237	-0.139	-0.304*	-0.105
	[0.105]	[0.103]	[0.132]	[0.117]	[0.176]	[0.141]
Weighted Herfindahl Index			0.412***	0.183**	0.702***	0.148
			[0.0869]	[0.0723]	[0.132]	[0.109]
AVE*Weighted tariff	-0.0300	0.204	-0.0674	0.347	0.838*	0.222
	[0.224]	[0.181]	[0.275]	[0.231]	[0.476]	[0.369]
Weighted Herfindahl Index*AVE			0.344***	-0.0340	0.919***	-0.109
			[0.119]	[0.0908]	[0.241]	[0.195]
Weighted Herfindahl Index*Weighted tariff			-0.372***	-0.363***	-1.263***	-0.244
			[0.115]	[0.0967]	[0.352]	[0.287]
Weighted Herfindahl Index*Weighted tariff*AVE					-1.867***	0.253
					[0.710]	[0.579]
Constant	-1.069**	-2.290***	-1.202**	-2.467***	-1.486***	-2.446***
	[0.512]	[0.397]	[0.516]	[0.403]	[0.530]	[0.407]
Observations	4,656	4,656	4,522	4,522	4,522	4,522
Number of price_code	74	74	73	73	73	73
Product dummies	No	Yes	No	Yes	No	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1.

Industrial price, weighted unit value per kg, weighted tariff, AVE of NTM in logs.

3.6 Conclusions

This study estimated the TPT for the Tunisian economy using data from 2000 to 2008. The main results indicate that changes in tariffs are only partially transmitted to changes in retail prices, with an average pass-through of 10 per cent. This partial pass-through effect is lower in magnitude than that found in other developing-country studies. The model was also estimated for specific sectors, with results indicating that the TPT for agricultural products is around 22 per cent, whereas for the manufacturing sector the pass-through coefficient is not statistically significant. This result confirms that a trade liberalization scenario that is not strengthened by trade-related institutions and policies, such as a stable macroeconomic environment, a competitive exchange rate and competitive policies, fails to contribute to an efficient allocation of resources. As a consequence, consumer prices will not decrease as expected following tariff reduction. Consumers will not profit from trade liberalization. As the markets are distorted by government interventions via price controls, subsidies, taxes and barriers to entry, tariff cuts will benefit the few firms operating in liberalized markets.

In addition, there are a number of subsidies on consumer goods and fixed producer prices for products such as grain, milk, meat, oil and some vegetables.

This could be due to the data construction, since the information available indicates the number of NTMs in the year in which the corresponding regulation applied but the duration of the measures is not provided. Note that some NTMs deal with product standards and do not necessarily have a protectionist effect.

3.

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