

10 Impact of economic liberalization

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To design successful reform strategies it is crucial that the effects of economic liberalization be analyzed thoroughly. To do that, we first need to quantify the barriers to trade in services, and then using these measures of trade barriers assess quantitatively the effects of liberalizing services.

The chapter is structured as follows. The first section considers the various problems faced in the quantification of barriers to trade in services and network industries. The next section assesses the tariff equivalents of barriers to trade in the Turkish telecommunications, electricity, natural gas, banking, maritime freight transport and road freight transport services sectors. The third section studies the effects of liberalization in goods and services within the context of Turkey's accession to the European Union (EU) on the Turkish economy. The final section concludes this study of economic liberalization.

Quantifying barriers to trade in services and network industries

First, we discuss the simplest and most common approach to measuring the barriers to trade in services, which involves frequency measures developed by Hoekman (1995). Next, we consider the approach adopted by the Australian Productivity Commission (APC) discussed by Findlay and Warren (2000). Finally, we consider the gravity approach developed by Francois (1999).¹

Hoekman's approach to estimating tariff equivalents in services

Hoekman (1995) constructs frequency ratios on the basis of commitments scheduled in the World Trade Organization's (WTO) General Agreement on Trade in Services (GATS). He considers the four modes of supply of GATS: (1) cross-border supply, (2) consumption abroad, (3) commercial presence and (4) movement of natural persons. According to the WTO's Services Sectoral Classification List (MTN.GNS/W/120) there are 155 non-overlapping service sectors (WTO 1991). As there are four possible modes of supply for each sector, 620 such openness/binding factors (commitments) exist for each member country.

As commitments scheduled in GATS apply to national treatment and market access separately, there are potentially 1,240 data cells for each member (620×2).^{2,3} Commitments were then classified into three categories and each category was assigned a numerical score as follows:

- if no restrictions were applied for a given mode of supply in a given sector ('none' in GATS jargon), a value of 1 was assigned;
- if no national treatment or market access liberalization policies were bound for a given mode of supply in a given sector ('unbound'), a value of 0 was assigned;
- if restrictions or limitations were listed for a given mode of supply in a given sector ('bound'), a value of 0.5 was assigned.

The value of these indicators was chosen to allow aggregation across sectors and countries. The higher the number, the greater the implied extent of openness-cum-binding. Using these scores, Hoekman calculated three indicators: (1) the number of sector/mode-of-supply combinations (cells) in which a commitment was made (as a share of the maximum possible – 620 for market access and 620 for national treatment), (2) the 'average coverage' of each schedule of commitments, defined as the arithmetic weighted mean of the scale factors allocated to each cell and (3) the share of 'no restriction' commitments in (a) a member's total commitments and (b) relative to the 155 possible sectors of the classification list. The higher the number, the more 'liberal' the service regime in the country.⁴

Although the original purpose of these coverage indicators was to quantify GATS commitments, Hoekman argued that they could also be used to generate information on the relative restrictiveness of policy regimes pertaining to service industries by assuming that the coverage of each country's schedule is an indicator of its policy stance. He used the frequency ratios as a starting point for estimating country-specific 'tariff equivalents' of the relative degree of discrimination of foreign service providers across countries and sectors. Here, he somewhat arbitrarily defined a set of benchmark 'guesstimates' of tariff equivalents for each sector. These are a subjective set of benchmark tariff equivalents for individual sectors to reflect the degree to which market access to these sectors is restricted. A value of 200 per cent was chosen for the sectors in which access tended to be prohibited by most countries, and which did not appear in most schedules, such as maritime cabotage and basic telecommunications; values between 20 per cent and 50 per cent were assigned to sectors in which access was less constrained (e.g. hotels and restaurants or wholesale services). Each country and sector was then assigned a value related to that benchmark. For example, the financial services sector (excluding insurance) was assigned a benchmark tariff equivalent of 50 per cent. The tariff equivalent of barriers to trade in a particular sector of a given country was then obtained by multiplying the guesstimated subjective tariff rate in the sector by one minus the coverage ratio of the sector in the country. Thus, if the subjective benchmark tariff rate is 200 per cent and coverage ratio is 10 per cent, then the country would have a tariff equivalent of 180 per cent (i.e. 0.9×200).

Hoekman (1995), when reporting the results of calculations for 26 sectors and 49 countries, used the information on market access commitments and not that on national treatment.

The importance of Hoekman's contribution is acknowledged in the literature, and the indices have been used in many empirical studies. There are certainly some clear advantages of Hoekman indices. First, they cover all sectors and a very large group of countries. Second, it is fairly easy to apply the Hoekman approach to the new WTO member states undertaking new GATS commitments. His approach requires no specific country and sectoral field studies.

The Australian Productivity Commission's approach to estimating tariff equivalents in services

A more elaborate restrictiveness measure than that of Hoekman has been constructed for different service industries by the APC in collaboration with the University of Adelaide and the Australian National University. To develop these indices, the actual restrictions on trade in a service industry are compiled from specifically designed questionnaires using a number of different sources. These restrictions are then assigned scores and grouped into categories, each of which is assigned a numerical weight. These scores and weights are based on subjective assessments of the costs of restrictions to economic efficiency. Finally, the sectoral tariff equivalents are computed using these scores and econometrically estimated relations between restrictiveness values and performance indicators such as the price of the service under consideration.⁵

The gravity approach to estimating tariff equivalents in services

The basic method for estimating services barriers by the gravity approach involves the estimation of sector-specific gravity equations, which relate the bilateral trade flow from country *i* to country *j* to the exporting and importing countries' gross domestic product (GDP) per capita, the populations in the two countries, the distance between the two countries, the trade barriers and a set of country dummies such as adjacency, common language and regional trading arrangements (e.g. EU membership). Using the econometrically estimated gravity equation and a measure of the elasticity of substitution for the service sector under consideration we obtain the tariff equivalent of barriers to trade in the service sector under consideration.⁶

Barriers to trade in different service sectors

When trying to estimate the tariff equivalents in services in Turkey it is noted that Hoekman's approach reveals certain weaknesses. First, the indices do not assign weights to entry barriers based on their differential impacts on the economy. As all limitations receive the same weighting (0.5), minor impediments are treated exactly the same as almost complete refusal of foreign entry into a domestic

market. Second, the indices are constructed on the basis of the GATS schedules of commitments, many of which do not provide an accurate description of the actual barriers. The indices reflect the level of commitments made by the member countries some time ago and, as a result, they do not in general show the present level of restrictions in particular service sectors. In several sectors the current level of liberalization exceeds the level of liberalization when the schedules of WTO commitments were undertaken in 2004. Thus, current average levels of tariff equivalents can be quite different from Hoekman's guesstimates, even assuming that they were initially correct. Third, considering an unscheduled sector as being completely closed to new entry does not give a clear picture of the situation either. It may well be the case that actual practices are more liberal than commitments, and therefore the indices may be overstating the degree of protection. Finally, the absolute level of indices depends very much on benchmark guesstimates of tariff equivalents of the most protectionist countries. For example, the guesstimate for non-life insurance financial services is 50 per cent, whereas that for life insurance services is 200 per cent. In consequence, the average sectoral level of all countries depends mainly on the level of the guesstimate. Thus, they reflect relative restrictiveness among countries rather than the absolute level of sectoral tariff equivalents; such estimates cannot be directly used in liberalization simulations when information about the absolute level of protection is required.

The main issue with the gravity model is related to the non-availability of data on bilateral sectoral trade flows in services for a large number of countries. Essentially, there are three sources of data for bilateral trade flows in services. The Global Trade Analysis Project (GTAP) database provides a cross-section dataset of world bilateral service trade flows for 2001. Second, the Organization for Economic Co-operation and Development (OECD) provides data on bilateral trade flows in services among the OECD countries.⁷ Finally, EU EUROSTAT provides data on EU members' trade in services.⁸ The bilateral GTAP data is constructed using various data sources and balanced against the input-output tables and balance-of-payments data. This dataset is aimed at computable general equilibrium (CGE) analysis and is not meant to be used in econometric studies, as many missing data points are estimated using various techniques and do not necessarily resemble real service flows. Moreover, GTAP data refer to one period only, which rules out their use for panel analysis.

On the other hand, the APC's approach is more appropriate for estimating tariff equivalents, as will be explained in some detail later on. As a result, when quantifying the barriers to trade in the Turkish telecommunications, electricity, natural gas, banking, maritime freight transport and road freight transport service sectors we consider the APC's approach, and in cases in which this approach cannot be used we consider the gravity approach or a related approach.

Telecommunications

To estimate the ad valorem equivalent of the prevailing barriers to the telecommunications services sector in Turkey we calculate first the restrictiveness index

values, following an approach similar to that of Warren (2000a) and Kimura *et al.* (2003a). Appendix Tables A10.1–A10.3 show – for fixed-line, mobile and internet services, respectively – the restriction categories, weights for them and the scoring for each category. The weights show the importance of the category in terms of how significantly the restriction of the category would limit service suppliers from entering or operating in the market. The sum of weights for all categories is 1. A score with a range from 0 (least restrictive) to 1 (most restrictive) is assigned for each category according to the degree of restrictiveness, and so the score reflects the type of restriction imposed by the economy.

In Appendix Tables A10.1–A10.3 the restriction categories are classified into 'restrictions on commercial presence' and 'other restrictions'. In the case of fixed-line, mobile and internet services the 'restrictions on commercial presence' include 'licensing of fixed-line services', 'form of commercial presence', 'direct investment: equity participation permitted', 'direct investment: restrictions on certain types of services', 'joint venture arrangements' and 'permanent movement of people'. 'Other restrictions' in the case of fixed-line services include 'third party resale of lease line', 'end-user tariff', 'regulation of network interconnection', 'market structure', 'composition of board of directors' and 'temporary movement of people'. In the case of mobile services, 'other restrictions' includes 'allocation of radio spectrum' instead of 'third party resale of lease line', and in the case of internet services 'other restrictions' includes 'infrastructure' instead of 'third party resale' and 'end-user tariff'. Among restrictions, 'licensing of fixed-line services' and 'direct investment: equity participation permitted' have a weight of 20 per cent each. These weights indicate that these barriers are the most important ones.

The Appendix tables reveal that in Turkey there are no restrictions on direct investments or on the permanent movement of people. Comparing the restrictions of fixed-line, mobile and internet services, it is noted that there are fewer restrictions of mobile and internet services than of fixed-line services.⁹

Appendix Table A10.4 shows the foreign restrictiveness (FR) index values for Turkish fixed-line, mobile and internet services. The FR value equals 0.193 in the case of fixed-line, 0.165 in the case of mobile and 0.12 in the case of internet services. To convert these index values into tariff equivalents, we use the coefficients estimated by Warren (2000a). The regression results obtained by Warren (2000a) for fixed-line services and mobile services are reported in Table 10.1. In the table, the penetration rate of fixed-line networks (main lines per 100 inhabitants denoted by q_f) is regressed on GDP per capita (y), household density (number of households per square km denoted by I), per cent of main lines connected to the digital exchange ($dshare$), waiting list as a per cent of the total demand for main lines ($wait$), population density (number of persons per square km denoted by pd) and measure of trade policy (p_f). On the other hand, the penetration rate of the mobile network (cellular phones per 100 inhabitants denoted by I) is regressed on y , pd and measure of trade policy (p_m).

Denoting the value of the trade policy variable under the full liberalized policy approach by p_i^* , the associated value of the dependent variable by q_i^* and the price elasticity of demand by η_i , ($i=f, m$), we note that:

Table 10.1 The estimated results for the fixed-line and mobile penetration models

	The fixed penetration model		The mobile penetration model	
	Coefficient	Standard error	Coefficient	Standard error
Constant	12.26	2.66	-1.3	0.7
GDP per capita (<i>y</i>)	0.004	0.0003	0.0008	0.00005
<i>y</i> ²	-6.30E-08	0.0	-1.90E-09	0.0
<i>y</i> ³	1.30E-13	0.0		
Household density (<i>hd</i>)	0.003	0.003		
Waiting list (<i>wait</i>)	-0.08	0.05		
Digitized network share (<i>dshare</i>)	-0.13	0.03		
Population density (<i>pd</i>)			0.001	0.0006
Policy variable (1 - FR index)	5.26	3.11		
Adjusted R-squared	0.89		0.78	

Source: Warren (2000a) (Model 5 in Table 6.5 and Model 7 in Table 6.6).

Note
Dependent variable for the fixed penetration model: mainlines per 100 inhabitants. Dependent variable for the mobile penetration model: cellular mobile subscribers per 100 inhabitants.

$$\frac{q_f^* - q_f}{q_f} = \eta_f \left[\frac{p_f^* - p_f}{p_f} \right] \quad \text{and} \quad \frac{q_m^* - q_m}{q_m} = \eta_m \left[\frac{p_m^* - p_m}{p_m} \right]$$

where subscripts *f* and *m* refer to fixed-line and mobile services respectively. Hence, the tariff equivalents (*TE_f*) are obtained as:

$$\left[\frac{p_f^* - p_f}{p_f} \right] 100 = TE_f \quad \text{and} \quad \left[\frac{p_m^* - p_m}{p_m} \right] 100 = TE_m^{10}$$

Based on these equations, we calculate the ad valorem tariff equivalents of restrictions on the fixed-line services during 2005 as 2.7 per cent, on mobile services as 3.43 per cent and on internet services as 1.64 per cent.¹¹ The tariff equivalent of restrictions in the telecommunications sector obtained as a weighted average of the tariff equivalents of restrictions in fixed-line, mobile and internet services weighted by sectoral employment levels is then 2.74 per cent. The calculations reveal that the Turkish telecommunications sector as of 2005 was quite liberal but that further efforts are needed for complete liberalization.

The tariff equivalents in the Turkish telecommunications sector during the 1990s were estimated by Warren (2000a) using index values derived from an international survey undertaken by the International Telecommunications Union (1998) for 136 countries. Warren (2000a,b) estimated first the restrictiveness

indices to trade in telecommunications and thereafter the price impact. The results are shown in Appendix Table A10.5. From the table, we note that the ad valorem tariff equivalents of restrictions in the telecommunications sector during the 1990s were 33.53 per cent in Turkey and zero per cent in Finland and the United Kingdom. These figures reveal that, as a result of restrictions in the telecommunications sector, the price of telecommunications services in Turkey during the 1990s was 33.53 per cent higher than the average price of telecommunications services in Finland and the United Kingdom.

Electricity

One of the first studies to develop indices of regulatory indicators in the electricity sector was that by Steiner (2000), who uses them to empirically investigate the linkages between regulatory regimes, market environments and performance. The author uses as indicators of performance industrial electricity prices, the ratio of industrial to residential electricity prices, utilization rates (an efficiency measure for generation) and reserve plant margins (an alternative efficiency measure for generation). Steiner concludes that the unbundling of generation and transmission, the expansion of third party access (TPA) and the introduction of electricity markets reduce industrial end-user prices.¹² The results obtained by Steiner were later extended by Doove *et al.* (2001) by increasing the number of countries under consideration from 19 to 50.¹³ The data in their analysis refer to the year 1996. Concentrating on the econometric model of the effects of regulation on industrial electricity prices, Steiner's model can be written as follows:

$$p_e = \alpha + \beta R + \gamma NR + \epsilon$$

where *p_e* denotes the industrial electricity prices, *R* the regulatory variables and *NR* the non-regulatory variables; α , β and γ are vectors of coefficients that were estimated and ϵ is the residual term. The author considers six regulatory and three non-regulatory variables, as shown in Table 10.2.

Although industrial electricity prices vary with the type and size of business, the electricity demand, the time of day, the time of year, the conditions of supply and the available generating capacity, Steiner (2000) considers the annual average electricity prices per kilowatt-hour (kWh) actually faced by 'industrial' customers, as determined by the International Energy Agency (IEA), as the dependent variable. All prices are converted from units of local currency to US dollars using the OECD's purchasing power parities. It must be noted that the IEA adjusts its electricity prices for the direct effect of taxes and subsidies. The regulatory variables focus on the key economic regulations needed to establish a competitive generation sector – vertical unbundling of the generation system from the transmission system, whether third parties can access the transmission grid and whether a wholesale environment (electricity market) exists. Dummy variables are used to indicate the three key economic regulations needed to establish a competitive generation sector. The unbundling of generation from transmission

Table 10.2 Steiner's model of industrial electricity prices

Variable	How measured
<i>Dependent variable</i>	
Industrial electricity price	Pre-tax industrial price (expressed in US PPPS per kWh)
<i>Independent regulatory variables</i>	
Unbundling of generation from transmission	Dummy variable (1 = accounting separation or separate companies; 0 = otherwise)
Third-party access	Dummy variable (1 = regulated or negotiated third-party access; 0 = otherwise)
Wholesale pool	Dummy variable (1 = presence of a wholesale electricity market; 0 = otherwise)
Ownership	Discrete variable (4 = private ownership; 3 = mostly private ownership; 2 = mixed; 1 = mostly public; 0 = public)
Time to liberalization	Negative of the number of years to liberalisation (ranges from -11 to 0)
Time to privatization	Negative of the number of years to privatisation (ranges from -11 to 0)
<i>Independent non-regulatory environmental variables</i>	
Hydropower share	Share of electricity generated from hydropower sources
Nuclear share	Share of electricity generated from nuclear sources
Gross domestic product	Gross domestic product (expressed in US PPPS billion)

Source: Steiner (2000).

Note

US PPPS, value in US dollars at purchasing power parity rates.

variable takes on a value of 1 if separate companies are involved in the generation and transmission sectors or if both sectors are managed by a single entity, but separate accounts are kept for each sector (accounting separation); otherwise it takes on a value of 0. The TPA variable takes on a value of 1 if generators and eligible customers have a legal right to access the transmission grid on certain prespecified terms and conditions (regulated TPA) or can negotiate the terms and conditions under which grid access can occur directly with the operator of the transmission grid (negotiated TPA); otherwise it takes on a value of 0. The wholesale environment variable takes on a value of 1 if generators can voluntarily sell or are obliged to sell their electricity into a wholesale electricity market; otherwise it takes on a value of 0.

In addition to the above three regulatory variables needed to establish a competitive generation sector, Steiner (2000) included three market structure variables in the model: ownership, the time to liberalization and the time to privatization. The ownership variable takes on different discrete values ranging from 0 to 4, depending on the mix of public and private ownership, as shown in Table 10.2. The time to liberalization and time to privatization variables measure the (negative) number of years to liberalization and privatization respectively. Indicators of

the time remaining to liberalization and privatization are included as a proxy for the impact of expectations of liberalization and privatization on prices. They are forward-looking indicators in that they assess the effect of regulation on prices before liberalization or privatization. Here, 'time to liberalization' is interpreted as being the time until the year in which key legislative changes are enacted, and 'time to privatization' is deemed to be the time until the year in which the first sale of a publicly owned generator occurs.

The model also included three non-regulatory environmental variables – the share of electricity generated from hydroelectric resources, the share of electricity generated from nuclear fuel and the GDP. The two share variables reflect differences in generating technologies across economies, which affect the marginal cost and hence the price of generating electricity. Finally, the inclusion of GDP adjusts for differences in the size of economies and is also an overall measure of national income.

As emphasized by Doove *et al.* (2001), Steiner's econometric results, summarized in Table 10.3, indicate the impact of each economic regulation parameter on price. From these individual effects it is possible to gauge the overall impact of all economic regulations (regulatory regime) on price. As Steiner's study includes only a subset of economic regulations affecting the generation sector, the impact

Table 10.3 Effects of regulation on electricity prices: random effects model

Variable	Estimated coefficient	Z-statistic	Value under the benchmark regime
Constant	0.0667 ^a	7.104	0.0667
<i>Regulatory and industry variables</i>			
Unbundling of generation from transmission	-0.0011	-0.659	Separate
Private ownership	0.0029 ^a	2.7	c
Third-party access	-0.0027	-1.357	Third-party access
Wholesale pool	-0.0052 ^a	-2.306	Yes
Time to liberalization	0.0008 ^a	2.814	c
Time to privatization	0.0006 ^b	1.51	c
<i>Non-regulatory environmental variables</i>			
Hydropower share in generation	-0.0341	-3.252	d
Nuclear share in generation	0.0023	0.132	d
Gross domestic product	0	1.011	d

Source: Steiner (2000).

Notes

a Statistically significant at the 5 per cent level.

b Statistically significant at the 20 per cent level.

c Not included in the calculation of the price impacts because sign of estimated coefficient was counterintuitive.

d Takes actual value in benchmark regime.

measures calculated here are unlikely to measure the full extent to which economic regulations impact industrial electricity prices.

The price impacts estimated for each economy measure the percentage increase in price attributable to inappropriate regulation. Here, we need an appropriate benchmark against which the effect of regulatory regimes can be measured. This benchmark corresponds to the optimal level of regulation, namely the socially least costly way of achieving the desired objectives. Doove *et al.* (2001) emphasize that one practical option is to use the combination of regulations that minimize the prices implied by the estimated equation. Noting that, for regulation i , the effect of inappropriate regulation on price (dp'_e) is the extent of inappropriate regulation (dR_i) multiplied by the estimated coefficient corresponding to regulation i (β_i), $dp'_e = \beta_i dR_i$, the impact of the entire regulatory regime on price (dp_e) is obtained by adding the individual effects of all of the n regulations, irrespective of whether or not the coefficients are statistically significant:

$$dp_e = \sum_{i=1}^n \beta_i dR_i$$

If inappropriate regulation increases prices by dp_e , the notional price expected to exist under the benchmark regime (p^0) can be estimated as the actual price less the change in price attributable to inappropriate regulation, or

$$p^0 = p_e - dp_e = p_e - \sum_{i=1}^n \beta_i dR_i$$

Expressing this change in price as a percentage of the implied price under the benchmark regime gives:

$$\text{Price impact} = \frac{dp_e}{p^0} = \frac{p_e - p^0}{p^0} = \frac{\sum_{i=1}^n \beta_i dR_i}{p_e - \sum_{i=1}^n \beta_i dR_i}$$

When using this approach we note that three of the six regulatory coefficients have the expected sign. Separating generation from transmission, allowing TPA to the transmission grid and allowing for a wholesale electricity market are all found to lead to lower prices. The coefficients on the three remaining variables – private ownership, time to liberalization and time to privatization – are less intuitive. As the coefficients are counterintuitive, Doove *et al.* (2001) decide not to include them in the calculation of the price impacts.

Using the methodology outlined above, price impacts were estimated for industrial electricity prices for each of the 50 economies during 1996. The price impact for the EU countries and Turkey are shown in Table 10.4. From the table, we note that the ad valorem tariff equivalent of restrictions in the Turkish electricity sector during the 1990s was 20.7 per cent. This figure reveals that, as a result of the regulatory regime implemented in Turkey in the electricity sector during

Table 10.4 Price impact of regulation in electricity supply

Country	Price impact (%)
Austria	13.2
Belgium	15.4
Denmark	8.5
Finland	0.0
France	16.0
Germany	8.3
Greece	16.6
Ireland	13.9
Italy	17.1
Luxembourg	13.8
Netherlands	15.5
Portugal	17.9
Spain	9.5
Sweden	0.0
United Kingdom	0.0
Turkey	20.7

Source: Doove *et al.* (2001).

this time, the price of electricity services was 20.7 per cent higher than the price of electricity services in the United Kingdom and Sweden.

Natural gas

To estimate the ad valorem equivalent of barriers to trade in natural gas, we make use of a study by the Department of Trade and Industry (2005). This study, developing a model of the natural gas market for the EU, considers three scenarios. The first scenario, which is called the 'constrained case', takes a fairly pessimistic view of what competition in the gas market will be like by 2015. Here, although the second gas directive has been transposed into national law by all member states of the EU, there has been little real enthusiasm for competition and the European gas market continues to be characterized as a series of national markets. The second case, called the 'most competitive case', represents the most positive outcome from the point of view of competition in the gas market that can reasonably be expected over the next ten years. Long-term contracts continue to play an important part in the market but pricing terms move away from oil-price indexation to market-related pricing. Liberalization within the EU itself is substantially complete but there remain problems beyond the EU's borders. Although some reform has been attempted in Russia, who, in this outcome, has signed the Energy Charter Treaty, Gazprom remains dominant over Russian production and effectively manages to exclude gas from the Caspian area from direct access to the European market. The third case, called the 'fully competitive case', represents

the best possible case from the point of view of competition in the gas market. It depicts a fully competitive gas market in the EU and globally by 2015–16. Within the EU, the liberalization process has been completed and there has been substantial reform in the gas market in Russia and other gas-producing countries. The liquid natural gas (LNG) market becomes fully commoditized with extensive spot trade.

Using the Energy Markets' European Gas Model, the Department of Trade and Industry (2005) calculates the spot price for each of the 25 countries considered in the study to be the marginal cost of supply, including gas costs, transportation costs and storage costs. The marginal cost is calculated as the increase in total costs in the entire model that result from increasing the demand in a particular country in a particular quarter by a small increment (1 million cubic metres) while holding all other assumptions and constraints unchanged. The results are reported in Table 10.5. Considering the constrained case as the base case, we note

Table 10.5 Gas price by scenario (price per unit of therm, real 2004 prices)

Country	Constraint case	Most competitive	Fully competitive
Austria	18.9	21.1	14.6
Belgium	31.0	19.5	15.3
Bulgaria	17.1	10.8	11.6
Croatia	19.9	12.3	16.3
Czech Republic	20.3	10.9	14.0
Denmark	17.7	13.8	13.8
Finland	11.6	8.2	9.1
France	37.4	20.6	16.1
Germany	22.8	14.6	14.2
Greece	18.6	11.9	12.9
Hungary	18.0	21.1	12.1
Ireland	36.6	24.6	18.2
Italy	19.7	10.0	14.1
Luxembourg	24.6	16.9	17.4
Netherlands	26.1	16.1	12.7
Poland	11.5	9.8	9.2
Portugal	12.7	20.5	17.6
Romania	16.5	20.0	11.2
Slovak Republic	15.8	8.6	11.7
Slovenia	20.5	13.2	16.2
Spain	30.6	13.6	15.0
Sweden	18.8	14.1	12.7
Switzerland	32.8	20.5	15.2
Turkey	34.9	14.1	11.2
UK	31.5	20.4	16.6

Source: Department of Trade and Industry (2005).

by comparing the most competitive case with the base case that liberalization of natural gas markets will lead to a 59.6 per cent reduction in the spot price of natural gas in Turkey.

Banking

McGuire and Schuele (2000), extending the work of McGuire (1998), develop index values of restrictiveness in financial services for a number of countries. The authors base their analysis on 1997 data and distinguish between prudential and non-prudential requirements. They note that prudential requirements aimed at ensuring the stability of the banking system by preserving solvency, limiting risks and protecting bank deposits are generally similar across economies. Therefore they remove from consideration prudential requirements and concentrate on non-prudential requirements. The index values of the non-prudential variables considered by McGuire and Schuele are shown in Appendix Table A10.6, in which scores range from 0 (least restrictive) to 1 (most restrictive). In the table, the restrictions have been divided into two groupings: those affecting 'commercial presence' and other restrictions called 'restrictions on ongoing operations'. Whereas the first group indicates restrictions on the movement of capital, the latter group is modelled as restrictions on trade in banking services. The commercial presence restriction grouping covers restrictions on licensing, direct investment, joint venture arrangements and the permanent movement of people. The other restrictions grouping covers restrictions on raising funds, lending funds, providing other lines of business, expanding banking outlets, the composition of the board of directors and the temporary movement of people. Given the scores shown in Appendix Table A10.6 for each variable considered, the authors assign weights to the variables and first obtain restrictiveness index values for the two categories and then the overall restrictiveness index values for the economies considered.

The scores shown in the second column of Appendix Table A10.7 reveal that the foreign restrictiveness index (FR index) for Turkish banking services is 0.05. The foreign discriminatory restrictiveness index (FDR index) is a subset of the FR index and covers discriminatory restrictions imposed only on foreign services providers. When estimating the FDR index, we regard 'licensing of banks', 'other business of banks – insurance and securities' and 'expanding the number of banking outlets' as aspects that partially restrict the activities of both domestic and foreign services suppliers, that is, as possible non-discriminatory restrictions. As such restrictions could still be imposed on foreign suppliers more discriminatorily but could be removed at the same time for both domestic and foreign suppliers, half of their weights are assigned for these restriction categories in calculating the FDR index. Calculations reveal that the FDR index for the Turkish banking sector is 0.025.¹⁴

To convert the index values into tax equivalents, we use the coefficients estimated by Kalirajan *et al.* (2000) that quantify the impact of restrictions on trade in banking services on the net interest margins (NIM) of banks.¹⁵ The ad valorem equivalent of restrictions is then calculated from the formula:

$$100 * \left[\frac{NIM_1 - NIM_0}{NIM_0} \right] = 100 * (e^{0.732 * TRJ} - 1)$$

where NIM_1 denotes the net interest margin under restrictions, NIM_0 the net interest margin under free trade and TRJ the value of the trade restrictiveness index. Based on this equation, we calculate the ad valorem tariff equivalent of restrictions in the banking sector measured by the FR index as 3.73 per cent. On the other hand, the tariff equivalent of restrictions in the banking sector measured by the FDR index is 1.85 per cent. These calculations reveal that the Turkish banking sector as of 2005 was quite liberal.

Using the methodology outlined above, tariff equivalents of barriers to trade in banking services were estimated by Kalirajan *et al.* (2000) for a large number of countries using 1997 data. The results of these calculations for EU countries and Turkey are shown in Appendix Table A10.8. From the table, we note that the ad valorem tariff equivalents of restrictions in the banking sector during the 1990s were 31.54 per cent in Turkey and 5.32 per cent in the EU countries. This figure reveals that, as a result of restrictions in the banking sector, the price of banking services in Turkey during the 1990s was 26.22 per cent higher than the average price of banking services in the EU.

Maritime freight transportation

To assess the tariff equivalents of barriers to trade in the maritime freight transport sector, we first calculate restrictiveness index values following the approach of McGuire *et al.* (2000) and Kimura *et al.* (2004). Appendix Table A10.9 shows for maritime transportation services the restriction categories, weights for them and scoring for each category.¹⁶ The weights again show the importance of the category in terms of how significantly the restriction of the category would limit service suppliers from entering or operating in the market.¹⁷ In the table the restriction categories are classified into 'restrictions on commercial presence and cross-border trade' and 'other restrictions'. The 'restrictions on commercial presence and cross-border trade' include 'conditions on the right to fly the national flag', 'form of commercial presence', 'direct investment in shipping service suppliers', 'direct investment in onshore maritime service suppliers', 'permanent movement of people', 'cabotage' and 'transportation of non-commercial cargoes'. On the other hand, 'other restrictions' include 'port services', 'discretionary imposition of restrictions, including for retaliatory purposes', 'United Nations Liner Code', 'government permits conferences', 'bilateral maritime services agreements on cargo sharing', 'composition of board of directors' and 'temporary movement of people'.

Appendix Table A10.10 reveals that the FR index value for Turkish maritime transportation services equals 0.5667. The corresponding restrictiveness index values for the EU countries estimated by McGuire *et al.* (2000) for the period 1994–8 are shown in Appendix Table A10.11. To convert these index values into

tariff equivalents, we use the method employed by Kang (2000). He uses shipping margins as a proxy for shipping price and defines shipping margins from country i (exporter) to country j (importer), M_{ij} , as:

$$M_{ij} = \frac{IM_{ij}}{EX_i}$$

where IM_{ij} represents the value of imports inclusive of cost, insurance and freight (CIF) of country j , which are imported from country i , and EX_i represents the observed free on board (FOB) value of exports of country i , which are exported to country j . Shipping margins, M_{ij} , are assumed to be a function of bilateral restrictions (R_{ij}), distance between countries (D_{ij}) and the scale of bilateral trade (SC_{ij}). As R_{ij} includes the information on restrictions on both sides, that is, exporter's and importer's, the equation determining shipping margins can be rewritten as follows:

$$\ln(M_{ij}) = C + \alpha_{11} \ln(R_{i0}) + \alpha_{12} \ln(R_{ic}) + \alpha_{21} \ln(R_{j0}) + \alpha_{22} \ln(R_{jc}) + \beta \ln(D_{ij}) + \gamma \ln(SC_{ij}),$$

where R_i and R_j , the restrictiveness indices in countries i and j , respectively, are divided into restrictions on commercial presence (R_{ic} and R_{jc}) and other restrictions (R_{i0} and R_{j0}). Based on this equation, Kang (2000) estimates the price impact of restrictions on shipping margins for the case of developing economies as follows:

$$\ln(M_{ij}) = 0.3388 + 0.1416 \ln(R_{ic}) + 0.0443 \ln(R_{j0}) + 0.0011 \ln(D_{ij}) - 0.0049 \ln(SC_{ij}).$$

To study the effects of EU integration, we consider the case in which the degree of existing restrictions in Turkey is lowered to the level of the EU average calculated from data provided by McGuire *et al.* (2000). To obtain ad valorem equivalents of restrictions in Turkey, shipping margins with existing restrictions, M_{Turkey} , and shipping margins with restrictions at the average EU levels, M_{Turkey}^* , are first calculated based on the following equations:

$$\ln(M_{Turkey}) = \ln(M_{Average}) - 0.1416 [\ln R_{Average}^c - \ln R_{Turkey}^c] - 0.0443 [\ln R_{Average}^0 - \ln R_{Turkey}^0]$$

$$\ln(M_{Turkey}^*) = \ln(M_{Turkey}) - 0.1416 [\ln R_{Turkey}^c - \ln R_{EU}^c] - 0.0443 [\ln R_{Turkey}^0 - \ln R_{EU}^0]$$

where $M_{Average}$, $R_{Average}^c$ and $R_{Average}^0$ denote the average of the shipping margins, the average value of the restrictiveness index on commercial presence and the average value of the restrictiveness index on other restrictions, respectively, over the countries reported in McGuire *et al.* (2000). Similarly, R_{Turkey}^c , R_{Turkey}^0 , R_{EU}^c and R_{EU}^0 denote restrictiveness index values on commercial presence and other restrictions in Turkey and the EU. The ad valorem equivalent is then calculated by the formula:

$$\left[\frac{(M_{\text{Turkey}} - 1) - (M_{\text{Turkey}}^* - 1)}{(M_{\text{Turkey}}^* - 1)} \right] 100$$

Based on this equation, we calculate ad valorem tariff equivalents of restrictions in the maritime transportation sector, measured by the FR index, as 193.5 per cent, taking as the benchmark the prices in Germany. Thus, the price of maritime services in Turkey decreases by 193.5 per cent if Turkey adopts and implements the EU rules and regulations on maritime transport services.

Road freight transportation

To estimate the ad valorem equivalent of barriers to trade in road freight services we make use of the gravity model. We consider the approach developed by Francois *et al.* (2007). They use data on services trade that come from the OECD supplemented with published International Monetary Fund (IMF) balance of payments statistics. These data cover 178 countries for 10 years (1994–2004), and they show trade with the world. Other country data (GDP, country populations) are from the World Bank's World Development Indicators database. The authors employ a two-step procedure. In the first stage they regress transport service imports on the usual gravity variables: GDP per capita, population and distance. As transport service data do not refer to bilateral trade data the authors construct a measure of GDP-weighted distance to a hypothetical centre of the world. This index of 'centrality' is then used as the distance variable in the first stage. In the second stage they regress the residuals from the first stage on individual country dummies. This second stage gives an indication of how protected individual markets are, and the authors then use the resulting coefficients to calculate the trade costs in percentages of delivered prices. These costs are seen as relative protection benchmarked against Hong Kong and Singapore, which the authors consider to be the closest they have in the sample to free trade countries. The calculations reveal that the ad valorem equivalent of barriers to trade in transport services is 41.05 per cent, which we in the following consider as the ad valorem equivalent of barriers to trade in road freight transport services.

Effects of liberalization

We predict that liberalization of trade in goods and services will remove the distortions in the price system, which in turn will boost the economy's allocative efficiency. As a side effect, this heightened efficiency will improve the country's investment climate. Investments will increase as well as foreign direct investment (FDI) inflows. Consequently, the allocative efficiency gains from liberalization will be boosted by induced capital formation. While investment increases above its normal level the economy will experience a growth effect. All of these possible developments are salutary for the material well-being of people in the long term. To quantitatively assess these effects we study first the implications of liberalization

on the telecommunications, electricity, natural gas, banking, maritime freight transport and road freight transport sectors of the Turkish economy, and thereafter concentrate on an analysis of the trade effects of economic liberalization.

Estimated benefits of liberalization through harmonization

To estimate the benefits of liberalization through harmonizing rules and regulations we consider the case of a particular sector, namely electricity, in some detail.¹⁸ This approach is then applied to other sectors in a similar way.

In the case of electricity, we compare the Turkish economy in a base case with the case when Turkey liberalizes completely in the sector. As the base case we consider the Turkish economy with the rules and regulations as they prevailed during the 1990s, when Turkey's electricity sector was not liberalized. Next we consider the case when Turkey liberalizes the electricity sector by adopting and implementing all of the rules and regulations of the most liberal countries in the EU.¹⁹ Here we refrain from explicit consideration of the problems of implementation over time, and assume that, once the electricity sector *acquis* is adopted, liberalization of the sector is achieved. This is a grand simplification, but it permits the analysis to be performed rather easily.

From the section on barriers to trade in different service sectors we know that the tariff equivalent of barriers to trade in electricity services in Turkey during the 1990s was 20.7 per cent. On the other hand, the tariff equivalent of barriers to trade in electricity services in the United Kingdom and Sweden, the benchmark countries, was zero per cent during the 1990s. One could thus infer that, as a result of the regulatory regime implemented in Turkey during the 1990s in the electricity sector, the price of electricity services during the 1990s was 20.7 per cent higher than the price of electricity services in the United Kingdom and Sweden. A change in the Turkish regulatory regime to that of the United Kingdom or Sweden would thus decrease the price of electricity services by 20.7 per cent. Given this change in the price of electricity services resulting from the change in Turkey's regulatory regime, one could then compute the change in Turkish consumer surplus as a measure of the welfare effect of liberalization from information on the consumers' electricity demand schedule.²⁰ However, electricity services are intermediate commodities that are used in the production of other commodities. Therefore, prices of other commodities in the economy will change as a result of the change in the price of electricity services. To study the welfare effects of liberalization, one has to consider not only the change in consumer surplus due to changes in the price of electricity services but also the changes in consumer surpluses due to changes in the prices of other commodities.

To analyze the effect of the change in the price of electricity services on the prices of other commodities we consider the 1998 input–output table for Turkey, which consists of 97 sectors and in which electricity is sector 69. Let **A** be the 97 × 97 matrix of input coefficients. Given **A**, form the 96 × 96 input matrix **B** by deleting the sixty-ninth column and the sixty-ninth row referring to the electricity sector. Denote the sixty-ninth row of **A** where the sixty-ninth column element

has been deleted by e . Let p be the 1×96 price vector of the 96 commodities, excluding the electricity services sector, and va the corresponding 1×96 unit gross value added vector. The price equations in the economy can be written as $p = pB + p_e e + va$, where p_e denotes the price of the electricity services. Hence we have $p = p_e e (I - B)^{-1} + va (I - B)^{-1}$. Note that base year domestic prices of all commodities equal unity in the input-output table. Given the tariff equivalent of barriers to trade in electricity services denoted by t we can write the price equation in the electricity sector as $1 = p_e (1 + t)$. Thus we have $p_e = 1 / (1 + t)$. Hence, given the new price of electricity services that will prevail in Turkey after it adopts and implements rules and regulations similar to those in the United Kingdom and Sweden, p_e , we can determine the equilibrium prices of the other 96 commodities from the above relation.

Given the new equilibrium price vector p , form the 1×97 price vector as $\pi = (p \ p_e)$. Let CON be the 96×1 consumption expenditure vector obtained from the 1998 input-output table by deleting the value of the consumption of the electricity services sector, and con_e be the value of the consumption of electricity services. Form the 97×1 consumption vector as:

$$CONS = \begin{bmatrix} CON \\ con_e \end{bmatrix}$$

Letting u denote the 1×97 unit vector, we can express the value of total consumption expenditure evaluated at base prices as $C = uCONS$. The value of total consumption expenditure evaluated at the prices that will prevail after Turkey adopts and implements the EU rules and regulations in the banking services sector can be computed by the relation $C^* = \pi CONS$. The effect on consumer welfare can now be calculated as:

$$(C - C^*)100/C^*$$

Hence, with the new price of electricity services, we observe that the welfare of Turkish society will increase by 0.6458 per cent. Given that consumption formed 80.834 per cent of the 1998 Turkish GDP, the percentage change in the welfare of society is equivalent to a 0.522 per cent increase in real GDP.

Table 10.6 shows the tariff equivalents of barriers to trade in various service sectors and network industries prevailing in the latter half of the 1990s in Turkey, as well as the tariff equivalents for the year 2005. The table also shows the tariff equivalents in the EU or in some benchmark countries of the EU during the latter half of the 1990s. Finally, the last column shows the tariff equivalents used in the present study when evaluating the effects of the liberalization of services and network industries within the context of economic liberalization.

Using the approach adopted for analyzing the effects of the liberalization of electricity services on other sectors, we note the percentage change in GDP as a result of the liberalization of banking, telecommunications, maritime transport, road freight transport, electricity and natural gas services will be as reported in Table 10.7.

Table 10.6 Tariff equivalents of barriers to trade in services and network industries in Turkey and the EU (%)

	Turkey end of 1990s	EU end of 1990s	Net effect end of 1990s	Turkey 2005	EU 2005	Tariff equivalent in trade with the EU used in this study
Banking	31.54	5.32	26.22	3.73	-	26.22
Telecommunications	33.53	0.00	33.53	2.74	-	33.53
Maritime transportation services	-	-	-	193.50	-	193.50
Road transportation services	-	-	-	-	-	41.05
Electricity	20.70	0.00	20.70	-	-	20.70
Natural gas	-	-	-	-	-	59.60

Sources: Own calculations, Findlay and Warren (2000) and Francois *et al.* (2007).

Note

Tariff equivalents for the EU at the end of the 1990s in telecommunications and electricity refer to those of Finland and the United Kingdom. Tariff equivalents for road transport services are obtained from Francois *et al.* (2007).

Estimated benefits of liberalization via increased trade exposure

To study the trade effects of economic liberalization within the context of the possible accession of Turkey to the EU, we consider the gravity equation:

$$[(\ln X_{ij} + \ln X_{ji})/2] = \beta_0 + \beta_1 \ln[Y_i Y_j] + \beta_2 \ln[Y_i^* Y_j^*] + \beta_3 \ln GD + \beta_4 Z + \epsilon$$

where X_{ij} are the exports from country i to country j , Y_i is the GDP of country i , Y_i^* is the GDP per capita in country i , GD is the geographical distance, Z refers to the additional vector of variables and ϵ stands for the error term.

Estimates of the various gravity specifications based on data for the EU-15 countries and Turkey are presented in Table 10.8, which suggests that the gravity equation explains at least 90 per cent of the variation in 1989–2004 data.²¹ Panel income elasticity of average trade flow is positive and statistically significant as expected, ranging between 0.82 and 0.96. GDP per capita also contributes positively to trade. Geographical distance between countries has a significant negative coefficient estimate in all specifications. Existence of a common border implies higher trade between countries.

Among the specifications presented in Table 10.8, ordinary least squares (OLS) forms a good basis to generate forecasts of trade flow between Turkey and the EU-15 countries because it includes practically all conventional constituents of a gravity equation, with the expected impact coefficients and adequate statistical significance. Moreover, this specification includes country-specific controls for Turkey.

Table 10.7 Effect of liberalization of services and network industries on gross domestic product (GDP) in Turkey

Service	Change in GDP (%)
Banking	2.402
Telecommunications	0.448
Maritime transportation	0.514
Road freight transportation	2.489
Electricity	0.522
Natural gas	0.067

Source: Own calculations.

The estimate of the gravity equation obtained above is used to make forecasts of bilateral trade for Turkey with the EU-15. We compute the bilateral flows for Turkey with each of the EU-15 countries and aggregate the individual flows to obtain the aggregate view of trade between Turkey and the EU-15. This specification includes all explanatory variables except for the common border dummy. This omission is not vital as Turkey has no common border with any EU-15 country except Greece. The forecasts are presented for the period 1996–2005 in Table 10.9.

While computing the forecasts, the only estimated coefficient that was tailored was the coefficient for the Turkey dummy. No other prior judgements were imposed on the overall setup. One can recall that the coefficient sign of the Turkey dummy is negative in the OLS (2) specification. This indicates that trade values of country pairs including Turkey are lower than those excluding Turkey. Accession of Turkey to the EU can be expected to address this disadvantaged situation and improve Turkey's trade with the union. Consequently, the coefficient of the Turkey dummy is taken as zero in computing forecasts. In this way, the assumption that Turkey's trade with the EU economy will reach the current intensity of intra-EU trade flows is facilitated.

Focusing on the 2002–5 time period, the hypothesized accession of Turkey to the EU yields an extra volume of trade, which is equivalent on average to 3.59 per cent of Turkey's GDP. Following Frankel and Rose (2002), this is at least equivalent to a 1.2 per cent increase in the Turkish per capita income.

Epilogue

The ten chapters of this book cover issues related to liberalization of foreign trade, liberalization of FDI and the role of regulatory institutions in trade liberalization. This book shows that economic liberalization, whether pursued unilaterally, multilaterally or regionally, has beneficial effects for the country under consideration. To provide a partial cross-check on the results, consider the OECD (2005b) study, which quantifies the benefits that arise from significant reductions of the barriers that inhibit product market entry, FDI and trade in OECD countries.

Table 10.8 Gravity equation estimates

	OLS (A1)	OLS (A2)	Random effects GLS (A1) ^a	Random effects GLS (A2) ^a
Constant	-9.488522 [-13.12622] ^b	-12.32887 [-16.54704]	-11.52878 [-5.511467]	-12.41714 [-6.111803]
Log real product GDP	0.837095 [87.04632]	0.818938 [86.76206]	0.961756 [21.23487]	0.93844 [20.77914]
Log real product GDP per capita	0.104796 [3.136588]	0.21013 [6.237921]	0.029293 [0.333312]	0.061381 [0.700540]
Log distance	-0.943771 [-38.65429]	-0.761815 [-26.40042]	-0.870832 [-7.801302]	-0.758538 [-6.786132]
Common border		0.485018 [10.95026]		0.361623 [4.312924]
Time trend ^c	0.017455 [5.529738]	0.013852 [4.515573]	0.013862 [3.511735]	0.013697 [3.511987]
Turkey ^d	-0.532389 [-7.492635]	-0.390682 [-5.591877]	-0.650494 [-0.913367]	-0.626695 [-0.904461]
Turkey 0204 (2002–4 period) ^e	0.469746 [5.192272]	0.476349 [5.449031]	0.500977 [6.731960]	0.50392 [6.712375]
Sample (time dimension)	1989–2004	1989–2004	1989–2004	1989–2004
Sample (number of cross-sections)	105	105	105	105
R-squared	0.907655	0.913834	0.898355	0.905318

Source: Own calculations.

Notes

GLS, generalized least squares; OLS, ordinary least squares.

a Component variances have been obtained through Swamy and Arora estimator. For the cross-section standard errors and variances, the White procedure, with degrees of freedom correction, was used.

b *t*-statistics are displayed in square brackets.

c Time trend is defined over each cross-section such that it has a unit increment each year.

d Turkey dummy controls the trade pairs involving Turkey.

e This controls the post-2001 episode for the trade pairs involving Turkey.

Table 10.9 Forecast of Turkish trade with EU-15 (1996–2005)

	Actual trade (million US\$)	Forecast trade ^a (million US\$)	GDP (million US\$)
1996	15,843.16	16,900.20	181,051.10
1997	17,148.11	17,496.82	189,164.60
1998	17,904.72	18,217.73	199,633.80
1999	17,314.40	17,742.43	183,823.40
2000	19,570.38	18,862.05	199,267.30
2001	16,938.80	17,591.24	145,243.60
2002	20,339.64	31,315.30	183,888.30
2003	27,623.67	37,717.66	240,375.80
2004	37,424.88	46,216.75	302,785.80
2005	40,630.98	49,962.69	363,299.90

Note

^a The forecast figures have been obtained by using the OLS (A1) specification in Table 10.8. No calibrations were made to the estimated coefficients.

The study identifies across the OECD the countries with a regulatory framework most supportive of good economic performance and evaluates what economic benefits would materialize if other countries aligned their frameworks with 'best practices'. The relaxed barriers include competition-restraining product market regulations, obstacles to FDI and tariffs. It turns out that the benefits from such liberalization are substantial. On average, reducing barriers to trade, investment and competition could increase the level of GDP per head over the medium term by some 3 per cent in each of the main OECD regions, and for the OECD as a whole GDP per capita would increase by 2–5 per cent. In particular for Turkey, the effect of bilateral tariff reductions is 1 per cent, the effect of relaxing obstacles to FDI 0.3 per cent and the effect of regulatory reforms 3.1 per cent. Thus the overall effect of liberalization for Turkey according to the OECD (2005b) amounts to a 4.7 per cent increase in GDP per capita.

Although economic liberalization is beneficial for countries, it also imposes costs, which may vary depending on the type of economic liberalization adopted (unilateral, multilateral or regional). The costs for Turkey have been particularly high in the case of the elimination of technical barriers to trade (TBT), discussed in Chapter 3, and they will be considerably high in the cases of adjusting to EU's banking, maritime freight transportation and road freight transportation *acquis*.

Trying to eliminate the TBTs following the EU approach, the Turkish public sector incurred considerable adjustment costs associated with adopting the EU's technical legislation; establishing institutions required for the efficient functioning of quality infrastructure such as the Turkish Accreditation Agency (TURKAK), the National Metrology Institute, and market surveillance authorities; training and employing a sufficient number of qualified and experienced staff with the

necessary professional integrity to be employed in those institutions; and acquiring the technical infrastructure (laboratories, cars, fuel) required for efficient functioning of the system. Although substantial progress has been achieved by Turkey between 1995 and 2009, the task is still not complete. Additional adjustment costs must be incurred. Turkey has incurred these costs with the hope of becoming a full member of the EU, and they were considered the unavoidable costs of EU accession. But as the chances of EU membership have decreased over time, doubts have arisen in Turkey as to whether the strategy adopted to eliminate TBTs by following the EU approach has in fact been the right strategy. Similar considerations apply also to the costs of adopting and implementing the maritime freight transportation *acquis* discussed in Chapter 8 and the road freight transportation *acquis* discussed in Chapter 9.

From the point of view of a neighbouring country of the EU with no hope of EU accession the optimal economic liberalization strategy is to acquire the institutions for running a successful market economy and to follow the 'universal' principles of sound economic policy discussed in Chapter 1. The neighbouring country of the EU could achieve these goals by adopting and implementing that part of the *acquis* which may be considered as pro-growth – all of the directives and regulations that will help the neighbouring country to acquire the high-quality institutions for running a successful market economy and to follow the 'universal' principles of sound economic policy.²² On the other hand, the current Turkish EU policy of carrying on with accession negotiations, however long the negotiations might take, remains as the best strategy for Turkey, as long as Turkish policy makers perceive the chances of the country's eventual EU membership as quite high. But during the period when accession negotiations take place, Turkey could still concentrate its efforts on adopting and implementing the pro-growth part of the *acquis* and leave the adoption and implementation of the other part of the *acquis* for later periods when the prospects of EU accession improve. This kind of policy would provide a plan B in case the accession negotiations fail at some point in the future.

Appendix

Table A10.1 The foreign restrictiveness index: restrictions on the fixed-line sector in Turkey, 2005

Weight	Scoring	Score	Category
Restrictions on commercial presence			
<i>Licensing of fixed-line services</i>			
(a) Regional line service			
0.20			No new licence allowed
	1.00	1.00	Licences are issued through complicated (discriminately) and costly procedures
	0.75		Licences are generally issued with application fee and several requirements
	0.20		Licences are generally issued with application fee
	0.10		Licences are automatically issued upon application without any cost
	0.00		
(b) Domestic long-distance line service			
	1.00		No new licence allowed
	0.75		Licences are issued through complicated (discriminately) and costly procedures
	0.20	0.20	Licences are generally issued with application fee and several requirements
	0.10		Licences are generally issued with application fee
	0.00		Licences are automatically issued upon application without any cost
(c) International line service			
	1.00		No new licence allowed
	0.75		Licences are issued through complicated (discriminately) and costly procedures
	0.20	0.20	Licences are generally issued with application fee and several requirements
	0.10		Licences are generally issued with application fee
	0.00		Licences are automatically issued upon application without any cost
<i>Form of commercial presence</i>			
(a) Regional line service			
	1.00	1.00	Measures that restrict or require a specific type of establishment
	0.00		No restriction on establishment
(b) Domestic long-distance line service			
	1.00		Measures that restrict or require a specific type of establishment
	0.00	0.00	No restriction on establishment
(c) International line service			
	1.00		Measures that restrict or require a specific type of establishment
	0.00	0.00	No restriction on establishment

Weight	Scoring	Score	Category
<i>Direct investment: equity participation permitted</i>			
0.20		0.00	The score is inversely proportional to the maximum equity participation permitted in an existing domestic company
<i>Direct investment: restrictions on certain types of services</i>			
0.10	1.00		Restrictions on providing some types of telephone service
	0.00	0.00	No restrictions on providing any type of telephone service
<i>Joint venture arrangements</i>			
0.10	1.00		Issues no new licence and no entry is allowed through a joint venture with a domestic company
	0.50		Foreign company can enter only through a joint venture with a domestic company
	0.00	0.00	No requirement for foreign companies to enter through a joint venture with a domestic company
<i>Permanent movement of people</i>			
0.02	1.00		No entry of executives, senior managers and/or specialists
	0.80		Executives, specialists and/or senior managers can stay for up to 1 year
	0.60		Executives, specialists and/or senior managers can stay for up to 2 years
	0.40		Executives, specialists and/or senior managers can stay for up to 3 years
	0.20		Executives, specialists and/or senior managers can stay for up to 4 years
	0.00	0.00	Executives, specialists and/or senior managers can stay for a period of 5 years or more
Other restrictions			
<i>Third-party resale of lease line</i>			
0.10	1.00		Resale is not permitted
	0.00	0.00	Resale is permitted in any market
<i>End-user tariff</i>			
0.05	1.00		End-user tariff is determined by rate of return regulation
	0.50	0.50	End-user tariff is determined by price cap established by the authority
	0.00		End-user tariff is determined by market force (no regulation)
<i>Regulation of network interconnection</i>			
0.05	1.00		Interconnection is completely regulated by the authority
	0.50	0.50	Interconnection is determined by private negotiations in general, but general terms are determined by the authority
	0.00		Interconnection is completely determined by private negotiations (no regulation)

Continued on next page.

<i>Weight</i>	<i>Scoring</i>	<i>Score</i>	<i>Category</i>
0.05			<i>Market structure</i>
			(a) Regional line service
	1.00	1.00	Monopoly
	0.00		Competition among plural providers
			(b) Domestic long-distance line service
	1.00		Monopoly
	0.00	0.00	Competition among plural providers
			(c) International line service
	1.00		Monopoly
	0.00	0.00	Competition among plural providers
0.02			<i>Composition of board of directors</i>
		0.00	The score is inversely proportional to the percentage of the board that can comprise foreigners
0.01			<i>Temporary movement of people</i>
	1.00		No temporary entry of executives, senior managers and/or specialists
	0.75		Temporary entry of executives, specialists and/or senior managers for up to 30 days
	0.50		Temporary entry of executives, specialists and/or senior managers for up to 60 days
	0.25		Temporary entry of executives, specialists and/or senior managers for up to 90 days
	0.00	0.00	Temporary entry of executives, specialists and/or senior managers for over 90 days

Source: Kimura *et al.* (2003a).

Table A10.2 The foreign restrictiveness index: restrictions on mobile services in Turkey, 2005

<i>Weight</i>	<i>Scoring</i>	<i>Score</i>	<i>Category</i>
			Restrictions on commercial presence
			<i>Licensing of mobile phone services</i>
0.20			No new licence allowed
	1.00		Licences are issued through complicated (discriminately) and costly procedures
	0.75		Licences are generally issued with application fee and several requirements
	0.20	0.20	Licences are generally issued with application fee
	0.10		Licences are generally issued with application fee
	0.00		Licences are automatically issued upon application without any cost
0.10			<i>Form of commercial presence</i>
	1.00		Measures that restrict or require a specific type of establishment
	0.00	0.00	No restriction on establishment
0.20			<i>Direct investment: equity participation permitted</i>
		0.00	The score is inversely proportional to the maximum equity participation permitted in an existing domestic company
0.10			<i>Direct investment: restrictions on certain types of services</i>
	1.00		Restrictions on providing some types of telephone service
	0.00	0.00	No restrictions on providing any type of telephone service
0.10			<i>Joint venture arrangements</i>
	1.00		Issues no new licence and no entry is allowed through a joint venture with a domestic company
	0.50		Foreign company can enter only through a joint venture with a domestic company
	0.00	0.00	No requirement for foreign companies to enter through a joint venture with a domestic company
0.02			<i>Permanent movement of people</i>
	1.00		No entry of executives, senior managers and/or specialists
	0.80		Executives, specialists and/or senior managers can stay for up to 1 year
	0.60		Executives, specialists and/or senior managers can stay for up to 2 years
	0.40		Executives, specialists and/or senior managers can stay for up to 3 years
	0.20		Executives, specialists and/or senior managers can stay for up to 4 years
	0.00	0.00	Executives, specialists and/or senior managers can stay for a period of 5 years or more

Continued on next page.

<i>Weight</i>	<i>Scoring</i>	<i>Score</i>	<i>Category</i>
			Other restrictions
0.05			<i>Regulation of interconnection between fixed-line and mobile or between mobiles</i>
	1.00		Interconnection is completely regulated by the authority
	0.50	0.50	Interconnection is determined by private negotiations in general, but general terms are determined by the authority
	0.00		Interconnection is completely determined by private negotiations (no regulation)
0.10			<i>End-user tariff</i>
	1.00		End-user tariff is determined by rate of return regulation
	0.50		End-user tariff is determined by price cap established by the authority
	0.00	0.00	End-user tariff is determined by market force (no regulation)
0.05			<i>Allocation of radio spectrum</i>
	1.00		Allocation is discriminately decided by the authority
	0.20		Allocated by auction with application fee
	0.10		Allocated by auction without application fee
	0.00	0.00	Radio frequencies are obtained with mobile services
0.05			<i>Market structure</i>
	1.00		Monopoly
	0.00	0.00	Competition among plural providers
0.02			<i>Composition of board of directors</i>
		0.00	The score is inversely proportional to the percentage of the board that can comprise foreigners
0.01			<i>Temporary movement of people</i>
	1.00		No temporary entry of executives, senior managers and/or specialists
	0.75		Temporary entry of executives, specialists and/or senior managers for up to 30 days
	0.50		Temporary entry of executives, specialists and/or senior managers for up to 60 days
	0.25		Temporary entry of executives, specialists and/or senior managers for up to 90 days
	0.00	0.00	Temporary entry of executives, specialists and/or senior managers for over 90 days

Source: Kimura et al. (2003).

Table A10.3 The foreign restrictiveness index: restrictions on internet services in Turkey, 2005

<i>Weight</i>	<i>Scoring</i>	<i>Score</i>	<i>Category</i>
			Restrictions on commercial presence
0.20			<i>Licensing of internet services</i>
	1.00		No new licence allowed
	0.75		Licences are issued through complicated (discriminately) and costly procedures
	0.20		Licences are generally issued with application fee and several requirements
	0.10	0.10	Licences are generally issued with application fee
	0.00		Licences are automatically issued upon application without any cost
0.10			<i>Form of commercial presence</i>
	1.00		Measures that restrict or require a specific type of establishment
	0.00	0.00	No restriction on establishment
0.20			<i>Direct investment: equity participation permitted</i>
		0.00	The score is inversely proportional to the maximum equity participation permitted in an existing domestic company
0.10			<i>Direct investment: restrictions on certain types of services</i>
	1.00		Restrictions on providing some types of internet service
	0.00	0.00	No restrictions on providing any type of internet service
0.10			<i>Joint venture arrangements</i>
	1.00		Issues no new licence and no entry is allowed through a joint venture with a domestic company
	0.50		Foreign company can enter only through a joint venture with a domestic company
	0.00	0.00	No requirement for foreign companies to enter through a joint venture with a domestic company
0.02			<i>Permanent movement of people</i>
	1.00		No entry of executives, senior managers and/or specialists
	0.80		Executives, specialists and/or senior managers can stay for up to 1 year
	0.60		Executives, specialists and/or senior managers can stay for up to 2 years

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Weight	Scoring	Score	Category
	0.40		Executives, specialists and/or senior managers can stay for up to 3 years
	0.20		Executives, specialists and/or senior managers can stay for up to 4 years
	0.00	0.00	Executives, specialists and/or senior managers can stay for a period of 5 years or more
			Other restrictions
0.10			<i>Regulation of interconnection agreements among internet service providers</i>
	1.00		Interconnection is completely regulated by the authority
	0.50		Interconnection is determined by private negotiations in general, but general terms are determined by the authority
	0.00	0.00	Interconnection is completely determined by private negotiations (no regulation)
0.10			<i>Infrastructure</i>
	1.00	1.00	Providers are not allowed to either build their own network or own/lease their international data gateways
	0.50		Providers are allowed to build their own network or own/lease their international data gateways
	0.00		Providers are allowed to build their own network as well as own/lease their international data gateways
0.05			<i>Market structure</i>
	1.00		Monopoly
	0.00	0.00	Competition among plural providers
0.02			Composition of board of directors
		0.00	The score is inversely proportional to the percentage of the board that can comprise foreigners
0.01			<i>Temporary movement of people</i>
	1.00		No temporary entry of executives, senior managers and/or specialists
	0.75		Temporary entry of executives, specialists and/or senior managers for up to 30 days
	0.50		Temporary entry of executives, specialists and/or senior managers for up to 60 days
	0.25		Temporary entry of executives, specialists and/or senior managers for up to 90 days
	0.00	0.00	Temporary entry of executives, specialists and/or senior managers for over 90 days

Source: Kimura et al. (2003).

Table A10.4 The estimated restrictiveness indexes, 2005

Weight	Estimated score (FR index)	Category
Fixed-line		
<i>Restrictions on commercial presence</i>		
0.20	0.093	Licensing of fixed-line services
0.10	0.033	Form of commercial presence
0.20	0.000	Direct investment: equity participation permitted
0.10	0.000	Direct investment: restrictions on certain types of service
0.10	0.000	Joint venture arrangements
0.02	0.000	Permanent movement of people
<i>Other restrictions</i>		
0.10	0.000	Third-party resale of lease line
0.05	0.025	End-user tariff
0.05	0.025	Regulation of network interconnection
0.05	0.017	Market structure
0.02	0.000	Composition of board of directors
0.01	0.000	Temporary movement of people
Index value	0.193	
Mobile services		
<i>Restrictions on commercial presence</i>		
0.20	0.040	Licensing of mobile phone services
0.10	0.000	Form of commercial presence
0.20	0.000	Direct investment: equity participation permitted
0.10	0.000	Direct investment: restrictions on certain types of service
0.10	0.000	Joint venture arrangements
0.02	0.000	Permanent movement of people
<i>Other restrictions</i>		
0.05	0.025	Regulation of interconnection between fixed line and mobile or between mobiles
0.10	0.000	End-user tariff
0.05	0.000	Allocation of radio spectrum
0.05	0.000	Market structure
0.02	0.000	Composition of board of directors
0.01	0.000	Temporary movement of people
Index value	0.065	
Internet services		
<i>Restrictions on commercial presence</i>		
0.20	0.020	Licensing of internet services
0.10	0.000	Form of commercial presence
0.20	0.000	Direct investment: equity participation permitted

Continued on next page.

<i>Weight</i>	<i>Estimated score (FR index)</i>	<i>Category</i>
0.10	0.000	Direct investment: restrictions on certain types of service
0.10	0.000	Joint venture arrangements
0.02	0.000	Permanent movement of people
		<i>Other restrictions</i>
0.10	0.000	Regulation of interconnection agreements among internet service providers
0.10	0.100	Infrastructure
0.05	0.000	Market structure
0.02	0.000	Composition of board of directors
0.01	0.000	Temporary movement of people
Index value	0.120	

Sources: information from Tables A10.1–A10.3 and own calculations.

Table A10.5 Restrictiveness index scores for telecommunications services during 1990s

	<i>Restrictiveness index</i>				
	<i>Restrictions on establishment</i>		<i>Restrictions on ongoing operations</i>		
	<i>Restrictions on direct investment in fixed and mobile network services</i>	<i>Restrictions on establishment total</i>	<i>Restrictions on cross-border trade</i>	<i>Restrictions on ongoing operations total</i>	<i>Index value</i>
Austria	0.1333	0.1333	0.0000	0.0000	0.1333
Belgium	0.1334	0.1334	0.0667	0.0667	0.2001
Denmark	0.0333	0.0333	0.0000	0.0000	0.0333
Finland	0.0000	0.0000	0.0000	0.0000	0.0000
France	0.2100	0.2100	0.0000	0.0000	0.2100
Germany	0.0493	0.0493	0.0000	0.0000	0.0493
Greece	0.1609	0.1609	0.3000	0.3000	0.4609
Ireland	0.3533	0.3533	0.0000	0.0000	0.3533
Italy	0.1369	0.1369	0.0000	0.0000	0.1369
Luxembourg	0.1667	0.1667	0.0000	0.0000	0.1667
Netherlands	0.0300	0.0300	0.0000	0.0000	0.0300
Portugal	0.1100	0.1100	0.4000	0.4000	0.5100
Spain	0.1793	0.1793	0.2333	0.2333	0.4127
Sweden	0.1000	0.1000	0.0000	0.0000	0.1000
United Kingdom	0.0000	0.0000	0.0000	0.0000	0.0000
Turkey	0.3987	0.3987	0.4000	0.4000	0.7987

Source: Australian Productivity Commission website, <http://www.pc.gov.au>.

Note

The restrictiveness index scores range from 0 to 1. The higher the score, the greater are the restrictions for an economy.

	<i>Price effect (%)</i>				
	<i>Restrictions on establishment</i>		<i>Restrictions on ongoing operations</i>		
	<i>Restrictions on direct investment in fixed and mobile network services</i>	<i>Restrictions on establishment total</i>	<i>Restrictions on cross-border trade</i>	<i>Restrictions on ongoing operations total</i>	<i>Price effect</i>
	0.8480	0.8480	0.0000	0.0000	0.8480
	0.8710	0.8710	0.4353	0.4353	1.3063
	0.1985	0.1985	0.0000	0.0000	0.1985
	0.0000	0.0000	0.0000	0.0000	0.0000
	1.4298	1.4298	0.0000	0.0000	1.4298
	0.3195	0.3195	0.0000	0.0000	0.3195
	1.5778	1.5778	2.9424	2.9424	4.5202
	2.6655	2.6655	0.0000	0.0000	2.6655
	1.0019	1.0019	0.0000	0.0000	1.0019
	1.0458	1.0458	0.0000	0.0000	1.0458
	0.2025	0.2025	0.0000	0.0000	0.2025
	1.3473	1.3473	4.8992	4.8992	6.2465
	1.7099	1.7099	2.2247	2.2247	3.9346
	0.6530	0.6530	0.0000	0.0000	0.6530
	0.0000	0.0000	0.0000	0.0000	0.0000
	16.7384	16.7384	16.7944	16.7944	33.5328

Table A10.6 Restrictions on banking services in Turkey, 2005

Weight	Scoring	Score	Category
Restrictions on commercial presence			
0.10	<i>Licensing of banks</i>		
	1.00		Issues no new licence/no new licence is allowed
	0.75		Issues up to three new licences with only prudential requirements/licences are issued through complicated (discriminatory) and costly procedures
	0.5/0.2		Issues up to six new licences with only prudential requirements/licences are generally issued with application fee and several requirements
	0.25/0.1		Issues up to ten new licences with only prudential requirements/licences are generally issued with application fee
	0.00	0.00	Issues new licences with only prudential requirements/licences are automatically issued upon application without any cost
0.10	<i>Form of commercial presence</i>		
	1.00		Measures that restrict or require a specific type of establishment
	0.00	0.00	No restriction on establishment
0.20	<i>Direct investment: equity participation permitted</i>		
		0.00	The score is inversely proportional to the maximum equity participation permitted in an existing domestic bank
0.10	<i>Direct investment: restrictions on certain types of services</i>		
	1.00		Restrictions on providing some types of banking services
	0.00	0.00	No restriction on providing any type of banking service
0.10	<i>Joint venture arrangements</i>		
	1.00		Issues no new banking licences and no joint ventures are allowed with domestic banks
	0.50		Bank entry is only through a joint venture with a domestic bank
	0.00	0.00	No requirement for a bank to enter through a joint venture with a domestic bank
0.02	<i>Permanent movement of people</i>		
	1.00		No entry of executives, senior managers and/or specialists
	0.80		Executives, specialists and/or senior managers can stay for up to 1 year
	0.60		Executives, specialists and/or senior managers can stay for up to 2 years

Weight	Scoring	Score	Category
	0.40		Executives, specialists and/or senior managers can stay for up to 3 years
	0.20		Executives, specialists and/or senior managers can stay for up to 4 years
	0.00	0.00	Executives, specialists and/or senior managers can stay for a period of 5 years or more
Cross-border trade			
0.10	<i>Funds raised by foreign banks</i>		
	1.00		Banks are not permitted to raise funds in the domestic market/foreign banks are not permitted to have cross-border deposits from Turkish banks, corporations and households
	0.75		Banks are restricted from raising funds from domestic capital market/foreign banks are permitted to have cross-border deposits from only some types of Turkish resident or any type of Turkish resident with specific ceiling amount
	0.50		Banks are restricted in accepting deposits from the public/foreign banks are permitted to have cross-border deposits from Turkish banks, corporations and households with licences
	0.00	0.00	Banks can raise funds from any source with only prudential requirements/foreign banks are permitted to have cross-border deposits from any type of Turkish resident without restrictions
0.10	<i>Funds lent by foreign banks</i>		
	1.00		Banks are not permitted to lend to domestic clients/foreign banks are not permitted to undertake cross-border lending to Turkish banks, corporations and households
	0.75		Banks are restricted to a specified lending size or lending to government projects/foreign banks are permitted to undertake cross-border lending to only some types of Turkish resident or any type of Turkish resident with specific ceiling amount
	0.50		Banks are restricted in providing certain services such as credit cards, leasing and consumer finance/foreign banks are permitted to undertake cross-border lending to Turkish banks, corporations and households with licences
	0.25		Banks are directed to lend to housing and small business
	0.00	0.00	Banks can lend to any source with only prudential restrictions/foreign banks are permitted to undertake cross-border lending to any type of Turkish resident without restrictions

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Weight	Scoring	Score	Category
			Other restrictions
0.10			<i>Other business of banks – insurance and securities</i>
	1.00		Banks can only provide banking services
	0.50	0.50	Banks can provide banking services plus one other line of business – insurance or security services
	0.00		Banks have no restrictions on conducting other lines of business
0.05			<i>Expanding the number of banking outlets</i>
	1.00		One banking outlet with no new banking outlet permitted
	0.75		Banking outlets are limited in number and location
	0.25		Expansion of banking outlets is subject to non-prudential regulatory approval
	0.00	0.00	No restrictions on banks expanding operations
0.02			<i>Composition of the board of directors</i>
		0.00	The score is inversely proportional to the percentage of the board that can comprise foreigners
0.01			<i>Temporary movement of people</i>
	1.00		No temporary entry of executives, senior managers and/or specialists
	0.75		Temporary entry of executives, senior managers and/or specialists for up to 30 days
	0.50		Temporary entry of executives, senior managers and/or specialists for up to 60 days
	0.25		Temporary entry of executives, senior managers and/or specialists for up to 90 days
	0.00	0.00	Temporary entry of executives, senior managers and/or specialists for over 90 days

Source: McGuire and Schuele (2000).

Table A10.7 The estimated restrictiveness index for the banking services sector in Turkey, 2005

Weight in this paper	Estimated score (FR index)	Estimated score (FDR index)	Category
			Restrictions on commercial presence
0.10	0.0000	0.0000	Licensing of banks
0.10	0.0000	0.0000	Form of commercial presence
0.20	0.0000	0.0000	Direct investment: equity participation permitted
0.10	0.0000	0.0000	Direct investment: restrictions on certain types of services
0.10	0.0000	0.0000	Joint venture arrangements
0.02	0.0000	0.0000	Permanent movement of people
			Cross-border trade
0.10	0.0000	0.0000	Funds raised by foreign banks
0.10	0.0000	0.0000	Funds lent by foreign banks
			Other restrictions
0.10	0.0500	0.02500	Other business of banks - insurance and securities.
0.05	0.0000	0.00000	Expanding the number of banking outlets
0.02	0.0000	0.00000	Composition of the board of directors
0.01	0.0000	0.00000	Temporary movement of people
1.00	0.050	0.025	Total

Sources: Table A10.6 and own calculations.

Note

Estimated score is obtained by multiplying score chosen in Table A10.6 by the corresponding 'weight'.

Table A10.8 Restrictiveness index scores and price effects for banking services during 1990s

	Restrictiveness index		Price effect (%)	
	EU	Turkey	EU	Turkey
Licensing of banks	0.0100	0.2000	0.751510778	16.8479307
Direct investment	0.0100	0.0100	0.751510778	0.842396535
Joint venture arrangements	0.0050	0.0525	0.375755389	4.422581809
Permanent movement of people	0.0085	0.0119	0.640287183	1.002451877
Restrictions on establishment total	0.0335	0.2744	2.519064129	23.11536092
Funds raised by banks	0.0075	0.0075	0.563633084	0.631797401
Funds lent by banks	0.0075	0.0075	0.563633084	0.631797401
Other business of banks – insurance and securities services	0.0050	0.0525	0.375755389	4.422581809
Expanding the number of banking outlets	0.0025	0.0131	0.187877695	1.105645452
Composition of the board of directors	0.0119	0.0120	0.897303869	1.012560635
Temporary movement of people	0.0028	0.0074	0.213053306	0.621267445
Restrictions on ongoing operations total	0.0373	0.1000	2.801256426	8.425650143
Index value	0.0708	0.3744	5.320320555	31.54101106

Source: Australian Productivity Commission website, <http://www.pc.gov.au>.

Table A10.9 Restrictions on maritime services in Turkey, 2005

Weight	Scoring	Score	Category
Restrictions on commercial presence and cross-border trade			
0.15			<i>Conditions on the right to fly the national flag</i>
	0.40	0.40	Commercial presence is required in the domestic economy
	0.30	0.30	50% or more of equity participation must be domestic
	0.20	0.20	50% or more of the crew are required to be domestic
	0.10	0.10	Ships must be registered
0.10			<i>Form of commercial presence</i>
	1.00		Measures that restrict or require a specific type of legal entity or joint venture arrangement
	0.50	0.50	Shipping service suppliers must be represented by an agent
	0.00		No restriction on establishment
0.10			<i>Direct investment in shipping service suppliers</i>
	0.51		The score is inversely proportional to the maximum equity participation permitted in an existing shipping service supplier
0.10			<i>Direct investment in onshore maritime service suppliers</i>
	0.51		The score is inversely proportional to the maximum equity participation permitted in an existing onshore maritime service supplier
0.02			<i>Permanent movement of people</i>
	1.00	1.00	No entry of executives, senior managers and/or specialists
	0.80		Executives, specialists and/or senior managers can stay for a period of up to 1 year
	0.60		Executives, specialists and/or senior managers can stay for a period of up to 2 years
	0.40		Executives, specialists and/or senior managers can stay for a period of up to 3 years
	0.20		Executives, specialists and/or senior managers can stay for a period of up to 4 years
	0.00		Executives, specialists and/or senior managers can stay for a period of up to 5 years or more
0.10			<i>Cabotage</i>
	1.00	1.00	Foreigners generally cannot provide domestic maritime services
	0.75		Foreigners that fly the national flag can provide domestic maritime services
	0.50		Restrictions on type of and length of time that cargoes can be carried
	0.00		No cabotage restrictions
0.10			<i>Transportation of non-commercial cargoes</i>
	1.00		Private shipping service suppliers cannot carry non-commercial cargoes
	0.50		National flag shipping service suppliers can carry non-commercial cargoes

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Weight	Scoring	Score	Category
	0.00	0.00	No restriction on access to non-commercial cargoes
			Other restrictions
0.10			<i>Port services</i>
	0.30		Some restrictions on access to ports
	0.20	0.20	Mandatory use of pilotage
	0.15	0.15	Mandatory use of towing
	0.10	0.10	Mandatory use of tug assistance
	0.05	0.05	Mandatory use of navigation aids
	0.05	0.05	Mandatory use of berthing services
	0.05	0.05	Mandatory use of waste disposal
	0.05	0.05	Mandatory use of anchorage
	0.05	0.05	Mandatory use of casting off
0.05			<i>Discretionary imposition of restrictions, including for retaliatory purposes</i>
	1.00	0.50	Governments are able to impose selective restrictions
	0.00		Governments are unable to impose selective restrictions
0.05			<i>United Nations Liner Code</i>
	1.00		Economy is party to the code and applies Article 2 of the code
	0.75		Economy is party to the code but does not apply Article 2 of the code
	0.00	0.00	Economy is not party to the code
0.05			<i>Government permits conference</i>
	1.00		Government permits the operation of conferences
	0.00	0.00	Conferences are subject to effective competition
0.05			<i>Bilateral maritime services agreements on cargo sharing</i>
	0.79		The score for an economy is taken from the 35 × 35 matrix of bilateral agreements on cargo sharing
0.02			<i>Composition of board of directors</i>
	0.51		The score is inversely proportional to the percentage of the board that can comprise foreigners
0.01			<i>Temporary movement of people</i>
	1.00		No temporary entry of executives, senior managers and/or specialists
	0.75		Temporary entry of executives, senior managers and/or specialists for up to 30 days
	0.50		Temporary entry of executives, senior managers and/or specialists for up to 60 days
	0.25		Temporary entry of executives, senior managers and/or specialists for up to 90 days
	0.00	0.00	Temporary entry of executives, senior managers and/or specialists for over 90 days

Source: Kimura et al. (2004).

Table A10.10 Restrictions on maritime services in Turkey, 2005

Weight	Restrictiveness		Category
	Score	index	
0.15	1.00	0.15	Restrictions on commercial presence and cross-border trade
			<i>Conditions on the right to fly the national flag</i>
			On the national ship registry (NSR) shipping companies must be 51% owned by Turkish nationals, and masters of ships must be of Turkish nationality, while up to 30% of officers of ships engaged in international seaborne transportation excluding cabotage can be foreign nationals. Turkish International Ships Registries (TISR) are open to foreign seafarers except for cabotage. In the Turkish flagged ships registered to TISR, 30% of the crew can be employed from foreign seafarers provided that the first captain is Turkish
0.10	0.50	0.05	<i>Form of commercial presence</i>
			Those who can obtain the national flag according to NSR are either companies 51% owned by Turkish nationals, or ships must belong to legal persons set up in accordance with Turkish law, the majority of whose board of directors are of Turkish nationality. Furthermore ships that belong to trading companies, the majority of whose managerial staff and representatives are of Turkish nationality and are registered on the Turkish Trade Register, are considered as Turkish. TISR are open to foreign seafarers except for cabotage. As these considerations apply mainly to cabotage, a score of 0.5 is assigned rather than 1.00
0.10	0.51	0.05	<i>Direct investment in shipping service suppliers</i>
			To fly the national flag on NSR, 51% of equity must be owned by Turkish nationals
0.10	0.51	0.05	<i>Direct investment in onshore maritime service suppliers</i>
			According to the Ports Law No. 618, only Turkish citizens and companies that are managed and represented by Turkish citizens and for which majority voting rights are held by Turkish citizens may exercise the rights related to ports
0.02	1.00	0.02	<i>Permanent movement of people</i>
			Shipping companies on NSR must have masters of ships of Turkish nationality, while up to 70% of officers of ships engaged in international seaborne transportation must be of Turkish nationality. Shipping companies on TISR can employ up to 30% of the crew from foreign seafarers provided that the first captain is Turkish

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Weight	Restrictiveness		Category
	Score	index	
0.10	1.00	0.10	<i>Cabotage</i> Cabotage is reserved to national flag carriers
0.10	0.00	0.00	<i>Transportation of non-commercial cargoes</i> No restriction on access to non-commercial cargoes
Other restrictions			
0.10	0.70	0.07	<i>Port services</i> Mandatory use of pilotage, towing, tug assistance, navigation, berthing services, waste disposal, anchorage and casting off
0.05	0.50	0.03	<i>Discretionary imposition of restrictions, including for retaliatory purposes</i> There are various restrictions governments can impose against foreign suppliers. As such a system may result in discriminatory restrictions against foreign suppliers, but may also not, a score of 0.5 is assigned to this category instead of 1
0.05	0.00	0.00	<i>United Nations Liner Code</i> Economy is not a party to the Code
0.05	0.00	0.00	<i>Government permits conference</i> Conferences are subject to effective competition
0.05	0.79	0.04	<i>Bilateral maritime services agreements on cargo sharing</i> McGuire <i>et al.</i> (2000) considers 20 economies to obtain the score for this category: EU (15 countries), Argentina, Brazil, Canada, Chile, Colombia, Mexico, United States, Australia, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand and Turkey. The procedure is as follows: each country is assigned 0 if it has a bilateral agreement with a certain country, say Argentina, and 1 otherwise. Then the sum of the score (max. 19 and min. 0) is divided by 19 (the number of the other economies) to obtain the score for Argentina. This paper basically follows the same procedure and calculates the score by adding Russia to the 20 economies. Turkey has bilateral agreements with five EU countries and two of the remaining countries. Considering the EU countries as 15 separate countries we have a total of 34 countries excluding Turkey. Hence the score is $27/34 = 0.79$

Weight	Restrictiveness		Category
	Score	index	
0.02	0.51	0.01	<i>Composition of board of directors</i> Those who can obtain the national flag according to NSR are either companies 51% owned by Turkish nationals, or ships must belong to legal persons set up in accordance with Turkish law, the majority of whose board of directors are of Turkish nationality
0.01	0.00	0.00	<i>Temporary movement of people</i> Temporary entry of executives, senior managers and/or specialists for over 90 days
Score		0.5667	

Sources: Based largely on information obtained from the Undersecretariat for Maritime Affairs and also on information contained in Kimura *et al.* (2004).

Table A10.11 Restrictiveness index scores for maritime services during 1990s

	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Luxembourg	Netherlands	Portugal	Spain	Sweden	UK
Domestic index															
<i>Restrictions on establishment</i>															
Conditions on the right to fly the national flag	0.1283	0.0998	0.0143	0.0428	0.0570	0.0998	0.0428	0.0855	0.1283	0.0570	0.0998	0.0143	0.0713	0.0998	0.0143
Form of commercial presence	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0475	0.0000	0.0000
Direct investment in shipping service suppliers	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Direct investment in onshore maritime service suppliers	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Restrictions on establishment total	0.1283	0.0998	0.0143	0.0428	0.0570	0.0998	0.0428	0.0855	0.1283	0.0570	0.0998	0.0143	0.1188	0.0998	0.0143
<i>Restrictions on ongoing operations</i>															
Transportation of non-commercial cargoes	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Port services	0.0000	0.0000	0.0190	0.0238	0.0238	0.0428	0.0428	0.0190	0.0000	0.0000	0.0000	0.0190	0.0190	0.0190	0.0000
Government permits conferences	0.0000	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475	0.0475
Restrictions on ongoing operations total	0.0000	0.0475	0.0665	0.0713	0.0713	0.0903	0.0903	0.0665	0.0475	0.0475	0.0475	0.0665	0.0665	0.0665	0.0475
Domestic index total	0.1283	0.1473	0.0808	0.1140	0.1283	0.1900	0.1330	0.1520	0.1758	0.1045	0.1473	0.0808	0.1853	0.1663	0.0618
Foreign index															
<i>Restrictions on establishment</i>															
Conditions on the right to fly the national flag	0.1358	0.1073	0.0218	0.0503	0.0645	0.1073	0.0503	0.1500	0.1358	0.0645	0.1073	0.0218	0.0788	0.1073	0.0218
Form of commercial presence	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0525	0.0050	0.0050
Direct investment in shipping service suppliers	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0288	0.0050
Direct investment in onshore maritime service suppliers	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0288	0.0050
Permanent movement of people	0.0009	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085	0.0085
Restrictions on establishment total	0.1517	0.1308	0.0453	0.0738	0.0880	0.1308	0.0738	0.1735	0.1593	0.0880	0.1308	0.0453	0.1498	0.1783	0.0453
<i>Restrictions on ongoing operations</i>															
Cabotage	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Transportation of non-commercial cargoes	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Port services	0.0050	0.0050	0.0240	0.0288	0.0288	0.0478	0.0478	0.0240	0.0050	0.0050	0.0050	0.0240	0.0240	0.0240	0.0050
Discretionary imposition of restrictions including for retaliatory purposes	0.0263	0.0500	0.0500	0.0500	0.0500	0.0500	0.0263	0.0263	0.0500	0.0263	0.0500	0.0263	0.0500	0.0500	0.0263
United Nations Limer Code	0.0381	0.0381	0.0381	0.0381	0.0381	0.0381	0.0025	0.0025	0.0381	0.0025	0.0381	0.0381	0.0381	0.0381	0.0381
Government permits conferences	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500
Bilateral maritime services agreements on cargo sharing	0.0500	0.0471	0.0500	0.0500	0.0500	0.0485	0.0500	0.0500	0.0500	0.0485	0.0500	0.0485	0.0500	0.0500	0.0500
Composition of the board of directors	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119	0.0119
Temporary movement of people	0.0028	0.0028	0.0043	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028	0.0028
Restrictions on ongoing operations total	0.1942	0.2150	0.2383	0.2417	0.2417	0.2592	0.2013	0.1775	0.2179	0.1571	0.2179	0.2117	0.2369	0.2369	0.1942
Foreign index total	0.3458	0.3457	0.2836	0.3154	0.3297	0.3899	0.2750	0.3510	0.3772	0.2451	0.3487	0.2569	0.3867	0.4152	0.2394

Source: McGuire et al. (2000).

Notes

The domestic and foreign restrictiveness index scores range from 0 to 1. The higher the score, the greater are the restrictions for an economy.

Table A10.12 Data definitions and sources

The data used in analysis have been compiled from the following sources and transformed as described below.

X_{ij}	Exports from country i to country j , measured in million US dollars, ^a deflated by the export price index (2000 = 100). ^b
Y_i	Real GDP of country i , measured in constant 2000 US dollars. ^c
Y_i^p	Real <i>per capita</i> GDP of country i , measured in constant 2000 US dollars. ^c
GD_{ij}	Geographical distance between countries i and j . ^d
$BR1_{ij}$, $BR2_{ij}$	Dummy variables to indicate whether the countries i and j are neighbours. $BR1$ takes the value of 1 if i and j are neighbours with a common land border; it is zero otherwise. $BR2$ has a broader definition and it takes the value of 1 if i and j are close to each other through sea transportation.

Sources: a, Direction of Trade Statistics (DOTS), CD-ROM, published by the IMF; b, International Financial Statistics (IFS), Online, disseminated by the IMF; c, World Development Indicators (WDI), published by the World Bank; d, Great circle distances between capitals from the website <http://www.wcrf.ars.usda.gov/cec/java/lat-long.htm>

Notes

1 Introduction

- 1 See Rodrik (2007b).
- 2 The Basic Agreement on Telecommunications is discussed in Chapter 4, the Energy Charter Treaty in Chapter 6 and the Basel Core Principles in Chapter 7.
- 3 For a discussion of the ENP see Commission of the European Communities (2003, 2004, 2006a,b) and Hoekman (2007).
- 4 For a discussion of these rules see Chapter 9.

2 The foreign trade regime and trade liberalization in Turkey

- 1 As of 2009 negotiations are in progress with the Faroe Islands, the Gulf Cooperation Council, Jordan, Lebanon and Montenegro, while exploratory talks have been held with Chile, Mexico, the Southern African Customs Union and Ukraine.
- 2 Because of technical difficulties and costs involved in meeting the rules of origin requirements, available evidence shows that utilization rates are often much lower than 100 per cent (Brenton and Manchin 2002).
- 3 The eight chapters are Chapter 1 on free movement of goods, Chapter 3 on the right of establishment and freedom to provide services, Chapter 9 on financial services, Chapter 11 on agriculture and rural development, Chapter 13 on fisheries, Chapter 14 on transport policy, Chapter 29 on customs unions and Chapter 30 on external relations.
- 4 Chapter 20 on enterprise and industrial policy was opened for negotiation at the end of March 2007, and two more negotiation chapters were opened thereafter, namely Chapter 18 on statistics and Chapter 32 on financial control. At the end of December 2007 Chapter 21 on trans-European networks and Chapter 28 on health and consumer protection, and during June 2008 Chapter 6 on company law and Chapter 7 on intellectual property were opened. Recently, with the opening of Chapter 4 on free movement of capital and Chapter 10 on information society and media, the number of policy chapters opened has increased to ten.
- 5 Articles 24.1 and 24.2 of the CUD mention the possibility of free trade in agricultural products, provided that appropriate conditions are in place, that is, Turkey fully adopts the Common Agricultural Policy (Article 25 and 27). The bottom line is that customs union arrangements apply now solely to industrial products and leave out for the time being agricultural products, although the latter may be subject to bilateral liberalization.
- 6 The following sections are based largely on Togan (2010).
- 7 We would like to thank Şinasi Demirbaş and Taşkın Barış Ergün of the Undersecretariat for Foreign Trade for explaining certain aspects of this complex tariff schedule.