The impact of multilateral liberalisation on European regions: a CGE assessment

Very preliminary and incomplete draft – May 2004

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[#] We are grateful to the European Commission for financial support to previous work devoted to developing the DREAM model. The structure and applications remain our sole responsibility. Correspondance: laborde@cepii.fr.

1 Motivation

Trade liberalisation often incurs significant distributional impacts. This is true across persons, and it has been widely documented. But this can also be the case across regions, due in particular to their differences in factor endowments, in sector specialisation and in trade relationships. This problem is critical for the EU. Trade policy is a Community competence, but the EU's economy is so large and so diverse that few agreements can pretend not to hurt one region or the other, and sometimes a number of them. This does not mean that the impact is not positive for the EU as a whole, but that the gains are not evenly distributed geographically. This raises various types of concerns. Politically, it means that a globally beneficial agreement may meet important opposition, in places where it is seen as a threat for the economic activity. From an equity point of view, it raises the question of whether the contrasted impact across regions is acceptable. In terms of efficiency, large regional disparities in the impact may involve higher adjustment costs, either due to local unemployment, to forced labour mobility, to local factor price increases, or to negative externalities.

This calls for an assessment of the possible impact of trade policies at the regional level, which has not been undertaken so far for the EU. At the regional level, policy makers might need a tailor-made assessment of the impact of trade policies, in order to evaluate more accurately to possible problems raised. At the EU-wide level, this raises the question of how trade policies interfere with the objective of regional and cohesion policies. In both cases, an accurate assessment is useful at least to make adapted policy choices, and possibly to define adapted accompanying policies. In the United States, for instance, such policies are common since the *Trade Adjustment Assistance Program* was launched during the Kennedy Round in 1962. In addition, asking such a question is natural in the EU, given that cohesion policy is an important Community competence.

An additional case for a regional analysis of the impact of trade policies is methodological. A well-specified, regional analysis should deliver a more accurate assessment of the induced global impact. Aggregate, EU-wide assessments indeed fail to take into account the heterogeneity and segmentation of the European economy. And this may result in a misstatement of the nature of supply and demand responses.

This article is by no way normative, in the sense that it does not intend to define such adapted policy responses. Instead, it aims at proposing a tool to provide with an accurate assessment of the regional impact of trade policies in the EU, and at applying it to a few liberalisation scenarios. This task is rendered especially complex in the case of the EU, mainly for two reasons. Firstly, the EU trade policy includes a lot of preferential agreements, that are to be thoroughly taken into account if one is to give a proper evaluation of the possible impact of any liberalisation. Secondly, the EU has a vast economy, gathering very different regions, with different degrees of integration between each other. Just sticking to the NUTS-1 classification, the EU is presently divided in 78 regions, and this number will rise to 119 in the enlarged EU. Although economic interactions are admittedly very important across these regions, income per capita varies in a proportion from one to 7 in the fifteen-member EU, and from one to more than 20 in the enlarged Union.

Various types of models have been developed in order to cope with regional issues. For the sake of simplicity, many of them basically split the assessed, economy-wide impact across regions, according to a given criterion. This is hardly satisfactory in the case of trade policy changes, which frequently involve significant and contrasted changes in prices and incomes. Agents and markets adjust to these changes, in a way that is difficult to assess based on accountancy relationships. Admittedly, computable general equilibrium (CGE) modelling is the best tool to assess the nature of these adjustments, and of the resulting impacts. Their inconvenient, however, is to be very demanding both in terms of data and of computational resources. This explains why such models have rarely been applied so far to large-scale regional analysis and in particular why they have not been used for a joint analysis of European regions.

In order to give valuable insights about the regional impact of trade policies in the EU, this work aims at side-stepping these hurdles. This is done through a two-tier approach. An EU-wide analysis is first carried out using MIRAGE, a CGE model devoted to trade policy analysis, and based on a very detailed measure of protection, taking exhaustively into account preferential agreements. In the second stage, an original CGE model nicknamed DREAM (for Deep Regional Economic Analysis Model) has been developed in order to assess the impact induced on each NUTS-1 European region. DREAM is a full-fledged, bottom-up regional CGE model, in which each NUTS-1 EU region is considered separately. This assessment takes advantage of the information delivered by MIRAGE in the previous stage, concerning the impact of the shock studied on key international trade variables. This approach makes it possible to propose a regional CGE evaluation of the impact of trade policies, while taking accurately into account the complexity of EU's trade patterns and trade policies. In order to implement this model, a database describing the necessary variables for 119 NUTS-1 EU regions and 21 sectors is built. This requires a heavy work in order to harmonise and complete existing data.

The model is applied in this article to several multilateral liberalisation scenarios. Each of the proposed assessments follows the same *modus operandi*. The liberalisation considered is translated in cuts in the ad-valorem equivalent of border protection (including ad-valorem tariffs, specific duties, tariff quotas, prohibitions and anti-dumping duties), separately for each HS-6 digit product and for each partner. The impact is then assessed by using jointly MIRAGE and DREAM models.

This article is structured as follows. Section 2 describes the economic rationale and the sate of the art, as far as the regional impact of trade policies is concerned. Section 3 describes the general framework and the implementation of the DREAM model and the corresponding approach. Section 4 describes how the required dataset has been built. Section 5 applies this tool to the liberalisation scenarios considered. Section 6 concludes.

2 Economic rationale and state of the art

There are many reasons why the impact of trade policies should differ across regions. The most straightforward are probably the differences in sector specialisation. By nature, trade agreements have strongly contrasted impacts on sectors relative prices within economies. According to the sectoral specialisation of each region, this will result in different aggregate impacts. Another important aspect is the nature of each region's trade relationships. This will influence the results both through the direct impact of trade flows on sector demand within each region, and through the indirect impact resulting from the induced changes in intermediate demands.

Beyond these direct effects, trade policies will also impact local factor markets, as soon as cross-regional factor mobility is not perfect, as is obviously the case for labour. A positive, ex-ante impact on the demand addressed to a region's firms might therefore induce an upward pressure on wages in the region. This is likely to have two kinds of impacts. It will first raise producers' costs, thus limiting the ex-ante demand increase.

But higher wages might also attract some immigrants, in particular from other regions within the country, with which the mobility of labour is relatively high. This labour inflow will in turn limit the upward pressure on wages, and increase the output potential of the region. If the skill-mix of migrants is different from the regional skill-mix, this will in addition have an impact on the skilled to unskilled relative wage. Other possible important consequences have also to do with factor mobility. The strong capital mobility makes it likely that large cross-region capital flows would be created. In contrast, immobile production factors such as land should suffer from more contrasted impacts across regions, since no mobility can smooth the adjustment.

Trade liberalisation also modifies local demand, both through price and income changes. For instance, any income increase will raise consumers' demand. Since a "home bias" exists even across regions within a given country (see e.g. Combes et al., 2003), this demand increase will be mainly addressed to local producers, but part of it will be sourced in other regions, thus transmitting the impact to other regions.

Finally, local externalities might magnify or dampen the cross-regional impact. They be might positive, through local accumulation of skills and know-how, through networks, providers and infrastructure. But they can also be negative, through congestion effects and increased real estate prices. Although these effects have been largely studied in the framework of economic geography literature, there is no robust ground to incorporate them in an applied, large-scale model.

How to assess this multifaceted impact of trade policies at the regional level? To answer this question, a rapid overview of existing methodologies is useful.

Three kinds of models are commonly used to deal with regional economic issues (Anselin and Madden, 1990; see also West, 1995, for a comparison of these three classes of models): Input-Output (IO), integrated IO and econometric models (IOE) and computable general equilibrium (CGE) models. The IO approach is the oldest one, but it is still widespread, notably because it is not too much demanding in terms of data or of computation. IO models are demand driven. Market clearing occurs through supply adjustment to demand shocks.

Prices are assumed to remain constant and do not play any role in the adjustment, while budget constraints are not considered, either at the agent's level or at the macro-economic level. Such models are basically used to share out a given demand shock across regions, using linear function and fixed technologies.

To overcome these limits, and in particular the lack of price responsiveness, integrated IO and econometric (IOE) modelling have been developed (see Rey, 1999 for a recent survey). The idea underlying this approach is to combine the sector detail of IO analysis with the flexibility of econometric models, which are frequently dynamic, include some price effects and make use of non-linear function, with flexible coefficients. In addition, such models can be used for impact analysis, but also for forecasting. IOE models have a wide range of specifications and of modelling purposes. However, they suffer from several drawbacks. Given the nature of econometric models, IOE models are most of all interesting for short-term or mid-term analysis. They do not take into account consistency constraints, for agents as well as for economies. Sectoral detail is very poor in the econometric part of the model; although several types of linking between IO and econometric models are used, this implies that price response is only taken into account at the aggregate level, not in terms of relative prices across sectors. Finally, IOE models remain basically demand driven, even though some supply adjustment is taken into account.

The approach used in CGE modelling is radically different. Their description of the economy relies on optimising agents, the behaviour of which is microfounded, and it is fully consistent theoretically. This means that each agent (generally households, firms and government) behaves in order to maximise its objective function, subject to his own (budget or technology) constraints. The response to any shock in exogenous variables will then result from the endogenous reactions of agents, under the consistency constraints: this results in a new equilibrium, in which agents still behave optimally, all markets are cleared (although some market imperfection can be introduced) and all macro-economic constraints are met. Following the pioneering work of Scarf (1967, 1973) on their computational implementation, the use of CGE models for policy-oriented analysis has widely spread since the late seventies. Indeed, based on a robust and widely accepted modelling of agents’ behaviour, CGE models are able to provide a detailed description of the impact of a shock on an economy. A number of robust and well-identified mechanisms are quantified in a single, rigorous and consistent framework, where agents' endogenous adaptation is taken into account. This makes this assessment very valuable, most of all when the price system is strongly impacted by the shock, as is generally the case as result of a trade liberalisation.

As is well known, however, CGE models are very demanding in terms of data and parameters, as well as in computational resources. This has strongly limited their use at the regional level. Still, several regional, CGE models have been developed during the last twenty years. Basically, they follow three different approaches: top-down, hybrid and bottom-up.

Top-down models include two separate parts, describing respectively the economy as a whole and the regions. As a matter of fact, only the first one belongs to the category of CGE models. The economy-wide impact obtained is then shared across region through the regional part of the model. This regional part is simplified, in that agents behaviour is not fully specified (or not at all), and there is no feedback to the national level. The ORANI model of the Australian economy (Dixon et al., 1982) has been the pioneering work in this domain, with a follow-up through the MONASH model (Adams et al., 1994).

Obviously, the top-down structure is not really satisfactory. It has been designed for the sake of tractability, given data and computational constraints. Hybrid models (see e.g. Higgs et al., 1983) are based on a similar structure, but introduce some direct link between the national and the regional dimension. Typically, one or several sectors will be represented, in the national model, as segmented across regions: production will be considered separately according to the region where it takes place. The sectors concerned by such modelling will be those deserving special interest given the topic studied, provided that the corresponding data is available. For those variables that where only considered at the economy-wide level in the national model, a regional model will determine how the impact is share across regions, as is done in top-down models.

Bottom-up models are full-fledged regional, CGE model (see Partridge and Rickman, 1998, for a survey of this class of models): a single CGE model is used, in which each region is considered separately, as would a country in a multi-country model. Most of the time, such models are specified in a standard fashion, which does not differ significantly from what is done in countrywide models. Such models are the most satisfactory from an analytical point of view. But this comes at a cost, since they are also the most demanding both in terms of data and of computational resources. This is why such models have mainly be used for one single region (12 such models, mostly for US regions, are listed in Partridge and Rickman, 1998, Table 1, and this list is far from exhaustive). Numerous applications have also been devoted to studying a handful of regions.

To the best of our knowledge, Australia is the only country where large-scale, bottom-up regional CGE modelling have been developed and applied. This has been done first through the MONASH-MRF model (Peter et al., 1996). This Johansen-ORANI type model disaggregates the Australian economy in 8 regions and 13 sectors. It has also been applied to Brazil, where 27 states and 8 sectors where considered (Haddad and Dominguez, 2003). Recently, a highly disaggregated evolution of MONASH-MRF has been proposed, the TERM model (Horridge et al., 2003). It is based on a database describing output or employment in the Australian economy for 144 sectors and 57 regions, and the model is typically solved for approximately 30 regions and 40 sectors. In order to make such a huge model tractable, a number of simplifying assumptions are made (perfect competition, perfect complementarity across intermediate inputs, demand sourcing not user-specific...). In addition (and this was already the case for MONASH-MRF), only a small part of the data is available at the most detailed level, the rest is estimated. However, this model is fully-fledged, with most features common with the ORANI model, and it can serve a variety of purposes in analysing in great regional detail the Australian economy. This model probably represents so far the cutting-edge of regional CGE analysis.

CGE models are widely considered by now as the best-suited tool to assess the impact of trade policies. The reason for this is that trade agreements can involve substantial changes in prices, in allocated resources and in income, which are frequently strongly contrasted across sectors and countries. As outlined above, this is the case where the robust and consistent modelling of agents' behaviour is the most valuable. This is also true at the regional level, and it should be obvious after the discussion above that bottom-up CGE models appears as the best tool to assess accurately the regional impact of trade policies. It should also be obvious that such analysis is very costly and difficult to implement. In such a model, each region trades with each other (and with the rest of the world) in each sector, and the corresponding flows result from the optimisation of agents behaviour. Needless to say, such optimisation is very heavy to compute, if one is to break down a large number of regions. In addition, the data required to feed such a model is very difficult to gather (or better said is lacking most of the time) at the regional level. This is why multi-region, bottom-up models are so rare.

3 The DREAM model: general framework and implementation

As mentioned previously, there are 78 NUTS-1 region in the EU, and this number will raise to119 once the enlargement to 25 countries is completed. In addition, a significant part of the necessary data is not available at this level. As a matter of fact, given present computational resources and data constraints, a full-fledged European interregional CGE model cannot be implemented. However, in order to give valuable insights about the regional impact of trade policies in the EU, this work aims at side-stepping these hurdles, in order to combine a regional analysis with the benefits of a general equilibrium framework.

This is done by using an original, two-tier approach where a regional general equilibrium model is tied to an EU-wide, trade policy general equilibrium model. The first tier involves assessing, for the EU as a whole, the impact of the trade policy shock considered, by using the MIRAGE model. In the second tier, the impacts obtained as a result for some key EU-wide variables are used as input for the DREAM model, created on purpose. DREAM is a CGE model in which each of the EU's 119 NUTS-1 regions is considered separately, and where trade relationships with the rest of the world are described based on MIRAGE's results. Agents' behaviour is described in a consistent, microfounded fashion, including their endogenous reactions to changes in prices and incomes. As far as possible, DREAM's theoretical set-up is consistent with MIRAGE’s one, although some simplifications are made in order to make it possible to consider separately each NUTS-1 European region.

This section provides a general overview of the DREAM model. It does not intend to present exhaustively the model (the list of equations is given in Appendix 1), but it describes the general framework and the key assumptions. For the sake of simplicity, the structure of the MIRAGE model will not be recalled (for a detailed presentation, see Bchir et al., 2002a, b).

3.1 General approach

MIRAGE is a multi-region, multi-sector CGE model been developed by the CEPII, with the collaboration of ITC (WTO-UNCTAD), with the specific purpose of assessing the impact of trade policies. It incorporates imperfect competition and product differentiation by variety and by quality, in a sequential dynamic set-up where installed capital is assumed to be immobile. Adjustment inertia is linked to capital stock reallocation and to market structure changes. MIRAGE draws upon a very detailed measure of trade barriers and of their evolution under given hypotheses, thanks to the *MAcMaps* database. For the remaining variables, the model is calibrated using the GTAP 5.3 database (Dimaranan and McDougall, 2002). The geographical and sectoral aggregation is chosen specifically for each study and generally includes a rather large number of regions (up to 21 in the applications made so far), and up to 57 sectors.

This framework enables an accurate description of the impact of a liberalisation scenario to be delivered. However, as outlined above, it cannot be applied at the level of European regions, due both to computational constraints and to data limitations. The approach followed here is to carry out, in a first step, MIRAGE's simulations of the trade policy shock considered. This provides with a satisfactory assessment of the impact on international trade volumes and prices, while considering the EU as a whole. We then take stock of this information, by considering as exogenous the changes calculated by MIRAGE for import prices and for exports demand curves.

The DREAM model then assesses in a CGE framework the impact induced at the regional level in the EU, enlarged to 25 countries. This regional model does not concentrate on external trade relationships. The geographical breakdown outside the EU used in the MIRAGE simulation is also used in DREAM, but non-EU economies are only considered through their trade relationships with the EU, with prices set exogenously for EU's imports, and notional demand set exogenously for EU's exports. In addition, the sectoral breakdown is less detailed. These are necessary conditions in order to make the model tractable, and to focus on the regional dimension. This makes it possible to use a CGE model that is completely specified for each of the 119 NUTS-1 EU regions. The trade policy shock considered in DREAM's simulations thus include both the change in the EU's custom duties, and the changes in import prices and in export demand curves obtained as a result of MIRAGE's simulation.

DREAM mimics MIRAGE's theoretical structure, as far as possible given data and size constraints. It incorporates horizontal and vertical product differentiation, with formulations identical or close to those used in MIRAGE. Nevertheless, some simplifications had to be made in the theoretical framework. The main ones are the following:

(i) The country mix of imports (geographical distribution across providers, including foreign EU regions) as well as the country mix of exports (geographical distribution across markets, including foreign EU regions) is assumed to be constant across regions, within each EU country. In other words every external trade flow has a geographical composition that is country-specific, but uniform across regions within each country. This is rendered necessary by the very high number of regions considered (119): one-to-one regional flows would be untractable, with 119 x 119 = 14,161 flows for each sector.

(ii) Unlike MIRAGE, DREAM assumes perfect competition to hold in every sector, with constant-return-to-scale production functions.

(iii) The composition of the intermediate consumption basket for each sector is assumed to be fixed (Leontief function).

In parallel, several issues become more relevant at the regional level: capital mobility, cross-regional investment and capital ownership, labour mobility, cross-regional redistribution through national budget. Special attention has been devoted to their treatment in the DREAM model. Capital is assumed to be perfectly mobile across the EU, with a single rate of return. The corresponding cross-regional flows of capital income are taken into account. Labour is assumed to be imperfectly mobile across regions within each country. Contributions to and benefits from the national public budget are explicitly modelled.

3.2 The supply side

Production makes use of five factors: capital, labour (skilled and unskilled), land and natural resources. The first three are generic factors, whereas the latter two are sector-specific. The production function assumes perfect complementarity between value added and the intermediate consumption. The combination of production factors is represented by a nested CES structure which allows taking into account different degrees of substitution between factors. Thus, a first CES function gives value added by combining the aggregate of skilled labour and capital to other factors, with an elasticity of substitution equal to 1.1. In a second stage, skilled labour and capital are combined with an elasticity of substitution of 0.6. This aims at reflecting the well-documented skill-capital relative complementarity.

For the sake of simplicity, the sectoral distribution of intermediate inputs used by each sector is assumed to be fixed (Leontief function), although it varies across utilisation sectors. This prevents from the additional complexity associated with modelling a sector-specific endogenous trade-off in the choice of intermediate inputs. For each sector of origin, the nesting across different origins is exactly the same as for final consumption (see below). Production uses constant-returns-to-scale technology in each sector, and perfect competition is assumed to hold.

3.3 The demand side

In each region, demand is modelled through a single, representative household, who maximises his utility, subject to his budget constraint. This household has two sources of income: the return to the production factors it earns, and government transfers. Labour wages paid in a region are always assumed to accrue wholly to the region's representative household. This is also the case for land and natural resources, for the sake of simplicity (landowners are thus assumed to live in the region). In contrast, capital ownership is not assumed to be specifically regional. Each region thus earns the capital incomes generated by the capital stock its representative agent owns, within the region as well as outside, but production in the region is made using the capital stock installed in the region, whatever its owner.

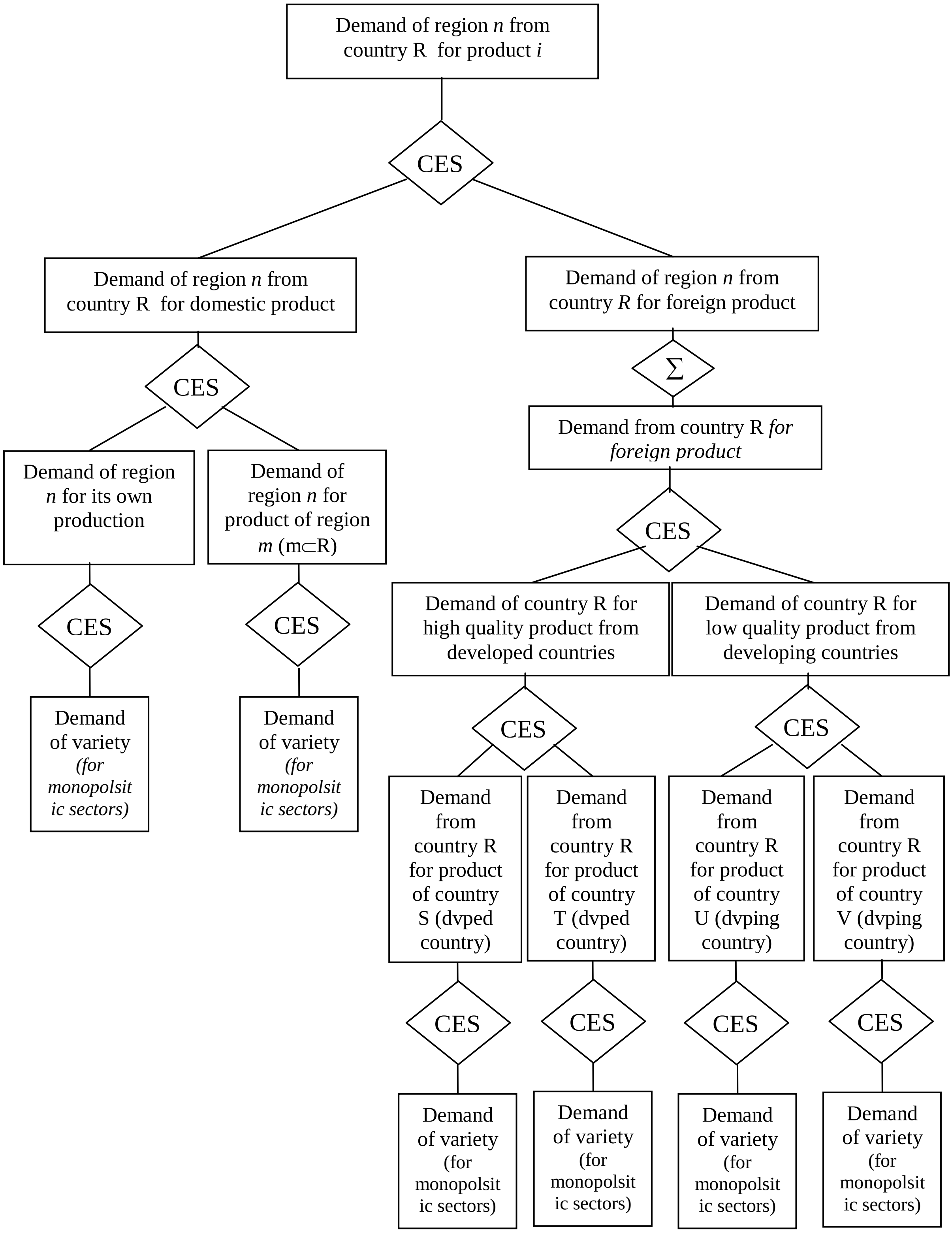
National governments collect taxes and transfer credits to each region in the country. Taxes (with rates as measured in the GTAP database) are collected mainly on output and on consumption. Tariff revenues also accrue to the government. The whole taxes are assumed to be redistributed to the regions. Throughout the simulations, the corresponding amounts of taxes redistributed evolve as a linear function of the number of workers by region. Altogether (private and public credits included), each region does not necessarily have a balanced current external account in the benchmark. The imbalance is in this case held constant across simulations, and is considered as a (positive or negative) transfer to the region, which adds to available income.

The representative household saves a constant share of its disposable income. The remaining part is used for consumption, seeking to maximise the household LES-CES utility function. This function is not homothetic, due to the existence of a minimum level of consumption for each product. This results in income elasticities of consumption being different from unity, and potentially different across sectors.

The geographical distribution of demand across providers is the same for capital good, intermediate consumption and final consumption. It follows a three-tier, nested CES structure, reflecting choices across different origins, with a constant elasticity of substitution for each of them (see Figure 1). At the first level, an Armington specification splits the demand between domestic goods, goods from a foreign, developed country, and goods from a foreign, developing country. As in the MIRAGE model (although in a slightly different way), this distinction between goods originating in developed and in developing countries intends to reflect the corresponding difference in quality. These quality differences have been widely illustrated empirically in recent years (see e.g. Fontagné et al., 1997). Within each of the two bundles of goods originating from developed and from developing countries, a second level reflects the choice across countries of origin, with higher substitution elasticity. Finally, a third level describes, for each country of origin, the choice of consumers across the horizontally differentiated varieties of the product.

This demand specification enables an accurate description of the consumer behaviour to be made. However, it is rather complex to implement as soon as the geographical breakdown is detailed. This is why, for the sake of simplicity, the geographical distribution of demand between domestic and foreign providers, and across foreign providers is assumed, within each country and each sector, to be the same across regions. This assumption prevents some region-specific patterns of trade from being taken into account, but it is necessary in order to keep the model tractable. The regional "home bias" and the regional product diversity are still taken into account, since each region produces its own varieties, the weight of which in the regional consumption basket is calibrated.

Figure 1: Demand side



3.4 Cross-regional mobility of production factors

The mobility of production factor is an important topic to deal with in the context of EU's regions, given the very large cross-regional flows observed. For obvious reasons, however, this does not concern land and natural resources, which are assumed to be immobile across regions. For the sake of simplicity, they are also assumed to be owned entirely by the region's representative household.

In contrast, capital is assumed to be perfectly mobile across sectors and across regions. This implies that the nominal return to capital is unique across the EU. This entails also large cross-regional flows of capital income, from where the capital stock is to where its owner lives. The supply of capital stock within each region is thus very elastic with respect to its price, and this implies that any ex-ante upward pressure on the rate of return to capital in a region will result, ex-post, in a capital inflow from other European regions.

Both types of labour, skilled and unskilled, are perfectly mobile across sectors but imperfectly mobile across regions, within each country. This is important since trade policies, by modifying prices and income, may have an impact on cross-regional migrations. This is potentially an important channel in shaping the relative impact of a given shock across regions. The economic determinants of migration are numerous, and the corresponding specification varies across the models in which migration is incorporated. In DREAM, migration flows are expressed as a proportion of the labour force in the region of origin and of destination, and they are linked to the relative changes in the real incomes in these two regions. This results from the relative change in wages, from the share of wages in households' income, and from the relative changes in consumption prices. Practically, migration flows are set as follows:

$$MIGR_{n \to m} = \sigma^{migr} \times \frac{Pop_n \times Pop_n}{\sum Pop_i} \times \log\left(\frac{\Delta\left(\frac{y_m}{p_m}\right)}{\Delta\left(\frac{y_n}{p_n}\right)} \right) \qquad (2)$$

with σ^{migr} the elasticity of migration, Pop_k the population of the region k (m, n and i belong to the same country) and $\Delta \frac{y_m}{p_m}$ the real income variation of an agent living in the region m.

This same equation is used for skilled and unskilled labour. The same elasticity of migration is used in both cases, and its value is chosen mainly based on Eichengreen (1993).

3.5 Market clearing and macro-economic closure

Equilibrium is reached when all good and factor markets clear. Given the conditions of cross-regional mobility defined above, each production factor market is assumed to be fully employed at the equilibrium, with a market behaving in a perfectly competitive way. As a consequence, unemployment is not modelled. However, this does not prevent from drawing employment lessons from the results displayed, in particular from those related to migrations and wages.

Exchange rates are assumed to be exogenously fixed throughout EU's regions. This assumption is compulsory across Euroland regions, and it is extended to other regions. A consequence of this assumption is that each region's current balance (i.e., the difference between savings and investment) is endogenous. For the EU as a whole, the current balance is given by MIRAGE simulations, in which it is assumed to be exogenous. As a consequence, the EU's current external balance is also assumed to be exogenous in DREAM. The macroeconomic closure is neo-classical. Investment is set to be equal to savings, for the EU as a whole.

DREAM also incorporates a variable number of (group of) countries outside the UE. However, as outlined above, the results for these countries are drawn for the MIRAGE model, which is better suited to analyse the international consequences of trade policies. This is why these non-EU countries only enter the model through their external trade flows, under conditions that are tied to MIRAGE simulations results. Practically, the price change of EU's imports from a given foreign partner in a given sector is exogenously set equal to the change obtained as a result of MIRAGE's simulation. For EU's exports in a given sector toward a given partner, the notional demand is exogenously set, according to MIRAGE's simulation. This means that the result obtained from MIRAGE's simulation is used to re-calibrate the function expressing the demand expressed by the partner to EU's exports in this sector. If the initial MIRAGE simulation is carried out considering separately some or all EU countries, these exogenous import prices and notional demand for exports are set individually for each of these countries. In each case, this approach enables the key international trade variables to be drawn from MIRAGE simulations, which are precisely designed to study trade policies.

4 Building a consistent and exhaustive, European regional database

CGE models require an exhaustive and coherent dataset. Output, value-added split, consumption, income and factor endowments need to be described for each sector and each region throughout the EU.

First, the source of national data is the GTAP 5.3 Database (Dimaranan and McDougall, 2002), except for market access, for which we rely on the MAcMaps database (Bouët et alii, 2002).

Second, the EUROSTAT’s REGIO database provides data at the regional (NUTS-1) level. For acceding countries, however, this data did not proved to be satisfactory, with an excessive level of sector aggregation, and a high missing rate –in the NUTS1 classification, it exceeds 30%-. We thus had to use data from national statistical institutes for these countries. Moreover, some information about industrial sectors is drawn from the EUROSTAT’s NeoCronos database. For European budget and transfers, the European Commission budget articles of the last six years were used.

A large-scale harmonisation procedure has been developed to ensure the consistency of regional and national data. The European NACE classification is mapped to the GTAP one in order to obtain a homogeneous dataset. The year of reference is 1997. This results in a 119-European region, and 21-sector database (3 agricultural sectors, 2 other primary activities, 9 industrial sectors and 7 services), covering the EU-25.

Harmonisation is not sufficient, however, when no consistent regional data is available, as is the case in the EU for trade flows between regions belonging to the same country, for foreign trade flows and for regional factor endowments. In both cases, data had to be reconstructed based other existing regional and national data, using well-suited assumptions.

4.1 Cross-regional, intra-national trade flows

Trade linkages across regions are obviously important when assessing how a trade policy shock spreads. However, no external (either foreign or intra-national) trade data is available at the regional level for the EU as a whole.[1] As far as foreign trade is concerned, this problem was solved by considering that, for any trading partner, import penetration rate and export intensity are the same across regions within the country. As to trade flows between regions, within a given country, three main assumptions are made:

- The geographical pattern of consumption is independent of its use (in a region the bundle of goods for final demand, intermediate consumption and capital good demand has the same geographical composition).

- For each good and each region, the allocation of demand across other regions within the country follows the regional allocation of output for this good.

- A "home-bias" effect is taken into account. The share of local supply is increased compared with its share in national production (this effect is stronger for services than for other sectors).

$$\begin{aligned} shC_{i,n,n} &= \frac{k(i) \times shP_{i,n}}{1 + (k(i) - 1) \times shP_{i,n}} \\ shC_{i,m,n} &= \left(1 - shC_{i,n,n}\right) \times \frac{shP_{i,m}}{\sum_{l \neq n} shP_{i,l}} \end{aligned} \qquad (3)$$

with $shC_{i,m,n}$ the share of region *n*'s demand in good *i* of domestic origin addressed to region *m*, $shP_{i,n}$ the share of region *n* in the national production of good *i* and *k(i)* the home-bias effect parameter (set to 3 for services and to 2 elsewhere).

Since this approach is driven by the demand side, there is no ex-ante guarantee that the demand computed will match with the effective level of production of each region. We thus use a minimisation entropy strategy to equilibrate our interregional trade pattern matrix.

4.2 Foreign trade flows

To the best of our knowledge, no foreign trade data is available for NUTS-1 regions at the EU-wide level. This prevents from measuring accurately the regional specificities of foreign trade, which are likely to be especially important in the case of border regions and of near countries. As soon as the partner is a distant country, however, the regional patterns are less likely to very uneven, at least within each sector.

[1] Some information is available in some countries for foreign trade at the regional level, but this is not systematically the case.

Absent any additional information, we thus assume for each sector that all regions in a given country have the same geographical sourcing of imports. For each enlarged-EU's country, the foreign trade pattern is given by the GTAP database, with full sectoral and geographical detail. At the aggregate level, this does not mean that a given partner has the same weight in each region's foreign trade within a given country, since sectoral specialisation introduce differences.

The lack of well-suited regional data about foreign trade is thus a limitation for the exercise carried out here. In particular, intense, "proximity" trade relationships cannot be reflected in the data. Still, countrywide foreign trade flows are accurately measured, and the approximation involved for the structure of foreign trade is likely to be limited, as soon as the partner concerned is distant.

4.3 Factor endowments

First, we assume that technology is homogeneous across the different regions of a country. As the European capital market is fully integrated, capital earnings are also equal across regions and sectors. Price of capital differs for some subsidized sectors. Since the sectoral value-added and the level of employment in each region is known, and the national level of endowments, factor uses and production are given by the GTAP database, we can solve the supply side of the DREAM model in order to compute the initial level of factor use for every region and every sector. This system also gives us initial factor prices in every region.

Finally, if for both labour and land factors, regional uses equal to regional endowments, capital ownership is distributed across regions by following the no-labour income distribution in the household accounts.

5 Applications to multilateral liberalisation scenarios

In order to provide a basis for the simulation exercise, the alternative agendas of tariff cuts considered need to be translated into scenarios, that is in quantified changes of trade barriers in each sector, for each bilateral trade flow between regions, for each year of the phase-in period. This exercise is carried out here based on the *MAcMaps* database. While it allows the most detailed information to be taken into account, it is subject to various constraints.

Four types of protection instruments a taken into account: ad-valorem tariffs, specific duties, tariff quotas, anti-dumping duties. The information considered here refers to the ad-valorem equivalent tariff of these instruments considered globally. This implies defining scenarios on this global ad-valorem equivalent. Due to the absence of reliable protection data, services are not included in any of the scenarios considered hereafter.

All the scenarios presented in this Section share the following two characteristics. They are based on a systematic rule of evolution of the ad-valorem tariff equivalent of the five protection instruments (ad-valorem tariffs, specific duties, tariff quotas, prohibitions, anti-dumping duties) considered a whole. This rule of evolution may be conditional to the initial level of the ad-valorem tariff equivalent.

Before turning to the results, let us emphasise that such an assessment is tributary of the regional classification used. In particular, although the NUTS1 classification includes an already large number of regions, several countries do not have any regional disaggregation at all at this level. This is the case of Cyprus, Denmark, Estonia, Ireland, Latvia, Lithuania, Luxembourg, Malta, Slovenia, and Sweden. Continental Portugal and continental Finland are also considered each as one single region. In parallel, the economic weight of NUTS-1 regions differs widely, even excluding single-region countries, spreading from 662 thousands euros (Åland region, Finland) to 419 millions euros (Nordrhein-Westfalen, Germany), as measured by their 1997 GDP. The percent changes presented below should therefore be interpreted by keeping in mind these strong disparities in the classification's definition.

5.1.1 Experiment design

A pre-experiment simulation is carried out in order to account for the EU enlargement and the MFA phasing out.

Six scenarios are considered, covering a wide range of far reaching liberalisation hypotheses :

(a) Tariff peak removal: all tariffs exceeding an ad-valorem equivalent of 15% are cut back to 15%. (Table 2).

(b) Complete liberalisation: all tariffs, domestic support measures and export subsidies are removed.

(c) Agricultural tariff liberalisation: tariffs are removed in agricultural and food products.

(d) Ag. tariff+DS+XS: tariffs, domestic support measures and export subsidies are removed for agricultural and food products.

(e) Manufacturing (except textile-wearing): tariffs are removed for non-agricultural products, except textile-wearing-leather and shoes.

(f) Textile-wearing liberalisation: tariffs are removed for the textile, wearing, leather and shoes sectors.

Each scenario is first simulated using the MIRAGE model. Our main interest lies in the resulting impact for European countries. The magnitude of these impacts is larger for acceding countries than for EU-15 members, under almost all scenarios Even the removal of tariff peaks have a significant impact, raising welfare by more than 1% in Baltic states, Hungary, island countries, Slovakia and Slovenia .

5.1.2 Regional impacts

Due to time constraints, only a very brief outline of the structure of the results is presented in this draft version. More detailed comments will follow. Let us first focus on the impact of a complete liberalisation (scenario (b)). Table 3 presents the impact on value added by large sector (agriculture, textile-wearing, other manufacturing), and for the whole economy, for each region. This allows the structure of the impact across regions to be highlighted, with both the proportional changes in value added by sector, and the output mix of each region explaining the different results obtained. The change in income is also displayed, using the equivalent variation. In addition, an index of structural change is computed, in order to give hints about the magnitude of adjustment costs to be expected for each region.

A complementary approach is obtained by focusing on the largest changes. For output, exports and imports, Table 4 displays the top 5 absolute changes, across sector-region pairs. This allows the most noticeable impacts to be studied.

In a second stage, the analysis is extended to whole set of scenarios presented above ((a) through (f)). The very large number of regions, coupled with these 6 scenarios, does not allow for a detailed presentation of results. Table 5 shows the changes involved under each scenario, on the equivalent variation of income, on real GDP and on the index of structural change. In addition, Table 6 and Table 7 show the top and bottom variations observed under each scenario, across sector-region pairs.

6 Conclusion

Assessing the impact of trade policies at the regional level is useful for various reasons. The cross-regional distributional impact is important from a policy point of view. It gives a better idea of the nature of the adjustments to be expected and it helps addressing the question of whether flanking policies are required. It also helps understand how trade policy and cohesion policy interfere. Even at the aggregate level, taking into account the regional structure of the EU's economy helps better assessing the resulting impact. However, such a regional approach to trade policies was still lacking in the EU.

This article proposes a tool for filling this gap. This tool consists in a two-tier approach, embedding two CGE models. The MIRAGE model is first used for a preliminary, EU-wide analysis of the impact of the shock studied. The information thus produced about the impact on international trade, and more specifically on the price of EU imports and on the demand addressed to EU's exports is then used as input for a second stage, regional analysis. This regional analysis is carried out using DREAM, an original model built on purpose. DREAM is a bottom-up, CGE model describing separately each NUTS-1 EU region, and its relationships with the rest of the world.

This approach is costly in terms of time, data and computational resources. However, it makes it possible to combine, in a true CGE approach, a detailed analysis of EU's trade policies (taking preferential agreements into account) together with a fully specified modelling of the regional structure of the EU's economy. The results presented in this article illustrate the interest of this approach. The shocks considered here do not lead to large assessed impacts. Still, they highlight the fairly contrasted nature of the impact of trade liberalisation across EU regions, for each of the three scenarios.

Cross-regional differences mainly arise as a result of differences in sectoral output specialisation, along with sectoral and geographical trade specialisation. These differences interact with the nature of the shock, with region-wide equilibrium constraints, and with close cross-regional economic links. As illustrated by the comparison with the results of an accounting allocation methodology, the results are not easily proxied based on a simple calculation, even when economy-wide constraints and regional characteristics are taken into account. Agricultural sectors are especially sensitive ones, due both to their relatively high level of protection and to their uneven distribution across EU regions. In addition, since poorer regions tend on average to be more specialised in agriculture, some shocks resulting in an adverse impact on agricultural activities may go against cross-regional convergence objectives. This is illustrated, although to a very limited extent, in the assessed impact obtained as a result of a multilateral, limited liberalisation scenario. The specific role of transport and communication is also noteworthy. Indeed this sector is in average more important in wealthier regions, and it is generally among the most favoured ones as a result of a liberalisation.

Many developments could be undertaken based on the tools presented here. Our feeling is that the main limitations so far are linked to data availability. In particular, the lack of harmonised regional data on external trade, covering the whole EU, prevents important effects from being taken into account. These effects are most of all relevant for "proximity" trade relationships, involving close partners and border regions, but they certainly deserve attention. An effort to collect and harmonise such data would therefore be useful. Other limitations have to do with the level of detail. Although the model presented here is already extremely large and complex, the analysis can still be considered as carried out at a rather aggregated level, in geographical as well as sectoral terms. Going into more details would certainly raise technical difficulties, but actually the limiting factor is data availability. Theoretical developments are also worth considering. The economic geography literature opens a wide range of possibilities in this respect. However, it is essential to keep in mind that applied analysis shall be based on proved and robustly measured relationships. In particular, externalities are a very interesting subject of theoretical analysis, but they should be handled very carefully when it turns to carrying out policy-oriented assessments.

The kind of analysis presented here intends to bridge the gap between economy-wide analyses and local concerns about trade policy impact. It is likely to be complementary to many other approaches, either by providing a more detailed assessment, of by delivering well-suited inputs for more specific analyses. As such, it will hopefully help gaining a better understanding of various dimensions of the impact of trade policies.

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Appendix 1: Sectoral and geographical aggregations

Table A. 1: Geographical aggregation

GTAP code	GTAP description	Corresponding region
aus	Australia	Cairns
nzl	New Zealand	Cairns
chn	China	DvgAsia
hkg	Hong Kong	DvgAsia
jpn	Japan	Japan
kor	Korea	Row
twn	Taiwan	Row
idn	Indonesia	Cairns
mys	Malaysia	Cairns
phl	Philippines	Cairns
sgp	Singapore	Row
tha	Thailand	Cairns
vnm	Vietnam	DvgAsia
bgd	Bangladesh	DvgAsia
ind	India	DvgAsia
lka	Sri Lanka	DvgAsia
xsa	Rest of South Asia	DvgAsia
can	Canada	Cairns
usa	United States	USA
mex	Mexico	Row
xcm	Central America, Caribbean	ACP
col	Colombia	Cairns
per	Peru	Row
ven	Venezuela	Row
xap	Rest of Andean Pact	Cairns
arg	Argentina	Cairns
bra	Brazil	Cairns
chl	Chile	Cairns
ury	Uruguay	Cairns
xsm	Rest of South America	Cairns
aut	Austria	aut
bel	Belgium	bel
dnk	Denmark	dnk
fin	Finland	fin
fra	France	fra
deu	Germany	deu
gbr	United Kingdom	gbr
grc	Greece	grc

Geographical aggregation (continued)

GTAP code	GTAP description	Corresponding region
irl	Ireland	irl
ita	Italy	ita
lux	Luxembourg	lux
nld	Netherlands	nld
prt	Portugal	prt
esp	Spain	esp
swe	Sweden	swe
che	Switzerland	Row
xef	Rest of Eur Free Trade Area	Row
alb	Albania	Row
bgr	Bulgaria	Row
hrv	Croatia	Row
cze	Czech Republic	cze
hun	Hungary	hun
mlt	Malta	mlt
pol	Poland	pol
rom	Romania	Row
svk	Slovakia	svk
svn	Slovenia	svn
est	Estonia	est
lva	Latvia	lva
ltu	Lithuania	ltu
rus	Russian Federation	Row
xsu	Rest of Former Soviet Union	Row
cyp	Cyprus	cyp
tur	Turkey	Row
xme	Rest of Middle East	Row
mar	Morocco	Row
xnf	Rest of North Africa	Row
bwa	Botswana	ACP
xsc	Rest of South Afr C Union	Cairns
mwi	Malawi	ACP
moz	Mozambique	ACP
tza	Tanzania	ACP
zmb	Zambia	ACP
zwe	Zimbabwe	ACP
xsf	Other Southern Africa	ACP
uga	Uganda	ACP
xss	Rest of Sub-Saharan Africa	ACP
xrw	Rest of World	Row

Table A. 2: Sectoral aggregation

GTAP code	GTAP description	Corresponding sector	Competition
pdr	Paddy rice	Cereals	Perfect
wht	Wheat	Cereals	Perfect
gro	Cereal grains nec	Cereals	Perfect
v_f	Vegetables, fruit, nuts	OthVeg	Perfect
osd	Oil seeds	OthVeg	Perfect
c_b	Sugar cane, sugar beet	OthVeg	Perfect
pfb	Plant-based fibers	OthVeg	Perfect
ocr	Crops nec	OthVeg	Perfect
ctl	Cattle,sheep,goats,horses	Animals	Perfect
oap	Animal products nec	Animals	Perfect
rmk	Raw milk	Animals	Perfect
wol	Wool, silk-worm cocoons	Animals	Perfect
for	Forestry	OthVeg	Perfect
fsh	Fishing	Fishing	Perfect
col	Coal	Extraction	Perfect
oil	Oil	Extraction	Perfect
gas	Gas	Extraction	Perfect
omn	Minerals nec	Extraction	Perfect
cmt	Meat: cattle,sheep,goats,horse	Agri_Ind	Imperfect
omt	Meat products nec	Agri_Ind	Imperfect
vol	Vegetable oils and fats	Agri_Ind	Imperfect
mil	Dairy products	Agri_Ind	Imperfect
pcr	Processed rice	Agri_Ind	Imperfect
sgr	Sugar	Agri_Ind	Imperfect
ofd	Food products nec	Agri_Ind	Imperfect
b_t	Beverages and tobacco products	Agri_Ind	Imperfect
tex	Textiles	Tex_Ind	Imperfect
wap	Wearing apparel	Tex_Ind	Imperfect
lea	Leather products	Tex_Ind	Imperfect
lum	Wood products	Wood_Ind	Imperfect
ppp	Paper products, publishing	Paper_Ind	Imperfect
p_c	Petroleum, coal products	Chim_Ind	Imperfect
crp	Chemical,rubber,plastic prods	Chim_Ind	Imperfect
nmm	Mineral products nec	Metal_Ind	Imperfect
i_s	Ferrous metals	Metal_Ind	Imperfect
nfm	Metals nec	Metal_Ind	Imperfect
fmp	Metal products	Metal_Ind	Imperfect
mvh	Motor vehicles and parts	Tran_Ind	Imperfect
otn	Transport equipment nec	Tran_Ind	Imperfect
ele	Electronic equipment	Mach_Ind	Imperfect
ome	Machinery and equipment nec	Mach_Ind	Imperfect
omf	Manufactures nec	OthInd	Imperfect
ely	Electricity	Services	Imperfect
gdt	Gas manufacture, distribution	Services	Imperfect
wtr	Water	Services	Imperfect
cns	Construction	Services	Imperfect
trd	Trade	Trade	Imperfect
otp	Transport nec	TransCom	Perfect
wtp	Sea transport	TransCom	Perfect
atp	Air transport	TransCom	Perfect
cmn	Communication	TransCom	Perfect
ofi	Financial services nec	Finance	Imperfect
isr	Insurance	Finance	Imperfect
obs	Business services nec	Services	Imperfect
ros	Recreation and other services	Services	Imperfect
osg	PubAdmin/Defence/Health/Educat	Services	Imperfect
dwe	Dwellings	Services	Imperfect

Tables

Table 1: List of NUTS-1 EU regions, with GDP, population and GDP per capita in 1997

NUTS1	Name	GDP (millions of euros)	Population (thousands)	GDP per capita (thousands)	AccCount	20HIGH	40LOW
at1	Ostösterreich	82 470.00	3 404.00	24.23		Y	
at2	Südösterreich	33 362.90	1 770.60	18.84			
at3	Westösterreich	65 811.70	2 893.20	22.75		Y	
be1	Bruxelles/Brussels	41 311.40	950.60	43.46		Y	
be2	Vlaams Gewest	123 269.10	5 898.80	20.90			
be3	Région Wallonne	51 556.80	3 320.80	15.53			
cy00	Cyprus	*7 830.20*	*700.00*	11.19	Y		
cz01	Praha	10 337.60	1 205.00	8.58	Y		
cz02	Stredni Cechy	3 925.90	1 105.20	3.55	Y		Y
cz03	Jihozápad	5 093.00	1 181.00	4.31	Y		Y
cz04	Severozápad	4 517.10	1 130.40	4.00	Y		Y
cz05	Severovýchod	5 917.30	1 492.30	3.97	Y		Y
cz06	Jihovýchod	6 668.70	1 662.70	4.01	Y		Y
cz07	Strední Morava	4 811.60	1 245.20	3.86	Y		Y
cz08	Moravskoslezko	5 483.70	1 287.40	4.26	Y		Y
de1	Baden-Württemberg	264 597.80	10 374.50	25.50		Y	
de2	Bayern	310 976.80	12 043.90	25.82		Y	
de3	Berlin	74 738.10	3 458.80	21.61		Y	
de4	Brandenburg	39 311.20	2 554.40	15.39			
de5	Bremen	20 315.20	677.80	29.97		Y	
de6	Hamburg	66 444.30	1 708.00	38.90		Y	
de7	Hessen	167 095.80	6 027.30	27.72		Y	
de8	Mecklenburg-Vorpommern	27 506.80	1 817.20	15.14			
de9	Niedersachsen	162 080.80	7 815.10	20.74		Y	
dea	Nordrhein-Westfalen	418 953.40	17 947.70	23.34		Y	
deb	Rheinland-Pfalz	83 130.30	4 000.60	20.78		Y	
dec	Saarland	22 645.30	1 084.20	20.89			
ded	Sachsen	69 764.30	4 545.70	15.35			
dee	Sachsen-Anhalt	39 861.70	2 723.60	14.64			
def	Schleswig-Holstein	59 380.70	2 742.30	21.65		Y	
deg	Thüringen	36 654.90	2 491.10	14.71			
dk0	*Denmark*	*149 169.20*	*3 700.00*	40.32		Y	
ee00	*Eire*	*60 168.90*	*1 406.00*	42.79			
ei0	*Estonia*	*4 075.40*	*4 311.30*	0.95	Y		Y
es1	Noroeste	45 073.00	4 311.30	10.45			
es2	Noreste	59 712.40	4 037.40	14.79			
es3	Comunidad de Madrid	83 606.40	5 025.20	16.64			
es4	Centro (ES)	55 191.70	5 264.30	10.48			
es5	Este	153 172.20	10 746.30	14.25			
es6	Sur	79 802.20	8 347.50	9.56			
es7	Canarias (ES)	19 069.40	1 576.60	12.10			
fi1	Manner-Suomi	107 409.60	5 107.10	21.03			
fi2	Åland	662.50	25.30	26.19		Y	

NUTS1	Name	GDP (millions of euros)	Population (thousands)	GDP per capita (thousands)	AccCount	20HIGH	40LOW
fr1	Île de France	352 081.10	11 055.70	31.85		Y	
fr2	Bassin Parisien	192 977.60	10 505.50	18.37			
fr3	Nord - Pas-de-Calais	65 338.60	4 006.50	16.31			
fr4	Est	96 870.00	5 142.60	18.84			
fr5	Ouest	137 186.50	7 682.80	17.86			
fr6	Sud-Ouest	112 184.90	6 128.20	18.31			
fr7	Centre-Est	141 885.70	6 961.20	20.38			
fr8	Méditerranée	123 369.60	7 009.10	17.60			
fr9	Départements d'outre-mer (FR)	19 235.30	1 636.20	11.76			
gr1	Voreia Ellada	33 300.30	3 387.80	9.83			
gr2	Kentriki Ellada	24 142.60	2 638.30	9.15			
gr3	Attiki	38 757.60	3 447.60	11.24			
gr4	Nisia Aigaiou, Kriti	10 902.50	1 012.90	10.76			
hu01	Közép-Magyarország	17 026.40	2 880.70	5.91	Y		Y
hu02	Közép-Dunántúl	4 246.80	1 113.80	3.81	Y		Y
hu03	Nyugat-Dunántúl	4 152.80	995.10	4.17	Y		Y
hu04	Dél-Dunántúl	3 049.40	990.40	3.08	Y		Y
hu05	Észak-Magyarország	3 442.60	1 290.80	2.67	Y		Y
hu06	Észak-Alföld	4 221.20	1 539.20	2.74	Y		Y
hu07	Dél-Alföld	4 212.80	1 364.40	3.09	Y		Y
it1	Nord Ovest	123 451.30	6 064.10	20.36			
it2	Lombardia	213 840.00	8 958.70	23.87			
it3	Nord Est	140 325.60	6 557.80	21.40			
it4	Emilia-Romagna	90 086.30	3 937.90	22.88		Y	
it5	Centro (I)	109 539.10	5 802.20	18.88			
it6	Lazio	104 712.40	5 217.20	20.07			
it7	Abruzzo-Molise	23 824.50	1 604.40	14.85			
it8	Campania	66 254.80	5 785.40	11.45			
it9	Sud	76 835.30	6 769.70	11.35			
ita	Sicilia	58 904.00	5 100.80	11.55			
itb	Sardegna	22 218.00	1 663.00	13.36			
lt00	*Lituania*	*8 452.10*	*3 580.00*	2.36	Y		Y
lu0	*Luxembourg*	*15 421.80*	*424.00*	36.37		Y	
lv00	*Latvia*	*4 958.30*	*2 433.00*	2.04	Y		Y
mt00	*Malta*	*2 944.50*	*383.00*	7.69	Y		Y
nl1	Noord-Nederland	33 764.40	1 634.00	20.66			
nl2	Oost-Nederland	58 883.70	3 225.50	18.26			
nl3	West-Nederland	171 101.60	7 267.30	23.54			
nl4	Zuid-Nederland	68 904.20	3 440.30	20.03			
pl01	Dolnoslaskie	10 143.80	2 985.40	3.40	Y		Y
pl02	Kujawsko-Pomorskie	6 292.60	2 098.00	3.00	Y		Y
pl03	Lubelskie	5 486.80	2 242.00	2.45	Y		Y
pl04	Lubuskie	3 074.60	1 020.30	3.01	Y		Y
pl05	Lódzkie	7 866.30	2 672.80	2.94	Y		Y
pl06	Malopolskie	9 462.80	3 206.60	2.95	Y		Y
pl07	Mazowieckie	22 743.00	5 065.00	4.49	Y		Y
pl08	Opolskie	3 288.60	1 091.10	3.01	Y		Y
pl09	Podkarpackie	5 371.00	2 117.30	2.54	Y		Y
pl0a	Podlaskie	3 185.20	1 223.90	2.60	Y		Y
pl0b	Pomorskie	6 972.20	2 179.10	3.20	Y		Y
pl0c	Slaskie	18 941.20	4 894.20	3.87	Y		Y

NUTS1	Name	GDP (millions of euros)	Population (thousands)	GDP per capita (thousands)	AccCount	20HIGH	40LOW
pl0d	Swietokrzyskie	3 363.40	1 327.90	2.53	Y		Y
pl0e	Warminsko-Mazurskie	3 783.70	1 460.40	2.59	Y		Y
pl0f	Wielkopolskie	11 486.80	3 346.00	3.43	Y		Y
pl0g	Zachodniopomorskie	5 669.40	1 729.80	3.28	Y		Y
pt1	Portugal (Continent)	89 897.80	9 583.80	9.38			
pt2	Açores (PT)	1 627.70	238.50	6.82			Y
pt3	Madeira (PT)	2 364.20	247.50	9.55			
se0	*Sweden*	218 489.30	8 846.00	24.70			
si00	*Slovenia*	16 062.70	1 987.00	8.08	Y		Y
sk01	Bratislavský	4 457.50	618.90	7.20	Y		Y
sk02	Západné Slovensko	5 933.10	1 876.60	3.16	Y		Y
sk03	Stredné Slovensko	4 042.60	1 351.80	2.99	Y		Y
sk04	Východné Slovensko	4 162.70	1 531.60	2.72	Y		Y
ukc	North East	40 472.60	2 597.40	15.58			
ukd	North West (including Merseyside)	121 096.90	6 888.00	17.58			
uke	Yorkshire and The Humber	88 935.70	5 036.20	17.66			
ukf	East Midlands	79 033.20	4 148.90	19.05			
ukg	West Midlands	96 629.90	5 318.70	18.17			
ukh	Eastern	108 667.70	5 313.40	20.45			
uki	London	204 042.70	7 098.20	28.75		Y	
ukj	South East	171 470.20	7 927.10	21.63		Y	
ukk	South West	89 603.20	4 858.80	18.44			
ukl	Wales	46 841.50	2 924.00	16.02			
ukm	Scotland	98 079.10	5 122.50	19.15			
ukn	Northern Ireland	26 675.70	1 680.30	15.88			
EUROPE	All european regions	7561660.90	449609.80	16.82			
EU15	European union (15)	7427697.60	412340.00	18.01			
AccCount	Accessing countries	277157.40	77916.60	3.56			
20HIGH	20 highest-GDP-per-capita regions	2800240.10	108212.00	25.88			
40LOW	40 lowest-GDP-per-capita regions	260617.30	76250.10	3.42			

Source: Eurostat, GTAP

Table 2:Average level of Protection of and faced by EU

Initial levels (%)

EU's protection

i	ACP	Cairns	DvgAsia	Japan	Row	USA	Av. Tariff
Agri_Ind	24.95	28.39	12.73	17.50	10.71	28.27	20.43
Animals	0.61	23.45	12.36	3.01	16.57	8.19	10.70
Cereals	0.96	9.13	2.32	8.23	7.81	3.86	5.38
Chim_Ind	0.00	2.43	1.40	3.91	1.41	3.44	2.10
Extraction	0.00	0.02	0.03	0.18	0.00	0.05	0.05
Fishing	0.10	7.36	5.84	7.37	3.63	8.62	5.49
Mach_Ind	0.00	0.92	0.82	1.86	0.58	1.05	0.87
Metal_Ind	0.01	1.60	2.57	1.98	1.06	2.28	1.58
OthInd	0.00	1.16	1.70	1.79	0.58	1.39	1.10
OthVeg	1.26	5.78	2.78	5.66	5.16	5.03	4.28
Paper_Ind	0.00	0.05	0.02	0.30	0.03	0.19	0.10
Tex_Ind	0.00	7.72	8.69	6.84	3.63	6.87	5.62
Tran_Ind	0.00	7.10	2.05	7.90	3.21	4.06	4.05
Wood_Ind	0.00	1.19	0.39	1.88	0.19	1.44	0.85
Av. Tariff	1.99	6.88	3.84	4.89	3.90	5.34	4.47

Protection faced by EU

i	ACP	Cairns	DvgAsia	Japan	Row	USA	Av. Tariff
Agri_Ind	27.46	27.36	14.50	31.97	30.45	5.51	22.88
Animals	9.17	5.87	4.12	51.58	25.59	0.77	16.18
Cereals	6.99	8.32	17.34	151.16	54.89	1.99	40.12
Chim_Ind	10.71	5.66	7.75	1.85	4.82	2.26	5.51
Extraction	7.67	1.79	3.04	0.96	2.27	0.08	2.64
Fishing	19.13	2.16	1.39	4.68	12.46	0.46	6.71
Mach_Ind	8.36	4.23	5.64	0.12	4.58	1.19	4.02
Metal_Ind	13.84	5.67	7.10	0.97	5.03	1.94	5.76
OthInd	29.79	6.16	9.64	1.84	5.00	2.36	9.13
OthVeg	15.39	3.66	12.12	5.26	21.92	3.41	10.30
Paper_Ind	10.92	4.02	7.03	0.02	3.65	0.08	4.29
Tex_Ind	17.85	14.26	8.25	8.88	10.05	9.07	11.39
Tran_Ind	11.47	9.39	7.99	0.00	8.49	2.35	6.61
Wood_Ind	22.34	6.53	3.28	1.61	5.30	0.72	6.63
Av. Tariff	15.08	7.51	7.80	18.64	13.89	2.30	10.87

Post Tariff Peaks Cut Level(%)

EU's protection

i	ACP	Cairns	DvgAsia	Japan	Row	USA	Av. Tariff
Agri_Ind	3.13	9.52	7.69	10.57	6.00	11.08	8.00
Animals	0.44	7.06	4.64	2.66	4.88	2.82	3.75
Cereals	0.51	6.33	2.04	4.56	7.60	3.59	4.11
Chim_Ind	0.00	2.53	1.42	4.08	1.46	3.62	2.19
Extraction	0.00	0.02	0.03	0.18	0.00	0.05	0.05
Fishing	0.10	7.36	5.84	7.37	3.63	8.62	5.49
Mach_Ind	0.00	0.92	0.82	1.86	0.58	1.05	0.87
Metal_Ind	0.01	2.21	2.83	5.13	2.03	3.22	2.57
OthInd	0.00	1.23	1.97	2.09	0.63	1.48	1.23
OthVeg	1.13	4.40	2.28	5.20	4.50	4.76	3.71
Paper_Ind	0.00	0.67	0.17	1.55	0.35	1.00	0.62
Tex_Ind	0.00	7.76	8.69	7.29	3.73	7.23	5.78
Tran_Ind	0.00	7.05	2.05	7.85	3.21	4.02	4.03
Wood_Ind	0.00	1.19	0.39	1.88	0.19	1.44	0.85
Av. Tariff	0.38	4.16	2.92	4.45	2.77	3.86	3.09

Protection faced by EU

i	ACP	Cairns	DvgAsia	Japan	Row	USA	Av. Tariff
Agri_Ind	12.59	7.41	7.94	11.38	9.29	4.95	8.93
Animals	7.72	2.28	3.69	10.52	6.61	0.77	5.27
Cereals	4.83	5.09	3.59	10.79	7.57	1.99	5.64
Chim_Ind	7.44	4.90	5.82	1.88	4.42	2.49	4.49
Extraction	6.45	1.35	2.27	0.96	2.12	0.08	2.21
Fishing	11.82	1.11	1.48	4.68	7.33	0.46	4.48
Mach_Ind	6.86	4.09	5.95	0.12	4.23	1.19	3.74
Metal_Ind	9.10	5.12	5.14	1.26	4.64	2.39	4.61
OthInd	13.13	5.51	5.90	1.92	4.24	2.36	5.51
OthVeg	8.68	2.89	6.18	4.91	7.53	2.64	5.47
Paper_Ind	7.64	3.90	5.89	0.42	3.96	0.53	3.72
Tex_Ind	10.38	11.46	10.35	8.99	6.75	8.93	9.48
Tran_Ind	9.31	5.57	5.21	0.00	4.87	1.97	4.49
Wood_Ind	12.20	5.85	3.89	1.61	4.55	0.74	4.81
Av. Tariff	9.15	4.75	5.24	4.25	5.58	2.25	5.20

Source: Authors' calculations. MacMap Database.
Note: "Av. Tariff" displays the simple average of columns/lines data and not the aggregated tariffs.

Table 3: Complete liberalisation results: Value-Added in volume by sector (initial share in regional GDP and % of changes), Real GDP in volume (initial level in 1997 USD and % of changes), Equivalent variation (as % of initial income) and Adjustment indicator.

Region		VA - Agric.sect.		VA - Manuf. Sect.		VA - Tex_Wea. Sect		Real GDP		Eq. Var.	Adj.
		Share	Ch. (%)	Share	Ch. (%)	Share	Ch. (%)	Init.Val.	Ch. (%)	%	Ind.
at1	Ostosterreich	3.33	-2.70	8.80	0.15	0.16	-6.50	69 352	0.48	0.07	1.45
at2	Sudosterreich	4.39	-2.80	15.09	0.10	0.29	-6.42	28 846	0.43	0.00	1.74
at3	Westosterreich	3.91	-2.59	14.97	0.10	0.37	-6.40	56 059	0.43	0.05	1.65
be1	Region Bruxelles	1.27	-8.35	6.25	0.82	0.17	-7.32	39 985	1.06	0.40	1.66
be2	Vlaams Gewest	5.60	-8.72	16.99	1.75	1.79	-7.63	123 460	0.92	0.14	3.02
be3	Region Wallonne	4.06	-8.83	10.81	0.99	0.37	-7.31	49 531	0.95	0.22	2.17
cy00	Chypre	2.35	-2.45	12.24	1.71	0.00	-4.21	6 861	4.06	0.45	2.36
cz01	Praha	3.29	-0.87	9.62	1.05	0.99	-8.44	9 466	0.25	0.18	1.24
cz02	Stredni Cechy	14.75	-1.93	30.77	1.02	3.17	-8.52	3 937	0.25	0.02	2.64
cz03	Jihozapad	14.62	-2.16	27.04	0.97	2.78	-8.62	4 993	0.27	0.01	2.60
cz04	Severozapad	9.36	-1.60	22.39	1.05	2.30	-8.49	4 539	0.32	0.12	2.20
cz05	Severovychod	14.18	-1.82	30.94	1.05	3.18	-8.48	5 873	0.22	0.03	2.58
cz06	Jihovychod	13.40	-2.14	25.28	0.98	2.60	-8.60	6 573	0.27	0.03	2.51
cz07	Stredni Morava	14.22	-1.89	30.20	1.04	3.11	-8.50	4 749	0.22	0.03	2.58
cz08	Moravskoslezko	10.96	-1.36	28.20	1.11	2.90	-8.39	5 614	0.29	0.11	2.37
de1	Baden-Wurttemberg	4.98	-3.13	18.00	0.89	0.84	-8.52	230 356	0.47	0.10	1.58
de2	Bayern	6.41	-3.36	12.64	0.99	0.73	-8.37	272 072	0.42	0.03	1.66
de3	Berlin	3.65	-2.61	4.21	0.93	0.13	-7.92	69 303	0.43	0.28	0.86
de4	Brandenburg	4.87	-3.64	6.15	1.05	0.11	-7.98	40 622	0.47	0.24	1.27
de5	Bremen	10.44	-3.02	11.55	1.23	0.25	-8.32	18 455	0.38	0.10	1.34
de6	Hamburg	3.41	-2.38	6.25	0.87	0.03	-8.06	52 004	0.48	0.10	0.73
de7	Hessen	4.00	-2.99	10.87	0.86	0.32	-8.24	140 663	0.49	0.19	1.18
de8	Mecklenburg-Vorp.	8.74	-2.51	3.70	1.40	0.31	-7.93	29 379	0.38	0.18	1.54
de9	Niedersachsen	8.90	-3.66	10.71	1.12	0.32	-8.15	154 820	0.40	-0.01	1.63
dea	Nordrhein-Westfalen	4.93	-3.05	13.07	0.87	0.58	-8.25	371 297	0.44	0.11	1.41
deb	Rheinland-Pfalz	5.24	-3.14	13.01	0.85	0.45	-8.19	76 409	0.44	0.19	1.35
dec	Saarland	5.56	-3.03	15.93	0.93	0.18	-8.30	21 613	0.50	0.32	1.08
ded	Sachsen	5.28	-3.10	7.61	1.14	0.79	-8.11	67 194	0.41	0.29	1.68
dee	Sachsen-Anhalt	7.51	-3.40	6.81	1.00	0.04	-7.86	39 985	0.40	0.27	1.23
def	Schleswig-Holstein	7.08	-2.80	6.40	0.91	0.11	-7.99	58 609	0.42	0.08	1.27
deg	Thuringen	7.06	-3.32	7.94	1.00	0.41	-8.02	35 506	0.40	0.26	1.50
dk0	Danemark	9.13	-6.16	12.48	0.59	0.67	-8.08	127 113	0.35	0.36	1.93
ee00	Estonie	10.65	-0.93	14.69	8.77	2.27	-16.05	3 464	5.31	0.64	14.68
ei0	Eire	11.51	-19.72	33.04	2.85	0.37	-9.07	52 583	-0.14	0.85	4.96
es1	Noroeste	11.03	-11.48	11.26	2.38	0.74	-4.21	41 016	-0.75	-0.08	4.98
es2	Noreste	6.71	-10.72	21.46	1.81	0.70	-5.26	55 729	0.01	0.35	3.34
es3	Com. Madrid	2.01	-9.10	10.12	1.26	0.46	-5.36	74 640	0.20	1.00	1.63
es4	Centro (ES)	13.36	-10.51	9.89	2.06	1.23	-4.05	49 264	-0.42	-0.85	4.54
es5	Este	5.98	-9.91	17.04	1.62	2.34	-4.65	141 934	-0.04	0.54	3.13
es6	Sur	11.33	-10.67	7.96	2.02	0.61	-4.18	72 266	-0.44	-0.45	4.44
es7	Canarias (ES)	6.29	-11.10	3.06	1.78	0.04	-4.73	17 442	-0.37	0.43	3.78
fi1	Manner-Suomi	8.03	-6.10	22.79	1.97	0.63	-8.95	82 389	0.17	0.14	2.15
fi2	Aland	10.33	-6.29	7.26	1.52	0.05	-8.68	531	-0.11	-0.17	2.11
fr1	Ile de France	1.48	-4.47	8.72	0.76	0.28	-5.74	279 453	0.40	0.57	0.96
fr2	Bassin Parisien	8.18	-5.31	19.93	0.91	0.66	-5.78	174 039	0.29	0.08	1.84
fr3	Nord - Pas-de-Calais	6.39	-4.70	16.88	0.97	1.46	-5.75	57 387	0.25	0.27	1.82
fr4	Est	6.15	-5.22	21.69	0.85	0.68	-5.83	88 961	0.32	0.31	1.65
fr5	Ouest	13.44	-6.15	13.99	0.98	0.78	-5.86	127 564	0.24	-0.51	2.46
fr6	Sud-Ouest	8.12	-5.54	11.44	0.92	0.59	-5.70	97 203	0.27	-0.02	1.90
fr7	Centre-Est	5.14	-5.42	19.41	0.94	0.95	-5.92	126 707	0.34	0.31	1.69
fr8	Mediterranee	4.30	-4.47	7.05	0.97	0.22	-5.48	101 565	0.28	0.35	1.27
fr9	DOM	5.22	-4.63	3.80	1.03	0.06	-5.43	16 597	0.28	0.48	1.40
gr1	Voreia Ellada	20.32	-3.32	12.05	-0.03	5.10	-3.85	27 838	-0.48	-0.24	3.03
gr2	Kentriki Ellada	24.46	-2.87	11.98	0.39	1.43	-4.13	19 898	-0.29	-0.32	2.76
gr3	Attiki	7.77	-2.58	15.69	0.18	1.85	-3.59	37 732	-0.34	0.99	1.97
gr4	Nisia Aigaiou Kriti	33.31	-1.27	5.46	-0.43	1.11	-3.94	10 725	-0.28	-0.09	2.42
hu01	Kozep-Magyarorszag	3.03	0.55	13.02	0.79	1.57	-10.98	13 203	0.50	0.17	2.79
hu02	Kozep-Dunantul	8.79	0.58	29.52	0.79	3.56	-11.12	3 190	0.66	0.22	4.64
hu03	Nyugat-Dunantul	8.58	0.54	28.25	0.77	3.41	-11.15	3 147	0.66	0.23	4.61
hu04	Del-Dunantul	8.95	-0.26	13.46	0.32	1.62	-12.24	2 265	0.92	0.36	4.79
hu05	eszak-Magyarorszag	7.46	0.30	20.96	0.62	2.53	-11.48	2 579	0.73	0.27	4.43
hu06	eszak-Alfold	9.85	-0.08	19.01	0.41	2.29	-12.04	3 212	0.92	0.36	5.02
hu07	Del-Alfold	11.20	-0.24	18.57	0.30	2.24	-12.31	3 234	1.03	0.41	5.29
it1	Nord Ovest	4.26	-2.83	16.91	0.29	1.68	-4.68	111 830	-0.06	-0.03	1.44
it2	Lombardia	3.90	-2.87	21.12	0.53	2.80	-4.74	193 244	-0.05	-0.03	1.59
it3	Nord Est	4.81	-3.07	18.59	0.68	3.20	-4.67	128 355	-0.09	-0.12	1.70
it4	Emilia-Romagna	6.93	-2.92	17.33	0.66	2.08	-4.74	81 225	-0.07	-0.21	1.70
it5	Centro (I)	3.91	-2.74	14.09	0.69	5.47	-4.49	99 097	-0.17	-0.02	1.75
it6	Lazio	2.36	-3.11	6.85	0.19	0.39	-4.83	93 815	0.04	0.20	1.10
it7	Abruzzo-Molise	5.76	-2.90	12.43	0.38	3.41	-4.54	21 396	-0.14	-0.19	1.70
it8	Campania	4.26	-2.96	7.92	0.29	1.66	-4.65	59 212	-0.06	0.04	1.39
it9	Sud	5.75	-3.16	7.75	0.56	2.11	-4.54	68 219	-0.13	-0.18	1.46
ita	Sicilia	5.27	-3.43	5.62	0.42	0.31	-4.71	52 163	-0.08	-0.09	1.31
itb	Sardegna	6.56	-3.41	6.89	0.46	0.39	-4.86	20 047	-0.02	-0.28	1.64

	Region	VA - Agric.sect.		VA - Manuf. Sect.		VA - Tex_Wea. Sect		Real GDP		Eq. Var.	Adj.
		Share	Ch. (%)	Share	Ch. (%)	Share	Ch. (%)	Init.Val.	Ch. (%)	%	Ind.
lt00	Lituania	13.25	-0.86	11.88	6.79	3.45	-5.78	6 689	3.01	0.60	7.26
lu0	Luxembourg	6.35	-9.24	14.06	1.56	1.18	-8.34	8 390	0.76	0.15	2.82
lv00	Latvia	12.36	-1.27	13.85	9.06	2.80	-11.63	3 911	3.81	0.47	9.31
mt00	Malta	1.90	-11.55	28.33	4.59	3.17	-8.96	2 390	5.81	0.45	4.76
nl1	Noord-Nederland	7.60	-2.47	14.49	0.19	0.21	-6.23	27 509	1.01	0.16	1.56
nl2	Oost-Nederland	7.77	-2.34	20.46	0.33	0.76	-6.27	52 184	0.80	0.08	1.58
nl3	West-Nederland	3.93	-2.94	10.94	0.14	0.21	-6.40	144 986	0.96	0.19	1.42
nl4	Zuid-Nederland	6.65	-2.23	24.91	0.26	0.85	-6.30	60 440	0.83	0.12	1.56
pl01	Dolnoslaskie	9.37	0.15	18.61	0.74	2.11	-9.19	7 699	0.68	0.16	2.09
pl02	Kujawsko-Pomorskie	12.08	0.13	20.90	0.78	2.36	-9.10	4 736	0.64	0.15	2.25
pl03	Lubelskie	13.82	-0.14	15.19	0.64	1.72	-9.42	4 230	0.71	0.18	2.11
pl04	Lubuskie	10.14	0.05	16.68	0.73	1.89	-9.23	2 289	0.66	0.16	2.10
pl05	Lodzkie	10.41	0.15	19.56	0.77	2.21	-9.13	5 820	0.65	0.15	2.16
pl06	Malopolskie	9.53	0.26	20.44	0.80	2.31	-9.07	7 057	0.64	0.15	2.17
pl07	Mazowieckie	8.79	0.03	14.72	0.70	1.67	-9.26	16 855	0.68	0.17	2.00
pl08	Opolskie	12.29	0.11	21.00	0.77	2.38	-9.13	2 484	0.65	0.15	2.24
pl09	Podkarpackie	11.45	0.16	20.99	0.79	2.37	-9.08	4 030	0.64	0.15	2.23
pl0a	Podlaskie	14.26	-0.14	15.30	0.65	1.73	-9.41	2 423	0.70	0.18	2.14
pl0b	Pomorskie	9.02	0.20	18.66	0.76	2.11	-9.16	5 280	0.67	0.15	2.12
pl0c	Slaskie	7.11	0.23	17.93	0.67	2.03	-9.32	14 158	0.75	0.20	2.01
pl0d	Swietokrzyskie	11.52	0.06	18.53	0.74	2.10	-9.20	2 496	0.66	0.16	2.18
pl0e	Warminsko-Mazurskie	13.05	-0.06	16.51	0.69	1.87	-9.32	2 874	0.68	0.17	2.14
pl0f	Wielkopolskie	13.65	0.07	21.67	0.75	2.45	-9.17	8 913	0.66	0.15	2.27
pl0g	Zachodniopomorskie	10.67	0.00	16.66	0.67	1.88	-9.32	4 255	0.71	0.17	2.12
pt1	Portugal (Continent)	9.76	-4.48	14.60	1.48	4.72	-8.04	68 126	-0.25	0.21	3.70
pt2	Acores (PT)	26.22	-4.43	2.88	0.89	0.19	-9.00	1 196	0.25	-0.46	6.88
pt3	Madeira (PT)	6.43	-3.88	2.90	2.02	1.39	-8.00	1 773	-0.17	0.37	2.27
se0	Sweden	5.64	-3.06	19.78	0.72	0.17	-13.41	179 490	0.55	0.18	1.56
si00	Slovenia	9.71	-0.58	23.16	2.28	2.00	-8.77	15 829	0.78	0.18	2.95
sk01	Bratislavsky	7.59	-2.35	20.73	0.46	2.39	-7.07	3 614	-0.52	0.68	2.94
sk02	Zapadne Slovensko	15.78	-3.83	28.03	0.32	3.24	-7.36	4 944	-0.50	0.12	4.97
sk03	Stredne Slovensko	12.62	-3.27	26.50	0.39	3.06	-7.18	3 385	-0.54	0.14	4.23
sk04	Vychodne Slovensko	11.20	-3.41	23.22	0.33	2.68	-7.31	3 382	-0.45	0.05	4.11
ukc	North East	6.47	-6.16	22.55	0.82	0.77	-7.61	39 628	0.40	0.42	1.96
ukd	North West	6.44	-6.34	18.38	0.98	2.08	-7.30	117 745	0.33	0.31	2.32
uke	Yorkshire	8.22	-6.71	18.66	1.01	1.55	-7.42	87 323	0.35	0.24	2.52
ukf	East Midlands	8.17	-6.98	20.25	1.17	3.52	-7.03	77 011	0.29	0.12	2.89
ukg	West Midlands	5.80	-7.39	26.03	0.87	0.93	-7.87	99 516	0.45	0.29	2.19
ukh	Eastern	5.40	-7.67	14.04	0.75	0.39	-7.95	113 598	0.42	0.19	2.10
uki	London	1.76	-5.34	5.61	0.68	0.56	-7.96	204 045	0.41	0.37	1.15
ukj	South East	2.98	-7.02	12.69	0.64	0.19	-8.03	168 323	0.44	0.27	1.50
ukk	South West	7.17	-8.06	15.97	0.67	0.52	-7.86	89 123	0.40	0.09	2.46
ukl	Wales	6.93	-7.22	20.07	0.80	0.57	-7.77	43 933	0.41	0.30	2.26
ukm	Scotland	8.09	-6.53	12.71	0.90	0.83	-7.64	95 726	0.42	0.24	2.41
ukn	Northern Ireland	13.13	-7.60	15.83	0.95	1.44	-7.38	27 038	0.29	0.00	3.29
aut	**Austria**	3.74	-2.65	12.18	0.11	0.26	-6.43	154 257	0.45	0.05	1.58
bel	**Belgium**	4.40	-8.64	13.45	1.52	1.14	-7.59	212 976	0.96	0.23	2.64
cyp	**Cyprus**	2.35	-2.45	12.24	1.71	0.00	-4.21	6 861	4.06	0.45	2.36
cze	**Czech Republic**	11.04	-1.54	24.03	1.03	2.47	-8.51	45 744	0.26	0.08	2.30
deu	**Germany**	5.72	-3.12	11.53	0.94	0.50	-8.30	1 678 286	0.44	0.12	1.45
dnk	**Denmark**	9.13	-6.16	12.48	0.59	0.67	-8.08	127 113	0.35	0.36	1.93
esp	**Spain**	7.56	-10.34	13.06	1.73	1.19	-4.60	452 291	-0.18	0.19	3.62
est	**Estonia**	10.65	-0.93	14.69	8.77	2.27	-16.05	3 464	5.31	0.64	14.68
fin	**Finland**	8.05	-6.10	22.68	1.97	0.62	-8.95	82 920	0.16	0.13	2.15
fra	**France**	5.96	-5.01	13.84	0.90	0.59	-5.80	1 069 476	0.31	0.20	1.68
gbr	**United Kingdom**	5.57	-6.72	15.12	0.85	0.99	-7.48	1 163 009	0.40	0.25	2.13
grc	**Greece**	17.49	-2.24	12.80	0.12	2.63	-3.81	96 193	-0.36	0.24	2.54
hun	**Hungary**	6.46	0.79	18.07	0.65	2.18	-11.39	30 830	0.68	0.25	4.11
irl	**Ireland**	11.51	-19.72	33.04	2.85	0.37	-9.07	52 583	-0.14	0.85	4.96
itl	**Italy**	4.52	-3.00	14.52	0.52	2.40	-4.64	928 604	-0.07	-0.05	1.54
ltu	**Lithuania**	13.25	-0.86	11.88	6.79	3.45	-5.78	6 689	3.01	0.60	7.26
lux	**Luxembourg**	6.35	-9.24	14.06	1.56	1.18	-8.34	8 390	0.76	0.15	2.82
lva	**Latvia**	12.36	-1.27	13.85	9.06	2.80	-11.63	3 911	3.81	0.47	9.31
mlt	**Malta**	1.90	-11.55	28.33	4.59	3.17	-8.96	2 390	5.81	0.45	4.76
nld	**Netherlands**	5.55	-2.52	15.92	0.23	0.45	-6.32	285 120	0.91	0.15	1.50
pol	**Poland**	10.25	0.16	18.14	0.73	2.05	-9.21	95 598	0.68	0.16	2.12
prt	**Portugal**	9.98	-4.44	14.10	1.48	4.55	-8.04	71 095	-0.24	0.20	3.74
svk	**Slovakia**	12.08	-3.08	24.86	0.37	2.87	-7.25	15 326	-0.50	0.21	4.23
svn	**Slovenia**	9.71	-0.58	23.16	2.28	2.00	-8.77	15 829	0.78	0.18	2.95
swe	**Sweden**	5.64	-3.06	19.78	0.72	0.17	-13.41	179 490	0.55	0.18	1.56
EU-25		6.01	-4.72	14.09	0.91	1.06	-6.16	6 788 445	0.33	0.16	2.10
EU-15		5.88	-4.98	13.89	0.90	1.02	-5.93	6 561 803	0.31	0.16	2.03
AccCount		9.69	-0.59	19.71	1.18	2.20	-9.20	226 642	0.86	0.20	3.74
20-richest regions		4.70	-3.59	11.43	0.82	0.52	-7.53	2 478 463	0.42	0.19	1.45
40-poorest regions		10.33	-0.63	20.36	1.18	2.33	-9.22	211 511	0.78	0.19	3.87

Source: Authors' calculations.

Table 4: TOP-5 of strongest variations in volume of trade (extra-EU) and production in the Complete liberalisation scenario (value in Mios of 1997 USD).

	The 5 strongest rises in trade						Production (volume)					
	EXPORTS			IMPORTS			The 5 strongest rises			The 5 strongest falls		
Sectors	*Region*	*Value*	*%*	*Region*	*Value*	*%*	*Region*	*Value*	*%*	*Region*	*Value*	*%*
Agri_Ind	dk0	888.00	61.83	be2	1 594.08	32.62	ee00	62.09	7.21	ei0	-2 638.48	-19.64
	nl3	658.12	35.47	nl3	1 194.88	35.42	lt00	46.86	2.77	be2	-1 860.36	-8.70
	nl4	485.16	35.52	dk0	1 180.93	30.49	si00	39.70	1.14	es5	-1 528.71	-8.35
	fr5	410.93	25.75	dea	1 111.16	32.04	pl07	15.26	0.37	fr5	-1 385.77	-4.62
	nl2	398.00	35.42	es5	1 090.35	33.81	pl0c	15.21	0.38	dk0	-1 226.57	-5.33
Animals	nl2	91.37	58.68	fr5	265.02	36.18	mt00	1.64	4.46	fr5	-1 174.92	-10.31
	nl4	85.73	58.91	fr2	233.46	36.29	ee00	0.90	0.33	ei0	-934.32	-23.11
	nl1	43.44	58.60	dea	228.23	33.26	nl4	0.85	0.03	fr2	-562.52	-10.11
	nl3	31.47	58.84	de2	206.04	33.15	de3	-0.15	-6.94	es6	-485.38	-12.51
	de2	23.43	26.96	fr7	144.61	36.17	de6	-0.54	-7.02	es4	-408.08	-12.45
Cereals	hu07	15.01	49.31	be2	50.32	5.36	hu07	14.36	6.08	fr5	-361.20	-11.17
	hu06	12.31	49.46	ee00	20.29	11.77	hu06	12.06	6.25	fr2	-173.41	-10.99
	lt00	10.80	34.48	nl3	19.64	6.56	hu04	8.26	6.15	fr6	-122.63	-10.99
	hu04	8.54	49.44	fr5	17.73	6.39	hu02	7.49	6.80	dk0	-106.24	-12.96
	hu02	7.12	49.83	ukd	15.09	3.25	hu03	7.41	6.78	es6	-99.66	-12.73
Chim_Ind	ei0	713.89	-3.69	be2	262.72	0.20	ei0	661.77	4.50	se0	-246.52	-1.05
	dea	537.98	-1.34	nl3	212.18	0.54	be2	263.70	0.88	it2	-88.71	-0.18
	be2	500.83	-1.92	dea	201.17	0.68	dea	186.18	0.34	it1	-26.30	-0.16
	fr2	387.77	-0.38	de2	138.83	0.76	nl3	147.31	0.72	it3	-24.54	-0.16
	de2	327.99	-1.36	nl4	130.16	0.45	nl4	135.11	0.77	pt1	-21.17	-0.22
Extraction	ukm	95.05	3.66	es5	11.18	0.17	ukm	131.49	1.82	ee00	-1.01	-0.47
	cy00	61.43	0.94	ei0	8.70	-0.49	nl1	88.28	1.57	de5	0.01	0.90
	uke	27.78	3.66	es2	7.51	0.24	cy00	58.20	5.44	fi2	0.02	2.04
	ukf	27.39	3.66	nl4	7.21	0.09	it2	43.60	1.64	lv00	0.02	0.16
	se0	24.19	-1.53	es1	5.78	0.26	pl0c	38.86	0.85	de3	0.04	0.98
Finance	be1	49.27	-1.12	ee00	0.28	1.10	fr1	170.07	0.46	pt1	-273.12	-0.88
	fr1	48.14	-0.93	fi2	-0.02	0.53	uki	131.89	0.25	gr3	-68.45	-0.44
	be2	34.16	-1.13	gr4	-0.41	0.62	be1	101.27	0.81	ei0	-40.93	-0.64
	at1	30.73	-0.49	hu04	-0.42	0.78	be2	77.96	0.94	es3	-29.36	-0.25
	dea	30.15	-0.84	cz02	-0.43	0.35	dea	73.19	0.35	gr2	-23.47	-0.40
Fishing	dk0	6.81	4.39	es5	51.84	1.19	pt1	10.58	1.74	es1	-366.83	-16.73
	ukm	5.16	2.38	es6	30.00	1.14	ukm	3.92	0.56	es6	-153.17	-16.59
	fr5	3.43	0.26	es3	22.01	1.38	fr5	3.57	0.35	es5	-122.12	-16.65
	gr4	2.80	0.98	es4	21.31	1.12	gr3	3.51	0.12	ei0	-104.22	-16.58
	gr2	2.23	0.99	dk0	20.92	12.95	nl3	2.95	1.41	es7	-71.93	-16.71
Mach_Ind	se0	1 220.90	-2.08	ei0	326.79	0.25	se0	925.33	2.37	nl3	-47.57	-0.27
	de1	1 057.32	-1.86	dea	288.55	0.91	ei0	878.81	4.12	ee00	-23.43	-4.90
	dea	932.57	-1.83	de2	235.26	0.95	fi1	780.22	3.63	nl1	-6.43	-0.11
	de2	888.61	-1.88	de1	234.37	0.94	dea	621.02	0.86	nl4	-3.74	-0.01
	fi1	689.05	-2.68	se0	188.54	0.82	de1	620.65	0.74	nl2	-1.02	-0.01
Metal_Ind	dea	797.87	-1.61	dea	217.49	-0.59	dea	907.06	1.06	se0	-2.33	-0.01
	ukg	459.64	1.77	de1	144.18	-0.51	es5	468.30	2.89	be1	-0.32	-0.01
	es5	365.10	0.90	de2	127.54	-0.51	ukg	397.07	1.52	ee00	-0.20	-0.04
	de1	330.30	-1.64	be2	125.43	-0.95	fr2	380.66	1.13	fi2	0.36	1.94
	es2	305.62	0.87	ukg	109.16	-1.13	es2	360.67	2.63	pt2	0.63	1.06
OthInd	be2	1 422.92	0.79	be2	582.91	1.21	be2	1 331.75	12.97	at3	-11.29	-0.33
	be3	160.08	0.79	be3	70.00	0.93	be3	149.19	12.88	at1	-8.44	-0.44
	ukd	107.53	-0.45	be1	33.58	0.88	ukd	129.30	3.07	at2	-4.63	-0.34
	ukg	86.86	-0.48	uki	32.14	1.26	uke	96.82	2.99	se0	-4.33	-0.08
	uke	82.23	-0.45	dea	30.79	0.86	ukf	95.83	3.19	hu07	-0.11	-0.28

	The 5 strongest rises in trade						Production (volume)					
	EXPORTS			IMPORTS			The 5 strongest rises			The 5 strongest falls		
Sectors	*Region*	*Value*	*%*	*Region*	*Value*	*%*	*Region*	*Value*	*%*	*Region*	*Value*	*%*
OthInd	be2	1 422.92	0.79	be2	582.91	1.21	be2	1 331.75	12.97	at3	-11.29	-0.33
	be3	160.08	0.79	be3	70.00	0.93	be3	149.19	12.88	at1	-8.44	-0.44
	ukd	107.53	-0.45	be1	33.58	0.88	ukd	129.30	3.07	at2	-4.63	-0.34
	ukg	86.86	-0.48	uki	32.14	1.26	uke	96.82	2.99	se0	-4.33	-0.08
	uke	82.23	-0.45	dea	30.79	0.86	ukf	95.83	3.19	hu07	-0.11	-0.28
OthVeg	nl3	172.78	17.62	dea	270.87	1.89	mt00	2.76	17.28	es6	-625.61	-12.58
	nl2	93.77	17.52	de2	189.32	1.89	cz01	-0.33	-2.59	es4	-527.80	-12.56
	nl1	64.29	17.43	de1	159.47	1.88	fi2	-0.61	-3.09	es5	-360.36	-13.00
	gr1	47.38	13.15	es5	151.63	0.42	pl04	-1.06	-0.58	fr2	-281.00	-3.94
	nl4	47.38	17.65	nl3	143.24	3.02	de5	-1.16	-4.79	es2	-232.03	-13.31
Paper_Ind	fi1	205.77	-1.35	lt00	1.18	1.68	fi1	200.87	1.05	ei0	-20.67	-1.20
	se0	79.35	-2.01	ee00	0.61	1.60	dea	68.71	0.48	se0	-11.43	-0.05
	dea	59.97	-2.05	si00	0.37	1.15	de2	56.45	0.48	be1	-2.65	-0.22
	de1	49.86	-2.06	lv00	0.37	1.18	fr1	51.86	0.30	dk0	-1.07	-0.01
	de2	48.93	-2.07	cy00	0.12	-0.14	de1	49.43	0.41	be3	-0.82	-0.05
Services	fr1	263.50	-1.16	lt00	4.01	1.07	fr1	896.01	0.31	ee00	-3.00	-0.10
	dea	178.06	-1.06	ee00	2.69	0.80	dea	685.99	0.19	mt00	-2.41	-0.12
	nl3	166.40	-1.49	lv00	0.67	0.71	de2	485.18	0.19	pt2	-1.36	-0.12
	uki	136.13	-1.01	fi2	-0.19	0.60	dk0	481.10	0.40	lv00	-0.63	-0.02
	be2	132.95	-1.12	pl0a	-0.71	0.94	ei0	444.30	1.09	fi2	1.82	0.46
Tex_Ind	es5	221.94	1.92	dea	1 105.51	1.90	fi2	-0.10	-8.68	dea	-1 157.24	-8.25
	it5	185.54	-0.27	de2	773.94	1.85	pt2	-0.94	-9.00	pt1	-1 104.84	-8.04
	it2	170.91	-0.29	de1	685.34	1.86	es7	-1.32	-4.73	de2	-1 079.65	-8.37
	it3	133.83	-0.30	be2	542.44	0.84	fr9	-3.12	-5.43	de1	-1 016.81	-8.52
	fr7	120.30	-1.29	nl3	504.35	1.58	de6	-7.79	-8.06	it2	-1 009.05	-4.74
Trade	es5	78.25	-0.76	ee00	3.04	0.61	es5	180.14	0.38	fr5	-84.12	-0.37
	nl3	54.99	-1.19	fi2	-0.06	0.74	dea	147.47	0.18	fr2	-65.57	-0.23
	dea	47.37	-0.98	lt00	-0.11	0.82	ukd	129.22	0.39	fr1	-61.08	-0.12
	es6	45.51	-0.75	sk01	-0.15	0.73	nl3	126.02	0.16	pt1	-50.25	-0.30
	fr1	43.20	-1.10	hu04	-0.22	1.53	uki	113.09	0.19	fr7	-48.28	-0.22
Tran_Ind	de1	2 997.38	8.60	dea	1 250.66	3.25	de1	931.66	1.80	it1	-244.64	-1.55
	de2	2 620.94	8.58	de2	1 055.34	3.50	de2	898.42	2.00	at3	-225.82	-4.91
	de9	1 885.08	8.43	de1	987.53	3.62	be2	716.72	3.75	at2	-134.47	-4.92
	dea	1 563.50	8.66	be2	976.35	3.41	de9	646.77	2.00	at1	-134.32	-5.10
	be2	1 507.89	14.74	ukj	787.23	1.95	dea	528.99	1.97	it2	-117.36	-1.60
TransCom	fr1	192.26	-0.91	lt00	2.51	0.94	nl3	1 347.51	3.62	pt2	3.92	1.23
	nl3	187.28	-1.05	ee00	1.54	1.07	dk0	771.92	2.80	fi2	4.66	1.25
	es5	140.06	-0.85	lv00	1.14	0.63	be2	695.12	3.77	hu04	4.81	0.92
	uki	115.06	-0.81	fi2	-0.32	0.65	fr1	664.65	1.22	hu07	5.98	0.90
	dk0	112.29	-2.19	pl04	-0.41	0.78	se0	641.95	2.14	hu02	7.16	1.31
Wood_Ind	fi1	88.35	-2.41	dea	15.89	1.92	fi1	90.24	1.69	cz06	-0.86	-0.25
	se0	85.58	-3.40	be2	11.79	0.88	es5	68.44	2.05	cz03	-0.74	-0.27
	pt1	69.49	2.00	de2	11.38	1.93	it3	59.56	0.87	cz05	-0.56	-0.15
	es5	56.47	1.23	de1	10.38	1.93	dk0	45.19	1.29	cz07	-0.50	-0.17
	dea	43.37	-2.07	nl3	9.00	1.22	dea	42.26	0.40	cz02	-0.48	-0.19

Table 5: Comparison between Scenarii: Real GDP in volume (% of changes), Equivalent variation (as % of initial income) and Adjustment indicator.

Regions		(a) Tariff peak removal			(b) Complete lib'n			(c) Agric. tariff lib'n			(d) Ag. tariff+DS+XS			(e) Manuf. (exc.text)			(f) Text-wearing		
		rGDP	EV	Ad.I.	rGDP	EV	Ad.I.	rGDP	EV	Ad.I.	rGDP	EV	Ad.I.	rGDP	EV	Ad.I.	rGDP	EV	Ad.I.
at1	Ostosterreich	0.01	0.01	0.25	0.48	0.07	1.45	0.07	0.02	0.62	0.19	0.00	1.22	0.23	0.06	0.91	0.08	0.01	0.68
at2	Sudosterreich	0.00	0.01	0.30	0.43	0.00	1.74	0.03	0.01	0.67	0.19	-0.04	1.44	0.17	0.04	1.27	0.07	0.00	0.89
at3	Westosterreich	0.00	0.01	0.27	0.43	0.05	1.65	0.05	0.01	0.62	0.19	0.00	1.22	0.19	0.04	1.19	0.06	0.00	1.00
be1	Region Bruxelles	0.19	0.08	0.47	1.06	0.40	1.66	0.64	0.20	0.96	0.58	0.25	1.10	0.47	0.06	1.61	0.24	0.05	0.68
be2	Vlaams Gewest	0.23	0.10	0.87	0.92	0.14	3.02	0.68	0.15	1.87	0.47	0.27	1.82	0.61	0.13	2.49	0.21	-0.01	2.00
be3	Region Wallonne	0.20	0.07	0.74	0.95	0.22	2.17	0.67	0.12	1.79	0.53	0.26	1.53	0.46	0.04	1.41	0.24	0.04	0.96
cy00	Chypre	0.92	0.36	0.62	4.06	0.45	2.36	2.34	0.62	1.65	2.65	0.46	1.96	1.55	0.20	1.67	0.36	0.07	0.38
cz01	Praha	0.09	0.03	0.29	0.25	0.18	1.24	0.24	0.02	0.56	0.10	0.12	0.32	0.20	0.07	0.56	0.07	0.01	1.24
cz02	Stredni Cechy	0.15	0.05	0.55	0.25	0.02	2.64	0.32	0.03	1.15	0.32	0.08	2.10	0.23	0.06	1.01	0.02	-0.03	2.19
cz03	Jihozapad	0.15	0.05	0.52	0.27	0.01	2.60	0.32	0.04	1.11	0.36	0.09	2.27	0.22	0.06	0.94	0.02	-0.02	2.03
cz04	Severozapad	0.08	0.03	0.49	0.32	0.12	2.20	0.23	0.01	0.98	0.19	0.08	1.46	0.17	0.05	0.91	0.09	0.01	1.97
cz05	Severovychod	0.16	0.05	0.55	0.22	0.03	2.58	0.33	0.03	1.13	0.28	0.09	1.96	0.24	0.07	1.01	0.01	-0.03	2.19
cz06	Jihovychod	0.14	0.05	0.51	0.27	0.03	2.51	0.31	0.03	1.07	0.33	0.09	2.17	0.22	0.06	0.91	0.03	-0.02	1.98
cz07	Stredni Morava	0.16	0.05	0.54	0.22	0.03	2.58	0.33	0.03	1.12	0.30	0.09	2.02	0.24	0.07	1.00	0.01	-0.03	2.16
cz08	Moravskoslezko	0.09	0.03	0.55	0.29	0.11	2.37	0.24	0.01	1.08	0.17	0.07	1.35	0.18	0.06	1.03	0.09	0.00	2.22
de1	Baden-Wurttemberg	0.07	0.04	0.67	0.47	0.10	1.58	0.09	0.05	0.84	0.25	0.12	0.81	0.30	0.09	1.37	0.08	0.02	1.40
de2	Bayern	0.07	0.04	0.74	0.42	0.03	1.66	0.11	0.04	1.22	0.23	0.04	1.16	0.27	0.08	1.23	0.08	0.01	1.36
de3	Berlin	0.05	0.01	0.26	0.43	0.28	0.86	0.12	0.03	0.22	0.20	0.16	0.36	0.24	0.05	0.60	0.11	0.03	0.64
de4	Brandenburg	0.07	0.01	0.73	0.47	0.24	1.27	0.12	-0.01	1.41	0.23	0.01	1.35	0.25	0.05	0.88	0.11	0.02	0.59
de5	Bremen	0.11	0.09	0.57	0.38	0.10	1.34	0.11	0.09	0.36	0.16	0.14	0.64	0.36	0.18	1.44	0.11	0.04	0.82
de6	Hamburg	0.07	0.06	0.37	0.48	0.10	0.73	0.14	0.10	0.27	0.23	0.17	0.38	0.29	0.11	0.90	0.12	0.05	0.32
de7	Hessen	0.07	0.04	0.53	0.49	0.19	1.18	0.12	0.04	0.73	0.24	0.15	0.73	0.29	0.09	1.06	0.11	0.03	0.92
de8	Mecklenburg-Vorp.	0.08	0.01	0.80	0.38	0.18	1.54	0.11	-0.01	1.58	0.20	-0.01	1.51	0.24	0.05	0.91	0.09	0.00	0.96
de9	Niedersachsen	0.09	0.05	0.88	0.40	-0.01	1.63	0.12	0.04	1.62	0.21	-0.09	1.56	0.29	0.10	1.26	0.10	0.02	0.92
dea	Nordrhein-Westfalen	0.06	0.03	0.53	0.44	0.11	1.41	0.11	0.06	0.85	0.22	0.09	0.83	0.24	0.06	0.90	0.09	0.02	1.21
deb	Rheinland-Pfalz	0.06	0.02	0.54	0.44	0.19	1.35	0.10	0.02	0.82	0.22	0.10	0.82	0.27	0.08	1.01	0.09	0.01	1.08
dec	Saarland	0.08	0.03	0.55	0.50	0.32	1.08	0.10	0.01	0.54	0.23	0.20	0.63	0.31	0.11	1.23	0.13	0.05	0.69
ded	Sachsen	0.06	-0.01	0.62	0.41	0.29	1.68	0.10	-0.01	1.08	0.22	0.09	1.04	0.23	0.03	0.97	0.07	-0.01	1.49
dee	Sachsen-Anhalt	0.06	0.00	0.65	0.40	0.27	1.23	0.10	-0.01	1.27	0.19	0.03	1.25	0.24	0.04	0.73	0.12	0.03	0.39
def	Schleswig-Holstein	0.07	0.02	0.74	0.42	0.08	1.27	0.12	0.04	1.45	0.22	-0.01	1.38	0.24	0.05	0.78	0.11	0.03	0.59
deg	Thuringen	0.06	-0.01	0.67	0.40	0.26	1.50	0.10	-0.02	1.28	0.20	0.04	1.24	0.22	0.03	0.80	0.10	0.01	1.08
dk0	Danemark	0.50	0.01	2.45	0.35	0.36	1.93	1.59	-0.08	7.18	0.56	0.42	1.65	0.13	0.05	0.63	0.12	0.01	0.95
ee00	Estonie	1.00	0.22	2.19	5.31	0.64	14.68	3.62	0.38	4.73	3.77	0.25	5.85	6.07	1.91	42.91	0.14	-0.09	2.50
ei0	Eire	0.01	-0.04	0.86	-0.14	0.85	4.96	0.52	-0.17	2.95	-0.34	1.10	4.54	0.10	-0.17	1.40	0.23	0.03	1.57
es1	Noroeste	0.05	0.06	0.43	-0.75	-0.08	4.98	0.05	0.08	0.98	-0.87	-0.11	4.72	0.21	0.07	0.81	0.06	0.01	0.65
es2	Noreste	0.07	0.08	0.39	0.01	0.35	3.34	0.14	0.12	0.81	-0.17	0.37	2.94	0.29	0.12	0.87	0.08	0.02	0.64
es3	Com. Madrid	0.08	0.07	0.26	0.20	1.00	1.63	0.20	0.11	0.52	0.02	0.99	1.35	0.24	0.08	0.52	0.07	0.01	0.53
es4	Centro (ES)	0.04	0.06	0.44	-0.42	-0.85	4.54	0.02	0.07	1.10	-0.48	-0.81	4.14	0.17	0.05	0.77	0.05	0.00	0.79
es5	Este	0.07	0.07	0.36	-0.04	0.54	3.13	0.14	0.11	0.80	-0.17	0.56	2.66	0.23	0.08	0.89	0.04	-0.01	1.07
es6	Sur	0.04	0.03	0.41	-0.44	-0.45	4.44	0.04	0.03	1.06	-0.53	-0.53	4.10	0.17	0.04	0.64	0.06	0.00	0.60
es7	Canarias (ES)	0.05	0.03	0.32	-0.37	0.43	3.78	0.11	0.03	0.88	-0.51	0.28	3.59	0.18	0.05	0.42	0.07	0.00	0.20
fi1	Manner-Suomi	0.03	0.02	0.99	0.17	0.14	2.15	0.25	0.02	2.49	-0.19	0.10	1.38	0.43	0.08	0.61	0.13	0.02	0.93
fi2	Aland	0.11	0.09	0.85	-0.11	-0.17	2.11	0.45	0.19	2.24	-0.39	-0.01	1.59	0.38	0.07	0.34	0.14	0.03	0.31
fr1	Ile de France	0.04	0.01	0.22	0.40	0.57	0.96	0.14	-0.03	0.53	0.23	0.53	0.46	0.10	0.06	0.35	0.10	0.02	0.46
fr2	Bassin Parisien	0.09	0.03	1.11	0.29	0.08	1.84	0.22	0.01	2.59	0.22	0.06	2.12	0.08	0.06	0.49	0.10	0.01	0.66
fr3	Nord - Pas-de-Calais	0.07	0.02	0.83	0.25	0.27	1.82	0.19	-0.02	1.97	0.19	0.27	1.59	0.06	0.05	0.63	0.07	-0.01	0.99
fr4	Est	0.07	0.02	0.89	0.32	0.31	1.65	0.17	-0.03	2.09	0.22	0.28	1.70	0.07	0.05	0.53	0.11	0.01	0.67
fr5	Ouest	0.15	0.07	1.80	0.24	-0.51	2.46	0.39	0.10	4.17	0.29	-0.45	3.32	0.06	0.05	0.51	0.09	0.00	0.72
fr6	Sud-Ouest	0.10	0.03	1.26	0.27	-0.02	1.90	0.25	0.03	2.93	0.22	-0.06	2.38	0.07	0.06	0.48	0.09	0.00	0.63
fr7	Centre-Est	0.06	0.01	0.93	0.34	0.31	1.69	0.18	-0.02	2.16	0.23	0.28	1.75	0.09	0.06	0.53	0.09	0.00	0.80
fr8	Mediterranee	0.06	0.01	0.49	0.28	0.35	1.27	0.18	0.00	1.18	0.15	0.24	1.04	0.10	0.08	0.32	0.10	0.01	0.40
fr9	DOM	0.07	-0.01	0.77	0.28	0.48	1.40	0.20	-0.06	1.82	0.17	0.24	1.56	0.09	0.06	0.23	0.10	0.00	0.22
gr1	Voreia Ellada	0.11	0.06	0.53	-0.48	-0.24	3.03	0.21	0.11	1.28	-0.34	-0.29	2.34	0.03	0.05	2.10	0.02	0.00	0.50
gr2	Kentriki Ellada	0.11	0.07	0.47	-0.29	-0.32	2.76	0.27	0.14	1.26	-0.24	-0.41	2.43	0.12	0.11	1.40	0.06	0.02	0.28
gr3	Attiki	0.05	0.04	0.24	-0.34	0.99	1.97	0.11	0.07	0.42	-0.43	0.86	1.23	0.10	0.09	1.75	0.07	0.02	0.32
gr4	Nisia Aigaiou Kriti	0.13	0.10	0.41	-0.28	-0.09	2.42	0.32	0.22	1.07	-0.22	-0.01	2.14	0.11	0.09	1.31	0.05	0.02	0.25
hu01	Kozep-Magyarorszag	0.16	-0.01	1.46	0.50	0.17	2.79	0.66	-0.11	4.50	0.61	0.03	4.72	0.19	0.06	0.73	0.15	0.01	2.31
hu02	Kozep-Dunantul	0.37	0.12	2.72	0.66	0.23	4.64	1.33	0.31	7.88	1.38	0.48	8.84	0.17	0.06	1.00	0.10	-0.03	3.19
hu03	Nyugat-Dunantul	0.37	0.12	2.72	0.66	0.23	4.61	1.35	0.32	7.83	1.40	0.49	8.82	0.17	0.05	0.98	0.10	-0.03	3.14
hu04	Del-Dunantul	0.55	0.24	3.21	0.92	0.36	4.79	1.81	0.63	8.51	1.97	0.83	10.35	0.15	0.05	0.71	0.17	0.03	2.25
hu05	eszak-Magyarorszag	0.36	0.12	2.73	0.73	0.27	4.43	1.30	0.30	7.65	1.37	0.47	8.86	0.17	0.06	0.87	0.14	0.01	2.78
hu06	eszak-Alfold	0.57	0.26	3.26	0.92	0.36	5.02	1.87	0.68	8.76	2.04	0.89	10.50	0.15	0.04	0.82	0.14	0.01	2.61
hu07	Del-Alfold	0.67	0.33	3.48	1.03	0.41	5.29	2.17	0.88	9.24	2.40	1.13	11.16	0.14	0.04	0.80	0.15	0.01	2.56
it1	Nord Ovest	0.00	0.02	0.16	-0.06	-0.03	1.44	-0.02	0.01	0.59	0.09	-0.01	1.11	-0.08	0.03	0.77	-0.10	0.00	0.94
it2	Lombardia	-0.02	0.01	0.18	-0.05	-0.03	1.59	-0.06	-0.01	0.64	0.11	0.02	1.26	-0.08	0.02	0.52	-0.15	-0.03	1.19
it3	Nord Est	-0.01	0.01	0.18	-0.09	-0.12	1.70	-0.05	-0.01	0.69	0.07	-0.08	1.32	-0.07	0.03	0.51	-0.16	-0.04	1.28
it4	Emilia-Romagna	-0.01	0.02	0.18	-0.07	-0.21	1.70	-0.02	0.01	0.64	0.08	-0.17	1.48	-0.06	0.04	0.52	-0.12	-0.02	1.04
it5	Centro (I)	-0.01	0.01	0.19	-0.17	-0.02	1.75	-0.08	-0.02	0.77	0.05	0.00	1.07	-0.06	0.04	0.53	-0.25	-0.07	1.62
it6	Lazio	0.01	0.01	0.14	0.04	0.20	1.10	0.03	0.01	0.48	0.10	0.15	0.91	0.00	0.06	0.52	-0.07	0.00	0.49
it7	Abruzzo-Molise	-0.01	0.01	0.18	-0.14	-0.20	1.70	-0.04	-0.01	0.71	0.06	-0.19	1.28	-0.07	0.03	0.66	-0.18	-0.04	1.29
it8	Campania	0.00	0.00	0.16	-0.06	0.04	1.39	-0.01	-0.02	0.59	0.06	-0.02	1.05	-0.04	0.04	0.62	-0.11	-0.02	0.94
it9	Sud	0.00	0.00	0.16	-0.13	-0.18	1.46	-0.01	-0.02	0.63	0.02	-0.24	1.10	-0.05	0.04	0.51	-0.13	-0.02	1.04
ita	Sicilia	0.00	0.00	0.14	-0.08	-0.09	1.31	0.01	-0.01	0.48	0.01	-0.17	1.17	-0.02	0.05	0.45	-0.07	0.00	0.44
itb	Sardegna	0.00	0.01	0.17	-0.02	-0.28	1.64	0.02	-0.01	0.54	0.08	-0.34	1.66	-0.02	0.05	0.40	-0.08	0.00	0.49

Regions		(a) Tariff peak removal			(b) Complete lib'n			(c) Agric. tariff lib'n			(d) Ag. tariff+DS+XS			(e) Manuf. (exc.text)			(f) Text-wearing		
		rGDP	EV	Ad.I.	rGDP	EV	Ad.I.	rGDP	EV	Ad.I.	rGDP	EV	Ad.I.	rGDP	EV	Ad.I.	rGDP	EV	Ad.I.
lt00	Lituania	0.65	0.13	1.18	3.01	0.60	7.26	2.61	0.25	3.54	2.29	0.31	5.04	3.48	1.16	21.38	0.40	0.02	0.45
lu0	Luxembourg	0.32	0.05	2.09	0.76	0.15	2.82	1.08	0.00	5.25	0.52	0.23	1.49	0.48	0.05	1.30	0.20	0.00	2.07
lv00	Latvia	0.70	0.17	1.26	3.81	0.47	9.31	2.98	0.40	2.74	3.23	0.35	4.44	3.53	0.90	27.45	0.23	0.00	1.34
mt00	Malta	0.81	0.30	1.52	5.81	0.45	4.76	2.69	0.65	4.10	3.27	0.56	3.64	1.59	-0.22	2.88	0.62	0.05	2.71
nl1	Noord-Nederland	0.22	0.08	1.32	1.01	0.16	1.56	0.89	0.18	4.06	0.82	0.24	2.31	0.24	0.02	0.87	0.21	0.04	0.62
nl2	Oost-Nederland	0.30	0.10	1.32	0.80	0.08	1.58	1.03	0.18	4.04	0.80	0.24	2.28	0.28	0.01	0.85	0.17	0.01	1.05
nl3	West-Nederland	0.26	0.09	0.75	0.96	0.19	1.42	0.89	0.12	2.42	0.78	0.30	1.18	0.38	0.06	0.84	0.20	0.03	0.60
nl4	Zuid-Nederland	0.26	0.08	1.27	0.83	0.13	1.56	0.91	0.12	3.97	0.74	0.26	2.13	0.27	-0.01	0.94	0.17	0.01	1.11
pl01	Dolnoslaskie	0.12	0.06	0.34	0.68	0.16	2.09	0.46	0.12	1.19	0.72	0.07	2.02	0.27	0.08	0.89	0.06	0.00	1.86
pl02	Kujawsko-Pomorskie	0.14	0.07	0.34	0.64	0.15	2.25	0.52	0.16	1.24	0.85	0.14	2.33	0.26	0.07	0.94	0.04	-0.01	1.97
pl03	Lubelskie	0.14	0.08	0.32	0.71	0.18	2.11	0.51	0.16	1.11	0.97	0.24	2.51	0.24	0.07	0.82	0.07	0.01	1.69
pl04	Lubuskie	0.14	0.07	0.32	0.66	0.16	2.10	0.50	0.14	1.15	0.79	0.10	2.19	0.27	0.08	0.88	0.06	0.00	1.80
pl05	Lodzkie	0.13	0.07	0.33	0.65	0.15	2.16	0.49	0.14	1.21	0.77	0.08	2.16	0.27	0.08	0.92	0.05	0.00	1.92
pl06	Malopolskie	0.13	0.06	0.34	0.64	0.15	2.17	0.48	0.13	1.24	0.71	0.05	2.04	0.27	0.08	0.94	0.04	-0.01	1.97
pl07	Mazowieckie	0.14	0.07	0.30	0.68	0.17	2.00	0.51	0.14	1.08	0.76	0.08	2.04	0.29	0.08	0.85	0.06	0.00	1.70
pl08	Opolskie	0.14	0.07	0.34	0.65	0.15	2.24	0.52	0.16	1.24	0.87	0.15	2.32	0.27	0.07	0.94	0.04	-0.01	1.96
pl09	Podkarpackie	0.13	0.07	0.34	0.64	0.15	2.23	0.50	0.15	1.25	0.81	0.11	2.26	0.26	0.07	0.94	0.04	-0.01	1.98
pl0a	Podlaskie	0.15	0.08	0.31	0.70	0.18	2.14	0.53	0.17	1.11	1.00	0.25	2.55	0.24	0.07	0.83	0.07	0.01	1.70
pl0b	Pomorskie	0.14	0.07	0.32	0.67	0.15	2.12	0.52	0.15	1.19	0.76	0.08	1.97	0.30	0.09	0.93	0.05	-0.01	1.88
pl0c	Slaskie	0.07	0.03	0.36	0.75	0.20	2.01	0.36	0.07	1.20	0.53	-0.04	1.69	0.26	0.08	0.86	0.12	0.04	1.83
pl0d	Swietokrzyskie	0.14	0.07	0.33	0.66	0.16	2.18	0.51	0.15	1.19	0.84	0.13	2.31	0.27	0.08	0.91	0.05	0.00	1.88
pl0e	Warminsko-Mazurskie	0.15	0.08	0.32	0.68	0.17	2.14	0.52	0.16	1.13	0.94	0.21	2.44	0.25	0.07	0.86	0.06	0.00	1.76
pl0f	Wielkopolskie	0.14	0.07	0.35	0.66	0.15	2.27	0.51	0.16	1.26	0.91	0.19	2.44	0.25	0.07	0.93	0.04	-0.01	1.97
pl0g	Zachodniopomorskie	0.15	0.08	0.32	0.71	0.17	2.12	0.55	0.16	1.15	0.87	0.14	2.20	0.29	0.09	0.90	0.07	0.00	1.79
pt1	Portugal (Continent)	0.05	0.08	0.34	-0.25	0.21	3.70	0.21	0.19	0.68	0.01	0.17	3.08	0.05	0.06	0.79	-0.31	-0.06	2.42
pt2	Acores (PT)	0.01	0.08	0.31	0.25	-0.46	6.88	0.06	0.21	0.96	0.37	-0.60	7.08	0.11	0.09	0.36	-0.08	0.04	0.66
pt3	Madeira (PT)	0.05	0.07	0.21	-0.17	0.37	2.27	0.21	0.16	0.58	-0.05	0.28	1.87	0.10	0.08	0.39	-0.22	-0.04	1.31
se0	Sweden	0.00	0.03	0.51	0.55	0.18	1.56	0.10	0.06	1.02	0.20	0.12	1.27	0.35	0.12	0.80	0.14	0.04	0.85
si00	Slovenia	0.24	0.12	0.46	0.78	0.18	2.95	0.66	0.20	1.92	0.57	0.19	2.84	1.14	0.35	3.30	0.13	0.01	1.38
sk01	Bratislavsky	0.16	0.04	0.54	-0.52	0.68	2.94	0.41	0.03	0.89	-0.48	0.66	2.08	0.36	0.08	0.87	-0.05	-0.08	2.12
sk02	Zapadne Slovensko	0.15	0.06	0.58	-0.50	0.12	4.97	0.34	0.05	0.93	-0.33	0.15	4.57	0.32	0.10	0.89	-0.08	-0.04	2.28
sk03	Stredne Slovensko	0.17	0.06	0.58	-0.54	0.14	4.23	0.41	0.08	0.97	-0.42	0.13	3.69	0.36	0.11	0.93	-0.06	-0.03	2.27
sk04	Vychodne Slovensko	0.17	0.07	0.56	-0.45	0.05	4.11	0.45	0.12	0.98	-0.37	0.07	3.59	0.38	0.12	0.92	-0.04	-0.01	2.16
ukc	North East	0.07	0.06	0.30	0.40	0.42	1.96	0.22	0.13	0.55	0.21	0.29	1.40	0.12	0.05	0.62	0.14	0.03	0.97
ukd	North West	0.06	0.07	0.31	0.33	0.31	2.32	0.22	0.14	0.65	0.21	0.28	1.55	0.12	0.04	0.64	0.08	0.00	1.49
uke	Yorkshire	0.07	0.07	0.36	0.35	0.24	2.52	0.22	0.14	0.79	0.22	0.21	1.96	0.13	0.04	0.64	0.11	0.01	1.32
ukf	East Midlands	0.06	0.07	0.40	0.29	0.12	2.89	0.20	0.14	0.87	0.23	0.19	2.10	0.11	0.02	0.76	0.03	-0.03	1.84
ukg	West Midlands	0.07	0.07	0.37	0.45	0.29	2.19	0.20	0.11	0.74	0.25	0.28	1.77	0.14	0.03	0.73	0.15	0.04	1.05
ukh	Eastern	0.07	0.07	0.35	0.42	0.19	2.10	0.22	0.14	0.78	0.24	0.21	1.90	0.13	0.04	0.50	0.14	0.04	0.74
uki	London	0.07	0.07	0.12	0.41	0.37	1.15	0.23	0.12	0.22	0.24	0.45	0.44	0.13	0.01	0.35	0.11	0.01	0.85
ukj	South East	0.07	0.08	0.26	0.44	0.27	1.50	0.23	0.14	0.55	0.24	0.27	1.30	0.13	0.05	0.45	0.14	0.04	0.55
ukk	South West	0.07	0.08	0.41	0.40	0.09	2.46	0.21	0.14	0.94	0.25	0.09	2.31	0.12	0.04	0.53	0.13	0.03	0.82
ukl	Wales	0.07	0.07	0.37	0.41	0.30	2.26	0.21	0.13	0.80	0.23	0.19	1.96	0.14	0.06	0.59	0.15	0.03	0.87
ukm	Scotland	0.07	0.07	0.36	0.42	0.24	2.41	0.21	0.14	0.80	0.24	0.21	2.03	0.14	0.04	0.54	0.13	0.02	1.02
ukn	Northern Ireland	0.07	0.07	0.51	0.29	0.00	3.29	0.22	0.14	1.19	0.25	-0.02	2.99	0.10	0.02	0.58	0.10	0.00	1.27
aut	**Austria**	0.01	0.01	0.27	0.45	0.05	1.58	0.06	0.02	0.63	0.19	-0.01	1.26	0.20	0.05	1.10	0.07	0.00	0.85
bel	**Belgium**	0.22	0.09	0.78	0.96	0.23	2.64	0.67	0.16	1.73	0.50	0.26	1.65	0.55	0.09	2.14	0.22	0.02	1.63
cyp	**Cyprus**	0.92	0.36	0.62	4.06	0.45	2.36	2.34	0.62	1.65	2.65	0.46	1.96	1.55	0.20	1.67	0.36	0.07	0.38
cze	**Czech Republic**	0.12	0.04	0.49	0.26	0.08	2.30	0.28	0.03	1.01	0.24	0.09	1.74	0.21	0.06	0.90	0.04	-0.01	1.96
deu	**Germany**	0.07	0.03	0.64	0.44	0.12	1.45	0.11	0.04	1.05	0.22	0.07	1.02	0.27	0.07	1.09	0.09	0.02	1.14
dnk	**Denmark**	0.50	0.01	2.45	0.35	0.36	1.93	1.59	-0.08	7.18	0.56	0.42	1.65	0.13	0.05	0.63	0.12	0.01	0.95
esp	**Spain**	0.06	0.06	0.37	-0.18	0.19	3.62	0.11	0.09	0.87	-0.31	0.18	3.27	0.22	0.07	0.77	0.06	0.00	0.79
est	**Estonia**	1.00	0.22	2.19	5.31	0.64	14.68	3.62	0.38	4.73	3.77	0.25	5.85	6.07	1.91	42.91	0.14	-0.09	2.50
fin	**Finland**	0.03	0.02	0.99	0.16	0.13	2.15	0.25	0.02	2.49	-0.20	0.10	1.39	0.43	0.08	0.60	0.13	0.02	0.93
fra	**France**	0.08	0.02	1.00	0.31	0.20	1.68	0.21	0.00	2.34	0.22	0.17	1.90	0.08	0.06	0.46	0.10	0.01	0.64
gbr	**United Kingdom**	0.07	0.07	0.32	0.40	0.25	2.13	0.22	0.13	0.70	0.23	0.25	1.71	0.13	0.04	0.56	0.12	0.02	1.07
grc	**Greece**	0.09	0.06	0.41	-0.36	0.24	2.54	0.20	0.11	1.00	-0.34	0.16	1.98	0.08	0.08	1.76	0.05	0.01	0.37
hun	**Hungary**	0.34	0.11	2.51	0.68	0.25	4.11	1.22	0.25	7.02	1.27	0.42	8.10	0.17	0.05	0.82	0.14	0.00	2.61
irl	**Ireland**	0.01	-0.04	0.86	-0.14	0.85	4.96	0.52	-0.17	2.95	-0.34	1.10	4.54	0.10	-0.17	1.40	0.23	0.03	1.57
itl	**Italy**	-0.01	0.01	0.17	-0.07	-0.06	1.54	-0.03	-0.01	0.63	0.07	-0.05	1.20	-0.06	0.04	0.56	-0.14	-0.03	1.10
ltu	**Lithuania**	0.65	0.13	1.18	3.01	0.60	7.26	2.61	0.25	3.54	2.29	0.31	5.04	3.48	1.16	21.38	0.40	0.02	0.45
lux	**Luxembourg**	0.32	0.05	2.09	0.76	0.15	2.82	1.08	0.00	5.25	0.52	0.23	1.49	0.48	0.05	1.30	0.20	0.00	2.07
lva	**Latvia**	0.70	0.17	1.26	3.81	0.47	9.31	2.98	0.40	2.74	3.23	0.35	4.44	3.53	0.90	27.45	0.23	0.00	1.34
mlt	**Malta**	0.81	0.30	1.52	5.81	0.45	4.76	2.69	0.65	4.10	3.27	0.56	3.64	1.59	-0.22	2.88	0.62	0.05	2.71
nld	**Netherlands**	0.26	0.09	1.06	0.91	0.15	1.50	0.92	0.14	3.31	0.78	0.27	1.78	0.33	0.03	0.87	0.19	0.02	0.83
pol	**Poland**	0.13	0.06	0.33	0.68	0.17	2.12	0.48	0.13	1.18	0.77	0.09	2.13	0.27	0.08	0.89	0.06	0.00	1.85
prt	**Portugal**	0.05	0.08	0.34	-0.24	0.20	3.74	0.20	0.19	0.68	0.02	0.16	3.16	0.05	0.06	0.78	-0.30	-0.06	2.38
svk	**Slovakia**	0.16	0.06	0.57	-0.50	0.21	4.23	0.40	0.07	0.94	-0.39	0.22	3.71	0.35	0.10	0.90	-0.06	-0.04	2.22
svn	**Slovenia**	0.24	0.12	0.46	0.78	0.18	2.95	0.66	0.20	1.92	0.57	0.19	2.84	1.14	0.35	3.30	0.13	0.01	1.38
swe	**Sweden**	0.00	0.03	0.51	0.55	0.18	1.56	0.10	0.06	1.02	0.20	0.12	1.27	0.35	0.12	0.80	0.14	0.04	0.85
EU-25		0.08	0.04	0.75	0.33	0.16	2.10	0.23	0.06	1.89	0.21	0.14	1.84	0.18	0.06	1.63	0.07	0.01	1.09
EU-15		0.08	0.04	0.74	0.31	0.16	2.03	0.21	0.05	1.84	0.19	0.14	1.74	0.17	0.06	0.90	0.07	0.01	1.06
AccCount.		0.23	0.09	1.06	0.86	0.20	3.74	0.78	0.16	2.93	0.85	0.18	3.80	0.59	0.16	7.72	0.09	0.00	1.95
20-richest regions		0.09	0.03	0.80	0.42	0.19	1.45	0.21	0.04	2.00	0.25	0.17	1.03	0.21	0.06	0.95	0.10	0.02	1.02
40-poorest regions		0.22	0.08	1.08	0.78	0.19	3.87	0.75	0.15	3.00	0.82	0.17	3.93	0.58	0.17	7.93	0.09	0.00	1.99

Table 6: TOP-20 of strongest falls in Value Added level by scenario

Scen.	Sectors		Regions	Chg.-Value	Chg. - %	Sectors		Regions	Chg.-Value	Chg. - %
(a) Tariff peak removal	Mach_Ind	dk0	Danemark	-338	-2.98	Mach_Ind	fi1	Manner-Suomi	-146	-0.98
	Chim_Ind	ei0	Eire	-329	-1.40	Mach_Ind	fr2	Bassin Parisien	-142	-0.58
	Services	fr5	Ouest	-251	-0.11	Services	fr1	Ile de France	-141	-0.02
	Agri_Ind	es5	Este	-219	-1.36	Services	fr2	Bassin Parisien	-141	-0.05
	Mach_Ind	se0	Sweden	-204	-0.85	Agri_Ind	es6	Sur	-139	-1.31
	Mach_Ind	de1	Baden-Wurttember	-191	-0.53	Services	fr6	Sud-Ouest	-136	-0.07
	Mach_Ind	nl4	Zuid-Nederland	-184	-1.25	Mach_Ind	nl3	West-Nederland	-133	-1.31
	Services	de9	Niedersachsen	-180	-0.06	Services	dk0	Danemark	-119	-0.08
	Mach_Ind	de2	Bayern	-161	-0.55	Mach_Ind	nl2	Oost-Nederland	-117	-1.34
	Mach_Ind	dea	Nordrhein-Westfale	-153	-0.50	Mach_Ind	fr1	Ile de France	-116	-0.51
(b) Complete lib.n	Agri_Ind	ei0	Eire	-1 512	-19.64	Animals	ei0	Eire	-810	-23.11
	Agri_Ind	es5	Este	-1 346	-8.35	Agri_Ind	dk0	Danemark	-808	-5.33
	Agri_Ind	fr5	Ouest	-1 286	-4.62	Tex_Ind	it5	Centro (I)	-781	-4.49
	Agri_Ind	dea	Nordrhein-Westfale	-1 194	-2.47	OthVeg	es6	Sur	-763	-12.58
	Agri_Ind	fr2	Bassin Parisien	-1 108	-4.49	Animals	fr5	Ouest	-754	-10.27
	Agri_Ind	de2	Bayern	-1 049	-2.48	Agri_Ind	ukd	North West (includi	-726	-5.34
	Agri_Ind	be2	Vlaams Gewest	-980	-8.70	Agri_Ind	de1	Baden-Wurttember	-681	-2.46
	Agri_Ind	de9	Niedersachsen	-882	-2.63	Agri_Ind	ukm	Scotland	-664	-5.49
	Agri_Ind	es6	Sur	-864	-8.19	Agri_Ind	es4	Centro (ES)	-650	-8.07
	Tex_Ind	it2	Lombardia	-810	-4.74	Agri_Ind	uke	Yorkshire & The Hu	-650	-5.41
(c) Agric. tariff lib.n	Mach_Ind	dk0	Danemark	-968	-8.55	Mach_Ind	nl3	West-Nederland	-345	-3.39
	Services	fr5	Ouest	-591	-0.26	Metal_Ind	dk0	Danemark	-337	-4.59
	Agri_Ind	es5	Este	-566	-3.51	Services	fr2	Bassin Parisien	-321	-0.11
	Mach_Ind	nl4	Zuid-Nederland	-481	-3.26	Mach_Ind	nl2	Oost-Nederland	-307	-3.51
	Services	fr1	Ile de France	-450	-0.07	Services	fr6	Sud-Ouest	-307	-0.16
	Chim_Ind	ei0	Eire	-432	-1.84	Tex_Ind	it3	Nord Est	-302	-2.29
	Tex_Ind	it5	Centro (I)	-389	-2.23	Agri_Ind	pt1	Portugal (Continent	-272	-3.02
	Tex_Ind	it2	Lombardia	-388	-2.27	Services	dea	Nordrhein-Westfale	-272	-0.04
	Services	dk0	Danemark	-358	-0.25	Agri_Ind	es4	Centro (ES)	-267	-3.32
	Agri_Ind	es6	Sur	-357	-3.38	Services	fr8	Mediterranee	-263	-0.11
(d) Ag. tariff S + DS + X	Agri_Ind	ei0	Eire	-1 473	-19.14	Agri_Ind	dea	Nordrhein-Westfale	-585	-1.21
	Agri_Ind	es5	Este	-1 284	-7.96	OthVeg	es4	Centro (ES)	-547	-10.67
	Agri_Ind	es6	Sur	-823	-7.79	Agri_Ind	de2	Bayern	-517	-1.22
	Animals	ei0	Eire	-792	-22.62	Agri_Ind	de9	Niedersachsen	-458	-1.37
	Agri_Ind	be2	Vlaams Gewest	-780	-6.92	Agri_Ind	es1	Noroeste	-457	-7.94
	Agri_Ind	fr5	Ouest	-752	-2.70	Fishing	es1	Noroeste	-456	-16.60
	OthVeg	es6	Sur	-642	-10.59	Agri_Ind	es2	Noreste	-441	-8.04
	Agri_Ind	es4	Centro (ES)	-620	-7.70	Agri_Ind	pt1	Portugal (Continent	-403	-4.46
	Animals	fr5	Ouest	-613	-8.35	OthVeg	fi1	Manner-Suomi	-403	-3.53
	Agri_Ind	fr2	Bassin Parisien	-600	-2.44	Agri_Ind	ukd	North West (includi	-389	-2.86
(e) Manuf. (excl. text.)	Mach_Ind	de1	Baden-Wurttember	-383	-1.07	Trade	it2	Lombardia	-218	-0.14
	Services	be2	Vlaams Gewest	-325	-0.25	Tran_Ind	at3	Westosterreich	-212	-7.05
	Mach_Ind	de2	Bayern	-303	-1.03	Services	it6	Lazio	-207	-0.12
	Services	fr1	Ile de France	-300	-0.05	Services	de9	Niedersachsen	-207	-0.07
	Mach_Ind	dea	Nordrhein-Westfale	-289	-0.94	Mach_Ind	nl3	West-Nederland	-199	-1.95
	Metal_Ind	it2	Lombardia	-276	-0.75	Tex_Ind	be2	Vlaams Gewest	-198	-3.94
	Tran_Ind	it1	Nord Ovest	-271	-2.98	Services	uki	London	-191	-0.08
	Mach_Ind	nl4	Zuid-Nederland	-251	-1.70	Tex_Ind	dea	Nordrhein-Westfale	-187	-3.11
	Services	nl3	West-Nederland	-245	-0.13	Tex_Ind	de2	Bayern	-179	-3.25
	Tex_Ind	es5	Este	-240	-2.73	Tran_Ind	ei0	Eire	-174	-4.60
(f) Text.- wearing	Tex_Ind	it2	Lombardia	-1 020	-5.97	Tex_Ind	ukd	North West (includi	-399	-7.53
	Tex_Ind	it5	Centro (I)	-1 002	-5.76	Tex_Ind	it1	Nord Ovest	-361	-6.03
	Tex_Ind	it3	Nord Est	-780	-5.93	Tex_Ind	it4	Emilia-Romagna	-322	-6.00
	Tex_Ind	pt1	Portugal (Continent	-655	-9.77	Tex_Ind	it9	Sud	-273	-5.95
	Tex_Ind	dea	Nordrhein-Westfale	-547	-9.13	Tex_Ind	uke	Yorkshire & The Hu	-225	-7.67
	Tex_Ind	de2	Bayern	-509	-9.23	Tex_Ind	uki	London	-204	-8.06
	Tex_Ind	de1	Baden-Wurttember	-475	-9.31	Tex_Ind	it8	Campania	-189	-6.00
	Tex_Ind	be2	Vlaams Gewest	-465	-9.25	Tex_Ind	dk0	Danemark	-183	-9.34
	Tex_Ind	ukf	East Midlands	-420	-7.22	Tex_Ind	fr7	Centre-Est	-178	-5.08
	Tex_Ind	es5	Este	-403	-4.60	Services	it6	Lazio	-174	-0.10

Table 7: TOP-20 of strongest rises in Value Added level by scenario

Scen.	Sectors		Regions	Chg.-Value	Chg. - %	Sectors		Regions	Chg.-Value	Chg. - %
(a) Tariff peak removal	Agri_Ind	dk0	Danemark	1 402	9.25	TransCom	nl3	West-Nederland	222	0.51
	Cereals	fr5	Ouest	465	10.74	Tran_Ind	dea	Nordrhein-Westfale	215	1.63
	Tran_Ind	de1	Baden-Wurttember	407	1.60	Agri_Ind	ei0	Eire	213	2.77
	Animals	dk0	Danemark	384	6.03	TransCom	be2	Vlaams Gewest	207	0.66
	Tran_Ind	de2	Bayern	347	1.57	Agri_Ind	fr2	Bassin Parisien	191	0.78
	Agri_Ind	nl3	West-Nederland	298	3.05	Agri_Ind	fr5	Ouest	191	0.69
	Cereals	dk0	Danemark	263	12.49	Agri_Ind	nl2	Oost-Nederland	181	3.08
	Cereals	fr2	Bassin Parisien	232	10.96	Cereals	fr6	Sud-Ouest	163	10.90
	Agri_Ind	nl4	Zuid-Nederland	226	3.17	Tran_Ind	de7	Hessen	141	1.55
	Tran_Ind	de9	Niedersachsen	225	1.42	Tran_Ind	be2	Vlaams Gewest	134	2.13
(b) Complete lib.n	Services	fr1	Ile de France	1 914	0.31	Services	de2	Bayern	845	0.19
	TransCom	nl3	West-Nederland	1 570	3.62	Services	fr8	Mediterranee	806	0.35
	Services	dea	Nordrhein-Westfale	1 195	0.19	TransCom	it6	Lazio	748	1.84
	TransCom	be2	Vlaams Gewest	1 175	3.77	Services	fr6	Sud-Ouest	691	0.36
	Chim_Ind	ei0	Eire	1 057	4.50	Services	fr7	Centre-Est	677	0.29
	TransCom	dk0	Danemark	1 003	2.80	Mach_Ind	ei0	Eire	666	4.12
	TransCom	fr1	Ile de France	935	1.22	TransCom	it3	Nord Est	663	1.93
	Services	fr2	Bassin Parisien	908	0.30	TransCom	it1	Nord Ovest	661	1.91
	TransCom	it2	Lombardia	865	1.88	TransCom	dea	Nordrhein-Westfale	615	1.23
	Services	fr5	Ouest	855	0.38	Services	uki	London	582	0.24
(c) Agric. tariff lib.n	Agri_Ind	dk0	Danemark	4 254	28.07	Cereals	dk0	Danemark	652	30.98
	Agri_Ind	nl3	West-Nederland	1 159	11.88	Agri_Ind	fr2	Bassin Parisien	648	2.63
	Animals	dk0	Danemark	1 133	17.81	Cereals	fr2	Bassin Parisien	530	25.05
	Cereals	fr5	Ouest	1 060	24.46	TransCom	it2	Lombardia	423	0.92
	Agri_Ind	nl4	Zuid-Nederland	874	12.26	Agri_Ind	be2	Vlaams Gewest	374	3.32
	Agri_Ind	ei0	Eire	794	10.31	Cereals	fr6	Sud-Ouest	372	24.90
	TransCom	nl3	West-Nederland	748	1.73	Agri_Ind	fr7	Centre-Est	356	2.71
	TransCom	be2	Vlaams Gewest	719	2.31	TransCom	se0	Sweden	348	1.47
	Agri_Ind	nl2	Oost-Nederland	704	11.96	Agri_Ind	nl1	Noord-Nederland	344	11.87
	Agri_Ind	fr5	Ouest	671	2.41	Agri_Ind	fi1	Manner-Suomi	339	5.45
(d) Ag. tariff+DS+X S	Services	fr1	Ile de France	1 859	0.30	TransCom	it2	Lombardia	584	1.27
	TransCom	nl3	West-Nederland	963	2.22	TransCom	dk0	Danemark	583	1.62
	Services	dea	Nordrhein-Westfale	893	0.14	Services	dk0	Danemark	570	0.40
	TransCom	be2	Vlaams Gewest	801	2.57	Services	uki	London	558	0.23
	Services	fr2	Bassin Parisien	713	0.24	TransCom	it6	Lazio	536	1.31
	Services	fr8	Mediterranee	672	0.29	Mach_Ind	ei0	Eire	536	3.32
	Chim_Ind	ei0	Eire	651	2.77	Agri_Ind	dk0	Danemark	472	3.12
	Services	de2	Bayern	614	0.13	Services	be2	Vlaams Gewest	457	0.35
	Services	fr7	Centre-Est	590	0.26	Services	ei0	Eire	453	0.99
	TransCom	fr1	Ile de France	585	0.77	Services	fr6	Sud-Ouest	452	0.23
(e) Manuf. (excl. text)	Tran_Ind	de1	Baden-Wurttember	1 054	4.14	TransCom	dk0	Danemark	419	1.17
	Tran_Ind	de2	Bayern	926	4.20	Tran_Ind	de7	Hessen	372	4.09
	TransCom	nl3	West-Nederland	789	1.82	TransCom	it2	Lombardia	353	0.77
	Tran_Ind	de9	Niedersachsen	623	3.93	Tran_Ind	ee00	Estonie	351	255.94
	OthInd	be2	Vlaams Gewest	592	13.63	Mach_Ind	se0	Sweden	309	1.28
	Tran_Ind	dea	Nordrhein-Westfale	569	4.32	TransCom	it6	Lazio	276	0.68
	Tran_Ind	be2	Vlaams Gewest	538	8.57	TransCom	it1	Nord Ovest	274	0.79
	TransCom	be2	Vlaams Gewest	535	1.72	Tran_Ind	se0	Sweden	272	3.64
	Services	dea	Nordrhein-Westfale	442	0.07	TransCom	it3	Nord Est	260	0.76
	Chim_Ind	ei0	Eire	433	1.84	Tran_Ind	lt00	Lituania	246	208.89
(f) Text-wearing	OthInd	be2	Vlaams Gewest	434	9.99	Mach_Ind	fi1	Manner-Suomi	161	1.08
	Mach_Ind	se0	Sweden	286	1.19	TransCom	dk0	Danemark	152	0.42
	Mach_Ind	de1	Baden-Wurttember	251	0.70	TransCom	it2	Lombardia	147	0.32
	TransCom	nl3	West-Nederland	224	0.52	Mach_Ind	it2	Lombardia	147	0.49
	Mach_Ind	dea	Nordrhein-Westfale	221	0.72	Metal_Ind	it2	Lombardia	145	0.39
	Mach_Ind	de2	Bayern	220	0.75	TransCom	fr1	Ile de France	139	0.18
	TransCom	be2	Vlaams Gewest	209	0.67	Chim_Ind	ei0	Eire	127	0.54
	Metal_Ind	dea	Nordrhein-Westfale	209	0.45	TransCom	it5	Centro (I)	121	0.45
	Mach_Ind	ei0	Eire	189	1.17	TransCom	it3	Nord Est	118	0.34
	Services	it5	Centro (I)	180	0.12	Trade	es5	Este	110	0.09