Testing customs union theory

A customs union (CU) is a group of countries that form a single customs territory with a common external tariff policy that applies to non-members. It essentially permits the free movement of trade, labour and capital amongst member states; recent examples of customs union include EFTA, COMECON and The European Union (Trinity College Dublin , 2005). Customs union theory allows an analysis to be made of the impact the removal of barriers (quotas and tariffs) has on trade, between and amongst member and non-member countries.

The classical economic concept of free trade was first devised by economist Adam Smith (1723-1790) which followed enhancements from David Ricardo (1772-1823) and Robert Torrens (1780-1864). (E) It was Jacob Viner who pioneered the customs union theory by developing the " fundamental theoretical concept of trade creation and trade diversion". (Krauss, 1972) He concluded, from a broad-based perspective, that a customs union increased welfare when it created trade by diverting demand from a high cost domestic producer to a lower cost partner producer and thus decreased welfare when it diverted trade from a low cost foreign producer to a higher cost partner. (See appendix 1 for diagrammatical analysis)

Although Viner's theory provided us with a revolutionary understanding of the costs/benefits of free trade; (one can consider the conjecture to be the fundamental move towards globalization), it is based upon many oversimplified assumptions, it's a static model, assumes fixed proportions in consumption, constant costs and that trade creation and trade diversion are the only effects of a customs union. These assumptions essentially allowed him to " focus on the welfare effects of changes in the location of production

induced by customs union". (Krauss, 1972) However as this theory is based upon many postulations, it essentially fails to describe the ' real world' thus making the applicability of Viner's conclusion brutally limited.

The empirical evidence, (in light of the predictions of customs union theory in Europe), presented in this essay has been sourced from academic studies that have relaxed Viner's assumptions. This has given birth for analysis to be made on welfare arising from five dynamic principle sources, namely; speculation of production according to comparative advantage, economics of scale, changes in the terms of trade, forced changes in efficiency due to increased foreign competition and changes in the rate of growth. (Lipsey, 1960) One must note that although a number of criteria have been put forward for evaluating the changes of trade creation and trade diversion in a union, " it seems to be generally agreed that a priori judgment regarding the net effects of customs union on trade flows cannot be made" (Balassa, 1967).

Verdoorn's empirical estimations (1954) on the European Common Market and the Free Trade Area looks at the possible gains from specialization using theoretical analysis developed by Professor Meade.[1]Verdoorn's analysis assumed an elasticity of substitution between domestic goods and imports of -0. 5% and an elasticity of substitution between different imports of -2%, implying the former are not particularly good substitutes and the latter capable of fairly easy substitution. He estimated the changes in trade when tariffs are reduced between the six common market countries, the United Kingdom and Scandinavia and found intra-European trade to increase by approximately 17% and the gains from trade to the European countries to

equal to about 0. 05% of their annual incomes, barely imposing any change. Scitovisky[2]concludes that " even if we could raise the figures by twenty-five-fold the gain from increased intra- European specialization is likely to be insignificant". (Lipsey, 1960)

In comparison, still using the elasticity methodology, excellent empirical evidence is presented by B. Ballassa (1967) who has compared the ex-post income elasticities of import demand in intra and extra area trade for periods proceeding and following E. E. C. integration. This methodology is particularly desirable as it abstracts the effects of economic growth on trade flows and it allows for the comparability of the estimates of trade creation and trade diversion. The findings presented below are based on the assumption that the income elasticities of import demand would have remained unchanged without integration.

(Balassa, 1967)

With regards to table 1, during 1953-1965 income elasticity of demand increased from 1. 8 to 2. 1 for total (intra and extra area) imports, intra-area imports rose from 2. 4 to 2. 8 and hardly any change with regards to extra area imports. Thus illustrating trade creation in the European Common market, (which coincides with Verdoorn's estimates) and indicates no effects of trade diversion. However, these results vary substantially between commodity groups and therefore a more accurate conclusion can be reached if the disaggregation of data is allowed for. For instance, although the data shows a shift from foreign to partner country sources of food and raw materials, it fails to highlight the fact that food-deficit countries of the E. E.

C. increased imports of live animals, wheat, sugar and dairy products. Fuels have shown an acceleration of extra-area imports which was in-sync with the E. E. C. aim in reducing dependence on high-cost domestic coal[3]. (Balassa, 1967) Thus it would be extremely naive of us to conclude that there are no effects of trade diversion and any changes in extra area imports without further analysis.

Lipsey, Gehrel and Meade presented one of the major developments in customs union theory; the analysis of the " welfare effects of the substitution between commodities resulting from the relative changes in prices" (Lipsey, 1960) after the formation of a customs union. Essentially they relaxed Viner's assumption of fixed proportions in consumption and illustrated the " welfare gains from equating the marginal rate of substitution between the goods in consumption with their marginal transformation rate in production can offset the loss in welfare due to trade diversion" (Krauss, 1972), concluding that a trade diversion doesn't necessarily have to be welfare reducing.

With this conclusion in mind, new theoretical literature on international trade has broadened the potential gains from trade by focusing on the dynamic effects of economic integration on the market structure and profitability of firms' arising from imperfect competition, increasing returns to scale, productivity and economic growth. With this in mind we will now look at Turkey's experience of the European customs union before/after it joined on 1st January 1996.

Table 2

(YÄ±lmaz E. T., 2007)

Table 2 shows import penetration and export output ratio in the Turkish manufacturing industry for the periods 1984-2000. Analysis of the data suggests that average import penetration in manufactures didn't change by substantial amounts in 1980's (0. 175) to early 1990s (0. 170) but increased continuously from 17. 5% to 29. 6% after Turkey joined the CU. During this period European firms doubled their market share in Turkey from 12. 2% in 1992 to 23. 6% in 2000. " The difference between these import penetration rates is made up by penetration rate from non-EU countries which remained the same at approximately 5% during the 1990's. Thus, it would be safe to conclude that the EU increased its market share, but not at the expense of imports from other countries, such that at the aggregate level there was trade creation without trade diversion". (YÄ±lmaz E. T., 2007)

Turkish exports to the EU didn't increase to a large extent as the EU had already removed tariffs on Turkish imports before 1996. However we find an increase in productivity and competitiveness from local firms, triggered by an increase in import penetration, as illustrated in figure 1.

Figure 1

(YÄ±lmaz E. T., 2007)

IC- Import competing sectors EO- Export output ratio

Total factor productivity declined during 1985-1988, followed by a rapid increase in 1988-1994 and stagnated thereafter with the exception of the

import-competing sectors that achieved significant increase in total factor productivity in this period.

Table 3

(Akkoyunlu-Wigley, 2004)

Table 3 estimations of the price cost margin are based on data sets of 12 manufacturing industry sub sectors between 1994-2000. The results show a negative sign for the import ratio variable parameter (-0. 035465), which " indicates a negative correlation between the import variable and price cost margin variable. Therefore we can conclude that the increasing import volume with EU countries, for the years in which the custom union has been in force, has created a diminishing effect on the price cost margins of Turkish manufacturing industry". (Akkoyunlu-Wigley, 2004) Without hesitance one can conclude that the CU has generated an increase in competitiveness of the Turkish manufacturing sector and the negative relationship between price cost margin and export volumes supports the proposal that increasing exports to a customs union creates a pro-competitive effect in that industry.

Thus, in the case of Turkey, we have been able to look beyond the effects of trade creation/diversion as the only gains from a customs union and shown that trade diversion doesn't necessarily have to be welfare reducing, (as argued by Meade, Lipsey and Gehrel), where gains to welfare have risen through the enhancements in productivity and international competitiveness.

We shall now turn our attention to trade creation and diversion as a result of the Central and Eastern European Countries (CEEC) joining the EU in 2004.

Figure 2

(Wilhelmsson, June 2006)

Figure 2 clearly illustrates that the enlargement process has lead to gross trade creation as exports from the EU to the CEECs and EU imports from the CEECs have increased.

However this trade creation has been as a result of trade diversion from developing countries despite implementation of extensive trade preference policies for these countries.

Comparison of EU and OECD imports from developing countries
(Wilhelmsson, June 2006)

The above graph allows for the comparison of EU and rOECD[4]imports from developing countries. It highlights that rOECD imports from developing countries increased extensively whilst EU import didn't. According to theory, had integration between the EU and CEECs not taken place, EU imports should have developed at the same rate as rOECD imports. Hence this further emphasises that the enlargement process has provoked trade diversion. Alternatively, Cooper and Massell argue that less developed countries can gain from trade diversion so long as they are willing to " accept some reduction in national income to achieve an increase in industrial production", (Massell, 1965) whereby it now supplies other markets, thus further supporting the case for potential dynamic gains from a trade diverting CU.

From the above analysis there is an ambiguous effect of the formation of a customs union on welfare. This is primarily due to the problems of empirically testing the CU theory when accommodating for various aspects and assumptions, thus makings it unfeasible to compare research. In addition, although much analytical framework and econometric modelling is available that supports these studies, empirical evidence is limited. When formulating these models technical problems arise when it comes to the choice of appropriate base-years, choosing elasticity estimates (as experienced by Verdoorn and Balassa), the exact specification of the pre-integration situation, estimating the hypothetical situation of international trade patterns in the absence of integration and product categorisation and disaggregation. (Articles, 1989) Most people find estimates, for example those by Johnson[5]and Verdoorn[6], to be smaller than expected leading us to question inherent bias in these sorts of estimates and whether different approaches might yield different results. (Lipsey, 1960) Also when comparing empirical evidence one must bear in mind that the European customs union has gone through much enlargement over the last 50 years, from the original six countries that formed the European Economic Community in 1957 to a move towards greater economic integration under the Single European Act (1986). Thus empirical research has been conducted at various levels of integration, making the comparability extremely difficult given that larger countries that joined later on have greater economic power and hence are able to influence the terms of trade in their favour.

This essay has presented a combination of findings and conclusions, based on numerous differing assumptions and the extensive research available on

the adaptations of the traditional customs union theory. However one must appreciate that I have merely touched upon the vast research available on the fundamental theorem pioneered by Viner[7]. (Refer to footnote 7 for further details)

In conclusion, recent theoretical literature on CU looks beyond trade creation/diversion and is more concerned with other issues that arise once we relax Viner's assumptions. While econometric analysis by Akoyunlu-Wigley shows trade creation in Turkey due to the pro-competitive effect of CU, Lamfalussay[8]found no clear verification for either positive or negative trade effects of the common market, which has been backed by R. L. Major. Ballassa has argued that although overall there seems to be trade creation in the European Common market this is no longer the case when the disaggregation of data is allowed for. Copper and Massall take the CU theory further by accounting for the potential political gains of a CU as well as gains to non-member less developed countries. As stated above, these other issues[9]are less amenable to quantitative analysis which imposes a challenge to the comparability of theory with evidence, such that there is an ambiguous effect of the formation of a CU. Currently no single absolute theoretical framework for analyzing these trade effects is available such that this remains a critical area whereby we experience an absence of fully reliable estimates of the effects of changing trade policies in light of globalization.

Appendix 1

The above diagram illustrates trade creation and trade diversion after the formation of a customs union.

Before a customs union the price level was p3 which incorporated the world price plus tariff. Domestic consumption would be at Q1 and domestic production at Q2. The difference in supply and demand, Q1-Q2, was made up by imports.

After the formation of a customs union the price level fell to p2 whereby domestic consumption increased to Q3 and domestic production deceased to Q4. The level of imports increased by area Q3-Q4. Note area Q3-Q4 is larger than area Q1-Q2 due to cheaper imports from partner countries.

Area abcd is now the common external tariff within the customs union, whereby area W represents the transferred welfare and area Z is trade diversion from the cheaper non-partner country.