Israel and the European Community (EC) signed a Free Trade Area (FTA) agreement in industrial goods in 1975, an agreement which has been implemented in full since 1989. Israel asked the EC during the 1980s to adjust this agreement to the global economic and technological developments and to the accession to the EC of three Mediterranean countries – Greece, Spain and Portugal – but the Europeans were not willing to open the agreement. The end of the cold war in Europe, the 1991 Gulf war and the Madrid summit that followed, increased the European willingness to discuss the Israeli government’s reservations, which increasingly centred on the growing Israeli trade deficit with the EC. The negotiations, which lasted from September 1992 to November 1995, led in the end to a new FTA, incorporated in an association agreement. However, apart from an important agreement for cooperation in research and development, and the increase in some agricultural export quotas, the association agreement did not substantively change the situation preceding it. Israel’s complaints on unfair trade relations on the part of the EC remained unchanged, and provoked questions over the right framework for Euro-Israeli relations.\(^1\)

This study investigates the economic desirability to Israel of a Customs Union (CU) with the EC, that does not include agricultural products, and that has the EC’s Common Customs Tariff (CCT) as its external tariff. These features of the CU follow the model of the Euro–Turkish CU that entered into force at the beginning of 1996. According to the Ankara agreement, this CU should cover all trade in goods, including agricultural goods, but not ‘products within the province of the European Coal and Steel Community’.\(^2\) However, the Euro–Turkish association council decision 1/95 that establishes the new
CU stops short of incorporating agricultural products in the new CU at this stage. There seems no reason to believe that a Euro–Israeli CU will adopt a different external tariff, or that it will include agricultural products.

The central theme in this article is that a CU with the EC may be more efficient for Israel than the current FTA. The reason is that the effective tariff facing Israeli exporters to Europe can be lower in a CU than in an FTA. This is not a final verdict that Israel should establish such a CU. Rather, the article intends to stimulate discussion on the CU issue and to reflect on the gains to Israel from signing FTA agreements. Though different studies of the effects of the Euro–Israeli FTA have taken place in the past, the CU possibility was never approached from an academic angle. No doubt, comprehensive research is required to examine all aspects of a European–Israeli CU. This article, therefore, is not a substitute for such research, but merely an initial attempt.

Since an FTA agreement already exists between Israel and the EC in industrial goods, two effects are expected on the Israeli part following the move to a CU. The first will be the adoption by Israel of the EC’s trade rules. This means that Israel will accept the EC’s pyramid of trade preferences: Israel will replace the existing FTA it shares with the European Free Trade Area (EFTA) countries with the one embedded in the European Economic Area (EEA) (excluding Switzerland). It will also have to adopt the Lomé 4 convention with the ACP countries and the GSP with the rest of the developing world. It will have to adopt the Europe agreements with the Eastern European countries and the EU’s Mediterranean trade policy. Israel will also have to quit its unilateral exposure policy and its FTA agreements with Canada and Mexico (expected to be signed in 1999). But most important, since there is no FTA between the EC and the US, Israel will have to forgo the FTA it has with the latter which includes industrial as well as agricultural products. The importance to the Israeli economy of the trade with the US is clear: in the period 1990–1994 its share of Israeli imports was stable at around 18 per cent, and its share of Israeli exports was stable at around 30 per cent (indeed excluding diamonds this share is even greater). Therefore, abolishing the FTA with the US is hypothesized to have an important effect on Israel’s trade and economy. This of course, on top of the political repercussions such a move would have, which will not be analyzed here.

The second effect on the Israeli part following a CU with the EC will be the final removal of all tariffs between it and the EC. Under the FTA not all the products shipped from Israel enter the EC free of tariffs. Those that do not comply with the Rules of Origin (ROO) are not exempt from tariff. The formation of a Euro–Israeli CU will exempt all Israeli products from tariff (and of course all European products entering Israel).

The next section presents the problems that a small country like Israel faces in an FTA with large countries. The FTA’s ROO, it will be argued,
create a bias in the distribution of the FTA’s welfare gains in favour of Israel’s partners, and increases Israel’s trade deficit with them.

The third part of the article discusses the implications for the Israeli imports of a possible CU between Israel and the EC. Viner’s and Lipsey’s concepts of trade creation and trade diversion are used to classify Israel’s industrial branches into four cases of trade effects centring on the substitution between imports from the US and imports from the EC. The argument here is that there is a high probability that a Euro–Israeli CU will increase Israel’s welfare compared with the current FTA. The fourth section discusses the fate of Israeli exporters, the fifth deals with fiscal aspects of a CU, and the last section concludes.

THE DISTORTIONS OF ISRAEL’S FTA AGREEMENTS

In order to find out how much of Israel’s trade may be affected by a possible Euro–Israeli CU, one may be tempted to simply take a look at the current volumes of trade Israel has with each of the major partners. Indeed politicians and trade officials tend to do just that. This however is misleading since there are several factors explaining the volume of trade between any two countries, and it is important to try and estimate how an FTA factor fits into the explanation.

One of the common methods of decomposing the effects of a trade agreement on trade flows has been the estimation of trade variants through an ordinary least squares regression analysis. A known specification is that of the general gravity equation (in natural logarithms):

\[
\text{FLOW}_{ij} = b_0 + b_1 \text{GDP}_i + b_2 \text{GDP}_j + b_3 \text{POP}_i + b_4 \text{POP}_j + b_5 \text{DIST}_{ij} + u_{ij}
\]

where \(\text{FLOW}_{ij}\) is the nominal US dollar value of the trade flow from country \(i\) to country \(j\), \(\text{GDP}_i\) (\(\text{GDP}_j\)) is the nominal US dollar value of the GDP of country \(i\) (\(j\)), \(\text{POP}_i\) (\(\text{POP}_j\)) is the size of the population of country \(i\) (\(j\)), \(\text{DIST}_{ij}\) is the distance between the economic centres of the two countries, and \(u_{ij}\) is a log-normally distributed error with a mean of zero.

Actually there have been quite a few variations to this model. Tinbergen and Bergstrand, for example, did not include the population variables. A dummy variable was used in a great variety of forms, depending on each researcher’s objectives. Linne mann used variables for trade preferences between European countries and their ex-colonies, while Aitken used dummy variables for neighbouring countries. Brada and Mendez used dummy variables for each year in a period of 24 year, instead of running the regression separately for every year. The World Bank used the gravity equation to estimate the effects on the trade patterns of Israel and the Palestinians, should their trade ties be severed.

The gravity equation seems to enjoy a consistently high statistical explanatory power though its theoretical foundations are not very
strong. For example Aitken’s regressions for the period 1951–1967 achieved a correlation coefficient $R^2$ of between 0.755 and 0.874 and highly significant estimates.\textsuperscript{10} Similarly strong regressions were estimated by Linnemann, Tinbergen and Bergstrand.\textsuperscript{11}

Since the aim here is to estimate the effect of FTAs on Israel’s volume of trade and, therefore, the implied effect of giving up such an agreement with the US, the study will be using the equation (in natural logarithms):

$$F_{\text{OW}_i} = b_0 + b_1 GDP_i + b_2 \text{POP}_i + b_3 \text{DIST}_i + b_4 D_i + u_i$$

where $i$ is Israel’s trade partner. Since country $j$ is always Israel, its GDP and population are of course constant for a given year and so were omitted. The regression was estimated once for Israel’s imports and once for its exports. $D_i$ is a dummy variable for the existence of an FTA agreement in industrial goods between country $i$ and Israel. It scores 1 if an FTA agreement exists or 0 if not. The coefficient of this variable is hypothesized to be positive for imports as well as exports since it is presumed that FTAs increase the volume of trade between the partners.

The regression was estimated separately for each one of the years: 1985 (when Israel had an FTA with the 10 members of the EC), 1990 and 1992 (when Israel had an FTA with the US and with the 12 members of the EC) and 1993 (when Israel had an FTA also with the 7 members of EFTA). The members of the EC were each counted as a distinct observation. The results of the regression analysis are shown in Tables 1–2. The $t$ estimates are given in parentheses ($t$ estimate for $R^2$).\textsuperscript{12}

<table>
<thead>
<tr>
<th>Year</th>
<th>Const.</th>
<th>D</th>
<th>Popul.</th>
<th>GDP</th>
<th>Distan.</th>
<th>$R^2$</th>
<th>Adj. $R^2$</th>
<th>Tot. FTA Obs.</th>
<th>FTA Obs.</th>
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</thead>
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<tr>
<td>1985</td>
<td>0.0226</td>
<td>2.5386</td>
<td>-0.7685</td>
<td>1.6160</td>
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<td></td>
<td>(1.124)</td>
<td>(1.413)</td>
<td>(3.275)</td>
<td>(7.925)</td>
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<tr>
<td>1990</td>
<td>0.0307</td>
<td>1.7076</td>
<td>-0.6607</td>
<td>1.4289</td>
<td>-0.3679</td>
<td>0.7247</td>
<td>0.7008</td>
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<tr>
<td></td>
<td>(1.386)</td>
<td>(0.892)</td>
<td>(3.250)</td>
<td>(7.995)</td>
<td>(1.335)</td>
<td>(30.278)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td>0.0026</td>
<td>2.0397</td>
<td>-0.1563</td>
<td>1.3091</td>
<td>-0.5033</td>
<td>0.7655</td>
<td>0.7474</td>
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<tr>
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<td>(2.559)</td>
<td>(1.190)</td>
<td>(0.921)</td>
<td>(8.352)</td>
<td>(1.883)</td>
<td>(42.433)</td>
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<tr>
<td>1993</td>
<td>0.0003</td>
<td>7.5282</td>
<td>0.2988</td>
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<td>-0.2122</td>
<td>0.7322</td>
<td>0.7104</td>
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<td>(2.462)</td>
<td>(2.819)</td>
<td>(1.547)</td>
<td>(4.595)</td>
<td>(0.557)</td>
<td>(33.497)</td>
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</table>
### Table 2: Export Regressions with Dummies

<table>
<thead>
<tr>
<th></th>
<th></th>
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<td>1985</td>
<td>0.0281</td>
<td>1.8187</td>
<td>-0.2338</td>
<td>1.1262</td>
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<td></td>
<td>(1.495)</td>
<td>(1.182)</td>
<td>(1.584)</td>
<td>(9.441)</td>
<td>(1.649)</td>
<td>(56.410)</td>
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<td>1990</td>
<td>0.0100</td>
<td>1.1305</td>
<td>0.0055</td>
<td>1.0584</td>
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<td>0.8236</td>
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<td>67</td>
<td>13</td>
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<tr>
<td></td>
<td>(2.649)</td>
<td>(0.282)</td>
<td>(0.044)</td>
<td>(10.240)</td>
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<td>(70.043)</td>
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<td>-0.2462</td>
<td>0.8625</td>
<td>0.8546</td>
<td>64</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>(3.854)</td>
<td>(0.578)</td>
<td>(1.390)</td>
<td>(14.041)</td>
<td>(1.444)</td>
<td>(108.227)</td>
<td></td>
<td></td>
<td></td>
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<td>1993</td>
<td>0.0104</td>
<td>0.7335</td>
<td>-0.0755</td>
<td>1.1367</td>
<td>-0.4485</td>
<td>0.8198</td>
<td>0.8092</td>
<td>73</td>
<td>17</td>
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<tr>
<td></td>
<td>(1.975)</td>
<td>(0.613)</td>
<td>(0.591)</td>
<td>(10.526)</td>
<td>(1.700)</td>
<td>(77.355)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Incomplete data for Iceland, Luxembourg and Liechtenstein reduced the number of FTA observations in 1993 to 17.

### Findings

1. In all of the estimated equations the correlation coefficient is extremely significant and in the exports equations it is also very high. This means that Israel's trade is statistically very dependent on the variables included in the regressions (population, GDP, distance and FTA), and this is even more so with time: over the years the correlation coefficients tend to rise and their significance strengthens.

2. The size of the population of Israel's trade partners was not of great relevance to the determination of the imports from them in 1970, 1992, 1993, judging by the $t$ estimates. This cannot be explained by multicolinearity (a strong correlation between the explaining variables, which hurts the significance of their coefficients) between the population and the GDP variables since OECD countries (which share a relatively common level of GDP per capita) amount to something between a quarter to a half of the observations. Interestingly, the population was a significant factor in 1985, and in 1990. In explaining Israel’s exports, the population was of low significance over the whole period under investigation. Another interesting point is that if the population had any effect, it was always a negative one: The more populous the trade partner was, the less Israel traded with it. This reflects the tendency of populated countries to develop a wide variety of specializations and to be less dependent on international trade. It also reflects the fact that populous third world countries make up only a small share of Israel’s trade.
3. The GDP of Israel's trade partners was throughout the years a very powerful factor in the determination of trade in both directions: The larger the economy of the trade partner, the more Israel traded with it.

4. The distance of the trade partner from Israel tended to be quiet significant in determining the volume of trade in both directions with it: Trade decreases with distance. However, running the regression without the dummy variable increased the distance's significance. This arises from the fact that Israel tends to sign FTA agreements with far away countries. This tendency reflects both a political constraint and the fact that trade concentrates largely among developed countries with similar economic structures. The Israeli economy can take better advantages of economies of scale when trading with OECD countries than when it trades with the Middle East. The multicolinearity between distance and FTA membership should not however be too strong since the distance of Israel's FTA partners from it varies greatly (the distance of the US from Israel is around 10 times that of Greece). Anyway, to prevent a bias in the estimates of the coefficients of distance and FTAs, none should be omitted.

5. Conclusions regarding the dummy variable for the existence of an FTA should be drawn carefully, due to the relative scarcity of observations in most of the years. This may be the reason for the low significance of the dummy estimates. Judging by the estimates' significance, it is clear though, that Israel's imports are much more correlated with the existence of an FTA than its exports. This is especially pronounced in the 1990s.

Discussion of the FTA Factor

The relative insignificance of the relationship between Israel's exports and its FTA membership (compared with the imports-FTA relationship) may lend some statistical support to the Israeli government claims that its FTA partners (especially the Europeans) use Non-Tariff Barriers (NTBs) to discriminate against it.13

Another explanation would be the nature of the ROO. Both the EC and the US are large and sophisticated economies. Their producers can in most cases exploit economies of scale without recourse to foreign subcontractors. Also, being geographically large they are economically diversified with a different specialization in different regions.14 This again reduces the need for an international process of production. Israel on the other hand is a small economy that relies much more on foreign subcontractors (supplying different components and services) than the EC and the US. This in turn means that there are more Israeli exports to these FTA partners which do not comply with the ROO and are, therefore, not tariffs-exempt, than Israeli imports from those partners.

Of course, cumulation of origin is recognized between the partners of each of these FTAs, but not between them and third parties. For
example, Israeli exports to the EC would not be tariffs-exempt if a significant portion of the Israeli good was produced in the US, in Eastern Europe or in the Far East. It can be assumed that Israeli exporters to the EC are much more involved with non-EC foreign subcontractors than EC exporters to Israel. This is because Israel is not part of the European Single Market (SM) and has no borders with the EC members.15

Thus, on the imports side, Israel experienced trade creations as well as trade diversions upon the establishment of the FTA with the EC, while on the exports side it experienced a muted positive welfare effect. Israel’s FTA partners, in contrast, experienced muted trade creations and trade diversions on their imports side (discriminating in favour of these Israeli producers who pass the origin test); they also experience a strong positive welfare effect in their exports. In other words, prima facie, the asymmetry in the ability to comply with the ROO leads to an asymmetry in the balance of the FTA’s welfare effects, in favour of Israel’s partners.

The regression’s results point to the fact that eliminating an FTA with a trade partner (following the establishment of a Euro–Israeli CU) may greatly effect the volume of Israel’s imports from it. However, it is not known whether this is of benefit or cost to Israel. How large is the danger of trade diversions? What branches of industry are to be effected more than others? The following section conducts a rough examination of the effects of a possible Euro–Israeli CU, using Viner’s theory of CUs.

CUSTOMS UNION BETWEEN ISRAEL AND THE EC: A VINERIAN ANALYSIS

As stated above, Israel already has an FTA with the EC, so two effects are expected on the Israeli part following the formation of a CU with it. The first will be the adoption by Israel of the EEC trade rules. The second effect will be the final removal of all tariffs between it and the EC. Under the FTA not all the products shipped from Israel enter the EC free of tariffs. Those that do not comply with the ROO are not exempt from tariff. The formation of a Euro–Israeli CU will exempt all Israeli products from tariff. This means that part of the Israeli exports will become cheaper in the European markets and so the Israeli exports will increase. Of course the same will happen to some European exports to Israel but this effect is assumed to be relatively weak because of the assumption of greater Israeli reliance on foreign non-EC subcontractors (as discussed in the second section).

The following analysis will concentrate on the changes a possible Euro–Israeli CU will cause in the Israeli import patterns. The analysis will assume for simplicity that there are two possible sources for imports to Israel: Europe, and the Rest of the World (ROW). The ROW is actually composed of many countries, especially the US with which Israel shares an FTA as mentioned above. However, this analysis will not deal with possible changes to the trade patterns arising from the different
CCT levied on products from different origins. This is indeed another important aspect of a possible Euro-Israeli CU but analyzing it by branches requires databases of a very large scale which are not readily available to the public. Nevertheless, an aggregate comparison is possible between the European and Israeli tariff rates. Finally, the case of the Israeli exports will be dealt with. The analysis will be brief, assuming that the reader is acquainted with the Vinerian CUs theory.

**Analysis of possible trade effects: The EC vs the US and the rest of the world**

In the following analysis the trade effects between the US and the ROW (not including the EC) are held constant. A stands for the consumer price in Israel of the European good (it is assumed again that it always enters without tariff), B is the same price for a good originating in the ROW, and $TB$ is the Israeli tariff on goods imported from the ROW, or actually the Israeli tariff on the goods from the most competitive country within the ROW. Whenever this country is the US, according to the ROO, $TB$ is zero. CCT is the EEC’s tariff on goods imported from ROW. All cases use identical sets of Israeli supply and demand curves and identical prices A and B, so the results can be compared on a common basis. Price combinations that do not lead in the event of a CU to any changes in the source of the import or its price were not treated here, but belong to the ‘no change’ case.

**Case 1:** The first case is that where previous to the CU Israel was importing from ROW the amount $q_4-q_1$ at a price $B+tb$ (Figure 1), and the European price even without tariff was higher than ROW’s price including the CCT (which is higher than the Israeli tariff in this case). Following the union Israel adopts the CCT and now imports the smaller amount $q_3-q_2$ at the higher price $B+CCT$, still from ROW. Areas a and b represent the net loss to Israel from artificially raising the price on a cheap source and causing trade suppression. It is made of a net loss of customs revenue due to the reduction of imports (areas a), and (taking into account the Israeli producers gains) an excess loss of consumer welfare (areas b). Case 1, therefore, is the case of the small loss. The customs revenue may on the whole increase or decrease, according to the balance between the increase in the tariff from $TB$ to CCT, and the decrease in imports upon which the tariff is levied. Taken to the extreme, if the European price and $B+CCT$ are higher than the domestic equilibrium point (e) then Israel will stop importing all together, benefiting no one but its own producers at the expense of its consumers, its government, and ROW’s producers. The total loss to Israel will include areas c in addition to areas a and b. In case the ROW is really the US, there was no Israeli tariff levied from the beginning, and areas d should be added to all loss calculations.
One should note that under the constant costs assumption it would not be reasonable for the EC to apply a CCT that still leaves the ROW competitive and therefore does not protect the European Industry. However this assumption is relevant only to the analysis of the small country (Israel). When analyzing the European market, an upward sloping marginal cost curve should be taken into account for the foreign producers, and it can be shown that the CCT can limit the imports to Europe although still leaving Europe uncompetitive in the Israeli market.

Case 2: In the second case as in the first one both B+CCT and B+tb are lower than A but higher than B. Now however, B+CCT is lower than B+tb so in forming the CU Israel lowers its tariff. Accordingly, instead of reducing its imports from ROW, it increases the imports from $q_3-q_2$ to $q_4-q_1$. Areas $a$ and $b$ now represent a gain from the trade creation. Case 2, therefore, is the case of the small gain. Again, taken to the extreme, if the European price and $B+tb$ are higher than the domestic equilibrium point (e) then the total gain to Israel will include areas $c$ in addition to areas $a$ and $b$. Case 2 is not relevant if the ROW is really the US, because then there was no Israeli tariff levied from the beginning.

Case 3: The third case is similar to the first one, except that the European price is higher than ROW's price including the Israeli tariff but lower than ROW's price plus CCT. Following the union therefore, Israel adopts the CCT and now imports the smaller amount $q_6-q_5$ at the higher price $A$, now from the EC (Figure 3). Areas $a$ and $b$ represent the...
net loss to Israel from the substitution of the cheap source by the expensive source, and the loss of customs revenue. This is not exactly the classic case of trade diversion, for the external tariff here changes, so it will be dubbed pseudo trade diversion. It is made of a loss of all customs revenue to the Israeli government (areas $a$), and (taking into account the Israeli producers gains) an excess loss of consumer welfare (areas $b$). Out of these losses, the European producers benefit the areas $a1$ and $b1$. It is easy to see that the loss to Israel in Case 3 is much greater than the loss
in Case 1 because of the trade diversion. Case 3, therefore, is the case of
the large loss. Again, taken to the extreme, if the European price and
B+CCT are higher than the domestic equilibrium point (e) then Israel
will stop importing all together, with consequences and losses as
described in Case 1 above. Again, if ROW is really the US areas d should
be added to all loss calculation.

Case 4: Again ROW is more competitive than Europe (A>B), but this
time Israel gains from adopting the CCT for it is lower than its own
initial tariff on ROW’s products and so there is trade creation (Figure 4).
Case 4, therefore, is the case of the large gain. This is merely an
adjustment to the distortion initially caused by the FTA between Israel
and Europe. At the beginning Israel imports the amount q6–q5 from
Europe at the European price A, but after the formation of the CU it
imports the greater amount q3–q2 at the price B+CCT, now from ROW.
Areas a represent a gain due to the creation of customs revenue to the
Israeli government. Areas b represent a net gain to the Israeli consumers
(taking into account the Israeli producers losses). This case is the
opposite to Case 3 above (the sums of areas a1 and b1 are identical in
both cases but in Case 4 they represent a loss to the European
producers). If this case is taken to the extreme too, it can be shown that
if the European price and B+tb were higher than the domestic
equilibrium point (e) then Israel was not importing at all prior to the CU,
and the total gain to Israel will include areas c in addition to areas a and
b. Everybody gains except the local Israeli industry. As in Case 2, Case 4
is not relevant if the ROW is really the US.
GENERAL CONCLUSIONS

In cases where the ROW's industry is more competitive than Europe's industry, if the CCT is higher than the Israeli tariff, then the formation of a CU will cause a trade diversion, benefiting Europe at Israel's and the ROW's expense. If the CCT is lower than the Israeli tariff, then the CU will cause a trade creation by substituting the dear European products in the Israeli market with cheap products from the ROW. If the American producers were more competitive, then a Euro-Israeli CU will definitely cause Israel a loss (Cases 2 and 4 are irrelevant), indeed a greater one than in the case of other countries (since many American goods are tariff free and there is no distortion in their trade to begin with).

In cases where the European industry is more competitive (that is, \( A < B \) in the discussion above) then according to the constant cost analysis it was already the sole supplier to the Israeli market even before the CU. That is because according to the Euro-Israeli FTA European products enter Israel free of tariffs. For this reason, even when the ROW was more competitive (that is, \( A > B \)) there was no customs revenue from European imports and so there is no case of a true trade diversion in the classic sense (a case where it will be impossible without specific figures to tell whether Israel looses or gains).

The conclusions from Table 3 are that in cases where a Euro-Israeli CU will cause changes in the trade patterns, the ROW's industry (notably the US industry) and the Israeli economy on the whole share the same interests which are always contrary to the European and the Israeli industries' interests. The American industry can either be unaffected by the CU (in cases of trade creations), or lose in varying degrees.

<table>
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<tr>
<th>CASE</th>
<th>Trade:</th>
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<th>Creation</th>
<th>Pseudo Diversion</th>
<th>Creation</th>
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<td>Israeli consumers</td>
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<td>(+)</td>
<td>(-)</td>
<td>(+)</td>
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<tr>
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<td>Israeli tax revenue</td>
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<td>(?)</td>
<td>(-)</td>
<td>(+)</td>
</tr>
<tr>
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<td>Israeli industry</td>
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<td>(-)</td>
<td>(+)</td>
<td>(-)</td>
</tr>
<tr>
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<td>(+)</td>
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<td>(0)</td>
<td>(0)</td>
<td>(++)</td>
<td>(-)</td>
</tr>
<tr>
<td>1</td>
<td>ROW industry</td>
<td>(-)</td>
<td>(+)</td>
<td>(-)</td>
<td>(++)</td>
</tr>
</tbody>
</table>

\(-) = \text{negative effect}; \((-) = \text{strong negative effect}; \(+) = \text{positive effect}; \(++) = \text{strong positive effect}; \(?) = \text{an ambiguous effect}; \(0) = \text{no effect.}

The effects of the customs union on different industrial branches

What branches of industry belong to each of the four cases described above? What branches belong to none (meaning no change due to CU)?
To be able to sort the branches of industry accordingly it is essential to grade the suppliers in every branch by their competitiveness, and to compare the Israeli tariff and the CCT. For the technical problems mentioned above, no empirical comparisons of the tariffs will be attempted at the branch level. Rather, a general assumption will be made regarding the way the Israeli tariff compares with the CCT.

As for the competitiveness, it is of course very hard to measure it among different suppliers of a certain product. The most obvious measure would be the price the good is sold for, but that would be true only assuming the goods compared are identical. Today’s consumer however, enjoys a great variety of products and it is clear, for example, that cars of different brands are not deemed the same by the consumer, even when comparing cars of identical size and features. The existence of different prices for one good in one market may be interpreted as proof of the existence of different markets for different goods. Also, the fact that there is more than one foreign supplier suggests that the constant costs assumption does not hold.

In order to overcome the problems of variety and multiplicity of foreign suppliers, it will be assumed that every foreign supplier’s good is unique and different from the other goods supplied. Of course, it is impossible to examine every such good separately since there is a myriad of them, and since by the uniqueness definition above there is no empirical evidence of the rival's competitiveness (winner takes it all). Instead, major aggregate groups of products will be examined. The aggregation used is that of the Israeli Central Bureau of Statistics (CBS), which is a compilation of the Harmonized System sub-groups of products in to 21 major groups.

Balassa’s Revealed Comparative Advantage (RCA) index will be used here to scale the competitiveness of the different origins of import instead of prices. Originally used by Balassa to detect the advantage of a given country compared with another in any given branch, this index is the ratio of the trade balance (exports minus imports) to the total trade between the two (exports plus imports). A country enjoying a positive balance is considered to have an advantage in the specific branch, and the total trade acts as a numerator.\(^\text{16}\) Of course, this index is a very rough approximation of the comparative advantage, since real world trade patterns (on which it is based) are subject to different trade regimes and preferential agreements. These distort the trade balance of any given pair of countries. The index is sensitive to the level of industry branch aggregation too. Another problem is that of trade policy mutuality: The trade balance between any two countries is influenced by the rate of protection in each one against the other’s exports. If this rate of protection (tariffs, quotas, and all other NTBs) is not the same in both countries, the RCA will be distorted as a proxy for comparative advantage.

Keeping all that in mind some general conclusions are possible. Whenever one region displays a stronger comparative advantage vs.
Israel than the others, it may be interpreted to mean that when breaking down that branch’s aggregation to single unique products that region is the sole supplier of more unique goods than the other regions (in terms of sales revenue). The RCA index for a branch can be seen as a weighted average of RCA indices for sub-branches. The greater it is for a given region, the more (or the larger) sub-branches that region controls.

<table>
<thead>
<tr>
<th>Sector</th>
<th>EC</th>
<th>US</th>
<th>ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5) Mineral products</td>
<td>212</td>
<td>443</td>
<td>953</td>
</tr>
<tr>
<td>(6) Chemical and allied industries</td>
<td>160</td>
<td>-246</td>
<td>-444</td>
</tr>
<tr>
<td>(7) Plastics and rubber</td>
<td>253</td>
<td>-52</td>
<td>2</td>
</tr>
<tr>
<td>(8) Raw hides, Skins and Leathers</td>
<td>834</td>
<td>333</td>
<td>840</td>
</tr>
<tr>
<td>(9) Wood, charcoal, cork and straw</td>
<td>632</td>
<td>979</td>
<td>975</td>
</tr>
<tr>
<td>(10) Pulp of wood or other</td>
<td>774</td>
<td>639</td>
<td>735</td>
</tr>
<tr>
<td>(11) Textiles and textile articles</td>
<td>34</td>
<td>-461</td>
<td>391</td>
</tr>
<tr>
<td>(12) Footwear, headgear, umbrellas and sticks</td>
<td>722</td>
<td>-30</td>
<td>643</td>
</tr>
<tr>
<td>(13) Articles of stones</td>
<td>915</td>
<td>647</td>
<td>534</td>
</tr>
<tr>
<td>(14) Pearls and precious stones (ex. diamonds)</td>
<td>489</td>
<td>-865</td>
<td>-200</td>
</tr>
<tr>
<td>(15) Base metals and articles of base metals</td>
<td>618</td>
<td>91</td>
<td>517</td>
</tr>
<tr>
<td>(16) Machinery and mechanical appliances (HS84) Nuclear Reactors, Boilers, Machinery</td>
<td>483</td>
<td>116</td>
<td>-315</td>
</tr>
<tr>
<td>(17) Vehicles, aircraft and vessels (HS86) Railway or Tramway Locomotives (17)</td>
<td>363</td>
<td>51</td>
<td>-80</td>
</tr>
<tr>
<td>(18) Optical, photographic and cinematographic</td>
<td>292</td>
<td>159</td>
<td>-24</td>
</tr>
<tr>
<td>(20) Miscellaneous manufactured articles</td>
<td>628</td>
<td>343</td>
<td>737</td>
</tr>
<tr>
<td>(21) Works of art, collectors pieces and antiques</td>
<td>-32</td>
<td>-551</td>
<td>-405</td>
</tr>
<tr>
<td>Miscellaneous and unclassified goods</td>
<td>-685</td>
<td>-575</td>
<td>271</td>
</tr>
</tbody>
</table>

Source: calculations based on Israel's Central Bureau of Statistics, 'Table 13 - Imports from Main Trading Partners, by Commodity Group' and 'Table 12 - Exports to Main Trading Partners, by Commodity Group', Quarterly Statistics of Foreign Trade, IV-94.

Table 4 displays RCA index for the three major regions involved vs. Israel (multiplied by 1000), in 17 different CBS aggregate industry branches (the four agricultural branches which amounted in 1994 to 8.5 per cent of all Israeli imports excluding diamonds, and 9.1 per cent of all exports, were eliminated here). Table 5 displays the same indices for the two-digit Harmonized System branches that make up CBS branches 16 and 17. These two branches made up together 43.5 per cent of Israel's industrial imports in 1993, and this level of aggregation is, of course,
very inaccurate. The calculations are based on 1993 trade figures. The higher the index, the more competitive the region is in its trade with Israel (negative signs represent comparative disadvantage). The highest index in every branch is highlighted, as well as the indexes of other regions if they come as close as 100 points from the highest (Since as stated above, the index is a very rough approximation). Since both the EC and the US share an FTA with Israel, the distortion in comparing their RCA index is lower than in general. When comparing the index of the ROW, one should remember that at present an Israeli tariff is levied on their products, that is they enter Israel at the price $B+tb$.

There are some branches where one region displays a stronger comparative advantage vs. Israel than the others but it is important to know which of the remaining two regions is that region's closest competitor, the competitor that has the greatest potential to increase his share in the Israeli market in case a CU changes relative prices. The RCA index will be used again for that. For example if the EC scores highest in a certain branch, followed by the ROW with the US coming last, then it will be taken to mean that $A<B+tb$ and the US is irrelevant. Such branches fall into Case 4 if ROW's goods enter Israel with the CCT at a lower price than $A$.

In other branches there may be two regions whose index scored similarly, higher than the third region. In this kind of a situation it is clear what region is their potential rival (that is, the remaining third region), but it would still be difficult to sort such branches by the four cases described above.

(5) Mineral products, (11) textiles, (20) miscellaneous manufactured articles and miscellaneous and unclassified goods
In these branches (which in 1993 accounted for about 16.3 per cent of Israeli industrial imports) the ROW displays a clearly stronger comparative advantage than the EC. This means that $A>B+tb$ as in Cases 1, 2 and 3. Case 2 is different than Cases 1 and 3 in that the CCT is lower than the original Israeli tariff. Wherever that is the situation, Israel as a whole and the ROW would be better off, at the expense of the Israeli industry. Otherwise (Cases 1 and 3), the exact opposite is true.

(6) Chemicals, (13) articles of stones, (14) pearls and precious stones, (16) machinery and mechanical appliances, (18) optical, equipment
In these branches (which in 1993 accounted for about 57.0 per cent of Israeli industrial imports) the EC displays a stronger comparative advantage than the US, the ROW coming last. This means that $A<B$, or in other words a CU will generally have relatively insignificant effects in these branches.

(7) Plastics and rubber and (21) works of art, collectors pieces and antiques
In these branches (which in 1993 accounted for about 4.2 per cent of
Israeli industrial imports) the EC again displays the strongest comparative advantage vs. Israel, but now the ROW is more competitive than the US. This means that \( A < B + tb \), as in Case 4, if the CCT is low enough. Wherever that is the situation Israel as a whole and the ROW (but not the US) can generally expect to gain significantly at the expense of the European and Israeli industries. If the CCT is higher than the original Israeli tariff or a little lower, then the CU will generally have relatively insignificant effects.

(8) **Raw hides, skins and leathers, (10) pulp of wood or other, (12) footwear and headgear and (15) base metals and articles of base metals, HS (86) Railway**

In these branches (which in 1993 accounted for about 10.3 per cent of Israeli industrial imports) the US seems inferior to the EC and the ROW when competing over the Israeli market. Wherever the competition involves mostly American and Europeans, this means \( A < B \) and again there will generally be insignificant effects. Wherever the competition involves mostly European and the ROW industries, the competition is very close and conclusions are hard to draw.

(9) **Wood, charcoal, cork and manufactures of straw**

In this branch (which in 1993 accounted for about 1.1 per cent of Israeli industrial imports) the EC seems inferior to the ROW (including the US) when competing over the Israeli market. This means either \( A > B \) (if it was the Americans that out-competed the Europeans), or \( A > B + tb \) (if it was the ROW), as in Cases 1, 2 and 3 (Case 2 being irrelevant in the American case). This situation was already analyzed.

(17) **Vehicles, aircraft and vessels**

In this branch (which in 1993 accounted for about 11.3 per cent of Israeli industrial imports) the EC and the US seem to have an edge over the ROW. Wherever the competition involves mostly American and Europeans, the competition is very close and conclusions are hard to draw. Wherever the competition involves mostly European and the ROW industries, this means \( A < B + tb \) as in Case 4, if the CCT is low enough etc. (analyzed above).

**HS (87) vehicles, other than Railway**

In this branch (which in 1993 accounted for about 9.3 per cent of Israeli industrial imports) all three regions display similar RCA indices and no conclusion at all is possible.

**HS (88) Aircraft and Spacecraft, HS (89) Ships and Boats**

In these branches (which in 1993 accounted for about 1.7 per cent of Israeli industrial imports) the US displays a stronger comparative advantage than the EC and the ROW. This means that \( A > B \) as in Cases
1 and 3 (depending on the level of the CCT relative to the difference in the competitiveness between the US and the EC).

The classification of the different branches according to the four cases analyzed above, is possible even without referring to the relation between the Israeli and the European tariffs. The exceptions are branches 5, 9, 11 and miscellaneous which would otherwise fall into an ambiguous class including opposite cases: Cases 1 and 3 on one hand and Case 2 on the other. As mentioned above it is hard to compare average tariffs at this level of aggregation. Such an effort if attempted in perfect precision would go beyond the scope of this research.

However, a similar attempt has already been made by Laird and Yeats. Studying the pre-Uruguay round tariff rates of a group of developed and developing countries, the two have calculated for each country the average rates for different industry branches according to the MFN rates and according to the applied rates (taking into account the GSP and the different trade agreements each country has). The grand total average applied tariff rate of the EC CU – 2.5 per cent in the late 1980s – is somewhat higher than that implied by the ratio of Israel's customs revenue to its imports value – 2.1 per cent in 1993. When discounting the FTAs with the EC and with the US however, Israel's average applied tariff rate for the ROW is 6.3 per cent. This is done by assuming that all the European and American products enter Israel free of tariffs. Under this assumption dividing 2.1 per cent by ROW's share in Israel's imports in 1993 – 33.3 per cent – yields 6.3 per cent. This estimate is slightly upward biased because of the aforementioned assumption. The same rate in the EC case is lower: If the US will be discounted out of the average applied EC rate it will only go down (since the MFN rate applied vs. the US is higher than the average applied rate). Discounting Israel out will have of course negligible effects on the EC average rate. So the average applied tariff rate on goods originating outside the EC, the US and Israel was a little less than 6.3 per cent in 1993 in Israel vs. a figure lower than 2.5 per cent in the late 1980s in the EC. With the progress of Israel's exposure policy the average must have gone down but so did the EC's average since the late 1980s. It seems safe therefore to assume that the total average applied tariff rate in the EC CU vs. ROW is still lower than the Israeli one.

An important objection to this assumption is that the average EC rate is based on a different weighting than the average Israeli rate. This is because the different countries included here in ROW make up for different shares in the EC's and in Israel's imports (before or after Israel joins the EC CU). However the tariff gap is large enough and the origins weightings are still similar enough for the assumption to hold. The CCT is more liberal than Israel's exposure policy so far.

It is hard to compare the average applied tariff rates for specific branches since the branches are defined differently in this study, in Laird
and Yeats’s study and in the CBS customs revenue table. However going over the averages for branches with similar names in the two studies, it can be said that in branches 5, 9, 11 and misc. the Israeli average is higher than the EEC’s.19

Table 5 classifies the industrial branches according to the different trade cases, taking into account the assumption that joining the EC CU will on average reduce Israel’s applied tariff rate vs. ROW. As rough as the conclusions may be they point to the fact that more than a half of the industrial sectors in Israel are expected to experience very little effects following a Euro–Israeli CU. This conclusion is independent of the level of Israeli tariffs relative to the European ones. In more than 20 per cent of Israeli industrial imports, positive effects (for Israel as a whole) are expected following a CU. And yet, uncertainty still surrounds about a fifth of the Israeli industry.

| Case 1, 2 or 3 | Definitely Case 4/ Definitely No effects or No effects or 4/3 case 2 No effects No effects no conclusions |
|---------------|--------------------------------------------------|-----------------------------------------------|------------------------------------------|---------------------------------|
| 2.9 per cent  | 16.3 per cent                                    | 4.2 per cent                                  | 57.0 per cent                             | 19.6 per cent                   |
| 9, HS88, HS89 | 5, 11, 20, misc                                  | 7, 21                                         | 6, 13, 14, 16, 18                        | 8, 10, 12, 15, HS86, HS87       |

ISRAELI EXPORTS

Joining the EC CU will not only change the tariff level imported products face in Israel. It will also change the tariff level Israeli exports face in the ROW. This is because different countries have different trade policies vs. Israel and vs. the EC. This change in tariffs can greatly effect Israeli exports.

One obvious effect would be the rise in American tariffs from nothing today (under the FTA agreement) to the MFN level (since Israel is no longer on the US’s GSP list). A simple analysis will come up with straightforward conclusions: A decrease in Israeli exports to the US causing a definite loss to the Israeli economy. It is once again important to note that this is not the case with all of the Israeli exports to America. Those products that do not comply with the ROO will not be effected by a Euro–Israeli CU. The Israeli exports to the US account for more than a quarter of Israel’s exports, but it is impossible to say what portion actually enjoys the FTA.

As for Israeli exports to the ROW, it is impossible to say what will happen to the tariff level imposed on Israeli goods. These comprise around 40 per cent of Israeli exports. Taking into account the gain in Israeli exports to the EC described earlier, the fate of the Israeli exports in general as a result of joining the EEC CU seems unclear.
FISCAL ASPECTS

Other aspects to a possible Euro–Israeli CU are the fiscal aspects. One of them is the customs revenue issue. The members of any CU must decide how to split the common revenue among them or alternatively how to use it collectively. This question was left open by the Euro–Turkish association council decision on the establishment of a CU, and it should be settled later. One possibility is to decide that each member keeps the customs revenue it collects in its own borders and ports. In such a case the effect of a Euro–Israeli CU would be as follows: Both Israel and the EC will lose the revenue generated by custom duties levied on the other partner’s goods that do not comply with the ROO. They would also both lose the revenue generated by custom duties levied on third party’s goods transiting through the partner’s country. This last revenue would now be levied by the partner to his own benefit. Since the EC is an important economic centre, it is expected that more foreign goods transit through it to Israel than the other way around, so Israel is expected to lose.

Another fiscal aspect to any CU is the indirect taxation adjustment issue. The move from an FTA to a CU can represent a move from the destination principle to the origin principle (indeed it does in the case of the EC): Under an FTA, a good shipped from one member to the other requires taxation adjustment upon arrival to its destination. The government of the country of origin repays the exporter the VAT he has paid, and the government of the country of destination levies its VAT. This is the destination principle. Under a CU taxation can be guided by the origin principle, meaning every consumer pays the VAT of the country of origin, regardless of the destination within the union. The idea is to avoid the obstacle to trade in the form of border checks and tax adjustments. However, a country that has a trade deficit with the rest of its union partners (as Israel may) will prefer the destination principle (levying VAT on imports), while a country experiencing a surplus will prefer the origin principle (levying VAT on exports). It is true that the European VAT collection union was not extended to Turkey in spite of the Euro–Turkish CU, but this should be a desired feature of the CU.

CONCLUSIONS

This article has examined the economic desirability to Israel of a CU in industrial goods with the EC. Having an FTA with the EC, two effects are expected: The first will be the adoption by Israel of the EC trade rules, including the abolition of the American–Israeli FTA. The second effect will be the final removal of all tariffs between Israel and the EC.

The FTAs Israel has with some of its trade partners make it hard for Israeli producers to take on their foreign competitors. Israeli producers tend to rely more heavily on foreign sub-contractors than producers in a
large country for reasons of economies of scale, and a more limited national variety of relative advantages. Israel's FTA partners either have larger economies, or their producers have better access to European subcontractors, and are, therefore, exempted from the Israeli tariff. On the other hand, Israeli producers who use non-European subcontractors in goods exported to the EC, or use non-American subcontractors in goods exported to the US, are not exempted from the foreign tariff.

The Israeli producers have a relative disadvantage versus their European competitors as a result of the SM program, and the EEA. The FTAs Israel has, therefore, tend to expand its imports more than its exports. While on the imports side Israel is affected by some balance of trade creations and trade diversions, on the exports side the positive welfare effect is weak. On the other hand, Israel's FTA partners are weakly affected by the balance of trade creations and trade diversions on their imports side, but the positive welfare effect on their exports to Israel is complete. In other words, prima facie the asymmetry in the ability to comply with the FTA's ROO causes asymmetry in the FTA's welfare effects too, in favour of Israel's partners.

To refine the argument further, an FTA agreement carries an additional distinct distortion beyond the usual distortions of trade agreements. Either the origin criteria are fulfilled and a full exemption from the tariff is given to the member, or the criteria are not fulfilled and no exemption at all is given. This discontinuity in the tariff level is a source of distortion. For example, a 50 per cent non-European component in an Israeli good will not award it a tariff exemption, if more than 50 per cent Israeli content is required (in reality, the origin criteria in the Euro-Israeli FTA are not defined in terms of added value, but the logic still holds). Under a CU, however, the Israeli producer pays the full CCT only on 50 per cent of the good's value when the non-European components are purchased. So, effectively, the tariff is higher under an FTA for a small country producer, than under a CU. Similarly, it is higher under a CU than under an FTA, for a large country producer.

A sectorial analysis found that around one half of the Israeli industrial imports will not be affected from a CU with the EC. In another fifth, positive welfare gains will be felt, and the rest of the sectors are equivocal. In the bottom line, therefore, a CU with the EC may be more economically efficient to Israel than the current FTA.

These conclusions should be reserved. It is important to remember that as Israel adopts the EC's trade policy versus third parties in the wake of a CU, so the third parties apply their EC policy on Israeli exports. This would spell the end to the Arab boycott on all of its levels. On the other hand, that part of the Israeli exports to the US which under the current Israeli-American FTA does comply with the ROO (and is exempt of tariff), will be hurt by a Euro-Israeli CU. The Israeli balance of exports effects versus third parties should be studied.

Another aspect which was not treated here, is that of the substitution
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effect between imports from the US and imports from other non-European sources. This article does not estimate the balance of trade creations and trade diversions in the Israeli imports as a result of the discrimination embedded in the CCT. Analyzing the European tariff book requires a much more comprehensive study than was possible here. In general, a bias in favour of American goods is swapped for a bias in favour of developing countries. Some of the effects will terminate distortions caused by the Israeli-American FTA, and some will hurt the trade created by it, and cause new distortions. Still, it is quite possible that the potential for trade diversions between American and other non-European goods is low, if different goods are imported from these sources. Fiscally, the destination principle in the taxation adjustments is preferable to Israel, but the EC is expected to demand that the origin principle will be applied.

All this, of course, ignores the political repercussions of dismantling the American-Israeli FTA. The political aspects revolve around the implication of a Euro-Israeli CU to US-Israel relations, and to the Israeli ability to independently determine its external trade policy. No doubt further research should inquire into the CU question, in both its economic and political aspects. Nevertheless, this article shows that Israel may be paying an economic price for forgoing this option.

ACKNOWLEDGEMENTS

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NOTES

3. The Euro–Turkish Association Council, Decision 1/95 (Customs Union), Brussels, 3 March 1995, Article 22.


13. Foux arrives at similar results, though in his estimates the Israeli imports are unaffected by the FTA, while the exports actually decline. See Baruch Foux, 'Potential Trade between Israel and Eastern Europe Countries', The Helmut Kohl Institute for European Studies Working Papers (The Hebrew University of Jerusalem), No. 10/97, 1997, p.20.


19. This is true for branch 11 only if the EC and the US are (rightly) discounted from Israel's average. ROW's share in Israel's imports in this branch is 25.6 per cent so the world average to ROW average ratio is 3.9. This raises Israel from a total average of 4.0 per cent to an average of 15.6 per cent vs. ROW, compared with less than 7.3 per cent for the EEC.