E C O N O M I C S B U L L E T I N

The quality of parallel imports

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Abstract

This paper empirically analyzes the change in the quality of parallel import goods (goods that are traded without the permission of the intellectual property right holder) across countries over time. Index number methodology for assessing the changes in quality of traded goods is applied to goods subject to parallel import competition in the European Union during 1995-2004. The claim that parallel import competition leads to a reduction in quality over time is not substantiated after analyzing the changes in the quality of imports to Sweden and Finland (who joined the EU in 1995 and subsequently opened their markets to parallel trade) and comparing them to changes in quality in the rest of the EU.

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1. Introduction

Parallel imports are authentic goods that are protected by patent, copyright, or trademark but are traded without the authorization of the intellectual property right holder. They are branded consumer products such as clothing, pharmaceuticals, or electronics and are legitimate goods, not knockoffs or counterfeits. Countries differ in their treatment of the exhaustion of intellectual property rights and so some allow parallel trade (e.g. among nations of the European Union) and others do not (e.g. the United States). The policy of permitting parallel imports is often pursued in order to lower prices (through competition) for consumers.

One of the arguments against permitting parallel imports (PIs) is that manufacturers may have diminished incentive to keep up the quality of their product when faced with competition from their own product.[1] Manufacturers must bear investment and marketing costs as well as provide pre- and post-sales services. PI firms engage in arbitrage between markets and can free ride on such services while still selling the authentic product. Consumers are indifferent (except for any price difference) between buying from a PI firm and an authorized distributor since the good is authentic. Thus, the manufacturer faces competition from its own product. If the manufacturer can no longer command a premium on price, incentive to maintain high quality may diminish.

Quality can be defined as an additional characteristic that is valued by buyers (Aiginger 2001). For example, quality can encompass such things as durability, flexibility in use, a sophisticated variant, or user specificity. There could also be a service component or information content. High quality generally allows for a higher price without losing sales.

Studying PI goods is important from a policy standpoint because in permitting PIs, a potential tradeoff between low prices and high quality could result. Since the European Union allows parallel trade, an analysis of PI goods traded there could lend some insight to the validity of the existence of such a tradeoff. Using existing methodology for inferring the quality of traded goods, I analyze the change in the quality of goods subject to PI competition traded within the European Union over the period 1995-2004. A comparison is made between the countries which joined the EU in 1995 (Finland and Sweden) and the other EU countries. However, the claim that PI competition reduces quality is not substantiated.

2. Motivation and Literature

The body of literature on parallel imports is still relatively small. Malueg and Schwartz (1994), Maskus and Chen (2004), and Chard and Mellor (1989) all discuss theoretical reasons for and consequences of the existence of PIs. Empirical analyses of these goods are extremely sparse. Notable examples are Ganslandt and Maskus (2004) who look at pharmaceuticals, and Maskus and Chen (2004) who test their vertical price control model with US trade data.

The quality of traded goods has also been explored in the economic literature. Quality and trade patterns have been examined both theoretically (Flam and Helpman 1987) and empirically (Hallak 2006 and Hummels & Klenow 2005). Quality variation over time and across countries has also been assessed (Aw & Roberts 1986 and Feenstra 1988). Additionally, some studies look at the quality of factor inputs to gauge the quality of goods (Aiginger 2001).

[1] See Chard and Mellor (1989).

PI goods are unique in the sense that they are authentic, trademarked items that compete against goods with the same trademark.[2] Consumers do not have to worry about quality difference between authorized dealers and parallel traders because by definition PI goods are legitimate and not counterfeits. In theory their quality should not differ across countries; low income countries should export the same quality PI goods as high income countries. Consider a producer in France who exports a bottle of wine to Greece. If a PI firm re-exports that bottle to Germany, it should still be of the same quality because it is still the original good. Thus, Greece's exports of PI goods should have the same quality as that of a higher-income country.

Like other products, the quality of goods subject to PI competition can change over time. But how could PI competition be the cause of a reduction in quality? It is straightforward to see how competition from counterfeits could result in a "market for lemons" in which the manufacturer ultimately produces a lower-quality good.[3] However, since PI goods are authentic, they are of the same quality as any other item bearing the manufacturer's trademark. Consumers will not perceive PIs to be of a lower quality since they believe (correctly) that the goods are authentic. Predictions from the literature on reputations as a signal of quality can be extended to PI goods to explain why quality may be lower as a result of PI competition.

In Shapiro (1982), firms signal quality by way of reputation.[4] Assume firms can choose the quality of the good produced and higher quality is associated with higher production costs. Ultimately, the incentive for a firm to produce a good with higher quality depends on the ability of consumers to recognize the higher quality. If consumers cannot learn, and therefore continue to buy from a firm with a low-quality, then there is no incentive to produce more than the minimum quality needed to maintain a firm's reputation.

For PI goods, a consumer is unable to distinguish between the parallel import and the "original" good. The authorized dealer's good and the parallel import are of identical quality so the consumer is indifferent (except for price) to purchasing from the parallel trader or from an authorized dealer. By extending Shapiro's results to PI goods it is expected that if PI competition were to commence, customers will not recognize the authorized dealer so the manufacturer has no incentive to produce more than the minimum quality needed to maintain the firm's reputation.

To determine whether the quality of traded PI goods has changed over time, first quality will have to be quantified. Several works use unit values to infer quality. One approach is to use the unit value itself as a measure of quality. For example, in Hallak (2006), price indexes are constructed using export unit values and any cross-country variations in the price indexes are attributed to variations in quality.[5] Hummels and Klenow (2005) infer the quality of a nation's exports by combining estimates from regressions of export unit values and quantities on a measure of exporter income with elasticities of substitution. The use of index numbers as in Aw and Roberts (1986) is a third option for inferring quality change from unit values.[6] A hedonic

[2] They could also be items that are patented or copyrighted.
[3] See Akerlof (1970) for a description of the "market for lemons".
[4] Smallwood and Conlisk (1979), Rogerson (1983), and Allen (1984) also investigate reputation and quality.
[5] Rodrik (1988) also uses unit values as a proxy for quality.
[6] Index numbers have also been used to assess quality in Boornstein and Feenstra (1987).

specification with unit values regressed on specific product characteristics is used by Feenstra (1988). An instrumental variables approach is completed by Bils and Klenow (2001).

This paper contributes to both the limited literature on PIs in general, and to the quality literature in the capacity that changes in the quality of PI goods over time has not previously been assessed. Contributing to the policy dialog, the argument that PI competition reduces quality is investigated. This initial analysis will make use of existing methodology for inferring quality change using unit values.

3. Analysis of the Quality of Parallel Import Goods

One of the arguments against allowing parallel trade is that there could be a reduction in quality over time as a manufacturer faces competition from its own brand. Finland and Sweden joined the EU in 1995 and subsequently opened up their markets to parallel trade. Since parallel trade competition was already taking place in the rest of the EU and (presumably) the quality decline due to PI competition would have already taken place, then a natural experiment arises with the accession of Sweden and Finland. If there is validity to the claim that PI competition results in lower quality, these two countries should have a reduction in import quality relative to the other EU countries.

The following criteria will need to be met to determine that PI competition in Sweden and Finland resulted in lower import quality:

- *Sweden and Finland have lower import quality in the years after their accession.*
- *If other EU countries also have lower quality in the years after Sweden and Finland joined the union, then the reduction in quality in the accession countries is larger.*
- *The import quality of goods not subject to PI competition is not lower.*

In other words, to verify that PI competition is the driver of lower quality, first, lower quality must be evidenced.[7] Then, the lower quality should be of a greater amount than any reduction in countries that have had PI competition for a longer period of time. Finally, a reduction in quality should not be part of a broader trend of lower import quality for goods in general.

To examine the quality of PI goods over time, Aw and Roberts (1986) index number methodology is used.[8] They propose that changes in an aggregate unit value index can be decomposed into the changes attributable to quality and pure (quality adjusted) prices. The change in an aggregate unit value index is a biased measure of the true change in prices. Observed prices may be increasing due to an increase in quality. This bias can be removed by using a Tornqvist price index, which will reflect the quality-adjusted import price.[9]

The difference between the change in the aggregate unit value index and a Tornqvist index yields a measure of the change in import quality due to changing the composition of the bundle. In other words, changes in the observed price index are separated into changes in pure prices and

[7] Of course, PI competition was not the only policy change that occurred when the countries joined the EU. It is possible that implementing some of the other EU trade regulations could influence the quality as well.

[8] While the most common measure of quality is to simply use unit values, I will submit to the proposition in Hallak and Schott (2008) that when goods are differentiated, then unit values will not solely capture quality. Therefore, I will use the index number methodology to try to measure quality changes.

[9] It is the discrete time version of a Divisia price index which is a weighted sum of the growth rates of individual product prices.

changes in quality. Changes in the observed prices could come from changes in pure prices or from changes in quality. The changes in pure prices could come from many factors (e.g. production cost reductions).

This technique is applied to goods subject to PI competition that are traded in the EU-15 over the period 1995 - 2004.[10] Analysis reveals that both Finland and Sweden had *higher* quality in the period immediately after accession. So did eight of the other EU nations. Halfway through the sample (2000), the accession nations each had a higher level of quality than they did at the beginning of the sample. When comparing the quality change in Sweden and Finland with the rest of the EU, there is not sufficient support for the claim that PI competition reduces quality.

3.1 Methodology

Following Aw and Roberts, construct an aggregate unit value index for each importer *j*,

$$P_j(t) = \frac{\sum_g \sum_c V^{gc}(t)}{\sum_g \sum_c X^{gc}(t)} \qquad (1)$$

where *g* is a good, *c* is an importer country, *V* is the export value, *X* is the import quantity, and *t* is the year. The growth rate in the aggregate unit value index is

$$\Delta P_j(t) \equiv \ln P_j(t) - \ln P_j(t-1). \qquad (2)$$

Next, construct a Tornqvist price index. This index is the value-share weighted sum of the growth of the individual product prices,

$$\Delta P_j(t)^{Tornqvist} \equiv \sum_g \sum_c S_j(t) \Delta P_j^*(t) \qquad (3)$$

$$\text{where} \quad S_j(t) \equiv \left(\frac{1}{2}\right)\left[\frac{V^{gc}(t)}{\sum_g \sum_c V^{gc}(t)} + \frac{V^{gc}(t-1)}{\sum_g \sum_c V^{gc}(t-1)}\right]$$

$$\text{and} \qquad \Delta P_j^*(t) \equiv \ln\left(\frac{V^{gc}(t)}{X^{gc}(t)}\right) - \ln\left(\frac{V^{gc}(t-1)}{X^{gc}(t-1)}\right).$$

This index is a measure of the change in pure prices. The difference between the aggregate unit value index of observed prices and the Tornqvist index yields the quality change $\Delta Q_j(t)$ due to the change in the composition of the import bundle,

$$\Delta Q_j(t) \equiv \Delta P_j(t) - \Delta P_j(t)^{Tornqvist}. \qquad (4)$$

This change in quality can be further decomposed into the effect of changing the mix of countries that *j* imports from as well as the effect of changing the mix of goods that *j* imports. The Tornqvist partial price index for some characteristic *z* is the share-weighted growth in the unit value index for that characteristic. That is,

$$\Delta P_j^z(t) \equiv \sum_z S_j^z(t) \Delta P_j^{z*}(t) \qquad (5)$$

[10] Luxembourg is dropped from the analysis because its data observations do not begin until 1999.

$$\text{where} \quad S_j^d(t) \equiv \left(\frac{1}{2}\right)\left[\frac{\sum_d V^{ed}(t)}{\sum_e \sum_d V^{ed}(t)} + \frac{\sum_d V^{ed}(t-1)}{\sum_e \sum_d V^{ed}(t-1)}\right],$$

$$\text{and} \qquad \Delta P_j^{e^*}(t) \equiv \ln\left(\frac{\sum_d V^{ed}(t)}{\sum_d X^{ed}(t)}\right) - \ln\left(\frac{\sum_d V^{ed}(t-1)}{\sum_d X^{ed}(t-1)}\right)$$

and $e,d = g, c$. The change in quality stemming from a change in characteristic z can be expressed as

$$\Delta Q_j^z(t) \equiv \Delta P(t) - \Delta P_j^{z^*}(t) \qquad (6)$$

where $z = g, c$. $\Delta Q_j^g(t)$ measures the effect of changing the mix of products and $\Delta Q_j^c(t)$ measures the effect of changing the mix of export sources. If the two effects are happening concurrently, the change in quality could be overstated so an interaction term is defined to counteract such an effect,

$$\Delta Q_j^{gc}(t) \equiv \Delta Q_j(t) - \Delta Q_j^g(t) - \Delta Q_j^c(t). \qquad (7)$$

Finally, the change in observed prices can be expressed as

$$\Delta P_j(t) \equiv \Delta P_j(t)^{Tornqvist} + \Delta Q_j^g(t) + \Delta Q_j^c(t) + \Delta Q^{gc}(t). \qquad (8)$$

For this analysis, the $\Delta Q_j^g(t)$ term will show whether a country has experienced a reduction in the quality of imported goods.

3.2 Data

Parallel trade is not permitted in every country. The European Union does permit parallel trade between member states so there is an opportunity to assess PI quality using data from this region. However, actual data on parallel trade are not collected by customs. While at first blush this would seem to be a large limitation, analysis using this data can be justified. The mere *threat* of PI competition may be enough to induce the original manufacturer of a good to modify pricing decisions. The firm may deter PI competition by pricing in such a way that no PI firms actually enter the market. In this case, even if PI data were collected by customs, the value and quantities of PI trade would be zero. Thus, it is appropriate to conduct the analysis using goods that are likely subject to PI competition.

A 1999 study by The National Economic Research Associates in the EU indicates that the following categories of products are likely subject to parallel trade: cocoa, sugar confectionary, ice cream, alcohol, soft drinks, mineral waters, clothing, footwear, CDs, videodisks, soap, perfume, detergent, toiletries, consumer appliances, and consumer electronics.[11] These categories encompass 566 (8-digit HS) products in Eurostat's online trade database, Comext.[12]

[11] The NERA study used market research to provide a basis for estimating how interested parties might respond to a change in the trademark exhaustion regime. It focused on ten consumer goods sectors, which were mainly chosen on the basis of the importance of trademarks in the sector.

[12] This database can be accessed at "http://epp.eurostat.ec.europa.eu/newxtweb/". Data begin in the year 1995.

While eight digits is the most disaggregated level of data available from Comext, keep in mind it is still an aggregation. For example, the 8-digit code 33051000 indicates "shampoos". While "shampoos" will be treated as a single product in the analysis, in reality there is a substantial variety of branded products within that 8-digit product code. The analysis therefore will not be comparing exactly homogenous products. Since the ultimate aim of this study is to see if the quality of PI goods *in general* varies over time, the heterogeneity within 8-digit product codes should not be a large issue.

Data on the 566 product categories are extracted for the following nations: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Netherlands, Portugal, Spain, Sweden, and the United Kingdom. After extraction, 515 products have data entries. Data are annual over the period 1995-2004. Observations for each product include the source country, destination country, quantity (per 100 kilograms) imported, and import value in euros. Import values are reported to include charges for freight and insurance. There is no indication that transport costs changed substantially at the time of the EU enlargement so such costs should not be distorting the analysis.

3.3 Analysis

For the goods subject to PI competition, observed price indexes are computed and first-differenced according to equations (1) and (2). Then the decomposition into the change in pure prices and the change in quality is made using equations (3) and (4). The quality decomposition is calculated according to equations (5) through (8). Tables 1, 2, and 3 contain (respectively) the changes in observed prices, pure prices, and product quality for each country treated as an importer.

Observed prices changed by varying degrees for each importer. For example, in the first period, prices in Austria, Germany, and Greece fell an average of 5.8% while prices rose in the other non-accession countries an average of 8.8%. Both Finland and Sweden also had higher observed prices in the first period. By the end of the sample, observed prices were lower than 1995 levels in Austria, Germany, and Greece. Prices were higher overall in the remaining nations.

The change in observed prices is decomposed into the change in quality and the change in pure (quality-adjusted) prices. Again, countries' import prices varied. For the non-accession nations, in the first period pure prices rose an average of 4.1% in Denmark, France, Germany, Ireland, Italy, Portugal, and the UK. Prices fell an average of 2.8% in the other non-accession countries during the same period. In the same period import prices in Finland fell by 1.2% and in Sweden rose by 7.6%.

Focusing on the change in quality for Finland and Sweden, we see that both experienced an increase in quality in the two periods immediately after accession. This would not indicate support for the conjecture that parallel trade competition lowers quality. However, it is possible that the reduction in quality presents after a lag. In the 1997-1998 period, Finland experiences a 0.3% decrease in quality while Sweden has a 2.4% increase. In the next period, both nations have an increase in quality. Halfway through the sample (2000), the accession nations each have a higher level of quality than in 1995. If parallel trade competition does result in lower quality, it does so with a lag longer than five years. In the remaining four periods, each country has more

volatility with respect to quality change. By the end of 2004, the quality of imports in Finland is higher than in 1995. However, in Sweden, the overall quality is lower. In the last four periods, there was a 7.4% decrease, an 18.8% decrease, then a 13.1% increase, and finally a 25.1% decrease. It is conceivable that after a lag Sweden experienced lower quality as a result of parallel trade competition.

How does the experience of the accession nations compare with that of the other EU nations? In the year after accession, some of the nations experienced a reduction in quality (Austria, France, Ireland, and Italy), while the other eight countries had an increase in quality. The average increase for those countries was 8.5% while Sweden and Finland only experienced increases of 1.4% and 5.3% respectively. It is interesting to note that quality did not increase as much in the accession nations. However, since some of the EU nations actually did experience a reduction in quality while the accession nations did not, the smaller increase in quality is not likely to indicate a response to parallel trade competition. By the middle of the sample period, like the accession nations, the nations save Austria, Germany, Greece, and Ireland had higher levels of quality than in 1995.

Even though the experience of Finland and Sweden does not seem to support the claim that PI competition reduces quality, it seems worthwhile to compare the quality of PI imports to the quality of non-PI imports. Using 405 non-PI consumer goods, the quality decomposition analysis is repeated for the accession countries.[13] Table 4 presents the results. Non-PI imports did not exhibit exactly the same quality changes as PI goods. For Sweden, in the first, third, and fifth periods, the quality of non-PI goods fell while PI quality rose. From 2000 to 2002 the reverse was true. In the remainder of the periods, both types of goods experienced quality changes in the same direction. For Finland, non-PI goods had lower quality from 2000 to 2002 while PI goods had lower quality in the third, fifth, and eighth periods. In the last several periods, both nations had much lower volatility in the change in quality for non-PI goods than for quality changes in PI goods.

4. Conclusion

This paper applies index number methodology for inferring the export quality of goods subject to PI competition. When comparing the quality change in the two countries that became members of the EU in 1995 (Sweden and Finland) with the rest of the EU, there is not sufficient support for the claim that PI competition reduces quality. From a policy standpoint, this is encouraging because a tradeoff between lower prices from PI competition and a reduction in quality is not shown to exist in the EU.

A logical extension to the analysis is to explore the change in quality for different types of products. The data can be broken down into categories like pharmaceuticals, clothing, and food. For goods like electronics, one might expect to see falling quality adjusted prices (due to lower production costs) and increasing quality. In addition, one could consider the quality of non-consumer PI goods. For example, farm implements have a substantial amount of dealer services (warranties, training) associated with them. If PI competition occurs with this type of product, reductions in quality may take the form of a reduction in services, not necessarily a reduction in quality of the tangible good itself.

[13] The non-PI consumer goods are products such as furniture, kitchenware, and musical instruments.

5. References

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6. Tables

Table 1: Change in the Observed Prices of Parallel Import Goods

Change in Observed Prices									
	Period								
	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04
Finland	0.0492	0.1001	0.0197	0.0838	-0.0878	0.0284	0.1004	-0.0114	-0.0020
Sweden	0.1596	-0.0731	0.0199	0.0184	0.1253	-0.0821	0.0337	-0.0077	0.0048
Austria	-0.0974	0.0524	0.0488	0.0150	-0.0305	-0.0254	0.0213	-0.0775	-0.0994
Belgium	0.0193	0.1714	0.0604	-0.0556	0.0450	0.2200	-0.0876	0.1307	-0.0432
Denmark	0.1209	0.1337	-0.0019	0.2191	0.0696	0.0791	-0.0741	0.0921	0.0774
France	0.0240	0.0304	0.0173	0.0684	-0.0251	0.0384	0.0498	-0.0350	-0.0049
Germany	0.1668	-0.1141	-0.0219	-0.0357	-0.0116	0.0438	-0.0387	-0.0443	0.0698
Greece	-0.0590	0.0523	-0.0585	-0.0180	-0.0304	-0.2320	0.0470	0.2802	-0.0128
Ireland	-0.0180	-0.0424	0.0553	0.2533	0.1226	0.2834	-0.1940	-0.1029	0.1140
Italy	0.0798	0.0303	-0.0241	0.0851	0.0432	0.0652	0.0662	0.0748	0.0446
Netherlands	0.1156	0.1448	-0.0389	-0.0207	0.2439	0.1290	0.0452	-0.0119	-0.1390
Portugal	0.0171	0.0511	0.1300	0.2882	0.0918	0.0638	0.0093	0.0287	0.0169
Spain	0.0406	-0.0468	0.1582	0.0958	0.0384	-0.0156	0.0211	0.1317	0.1197
UK	0.2041	0.1570	0.0292	-0.0815	0.0236	-0.0994	0.0573	-0.0731	0.1141

Table 2: Change in the Quality-Adjusted Prices of Parallel Import Goods

Change in Quality-Adjusted Prices									
	Period								
	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04
Finland	-0.0124	0.0420	0.0133	0.0462	0.0196	0.0142	0.0451	-0.0339	-0.0164
Sweden	0.0764	-0.0193	0.0457	0.0281	0.0158	-0.0193	0.0367	0.0238	0.0876
Austria	-0.0917	0.1122	0.0197	0.0460	0.0065	-0.0065	-0.0028	-0.1037	-0.0722
Belgium	-0.0080	0.0423	0.0760	-0.0603	0.0679	0.0169	0.0085	0.1105	-0.0656
Denmark	0.0158	0.1317	0.0426	0.0151	0.0307	0.0434	-0.0127	0.0019	0.0743
France	0.0388	-0.0263	0.0281	-0.0444	0.0155	0.0673	0.0604	0.0301	-0.0209
Germany	0.0006	0.0103	0.0096	0.0299	0.0292	0.0106	0.0696	-0.0424	0.0126
Greece	-0.0488	0.0780	-0.0106	-0.0060	-0.0111	0.0242	0.0165	0.0187	-0.0597
Ireland	0.0624	0.0204	0.0466	0.0951	0.0681	0.0269	-0.0170	-0.0151	0.0340
Italy	0.0584	-0.0153	-0.0374	-0.0037	0.1127	0.0650	0.0458	0.0333	-0.0478
Netherlands	-0.0004	0.0597	-0.0173	0.0101	0.0440	0.0784	0.0105	-0.1016	-0.0035
Portugal	0.0024	0.0105	0.0310	-0.0047	0.0371	0.0170	0.0034	-0.0328	0.0161
Spain	-0.0173	0.0359	0.0410	0.0331	0.0366	0.0059	0.0584	0.0130	-0.0109
UK	0.0754	0.1045	-0.0447	0.0511	0.0634	-0.0001	0.0296	-0.0676	0.0363

Table 3: Change in the Quality of Parallel Import Goods

Change in Quality of Parallel Import Goods									
	Period								
	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04
Finland	0.0527	0.0491	-0.0026	0.0464	-0.0992	0.0739	0.0186	-0.2183	0.2042
Sweden	0.0145	0.0340	0.0241	0.0032	0.1194	-0.0744	-0.1876	0.1308	-0.2514
Austria	-0.0012	-0.0696	0.0256	-0.0358	-0.0357	-0.0097	0.0058	0.0458	-0.0308
Belgium	0.0331	0.0314	-0.1749	0.2416	-0.0193	0.0768	-0.0453	0.0174	-0.0153
Denmark	0.1374	-0.0395	-0.0170	0.2448	0.0806	-0.0912	-0.0858	0.0416	0.1929
France	-0.0014	0.0573	0.0084	0.0956	-0.0109	-0.0607	0.0628	-0.0089	0.0234
Germany	0.2015	-0.1066	-0.0598	-0.0462	-0.0578	0.0468	-0.0939	-0.0082	0.0986
Greece	0.0048	-0.0572	-0.0016	-0.0136	-0.0302	-0.4293	0.1323	0.2861	0.0454
Ireland	-0.0825	-0.0834	0.0003	0.1264	-0.0765	0.1752	0.2186	-0.0586	0.0521
Italy	-0.0102	0.0744	0.0042	0.0566	-0.0746	-0.0162	0.0352	-0.0073	0.1364
Netherlands	0.0651	0.0243	-0.0101	-0.0301	0.2205	0.0332	0.0700	0.1716	-0.4171
Portugal	0.0403	0.0244	0.1078	0.2745	0.0475	0.0126	0.0144	0.0583	0.0615
Spain	0.0670	-0.1128	0.0111	0.0664	-0.0080	-0.0132	-0.0206	0.0801	0.0728
UK	0.1282	0.0884	0.0580	-0.0593	-0.0557	-0.0676	0.0164	0.0001	0.0622

Table 4: Change in the Quality of Non-Parallel Import Goods: Finland and Sweden

Change in Import Quality - non PI goods									
	Period								
	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04
Finland	0.0358	0.0361	0.0089	0.0058	0.0724	-0.0187	-0.0310	0.0203	0.0283
Sweden	-0.0416	0.0329	-0.0075	0.0854	-0.0030	0.0118	0.0265	0.0247	-0.0438