

# Does the Entry Price System Restrict Fresh Fruit and Vegetable Exports from China to the EU?

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## 1 Introduction

China has become a major exporter of fresh fruits and vegetables in recent years. Between 2002 and 2006, China's fresh fruit and vegetable exports rose continuously, more than doubling in value to reach nearly \$5 billion US in 2006. The net trade position for fresh fruits and vegetables has also come close to doubling during this period, reaching \$3.5 billion US. Although the European Union (EU) is not a major destination market for fresh fruit and vegetable exports from China, some products, such as apples and pears, are exported to the EU at an increasing rate. These products, however, are subject to EU most favored nation (MFN) import barriers, as China has no preferential trade agreement with the EU.

The EU protects EU growers of 15 fruits and vegetables against international competition through *ad valorem* tariffs of up to 20%, and the entry-price system (EPS) aims to restrict imports below the product-specific, politically-designated entry price (EP) level.

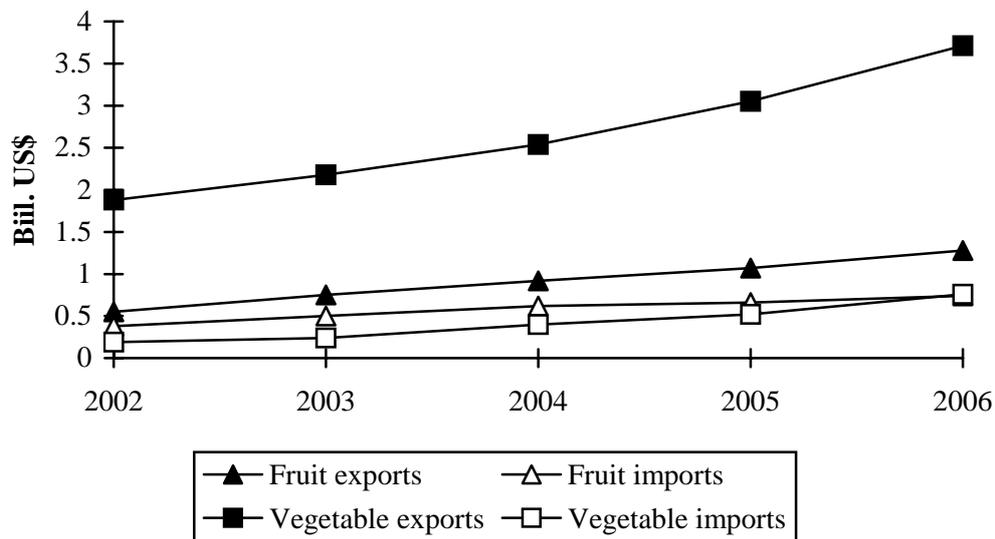
Various authors have analyzed the mechanism and the effects of the highly complex and opaque EPS. In particular, the EPS is compared to its predecessor, the reference price system (RPS) (Swinbank and Ritson, 1995; Grethe and Tangermann, 1999; Martin and de Gorter, 1999; Cioffi and del' Aquila, 2004). These studies found it difficult to assess the effectiveness of the EPS in general, since its effectiveness strongly depends on specific market conditions of the fruits and vegetables concerned. This conclusion is supported by individual case studies: Chemnitz and Grethe (2005) found that the EPS effectively restricts Moroccan tomato exports below the relevant EP to the EU, whereas Götz and Grethe (2007) show that the EPS is of low relevance for orange exports from Mediterranean countries.

The objective of this paper is to explore the relevance of the EPS for Chinese fruit and vegetable exports to the EU. Section 2 gives a short overview of the Chinese fresh fruit and vegetable trade. Section 3 explains the EPS, and Section 4 presents and discusses two indicators to assess the system's effectiveness. Section 5 reports results of a general analysis on the effectiveness of the EPS for fruits and vegetables from various origins based on a data set of Standard Import Values (SIVs), which are surveyed by the European Commission (EC) for each product and exporting country individually. Subsequently, Section 5 provides a more complete analysis of the restrictiveness of the EPS for Chinese exports of apples and pears, the only fresh fruits subject to the EPS and exported to the EU. Finally, Section 6 draws conclusions and gives an outlook on the future development of fresh fruit and vegetable exports from China to the EU.

## 2 Chinese Fresh Fruit and Vegetable Trade

Figure 1 displays China's fresh fruit and vegetable trade from 2002 to 2006. For vegetables as well as fruits, China was a clear net exporter over this period - net exports rose continuously to reach \$3.5 billion US by 2006.

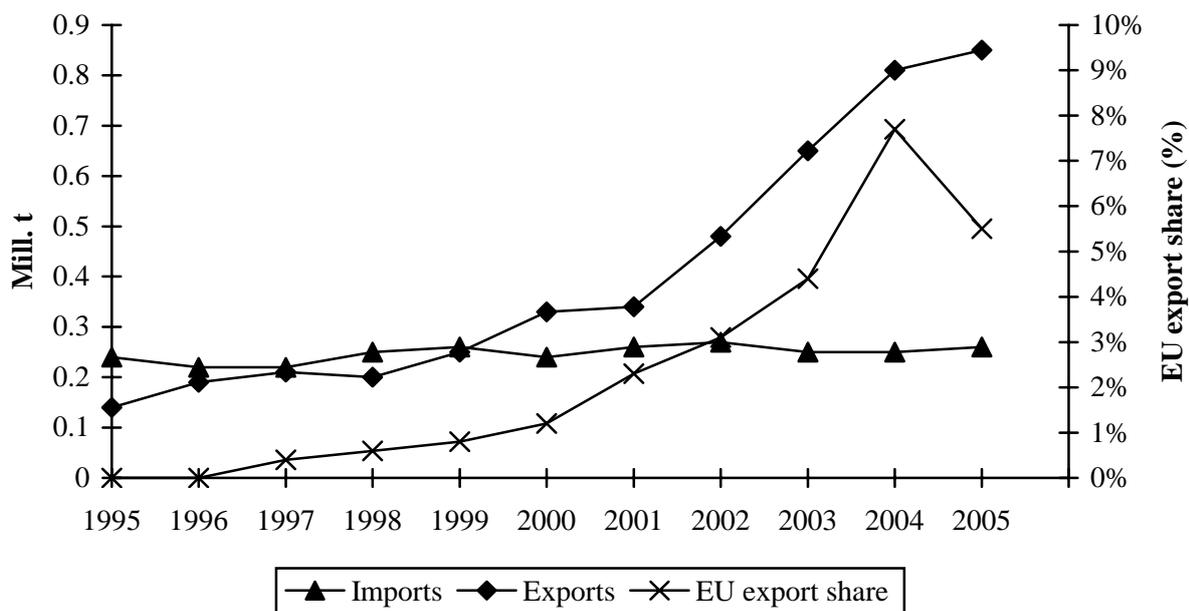
**Figure 1: China's Fresh Fruit and Vegetable Trade (2002-2006, bill. US\$)**



Source: FAO (2007), Eurostat (2007), own calculations.

The EU market is not a major destination for Chinese exports of fresh fruits and vegetables that are covered by the EPS. However, for apples and pears, Chinese exports to the EU have increased significantly over recent years (Figures 2 and 3).

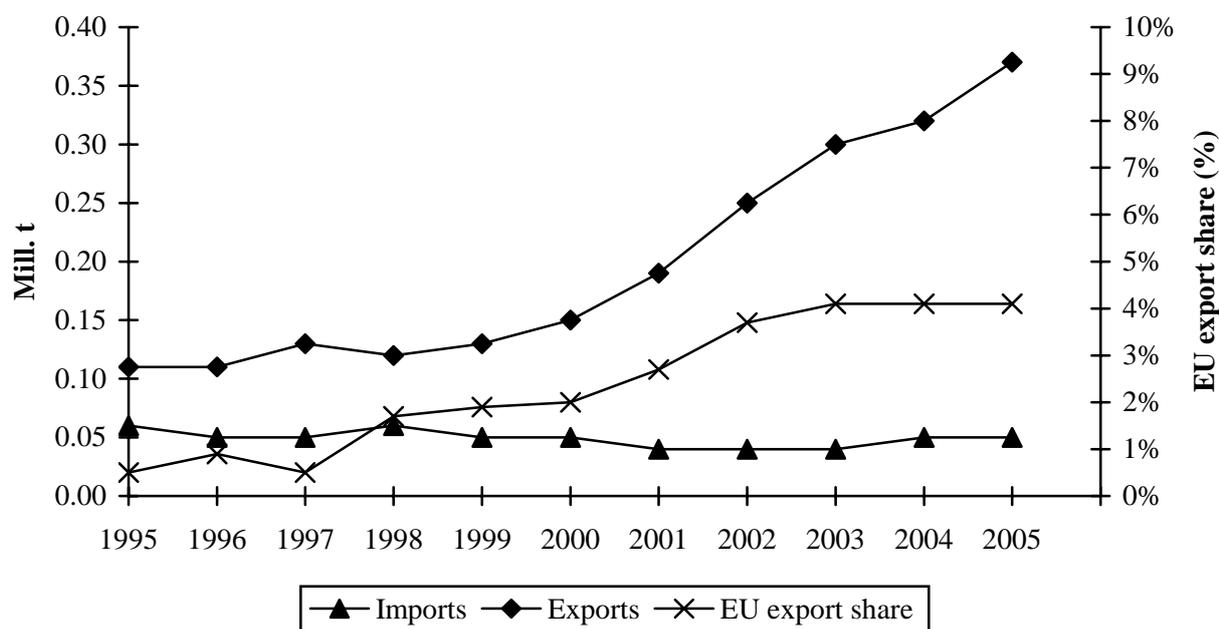
**Figure 2: China's Apple Trade (1995-2005, mill. tonnes)**



Source: FAO (2007), Eurostat (2007), own calculations.

From 1995 to 2000, China had essentially balanced trade for apples; however, after 2000, China became a strong net exporter of apples, with exports approaching one million tonnes in 2005. The share of apples exported to the EU has risen from zero in the mid-1990s to more than 5% in recent years. Figure 2 displays a sharp decline in the EU share in 2005, but market observers report that this is an inaccurate representation, explaining the decline as a result of incomplete official trade statistics. These observers argue that Chinese exports of apples to the EU actually increased in 2005 to reach more than 80,000 tonnes. The EU has recently implemented a licensing system for apple imports to monitor trade flows more closely.<sup>1</sup>

**Figure 3: China's Pear Trade (1995-2005, mill. tonnes)**



Source: FAO (2007), Eurostat (2007), own calculations.

For pears, Chinese net exports have increased significantly in recent years, totaling more than 300,000 tonnes in 2005. The EU share of Chinese exports has increased to 4% since 2003.

<sup>1</sup> Regulation 179/2006 (OJ 2006, L29/26).

### 3 The Import Regime of the EU for Fresh Fruits and Vegetables

The EU protects EU growers of 15 selected fruits and vegetables against international competition by means of *ad valorem* tariffs up to 20% and through the EPS (Table 1). The EPS aims to restrict imports below the product-specific, politically-designated EP level. If the EP is undercut, an additional specific tariff is levied, varying proportionally to the difference between the product's actual import price and the EP. If the EP is undercut by 8% or more, the maximum specific tariff (i.e., the maximum tariff equivalent (MTE)<sup>2</sup>) is charged at an amount up to 80% of the EP. The EPS became effective on July 1, 1995, displacing the RPS.

**Table 1: Basic Elements of the EPS**

	Ad valorem tariff (%)	EP		Specific tariff	
		Level (€t)	Period of application	MTE (€t)	in % of EP
<b>Apples</b>	4.8 - 11.2	457 - 568	01.01. - 31.12.	238	41.9 - 52.1
<b>Apricots</b>	20.0	771 - 1,071	01.06. - 31.07.	227	21.2 - 29.4
<b>Artichokes</b>	10.4	654 - 826	01.11. - 30.06.	229	27.7 - 35.0
<b>Cherries</b>	12.0	916 - 1,494	21.05. - 10.08.	274	18.3 - 29.9
<b>Clementines</b>	16.0	649	01.11. - 28.02.	106	16.3
<b>Courgettes</b>	12.8	413 - 692	01.01. - 31.12.	152	22.0 - 36.8
<b>Cucumbers</b>	12.8 - 16.0	481 - 1,105	01.01. - 31.12.	378	34.2 - 78.6
<b>Lemons</b>	6.4	462 - 558	01.01. - 31.12.	256	45.9 - 55.4
<b>Mandarins</b>	16.0	286	01.11. - 28.02.	106	37.1
<b>Oranges</b>	3.2 - 16.0	354	01.12. - 31.05.	71	20.1
<b>Peaches/ Nectarines</b>	17.6	600 - 883	11.06. - 30.09.	130	14.7 - 21.7
<b>Pears</b>	4.0 - 10.4	388 - 510	01.07. - 30.04.	238	46.7 - 61.3
<b>Plums</b>	6.4 - 12.0	696	11.06. - 30.09.	103	14.8
<b>Table Grapes</b>	8.0 - 17.6	476 - 546	21.07. - 20.11.	96	17.6 - 20.2
<b>Tomatoes</b>	8.8 - 14.4	526 - 1,126	01.01. - 31.12.	298	26.5 - 56.7

Source: European Commission (2007), own calculations.

One difficulty of monitoring compliance with the EPS is that a large share of fruit and vegetable imports in the EU is paid on commission, meaning that the import price is not determined until the product is sold in the EU import market. Therefore, the EC calculates a synthetic import price, the SIV. Fruit and vegetable prices - surveyed for each product and export country individually - are collected from representative fruit and vegetable wholesale markets in all EU member countries. The daily SIVs are calculated as the weighted average of collected wholesale market prices, less a marketing and transportation margin and custom duties.<sup>3</sup>

<sup>2</sup> The designation "maximum tariff equivalent" stems from the Uruguay Round of the GATT, in which the MTE was established as the tariffed equivalent of the former reference price system.

<sup>3</sup> Details of the calculation of the SIV are set down in Regulation 3223/94 (OJ 1994, L337/66).

During customs clearance, exporters have three options when declaring their fruits and vegetables that are subject to the EPS. According to the SIV method, the produce is declared based on the product-specific SIV as surveyed by the EC on the respective import date. This method is easy to apply for the importer and does not result in specific tariffs charges if the SIV is higher than the EP. Two reasons, however, may establish an incentive for the importer to apply an alternative method. First, the SIV may be below the EP, resulting in additional specific tariffs. Second, the SIV may be far above the EP, resulting in high *ad valorem* tariffs. In these two cases, products can be declared for the value of the produce as indicated by an invoice (invoice method). If the invoice method is used, the import charges are based on the f.o.b. invoice price adjusted for insurance and freight costs and thus the actual c.i.f. price. A third option is customs clearance by the deductive method, which is based on the final selling price of the shipment to be proven by invoice.

The EPS offers opportunities to legally and illegally circumvent paying specific tariffs, although the produce is finally sold at prices below the EP (García-Álvarez-Coque, 2002). According to information from importers, illegal circumvention is more prevalent in small-scale trading, particularly between related trading partners. Legal circumvention involves storing produce in the EU: stored products can be imported at any time and declared for customs clearance when the SIV is above the EP. Once cleared at a favourable SIV, the product can be sold in EU markets at any price.

#### 4 Indicators for Analyzing the Restrictiveness of the System

In this study, the relevance of the EPS for the import price of each product and origin is investigated based on the distribution of the SIV relative to the EP.

We define the relative difference between the SIV and the respective EP as GAP as follows:

$$(1) \quad GAP_{ijt} = \frac{(SIV_{ijt} - EP_{ijt})}{EP_{ijt}}$$

where  $i$ =kind of produce,  $j$ =country of origin, and  $t$ =time. Thus,  $GAP_{ijt}$  represents the relative difference between  $SIV_{ijt}$  and  $EP_{ijt}$ .  $EP_{ijt}$  depends not only on the kind of produce, but also on the country of origin since preferential EPs are granted to some countries. Besides,  $EP_{ijt}$  varies seasonally for some fruits and vegetables. If  $GAP_{ijt} > 0$ , the import price is higher than the EP, and if  $GAP_{ijt} < 0$ , it is lower.

Several characteristics of the distribution of  $GAP_{ijt}$  can be identified that are related to the relevance of the EPS. First, observations with  $GAP_{ijt} < 0$  indicate that there exists an export supply below the EP. The higher the share of observations with  $GAP_{ijt} < 0$  in all observations of SIV, the higher the export supply at prices below the EP. In this case, the EPS is relevant.

Assuming that circumvention of the EPS is only possible to some degree, and/or that circumvention involves additional costs (e.g. for storage), a high share of observations with  $GAP_{ijt} < 0$  indicates that abolishing the EP would result in an increase of export supply at prices below the EP. The stronger the degree of circumvention and/or the lower the cost of

circumvention, the less the EPS restricts the existing export supply below the EP, and the lower the effect of abolishing the EP would be.

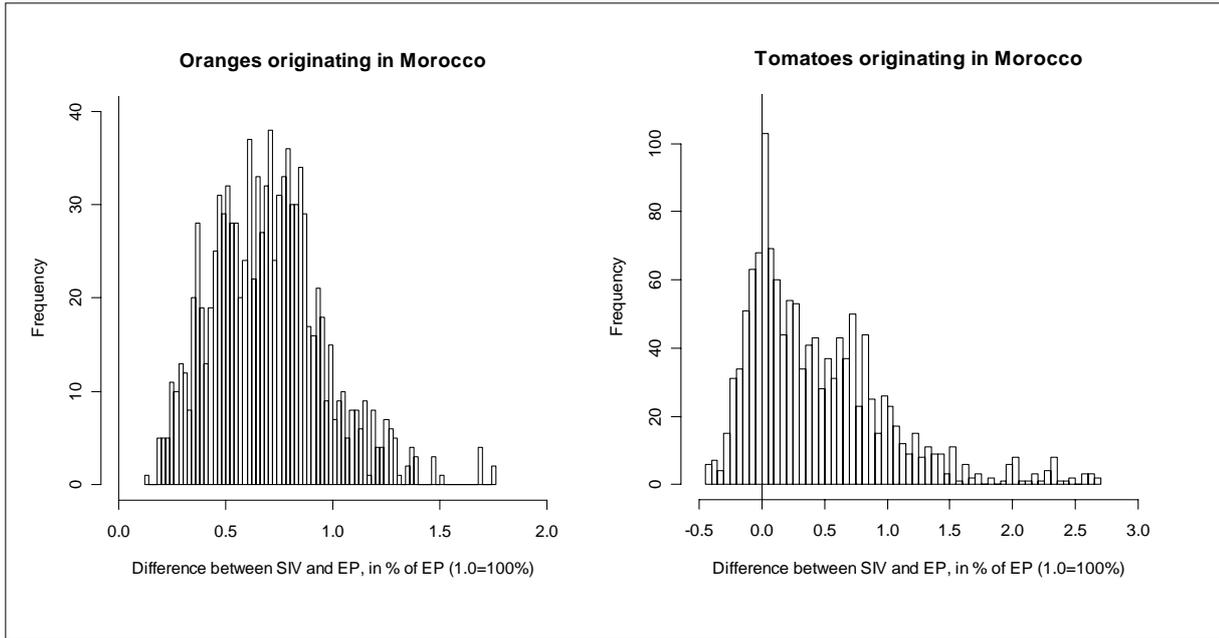
The share of observations with negative  $GAP_{ijt}$  as an indicator for the relevance of the EPS is confined to the effects of the EPS on observations with  $GAP_{ijt} < 0$  and does not cover the influence of the EPS on observations with  $GAP_{ijt} > 0$ .

The second indicator is derived from the assumption, supported by anecdotal evidence, that exporters may supply their produce at the lowest possible price while complying with the EP, thereby utilizing their competitive cost advantage and avoiding additional specific tariffs. This would be expressed in an accumulation of observations with  $GAP_{ijt} > 0$  closely above the EP. Here, the EP is relevant for exporters and has a significant influence on the price of the export supply. If the EP was abolished, export supply at prices below the EP would increase. Conversely, the EPS has no influence on observations with  $GAP_{ijt} > 0$  with SIV being significantly higher than the EP. The degree of accumulation of observations with  $GAP_{ijt} > 0$  slightly above the EP can be measured by the quantile with  $p=0.05$  of the distribution of  $GAP_{ijt}$  with  $GAP_{ijt} > 0$ . The quantile with  $p=0.05$  measures the highest  $GAP_{ijt}$  value in the set of observations that belong to the bottom 5% of the distribution of observations with  $GAP_{ijt} > 0$ . The lower the value of the 0.05-quantile, the more observations accumulate slightly above the EP. This indicator explicitly addresses the influence of the EPS on import price observations with  $GAP_{ijt} > 0$ .

The two indicators explained above are illustrated by the following two examples: oranges and tomatoes originating in Morocco. Goetz and Grethe (2007) show that the EPS is of low relevance for EU orange imports originating in Morocco. In contrast, the EPS is highly relevant for tomato imports originating in Morocco (Chemnitz and Grethe, 2005; García-Álvarez-Coque et al., 2007). Figure 4 opposes histograms for the distributions of  $GAP_{ijt}$  of these two cases from 1997 to 2005.

It is evident that  $GAP_{ijt} > 0$  for all observations of oranges, whereas  $GAP_{ijt} < 0$  for a substantial share (21%) of observations of tomatoes. Thus, export supply for oranges originating in Morocco can be observed exclusively above the EP, whereas tomatoes exported by Morocco are supplied at prices both above and below the EP. Further, for tomatoes, observations of  $GAP_{ijt}$  when  $GAP_{ijt} > 0$  accumulate closely above the EP, whereas observations of  $GAP_{ijt}$  for oranges are significantly higher than the EP with the minimum value of  $GAP_{ijt}$  set at 0.13. The 0.05-quantile is 0.03 for tomatoes and 0.31 for oranges. In other words, 5% of observations with  $GAP_{ijt} > 0$  exceed the EP by no more than 3% for tomatoes and 31% for oranges.

**Figure 4: Histograms of  $GAP_{ijt}$  for Moroccan Orange and Tomato Exports**



Source: Own calculations based on European Commission (2006).

Therefore, we measure the relevance of the EPS by two indicators in this study:

1) The share of observations with  $GAP_{ijt} < 0$  of all observations  $GAP_{ijt}$ , which can be defined as

$$(2) \quad neg.GAP_{ij} = \frac{\text{(number of observations } GAP_{ijt} \text{ with } GAP_{ijt} < 0)}{\text{(number of observations } GAP_{ijt})}$$

where  $i$ =kind of produce,  $j$ =country of origin, and  $t$ =time (correlated with the importance of the EPS). The smaller  $neg.GAP_{ij}$ , the less relevant is the EP for the import price for produce  $i$  exported by country  $j$ . Conversely, the larger  $neg.GAP_{ij}$ , the higher the influence of the EPS on the EU import price. A similar variable was used in previous studies on the effectiveness of the EPS and RPS by Cioffi and dell' Aquila (2004) and Swinbank and Ritson (1995), respectively.

2) This indicator is supplemented by a new indicator, which measures the degree of accumulation of observations with  $GAP_{ijt}$  closely above the EP by the 0.05-quantile of the distribution of  $GAP_{ijt}$  when  $GAP_{ijt} > 0$ . Since the variance of  $GAP_{ijt}$  may change by type of produce and country of origin - and due to the fact that the 0.05-quantile of distributions with differing variance are not exactly comparable - the 0.05-quantile is standardized by the standard deviation. In addition, large values are given less weight by creating a logarithm of the 0.05-quantile because the efficiency of the EPS is proportional to the 0.05-quantile within a certain interval only:

$$(3) \quad Q_{0.05ij}^* = \ln \left( \frac{Q_{0.05ij}}{sd(GAP_{ij})} \right).$$

The less  $GAP_{ijt}$  accumulates closely above the EP, the larger  $Q_{0.05ij}^*$  and the lower the influence of the EPS on the EU import price. For oranges and tomatoes originating in Morocco,  $Q_{0.05}^*$  equals

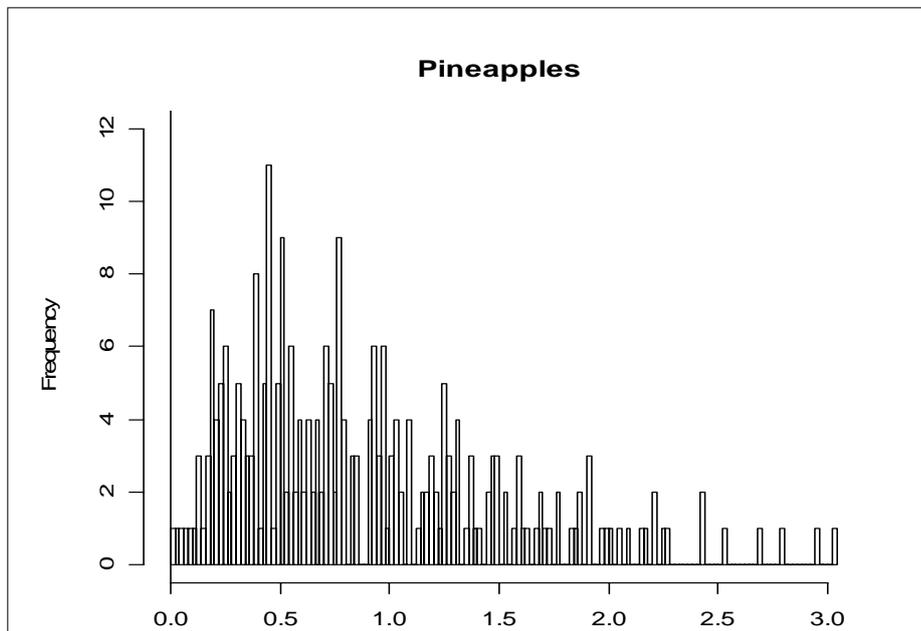
11.83 and 0.54, respectively. Yet, the converse case has to be interpreted with care since an accumulation of prices closely above the EP could also be caused by other factors, as illustrated by the following example. Figure 5 shows the histogram of the EU import price for pineapple, measured by unit value (UV). UVs are surveyed by the EC on a biweekly basis for fruits and vegetables that are not subject to the EPS. We transform UV according to

$$(4) \quad UV_{it}^* = \frac{UV_{it} - \min(UV_i)}{\min(UV_i)},$$

where  $i$ =produce and  $t$ =time. Thus,  $UV_{it}^*$  differs from  $GAP_{ijt}$  in that it does not describe the difference to  $EP_{ijt}$  but to the minimum  $UV_i$ .

It becomes evident that the distribution of  $UV_{it}^*$  for pineapples exhibits an accumulation close to its minimum value with  $Q_{0.05}^*$  equal to 2.97, even though an EP for pineapples does not exist. In this case, the accumulation is not caused by the EPS. Instead, the accumulation could be associated with a strong price competition if the sum of production and marketing costs is similar to the minimum  $UV_i$  for many producers. Therefore, a low value of  $Q_{0.05}^*$  in combination with a particularly low value of  $neg.GAP_{ij}$  may, but does not necessarily, indicate a relevant EPS. In those cases, the importance of the EPS cannot be determined unambiguously based on these indicators alone.

**Figure 5: Histogram of  $UV_{it}^*$  for Pineapple**



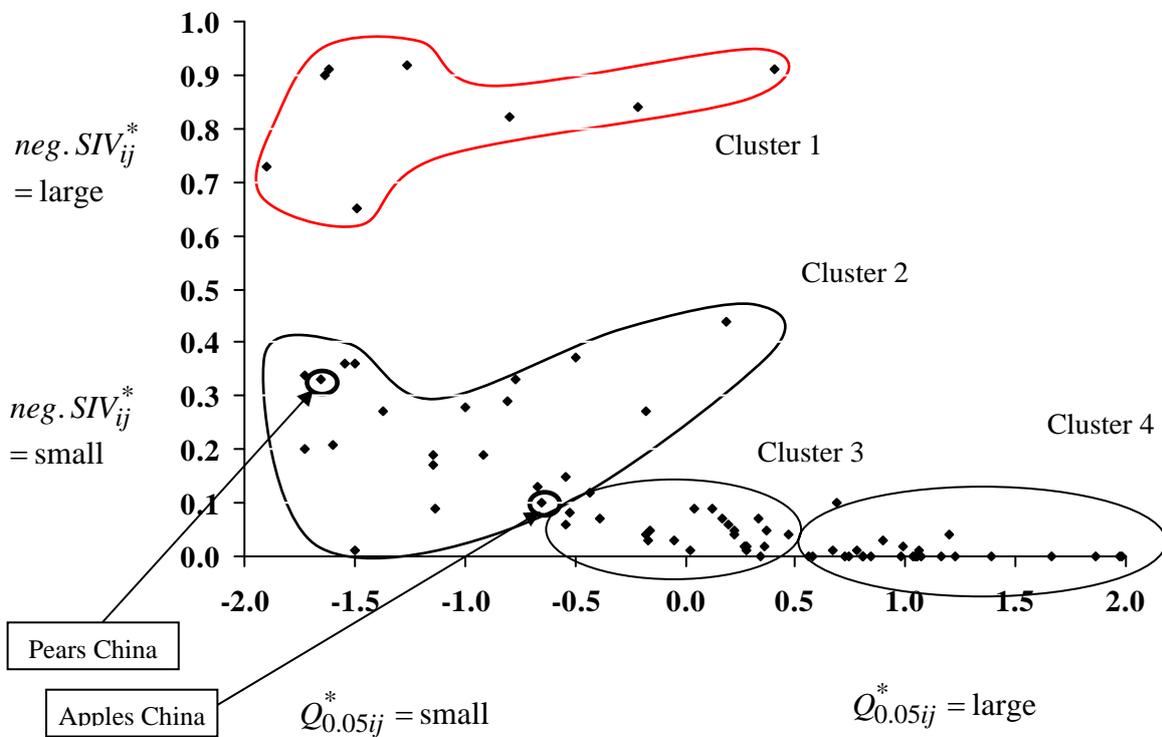
Source: Own calculations based on European Commission (2006).

## 5 Analysis of Effectiveness of the EPS

### 5.1 General Analysis for Fruit and Vegetable Imports of the EU

The indicators derived above,  $neg.GAP_{ijt}$  and  $Q_{0.05ij}^*$ , are calculated for 81 country and product specific distributions of  $GAP_{ijt}$ , each consisting of between 65 and 2,678 observations. The number of available observations of SIVs for a product of a particular exporting country varies depending on the number of days the produce is traded on EU wholesale markets. For this analysis, we utilize about 57,000 observations of SIVs from 1995 to 2005. Both indicators are used as variables in a cluster analysis, although the details of the analysis are not presented in this paper. Instead, we present the overall results in Figure 6 and consider the clusters in which Chinese exports of apples and pears are positioned.

**Figure 6: Results of Cluster Analysis (All Observations, 1995-2005)**



Source: Own calculations.

Figure 6 is organized in the dimensions of the two indicators described above: The vertical axis displays the share of negative observations in its original dimension, and the horizontal axis displays the size of the 0.05-quantile in its normalized, logarithmized, and z-standardized form. Cluster 1 is comprised of products with extremely high shares of negative observations between 65% and 92% and a high degree of accumulation of positive SIVs close to the EP. For this cluster, which consists mainly of plums from Central European countries, the EP system has a significant effect on EU import prices. Cluster 3 and Cluster 4 (to an even greater degree) display a very low share of negative observations of less than 12% and little or no accumulation of positive SIVs close to the EP. For products in these clusters, the EPS has minimal effectiveness.

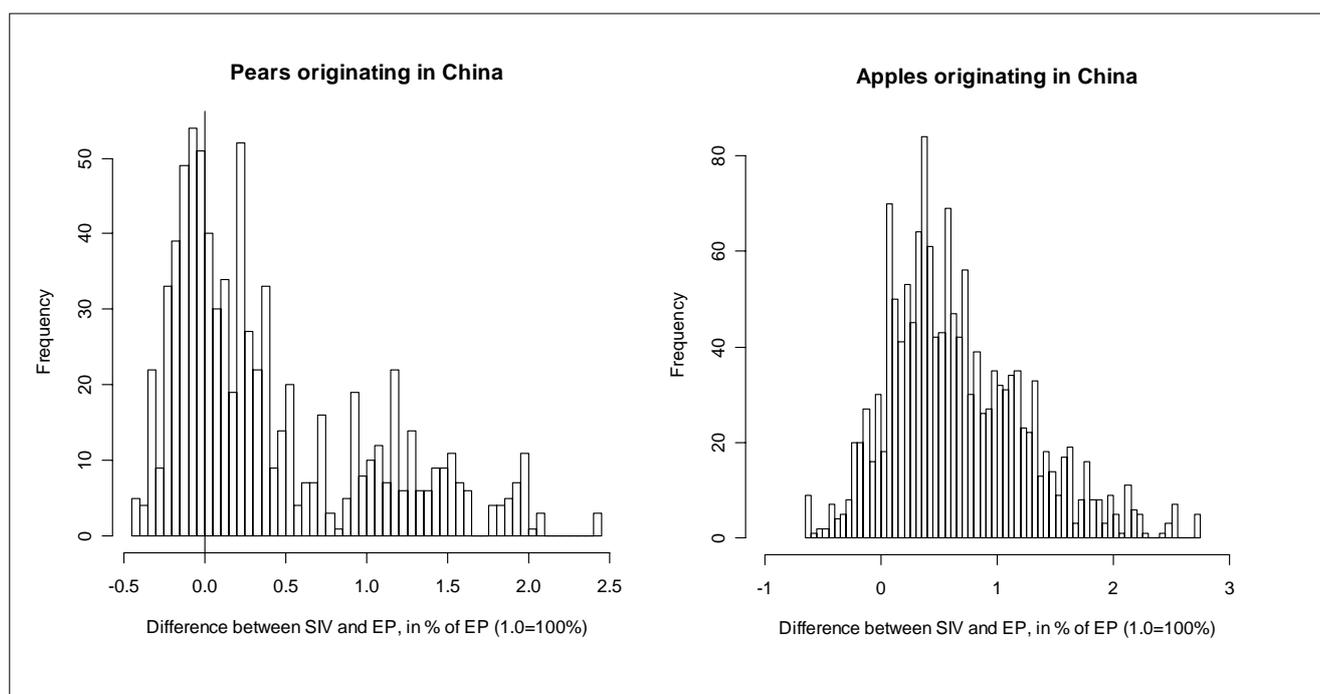
Cluster 2, which includes both apple and pear imports from China, is a relatively heterogeneous cluster. For most elements, there is a significant share of negative observations of up to 44% and a high degree of accumulation of positive SIVs closely above the EP. For these products as well, the EP system has an effect on the EU import price, although to a differing extent.

Figure 6 clearly demonstrates that for pears from China, the share of negative observations is higher than for apples from China (33% compared to 10%) and the size of the 0.05-quantile is lower, hinting at a higher effectiveness of the system for pears than for apples.

## 5.2 Specific Analysis for Apples and Pears from China

Figure 7 shows histograms for the distribution of apples and pears from China over all years available, making it clear that the share of negative observations is higher for pears and that the accumulation of SIVs just above the EP is also higher.

**Figure 7: Histograms for Apples and Pears from China (1997-2005)**

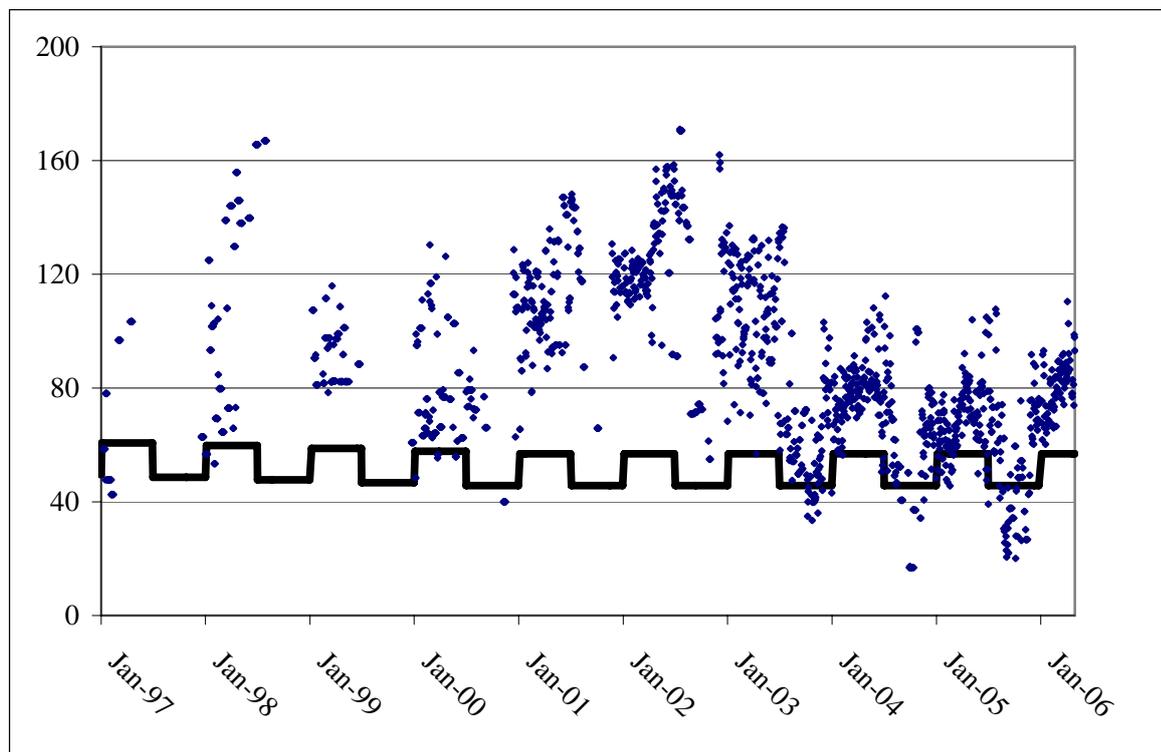


Source: Own calculations based on European Commission (2006).

It is important to keep in mind that both Figure 7 and the cluster analysis presented in Figure 6 are based on the distribution of SIVs for the period 1997 to 2005 as a whole and do not differentiate according to the time dimension. Thus, it is not possible to draw conclusions as to whether the system has become more or less restrictive over recent years. The remainder of this section is devoted to the analysis of the development of the distribution of SIVs for Chinese apple and pear exports to the EU over time.

Figure 8 displays the level of SIVs and the EP for apples from 1997 to spring 2006, and Table 2 displays distribution measures.

**Figure 8: Standard Import Values of EU Apple Imports from China (1997-2006, €100 kg)**



Source: European Commission (2006), own modifications.

**Table 2: Distribution Measures for SIVs of Apples from China (1999-2005)**

	1999	2000	2001	2002	2003	2004	2005	Corr. with mean (2000-2005)
<b>Mean</b>	0.53	0.48	1.17	1.29	0.67	0.35	0.20	28.2%
<b>Neg. obs.</b>	0.00	0.10	0.00	0.00	0.07	0.12	0.27	
<b>0.05 quantile</b>	18.15	2.01	10.58	10.09	1.82	2.81	1.93	
<b>Skewness</b>	0.69	0.80	0.39	0.51	0.34	-0.14	0.34	
<b>Observations</b>	87	159	178	212	247	231	237	
<b>Share of neg. observations &lt; 92% of EP</b>	0.0	0.5	0	0	0.65	0.89	0.76	

Source: Own calculations.

The SIV distribution for apples from China is well above the EP level until 2003, but in 2002 it began declining from a level of 129% above the EP on average to about 20% above the EP by 2005. Accordingly, the share of negative observations rose to 27%.

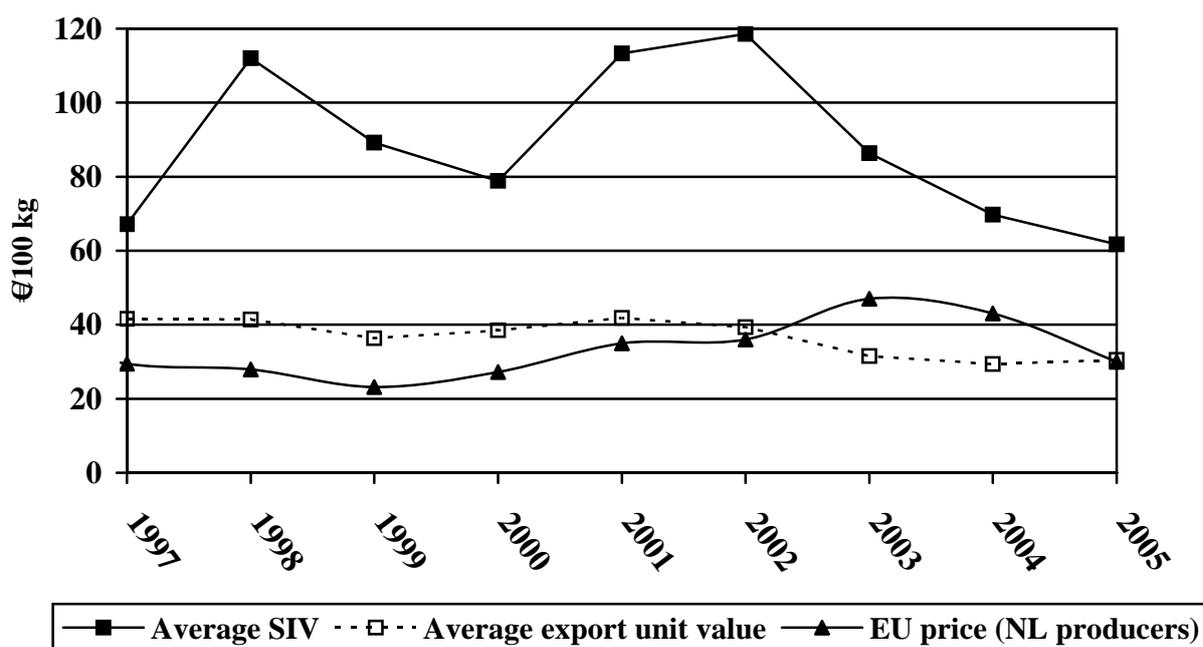
Looking at skewness, we expect that the closer the mean of the distribution gets to the EP, the more right-skewed the distribution will be, indicating a truncating effect caused by the EPS; this would imply a negative correlation between skewness and mean of the distribution. However, this hypothesis was not confirmed here.

The decreasing average SIV level, the increasing share of negative observations, and the declining size of the 0.05-quantile all support the conclusion that the EPS has become more relevant for Chinese apple exports to the EU in recent years. This conclusion is supported by interviews with EU importers, who report that it has become more difficult in recent years to escape tariffs under the EPS and that the storage of apples until a favourable SIV appears is a widespread practice.

Table 2 also reports the share of cases where the SIV is less than 92% of the EP when the SIV is below the EP (“negative observations”); this share varies between 50% and 89%. If importers would clear their products in such cases according to the SIV method, they would have to pay a specific tariff of about 40-50 €/100 kg (see Table 1), which would almost double the price of Chinese apples on the EU market. Importers report, however, that the full specific tariff (MTE) is very rarely charged, as importers typically wait for a more favourable SIV before customs clearance.

Figure 9 compares the development of SIVs to the average Chinese export UV for apples and to the price level for apples in the EU in order to explore reasons for the declining SIV level.

**Figure 9: Development of Apple Prices (1997-2005, €/100kg)**

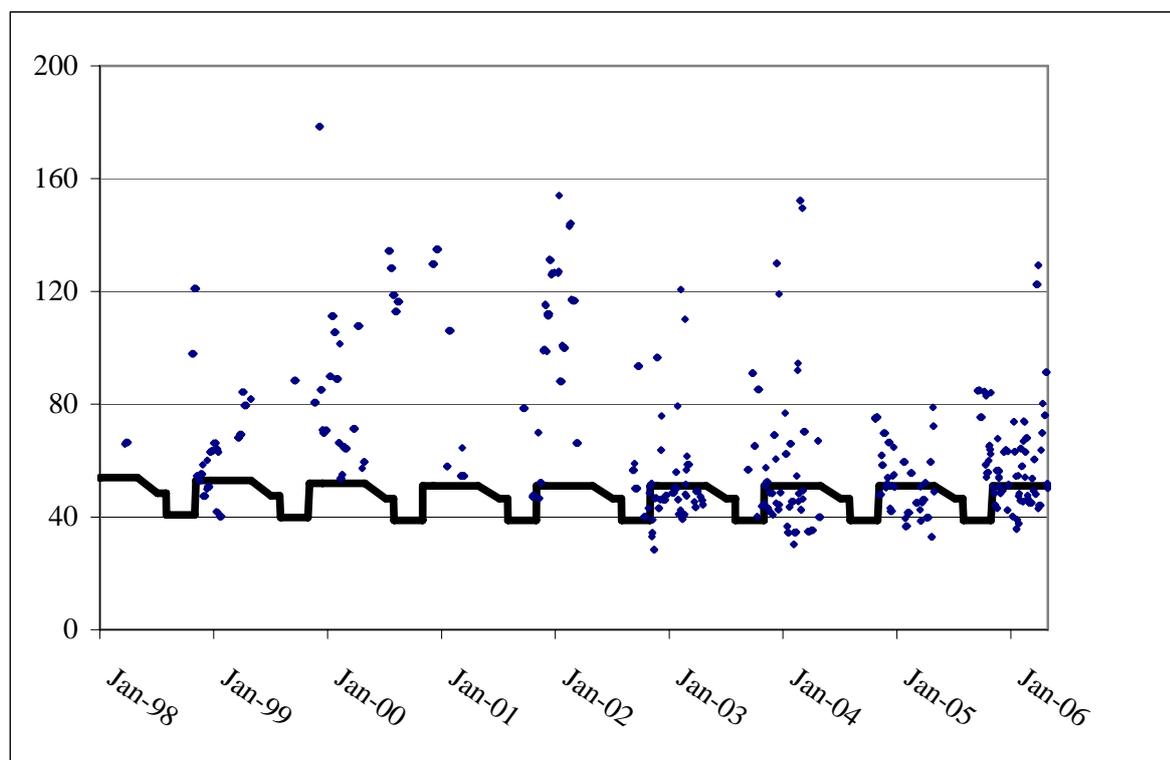


Source: European Commission (2006), FAO (2007).

The domestic EU price (producer price in the Netherlands, the main import country for Chinese apples) was relatively constant between 2002 and 2005 and, therefore, cannot explain the strong decline in the average Chinese SIV. Also, the average export UV of Chinese apples has been declining much less than the SIV on the European market. This indicates that there are more specific reasons underlying the price decline for apples traded to the EU, such as Chinese marketing strategy or changes in transportation costs; however, these possibilities were not confirmed by importers, who report fairly constant transportation costs over recent years.

Figure 10 displays the level of SIVs and the EP for pears from 1998 to spring 2006, and Table 3 displays distribution measures.

**Figure 10: Standard Import Values of EU Pear Imports from China (1997-2006, €100 kg)**



Source: European Commission (2006), own modifications.

**Table 3: Distribution Measures for SIVs of Pears from China (1999-2005)**

	1998	1999	2000	2001	2002	2003	2004	2005	Corr. with mean (2000-2005)
<b>Mean</b>	0.34	0.50	1.04	0.70	0.52	0.21	0.16	0.20	-88.2%
<b>Neg. obs.</b>	0.30	0.12	0.00	0.05	0.29	0.52	0.53	0.46	
<b>0.05 quantile</b>	0.46	4.01	0.85	0.42	0.61	0.20	1.05	0.65	
<b>Skewness</b>	1.59	1.80	-0.02	0.02	0.48	1.50	1.84	1.06	
<b>Observations</b>	53	64	95	65	99	120	108	116	
<b>Share of neg. observations &lt; 92% of EP</b>	0.38	1.0	0.0	1.0	0.86	0.56	0.79	0.72	

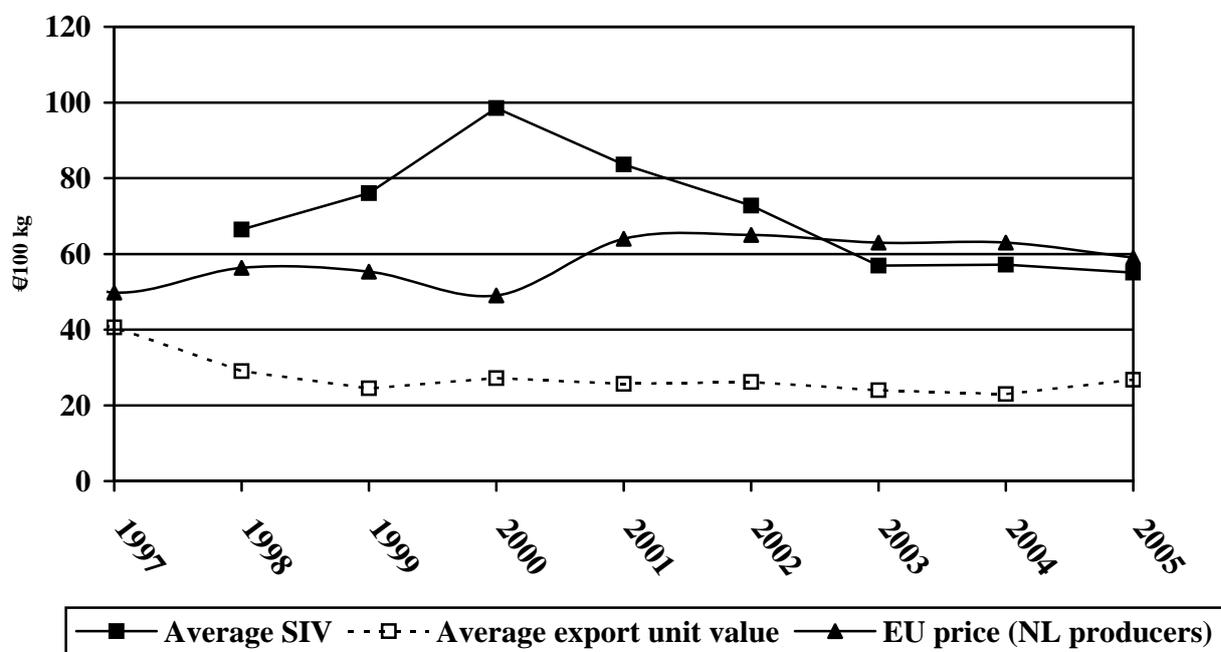
Source: Own calculations.

The SIV distribution for pears from China was well above the EP level until 2002, but in 2000 it began declining from a level of 104% above the EP on average to about 20% above the EP by 2005. Accordingly, the share of negative observations rose to 46% in 2005. The 0.05-quantile is low throughout. The strong negative correlation between skewness and mean of the distribution shows that the distribution becomes more right-skewed the lower the mean is, indicating a truncating effect caused by the EPS. In conclusion, the decreasing average SIV level, the increasing share of negative observations, and the increasing right-skewness all support the conclusion that the EPS has become more effective for Chinese pear exports to the EU in recent years.

The share of cases where the SIV is less than 92% of the EP in total cases with  $SIV < EP$  is between 38% and 100%.

To investigate reasons for the declining SIV level, Figure 11 compares the development of SIVs to the average Chinese export UV for pears and to the price level for pears in the EU.

**Figure 11: Development of Pear Prices (1997-2005, €100kg)**



Source: European Commission (2006), FAO (2007).

As was the case for apples, the strongly declining SIV for pears from China on the EU market is not found in conjunction with a declining EU price or a declining general export UV of Chinese pears.

## 6 Conclusions and Outlook

Our results indicate that the EPS restricts exports of apples and, even more so, of pears to the EU. In addition, the restrictiveness of the EPS has increased in recent years, as the price level of Chinese exports has come closer to the EP.

This contrasts with exports from all other relevant exporters of apples (New Zealand, South Africa, Chile, Brazil, Argentina) and pears (Argentina, Chile, South Africa) to the EU, which exclusively fall into Clusters 3 and 4 (see Figure 6); thus, the EPS is of low relevance. Looking at fresh fruit and vegetable exports to the EU in general, China and South Africa are the only countries other than North African and Eastern European countries for which the EPS is highly relevant.

How can the declining SIV of Chinese apples on the EU market and the increasing market share be explained? Next to potential cost advantages in production, transportation costs seem to play a role. Traders report that the cost to ship a 20-ton container from China to the EU is about 2500 €

in contrast to a container from Chile that would cost 4500 € This results in a significant price difference, equivalent to about 17% of the average Chinese SIVs for apples and pears in 2005. Some traders also report that they expect Chinese traders to ship less quantity to the EU in the future as low selling prices on the EU market, together with specific tariffs, have resulted in occasional losses for Chinese traders in recent years.

The future development of Chinese apple and pear exports to the EU will depend strongly on domestic market conditions in China. Chinese net exports of apples accounted for only 2.4% of total production—for pears this share was 2.8% (FAOSTAT, 2007). Thus, small relative changes in the Chinese consumption pattern could affect exports significantly. In fact, Lardy (2007) showed that the strong GDP growth rates in China - about 10% over the last three decades - have translated only to a limited extent into household consumption due to high investment and private saving rates. If the share of disposable income in the Chinese GDP increases, this may induce much higher domestic consumption of fresh fruits and vegetables and thus reduce the export potential. Such a development would make the EPS less relevant in protecting the EU market.

Finally, a potential conclusion of the Doha Round might result in significant tariff reduction rates that would also apply to the specific tariffs which are part of the EPS. In implementing the results of the Uruguay Round, the EU reduced entry prices by the same monetary amount as specific tariffs - an approach that could be repeated and would thus further diminish the relevance of the EPS (Grethe, 2005: 28-29).

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