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An Empirical Analysis of China's Export Behavior

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Abstract

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This paper studies the behavior of China's exports from the mid-1980s through 2001. Extensive quarterly data on values and quantities of major export products have been taken from Chinese customs statistics to form a panel data set. The data are used to estimate export supply price elasticities, including by industry groups. The extensive product level data permits the use of panel estimation techniques in order to increase the power of the testing methodology. Aggregate quarterly export unit price indices are also constructed and thereby provide an input to future research on China's trade.

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I. INTRODUCTION

Since the open door policy in 1978, the Chinese authorities have undertaken wide-ranging reforms of their exchange and trade systems that have steadily reduced the role of planning and increased the importance of market forces. These reforms suggest that trade may have become more market-oriented and that trade flows may have become responsive to prices. However, an empirical analysis by Brender (1992) indicated that, despite the far-reaching reforms, administrative controls still played a major role in China's foreign trade in the 1980s. Indeed, Brender found a perverse negative export supply price elasticity. He interpreted such result as reflecting the phenomenon of export value quotas, such that as the export prices declined, exporters had to export larger volumes in order to achieve the value target. We seek to update the analysis of export behavior in this paper, taking advantage of an additional decade of data and post-reform experience in China. The export equations can be tested for changes in elasticities associated with major reforms. Understanding the behavior of China's exports will also be particularly useful to help gauge the future effects of China's accession to WTO.

The remainder of the paper is organized as follows. Section II summarizes the key reforms of China's exchange and trade regimes. Section III describes the construction of export unit values and volumes from China's Customs Statistics. Quarterly quantities and values of major export commodities are matched with the closest related SITC code, permitting analysis of trade behavior according to different types of industries. The trade model and estimation methodologies are discussed in Section IV, and the results of estimation are presented in Section V. Finally, Section VI concludes.

II. KEY EXPORT REFORMS

China's economy has become substantially more open as a consequence of a program to reform the foreign trade system, begun in 1978.² Key reforms took place in several stages, mainly in 1984-85, 1988, 1991, and 1994. They included a reduction and eventual elimination of mandatory export planning, an increase in foreign exchange retention quotas, and access to foreign exchange adjustment centers (FEACs) at a more depreciated market-determined exchange rate (the "swap rate"). The reforms are expected to have made exports more responsive to market prices.

At the start of the reforms in 1978, almost all trade was carried out through 12 foreign trade corporations (FTCs), which were responsible for implementing China's central plan. Exporters supplied targeted quantities to the FTCs for export and all foreign exchange receipts were surrendered to the central bank at the official exchange rate. Each province was assigned contractually determined foreign exchange targets which, in turn were disaggregated and allotted as targets to the provincial trading companies. The FTCs were often not free to determine the goods that were exported or the procurement price, and thus

² See Cerra and Dayal-Gulati (1999) for additional details regarding external sector reforms.

frequently incurred export losses. Losses on mandatory exports were subsidized by the central government until the abolition of export subsidies in 1991.

Mandatory export planning was sharply reduced in a series of steps. Under the 1984 reforms, about 60 percent of exports fell under a mandatory plan, an additional 20 percent were assigned as value targets to the provinces, and the remainder were nonplan exports. The value targets were often converted into mandatory export plans with fixed quantities and prices in the provinces. For mandatory exports, the procurement price by the FTCs was fixed and target quantities were assigned to the producing enterprises. For nonmandatory exports, procurement prices by the FTCs depended on how the provinces decided to meet the value targets and on the negotiating position of producing firms vis-à-vis the procuring FTC. The agency system, under which FTCs acted as agents of the enterprises, was much more prevalent for imports than for exports. Given the large share of mandatory exports, most export transactions were routed through designated FTCs so that it is likely that even with these reforms, there was no close systematic relationship between relative prices and export volumes. Mandatory export planning was sharply reduced from 1988 and was abolished in 1991, which—combined with the elimination of export subsidies—led to increased competition among FTCs and better prices for export suppliers.

Access to and retention of foreign exchange was also liberalized gradually. In early 1984, local governments were granted the right to retain a share of the foreign exchange earned in their region and, by early 1985, this was extended to exporting enterprises. Retained foreign exchange could be sold or used for imports. In 1988, all enterprises eligible to retain foreign exchange, including state-owned and collectively-owned enterprises, were allowed to sell it at FEACs at a weighted average of the official exchange rate and the swap rate.³ The weights were determined by the size of the foreign exchange retention ratio. In addition, to encourage exports, retention quotas were increased significantly in 1988 and 1991 for enterprises that exceeded their targets and for priority sectors. The retention rate was also raised for higher domestic value-added products. Retained foreign exchange was distributed between the producing enterprise and the FTC handling the export transaction with shares that varied from region to region and by type of good. The 1988 reforms were a major step in increasing the responsiveness of exports to relative prices, although the increase in the retention quota may not itself have provided significant export incentives, unless the FTCs passed on these benefits to the enterprises through higher prices. In 1994, the retention quota system was abolished.

The exchange rate was unified at the prevailing swap-market rate in January 1994, which led to a depreciation of the official exchange rate of about 50 percent (implying an effective devaluation of about 7 percent). The unification of the exchange rate likely had a greater effect on export performance of domestic enterprises—which had faced an exchange rate which was a weighted average of the official exchange rate and the depreciated swap rate—rather than the FFEs, which had not been subject to retention quotas.

³FEACs were set up in late 1986, but originally only for foreign financed enterprises (FFE) and a few domestic enterprises.

In summary, the liberalization of the trade and exchange system can be expected to have made exports significantly more sensitive to market signals over the last two decades. In addition, the rapid growth of foreign financed enterprises—which were also subject to much more liberal trade and exchange regulations than domestic enterprises—and a steady rise in the share of manufacturing goods in exports could be expected to have increased the price elasticity of exports.⁴ These will, of course, have been reinforced by China's domestic reforms, including the liberalization of domestic prices, the steady growth in the role of the collectives and private enterprises, and—particularly in most recent years—growing efforts to reform the state-owned enterprises (SOEs) and the banking system.⁵

III. EXPORT UNIT VALUES AND VOLUMES

Quarterly unit prices and volume indices have been constructed for aggregate exports and for exports by one-digit SITC classification. Given that the reported customs statistics periodically introduces or eliminates some of the major export commodities, two sets of indices have been constructed. First, the group of commodities that are available for the entire period from 1985:4 to 2001:4 comprises the “balanced data set.” The second data set contains all commodities for which both quantity and values are reported, regardless of their beginning and ending date. The second set provides a more accurate reflection of the composition of trade, while the first set reduces the errors associated with volatile reporting of some commodities. For both data sets, customs statistics reports some of the commodities broken into subgroups of products. In order to avoid double counting a particular commodity, either the aggregate commodity or its subcomponents, but not both, are included in the sample depending on which provides the most information. However, for a few cases, the aggregate commodity and its subcomponents are used for different parts of the sample to increase the length of data availability.

The unit price and volume indices are constructed as chain-linked Laspeyres indices. The chain-linked Laspeyres unit price and quantity indices, respectively, are of the form:

$$L_P^c = \frac{\sum_i p_{i1} q_{i0}}{\sum_i p_{i0} q_{i0}} * \frac{\sum_i p_{i2} q_{i1}}{\sum_i p_{i1} q_{i1}} * \dots * \frac{\sum_i p_{iT} q_{i,T-1}}{\sum_i p_{i,T-1} q_{i,T-1}},$$

⁴Bayoumi (1996) states that manufactured goods have slightly higher price elasticities than primary goods.

⁵See, for example, Tseng and others (1994) for a discussion of China's domestic reform efforts.

$$L_Q^c = \frac{\sum_i p_{i0} q_{i1}}{\sum_i p_{i0} q_{i0}} * \frac{\sum_i p_{i1} q_{i2}}{\sum_i p_{i1} q_{i1}} * \dots * \frac{\sum_i p_{i,T-1} q_{i,T}}{\sum_i p_{i,T-1} q_{i,T-1}},$$

where i denotes a major export commodity. The Laspeyres price index is a weighted arithmetic average of the price relatives, where the initial period quantities provide the weights. Similarly, initial period prices provide weights for calculating the Laspeyres quantity index. Updating the weights through chain linking helps reduce biases associated with the introduction of new commodities in the reported export set and with the tendency for initial period prices or volumes to become progressively less relevant to the economic situation of later periods. This study uses quarterly chain linking, with the previous quarter used as the base for the price or volume weights. A commodity is used in the Laspeyres index calculation only if the price and quantity of the commodity are available for the quarter of the calculation and the previous quarter (required for the weights). This procedure ensures that the same set of export commodities are used in calculating the numerator and denominator of the Laspeyres index for a given quarter. In a few cases, an item was excluded from the set of commodities used to calculate a particular quarter if there was a break in the reporting definition of that item, or if the data appeared to be an extreme outlier indicative of error in the reported statistics.

The Laspeyres quantity and price indices, before seasonal adjustment, are presented for the complete export data and by one-digit SITC aggregate in Appendix III. The balanced data comprises about 16 percent of total export trade in 2001, while the set of all reported key export commodities comprises more than half of total export trade. For the latter, the proportion of export trade within the SITC category accounted for by the reported commodities ranges from 29 percent for SITC 5 to 95 percent for SITC 3. An examination of the indices shows that prices for manufactured goods have risen more than those for primary products over the entire sample period. In addition, the volume of export trade in manufactured goods, especially of SITC 7, has surged over time.

IV. MODEL AND ESTIMATION METHODS

The supply function of exports is represented as follows (in logs):

$$X_{it}^s = \alpha_i^s + \beta_1 P_{it} + \beta_2 E_t + \beta_3 P_t^{dom} + \beta_4 C_t + \beta_5 Y_t^{dom} + u_{it} \quad (1)$$

where:

X_{it}^s = export volume of i th good

P_{it} = export price of i th good in US\$

E_t = US\$ per yuan nominal exchange rate

P_t^{dom} = consumer price index

C_t = domestic credit

Y_t^{dom} = industrial production

The supply of exports in an economy driven by market incentives depends positively on the price at which these goods can be sold in foreign markets ($\beta_1 > 0$). If exports are priced in the consumer's currency, then the price received by the exporter in domestic currency will fall as the exchange rate appreciates, which will reduce the incentive to supply ($\beta_2 < 0$). As the price at which the export good can be sold in the domestic market—proxied by the consumer price index—increases, the incentive should be to switch supply from the foreign to the domestic market ($\beta_3 < 0$). Domestic credit proxies for the availability of enterprise financing, and thus should support export supply ($\beta_4 > 0$). Export supply should also rise with the capacity of the Chinese economy to produce goods and services—proxied by the industrial production index ($\beta_5 > 0$).

The demand function for exports can be represented as follows (in logs):

$$X_{it}^d = \alpha_i^d + \gamma_1 P_{it} + \gamma_2 P_{it}^w + \gamma_3 Y_t^w + \varepsilon_{it} \quad (2)$$

where:

X_{it}^d = export demand for i th good,

P_{it} = export price of i th good in US\$

P_{it}^w = world price of i th good

Y_t^w = world demand for Chinese exports

The demand for Chinese exports should depend inversely on the price at which the Chinese good is sold in the international market ($\gamma_1 < 0$). Demand for Chinese exports should increase as the price of competitor goods in the world market rises and as world income—and thus world demand for imports—grows ($\gamma_2 > 0$ and $\gamma_3 > 0$).

A key question is whether reforms that introduced market incentives in China have had an observable effect on the behavior of export suppliers. Thus, our principal interest is to test whether the coefficients in the supply equation—especially the price elasticities—are consistent with economic theory. However, export prices are endogenous. Consequently, two-stage-least-squares is employed as the first econometric methodology in order to identify the supply equation, using all of the exogenous variables in the system of equations (1) and (2) as instruments. The panel estimations use weighted two-stage-least-squares with fixed effects.

There are several sets of data on which to estimate equation (1). These include: (i) the Laspeyres volume and unit price indices for the balanced data and the full set of commodities for aggregate exports, (ii) exports by one-digit SITC category, and (iii) the panel of individual key export commodities, which can be limited to those available for the entire sample or can include the complete set of commodities.

Second, an alternative econometric methodology is employed to account for the possibility that the data are nonstationary and cointegrated. In particular, the null hypothesis

of a unit root cannot be rejected for the levels of the aggregate price and quantity indices, the exchange rate, the domestic price level, and domestic credit (all in logs). In addition, cointegration tests of equation (1) consistently find evidence of at least one cointegrating vector (most tests indicate two vectors). We use the dynamic OLS approach of Stock and Watson (1993) for both the aggregate index and panel estimations. This estimation technique has been shown to have superior performance in panel cointegration relative to OLS and fully modified OLS techniques (Kao and Chiang, 2000). We also adjust for serial correlation and cross-sectional heterogeneity. Dynamic OLS involves adding leads and lags of the first differences of the regressors to the equation.

$$X_{it}^s = \alpha_i^s + \beta Z_t + d_1(L)\Delta Z_t + d_2(L^{-1})\Delta Z_t + u_{it} \quad (3)$$

where $d_1(L) = \sum_{k=1}^{\infty} d_{1k} L^k$, $d_2(L^{-1}) = \sum_{k=1}^{\infty} d_{2k} L^{-k}$, $\beta = (\beta_1, \beta_2, \beta_3, \beta_4, \beta_5)$,

$Z_t = (P_{it}, E_t, P_t^{dom}, C_t, Y_t^{dom})$, and L is the lag operator. In practice, the infinite order polynomials are truncated to a parsimonious specification.

V. RESULTS

The export supply equation was estimated using the various sets of data, with the endogenous export price index on the right-hand side of the equation. In the two-stage least squares regressions, the exogenous variables consisted of the nominal exchange rate, the domestic price index, and domestic credit to sectors other than the central government.⁶ Other instruments consisted of the corresponding world export price index (representing competitors' prices), and world real GDP. The dynamic OLS regressions were adjusted for serial correlation and cross-sectional heterogeneity, and the infinite order polynomial was truncated to two leads and lags of the regressors. Fixed effect estimation was used for the panel sets, but homogeneous slope coefficients were assumed since several of the subperiods were too short to allow for heterogeneous coefficients.

The results for two-stage-least-squares regressions using the aggregate price and quantity indices are consistent with the expectation that China's program of external sector reforms have increased market incentives and encouraged export suppliers to respond to market price signals. Notably, the price elasticity of supply changed from a perverse negative sign over the entire sample period beginning in 1985, to an increasingly positive (and eventually significant) sign as the sample period has become more recent (Table 1). In particular, the price elasticity of supply changed from -1.0 to 3.8 from the sample period 1985:4-2001:4 to the period 1994:1-2001:4, respectively, in the data set that includes all of the reported key commodities, and it changed from -0.4 to 4.6 in the same periods for the balanced data set. The negative price elasticity in earlier periods is consistent with the value targets used in the mandatory export planning. As export prices rose, firms and local

⁶ The industrial production index was dropped from the regressions as it was highly correlated with domestic credit.

governments could fulfill the export value target at lower volumes. As reforms proceeded and the firms were increasingly permitted to retain the benefits from their exports, higher export prices began to stimulate supply. The other two price variables (the nominal exchange rate and domestic price index) have the expected signs for all sample periods (except the most recent period for the exchange rate), and the elasticities increase in absolute value in more recent periods, which is also suggestive of a greater response to market prices. The exchange rate was nearly constant over the period 1994:1-2001:4, so the results for this period likely reflect multicollinearity with the constant term, and should not be taken seriously. Domestic credit has the expected sign for all sample periods and its elasticity has been more stable.

The results using panels of industry-level indices are decidedly more mixed (Table 2). In addition to the aggregate quantity and unit export indices discussed above, a five component panel of industry level indices for primary products (SITC categories 0-4) and a four component panel of industry level indices for manufactures (SITC categories 5-8) were tested. The results for the manufacturing industries using the data set of all commodities had the expected signs for all of the independent variables and all of the sample periods terminating in 2001:4 (except for the exchange rate in the period 1994-2001:4, as discussed above). The coefficients were significant at the 1 percent level for sample periods 1988:1-2001:4 and 1991:1-2001:4. However, coefficients on export prices, the exchange rate, and the domestic price index are frequently of the wrong sign (relative to signs that would be expected if suppliers were responding to market price signals) for the regressions using manufacturing industries composed only of the commodities in the balanced data set and for the regressions using primary product industries. The more market-like behavior of the manufacturing industries is not unexpected, given that these industries consisted of a greater proportion of foreign-financed firms, which had not been subject to as strict planning and foreign exchange retention quotas as had the domestic firms. Moreover, the better performance of the data set including all items likely reflects the greater proportion of new manufactured goods and rapidly growing industries in that data set.

Perverse and significant signs on export prices and the domestic price index were also found using a disaggregated panel of individual commodities (Table 3), although the coefficients on the exchange rate and domestic credit are of the expected signs. The incorrect signs on the export prices, especially in the later sample periods, could cast some doubt on the results in Table 1 indicating that the export suppliers began responding to market incentives. However, another interpretation is probable. The export prices for key export commodities are constructed from the values and quantities reported in the Chinese customs statistics (price=value/quantity). Some of the quantity data in the customs statistics are rounded to a very crude level. These rounding errors and any other errors in the reporting of quantities would introduce negative correlation between export quantities and export prices. It is likely that such errors generate greater bias for individual commodities than for the aggregate export price and quantity indices, since in the latter case, the errors of individual items may offset each other. The use of panel data greatly increases the power of the estimation, leading to much more significant results. However, it can also increase the power around a biased result. Such an interpretation would thus suggest that the results of Table 1 based on aggregate export indices may be more reliable.

Results from the dynamic OLS estimations are generally consistent with those from the two-stage least squares regressions. Correct and significant signs are found on the total quantity indices (except for the exchange rate), and the price elasticities tend to increase in more recent periods (Table 4). Most of the price coefficients are insignificant in the panels of industries (Table 5), although they are significantly negative for the balanced data set of manufactured industries. Significantly negative coefficients are also found for the panels of individual commodities (Table 6). This finding suggests that errors and rounding in the reported customs data, as discussed above, are responsible for the perverse coefficients, rather than reflecting any bias of the estimation method. Thus, the estimation results from the aggregate indices, which average out the data construction errors, are likely to be more accurate.

Finally, we find some evidence of change to market-oriented export behavior from tests of structural break. In particular, Table 7 shows the results from DOLS regressions of the total quantity indices that include a post-1994 dummy interaction term on all price-related variables. The signs of the export price and domestic price coefficients indicate that export supply has become more responsive to market prices from the beginning of 1994. The coefficients are significant at the 10 percent level, except for the export price in the balanced data set, which is nearly significant. Chow breakpoint tests also indicate structural change in the regression for any partition of the sample near the mid-point (from roughly 1993-1995).⁷

VI. CONCLUSIONS

The results from the large panels of individual export commodities and small panels of one-digit SITC industries are somewhat mixed, but the interpretation of the perverse coefficient signs in some of these regressions is clouded by the possibility of data biases. However, regressions using aggregate export price and quantity indices clearly indicate that export suppliers have increasingly behaved according to predictions of economic theory based on a market economy. In particular, the price elasticity of supply has become positive and has increased over time, paralleling reforms in 1988 and 1991. These results point to the increased market behavior of Chinese exporters, which suggests that these firms are likely to respond to price signals going forward.

⁷ The subsamples were too short to perform Chow breakpoint tests for other dates of interest, such as 1988 or 1991. Also, dummy interaction variables for 1988 and 1991 were insignificant; however, there were too few observations to enable testing of a complete specification that includes dummy interaction variables for the leads and lags of differenced regressors.

Table 1. Total Quantity Indices (2SLS) 1/

Dependent Variable	All Items					Balanced Data				
Independent Variables:										
P_all	0.36 (0.34)	-1.03 (1.05)	2.33 (1.46)	4.48 ** (1.77)	3.76 *** (1.11)					
P_bal						0.24 (0.24)	-0.35 (0.31)	0.32 (0.48)	2.64 * (1.35)	4.57 *** (1.43)
Exrt	-0.14 (0.19)	-0.17 (0.24)	-1.17 *** (0.34)	-1.70 *** (0.57)	6.21 (6.63)	-0.17 (0.18)	-0.27 * (0.14)	-0.76 *** (0.24)	-2.08 ** (0.79)	4.78 (5.46)
P_dom	-0.24 (0.22)	-0.04 (0.56)	-1.61 ** (0.71)	-2.79 *** (0.97)	-4.08 *** (0.98)	-0.43 * (0.21)	-0.31 (0.26)	-0.72 ** (0.33)	-2.38 ** (0.98)	-5.76 *** (1.47)
D. credit	0.42 *** (0.14)	0.89 *** (0.06)	0.81 *** (0.07)	0.85 *** (0.10)	0.70 *** (0.14)	0.35 *** (0.12)	0.52 *** (0.05)	0.53 *** (0.06)	0.76 *** (0.14)	0.80 *** (0.18)
Adj. Sample Period	85:4-90:4	85:4-01:4	88:1-01:4	91:1-01:4	94:1-01:4	85:4-90:4	85:4-01:4	88:1-01:4	91:1-01:4	94:1-01:4

Note: Asterisks ***, ** and * denote significance level at 1%, 5% and 10%. Standard errors are in parentheses.

1/ Estimation uses two stage least squares. Instruments are the exchange rate, domestic price index, domestic credit, world competitor price indices, and world real GDP.

Table 2. Panels of Industry Indices (2SLS) 1/

Dependent Variable	Primary Products (SITC 0-4)									
	All Items					Balanced Data				
Independent Variables:										
P_all	0.01 (0.12)	-1.02 *** (0.20)	-1.17 *** (0.22)	-1.41 *** (0.24)	-1.25 *** (0.27)					
P_bal						-0.16 (0.20)	-1.18 *** (0.19)	-0.93 *** (0.19)	-0.33 * (0.17)	-0.28 (0.20)
Exrt	0.05 (0.20)	0.17 (0.20)	-0.12 (0.26)	0.27 (0.35)	1.90 (8.15)	0.21 (0.28)	0.10 (0.17)	-0.07 (0.22)	-0.19 (0.28)	1.57 (6.58)
P_dom	-0.10 (0.22)	0.61 ** (0.30)	0.85 *** (0.31)	1.50 *** (0.37)	1.35 (1.26)	0.10 (0.33)	0.10 (0.27)	-0.23 (0.27)	-0.61 ** (0.27)	-1.40 (1.03)
D. credit	0.07 (0.13)	0.07 (0.08)	-0.07 (0.08)	-0.23 *** (0.08)	-0.32 * (0.17)	0.06 (0.19)	0.32 *** (0.08)	0.39 *** (0.07)	0.44 *** (0.07)	0.41 *** (0.14)
Adj. Sample Period	85:4-90:4	85:4-01:4	88:1-01:4	91:1-01:4	94:1-01:4	85:4-90:4	85:4-01:4	88:1-01:4	91:1-01:4	94:1-01:4

Dependent Variable	Manufactures (SITC 5-8)									
	All Items					Balanced Data				
Independent Variables:										
P_all	-1.65 *** (0.24)	0.18 (0.26)	1.76 *** (0.26)	1.10 *** (0.21)	0.21 (0.26)					
P_bal						-1.49 *** (0.24)	-2.22 *** (0.27)	-1.37 *** (0.34)	-1.23 *** (0.21)	-0.56 *** (0.14)
Exrt	-0.31 (0.36)	-0.97 *** (0.22)	-1.17 *** (0.30)	-1.15 *** (0.28)	14.94 *** (4.01)	-0.34 (0.53)	-0.77 ** (0.31)	-0.49 * (0.29)	0.11 (0.23)	6.96 *** (2.58)
P_dom	-0.10 (0.41)	-0.14 (0.30)	-1.15 *** (0.35)	-0.89 *** (0.29)	-2.69 *** (0.62)	-0.13 (0.60)	1.07 *** (0.41)	0.59 * (0.33)	0.73 *** (0.22)	-1.01 ** (0.41)
D. credit	1.16 *** (0.25)	0.82 *** (0.08)	0.89 *** (0.09)	0.94 *** (0.07)	0.57 *** (0.09)	1.64 *** (0.37)	0.29 *** (0.11)	0.45 *** (0.08)	0.42 *** (0.05)	0.40 *** (0.05)
Adj. Sample Period	85:4-90:4	85:4-01:4	88:1-01:4	91:1-01:4	94:1-01:4	85:4-90:4	85:4-01:4	88:1-01:4	91:1-01:4	94:1-01:4

Note: Asterisks ***, ** and * denote significance level at 1%, 5% and 10%. Standard errors are in parentheses.

1/ Estimation uses weighted two stage least squares with fixed effects. Instruments are the exchange rate, domestic price index, domestic credit, world competitor price indices, and world real GDP.

Table 3. Panels of Individual Items (2SLS) 1/

Dependent Variable	Balanced Data by Commodity		
Independent Variables:			
P_bal	-0.92 *** (0.02)	-0.84 *** (0.02)	-0.81 *** (0.02)
Exrt	-0.35 *** (0.06)	-0.18 *** (0.06)	-0.13 * (0.07)
P_dom	0.41 *** (0.08)	0.37 *** (0.07)	0.37 *** (0.07)
D. credit	0.20 *** (0.02)	0.23 *** (0.02)	0.22 *** (0.02)
Adj. Sample Period	85:4-01:4	88:1-01:4	91:1-01:4

Note: Asterisks ***, ** and * denote significance level at 1%, 5% and 10%.

Standard errors are in parentheses.

1/ Estimation uses weighted two stage least squares with fixed effects.

Instruments are the exchange rate, domestic price index, domestic credit, world competitor price indices, and world real GDP.

Subsamples 85:4-90:4 and 94:1-01:4 contained too few observations to be estimated.

Table 4. Total Quantity Indices (DOLS) 1/

Dependent Variable	All Items					Balanced Data				
Independent Variables:										
P_all	3.04 (2.53)	1.43 ** (0.54)	1.47 *** (0.51)	1.58 *** (0.40)	3.09 *** (0.58)					
P_bal						-3.10 ** (0.59)	0.82 (0.54)	0.87 (0.52)	1.58 ** (0.70)	3.16 (2.14)
Exrt	2.22 (2.70)	-0.16 (0.33)	0.07 (0.42)	0.41 (0.66)	21.76 (14.22)	-1.52 (0.82)	-0.40 (0.32)	-0.36 (0.37)	-0.53 (0.63)	9.20 (21.33)
P_dom	0.64 (3.58)	-1.07 ** (0.42)	-1.10 *** (0.39)	-1.50 *** (0.40)	-4.95 *** (1.17)	1.93 (1.22)	-1.12 ** (0.46)	-1.16 ** (0.43)	-1.93 *** (0.60)	-5.45 (4.91)
D. credit	2.02 (1.35)	1.08 *** (0.10)	1.14 *** (0.12)	1.34 *** (0.13)	0.53 * (0.26)	-1.03 * (0.37)	0.81 *** (0.11)	0.84 *** (0.12)	1.01 *** (0.14)	0.69 (0.65)
Adj. Sample Period	86:4-92:4	86:4-01:2	88:1-01:2	91:1-01:2	94:1-01:2	86:4-92:4	86:4-01:2	88:1-01:2	91:1-01:2	94:1-01:2

Note: Asterisks ***, ** and * denote significance level at 1%, 5% and 10%. Standard errors are in parentheses.
1/ Estimation uses dynamic OLS with 2 leads and lags, with fixed effects and correction for serial correlation.

Table 5. Panels of Industry Indices (DOLS) 1/

Dependent Variable	Primary Products (SITC 0-4)					Balanced Data				
	All Items									
Independent Variables:										
P_all	-0.32 (0.37)	-0.16 (0.21)	-0.13 (0.23)	-0.10 (0.27)	-32.09 (72.39)					
P_bal						-0.67 (0.48)	-0.11 (0.23)	-0.10 (0.24)	0.08 (0.26)	-0.48 (0.50)
Exrt	1.14 (1.57)	0.70 (0.47)	0.74 (0.65)	0.37 (0.81)	-0.73 (0.57)	1.32 (1.82)	0.42 (0.49)	0.63 (0.65)	0.50 (0.80)	12.88 (27.57)
P_dom	-0.24 (2.83)	0.12 (0.51)	0.12 (0.54)	-0.20 (0.64)	0.66 (28.23)	-1.47 (3.58)	-0.34 (0.54)	-0.49 (0.55)	-1.08 * (0.60)	6.07 (7.21)
D. credit	0.54 (0.82)	0.45 *** (0.16)	0.39 ** (0.19)	0.45 ** (0.22)	6.15 (6.52)	0.99 (0.98)	0.63 *** (0.17)	0.67 *** (0.20)	0.83 *** (0.20)	3.01 (2.96)
Adj. Sample Period	86:4-90:4	86:4-01:2	88:1-01:2	91:1-01:2	94:1-01:2	86:4-90:4	86:4-01:2	88:1-01:2	91:1-01:2	94:1-01:2

Dependent Variable	Manufactures (SITC 5-8)					Balanced Data				
	All Items									
Independent Variables:										
P_all	-0.72 *** (0.19)	-0.17 (0.18)	-0.19 (0.20)	0.11 (0.22)	-0.51 (0.34)					
P_bal						-1.15 *** (0.28)	-0.53 ** (0.23)	-0.63 ** (0.25)	-0.42 (0.27)	-0.47 * (0.25)
Exrt	3.44 *** (0.69)	0.41 (0.38)	-0.79 (0.52)	-0.63 (0.57)	9.68 (9.06)	1.89 *** (0.51)	0.34 (0.37)	-0.34 (0.50)	-0.30 (0.51)	11.77 (8.20)
P_dom	7.46 *** (1.74)	0.68 (0.43)	1.14 ** (0.45)	1.24 ** (0.61)	-0.77 (1.45)	4.20 *** (1.55)	0.29 (0.42)	0.71 (0.44)	-0.20 (0.39)	0.66 (1.62)
D. credit	10.31 *** (2.88)	-0.38 (0.40)	-1.05 ** (0.43)	-1.94 *** (0.58)	-1.35 (1.42)	2.24 *** (0.63)	-0.15 (0.37)	-0.91 ** (0.43)	0.67 *** (0.13)	1.04 *** (0.35)
Adj. Sample Period	86:4-90:4	86:4-01:2	88:1-01:2	91:1-01:2	94:1-01:2	86:4-90:4	86:4-01:2	88:1-01:2	91:1-01:2	94:1-01:2

Note: Asterisks ***, ** and * denote significance level at 1%, 5% and 10%. Standard errors are in parentheses.

1/ Estimation uses dynamic OLS with 2 leads and lags, with fixed effects and correction for serial correlation and cross-equation heterogeneity.

Table 6. Panels of Individual Items (DOLS) 1/

Dependent Variable	Balanced Data by Commodity				
Independent Variables:					
P_bal	-0.42 *** (0.09)	-0.71 *** (0.03)	-0.71 *** (0.03)	-0.74 *** (0.03)	-0.52 *** (0.05)
Exrt	0.67 * (0.39)	0.18 (0.17)	0.24 (0.22)	0.04 (0.24)	12.26 *** (4.08)
P_dom	1.29 (0.94)	0.51 *** (0.18)	0.45 ** (0.18)	-0.07 (0.17)	1.21 (0.74)
D. credit	0.71 *** (0.22)	0.31 *** (0.06)	0.29 *** (0.06)	0.45 *** (0.06)	0.97 *** (0.15)
Adj. Sample Period	86:4-90:4	86:4-01:2	88:1-01:2	91:1-01:2	94:1-01:2

Note: Asterisks ***, ** and * denote significance level at 1%, 5% and 10%.

Standard errors are in parentheses.

1/ Estimation uses dynamic OLS with 2 leads and lags, with fixed effects and correction for serial correlation and cross-equation heterogeneity.

Table 7. Tests of Structural Break (DOLS) 1/

Dependent Variable	All Items	Balanced Data
Independent Variables:		
P_bal	0.90 (0.66)	0.41 (0.63)
Exrt	0.33 (0.63)	0.16 (0.59)
P_dom	-0.37 (0.73)	-0.58 (0.68)
D. credit	1.12 *** (0.12)	0.91 *** (0.13)
P_bal*Dumy94	1.41 * (0.75)	1.27 (0.82)
Exrt*Dumy94	0.22 (1.31)	-0.38 (1.07)
P_dom*Dumy94	-1.26 * (0.70)	-1.34 * (0.76)
Adj. Sample Period	86:4-01:2	86:4-01:2

Note: Asterisks ***, ** and * denote significance level at 1%, 5% and 10%.
Standard errors are in parentheses.

1/ Estimation uses dynamic OLS with 2 leads and lags, with correction for serial correlation. The dependent variables are the total quantity indices.

Data Sources and Issues

Quarterly data from 1985:4 to 2001:4 is obtained from *China's Customs Statistics*, which is edited by the General Administration of Customs of the People's Republic of China and published by the Economic Information and Agency, Hong Kong. Real industrial production is from the State Statistical Bureau's *China Latest Economic Indicators*. Domestic credit to sectors other than the central government and the consumer price index are from the IMF's *International Financial Statistics*. World prices for exports by one-digit SITC code in U.S. dollars are taken from the United States Bureau of Labor Statistics, except for SITC 4, which was unavailable and was proxied by the dollar price of sunflower oil reported by the UN.

The bilateral U.S. dollar-yuan nominal exchange rate is the inverse of line *rf* from the IMF's *International Financial Statistics*. However, it has been estimated that, following the reforms of 1988 (which led to increased access to the FEACs) about 50 percent of the foreign exchange transactions occurred at the swap rate, and this share increased to about 80 percent in the early 1990s. Therefore, the exchange rate has been calculated as a weighted average of the swap and the official exchange rates. The weight for the swap rate varies, based on the estimated share of transactions at that rate. For the period prior to 1988, the official exchange rate is used. The move to a unified exchange rate in January 1994 led to a depreciation of the official exchange rate vis-à-vis the U.S. dollar of some 50 percent, but the weighted exchange rate depreciated by less than 7 percent.

The world GDP index is constructed using quarterly real GDP data from *World Economic Outlook* for China's 20 main export destinations. A country's GDP data was weighted according to its share in China's export trade. However, entrepôt trade through Hong Kong SAR influences the share of partner countries' trade with China, and has been identified as a key factor in the divergent estimates of the U.S.-China bilateral trade deficit as reported by China compared with the United States. The U.S. Department of Commerce records reexports of goods of Chinese origin from Hong Kong SAR as U.S. imports from China. Until 1993, however, China recorded these reexports as Chinese exports to Hong Kong SAR rather than to the United States. Although the accounting of its exports by final destination is still not completely accurate, since 1993 China has attempted to identify its exports by final destination and improve its trade statistics. Trade weights were thus adjusted for entrepôt trade through Hong Kong SAR. Consequently, the trade weight of Hong Kong SAR in the revised estimates is considerably smaller, with an increase in the weights of other partner countries. Trade weights were also adjusted to capture the effects of third-market competition. The weights for countries that compete with China's exports in third markets were adjusted for the degree of correlation between the commodity composition of China's manufacturing exports and manufacturing exports from the competing countries. As a consequence of the adjustment for third market competition, the weights of trading partners in Asia, excluding Japan, are larger in the revised estimates. Following these changes,

Indonesia, Korea, Malaysia, Singapore, and Taiwan Province of China have a combined weight of 22 percent compared with around 9 percent in the unadjusted estimates.⁸

The data frequency for all variables is quarterly. China export commodity prices and volumes, real industrial production, and the consumer price index were seasonally adjusted using the Census X-11 filter before including in regressions.

⁸ Work on revising trade weights was done by Marianne Schultze Ghattas.

Major Export Commodities Available in Quantity and Value 1/

SITC 0: Food and Live Animals

- * Swine, live (excluding those for breeding)
- * Poultry, live
 - Beef, fresh or frozen
- * Pork, fresh or frozen
- * Frozen chicken
- * Meat of rabbit, frozen
 - others
 - of which: canned meat of swine
- * Eggs
- * Aquatic products (fish, crustacean and mollusc)
- * Cereals
- * Vegetable
 - canned vegetables
 - canned mushrooms
- * Fruit (instant frozen, normal storage)
 - canned fruits
- * Sugar
- * Natural honey
- * Tea
- * Dried chillies
- Oil cakes

SITC 1: Beverages and Tobacco

- * Beer
- * Flue-cured tobacco
- Cigarette

SITC 2: Crude Materials, Inedible, Except Fuels

- Goatskin
- * Furskin, raw
- * Edible oil seeds
 - Roasted peanuts
 - Wood sawn or chipped lengthwise, sliced or peeled
 - Wood in the rough
- * Raw silk
- * Cotton, not carded or combed
 - Ramie
- * Goat's wool
- * Hair, rabbit
 - Clay and other refractory minerals
 - Salt
- * Fluorspar
- * Barium sulphate
 - Barium carbonate
- * Talcum
 - Ferrous waste and scrap
 - Aluminium ores (including bauxite)
 - Aluminium oxide
 - Tungsten ores
 - Tungstates
- * Bristle
- * Casings
- * Feather of chicken, duck and goose
- * Medicinal materials

SITC 4: Animal and Vegetable Oils, Fats, and Waxes

- * Edible vegetable oil
- Tung oil

SITC 5: Chemicals and Related Products, N.E.S.

- * Furfural
 - Zinc oxide and zinc peroxide
 - Radioactive chemical elements, isotopes and compounds
- * Synthetic organic dyestuffs
- * Lithopone
 - Medicinal and pharmaceutical products
 - of which: antibiotics
 - Perfumes and toilet waters
 - Make-up or skin care productions
 - Preparations for oral hygiene
 - Peppermint oil
 - Incense, mosquitoes
 - Toilet soap
- * Detergent
 - Polyvinyl chloride in primary forms
 - Fireworks and firecrackers
- * Rosin

SITC 6: Manufactured Goods Classified Chiefly by Material

- Skin plates
- * Rubber tyre
 - Wooden articles for domestic or decorative use
 - Paper and paperboard
- * Cotton yarn
 - Yarn of discontinuous regenerated fibres
 - Spun rayon yarn
 - Yarn of 85% or more synthetic staple fibres
 - Yarn of 85% or more artificial fibre
 - Yarn of sythetic staple fibres mixed with cotton
 - Flax or ramie yarn
- * Cotton fibres woven (including cloth mostly made of cotton)
 - Artificial silk and satins (incl those w/ regenerated filament as the maincontent)
 - Polytseter cotton fibres, woven
 - Woven fabrics of sythetic staple fibre with cotton
 - Spun rayon woven fabrics
 - Rayon woven fabrics
 - Woven fabrics of artificial staple fibres
- * Silk woven fabrics
- * Woollen piece goods (incl those w/ wool as the main content)
 - Flaxie or ramie woven fabrics
 - Cotton bath towels
 - Embroidered articles other than garments
 - Gunny bag
 - Bags of PP or PE strip
 - Woollen blanket
 - Knitted or crocheted table linen
- * Carpet
- * Cement
- * Plain glass
 - Porcelain and pottery ware, for domestic
 - Ornamental ceramic articles

Major Export Commodities Available in Quantity and Value (cont) 1/

SITC 6: Manufactured Goods Classified Chiefly by Material (cont)

- * Zinc and its alloys unwrought
- * Tin and its alloys unwrought
- Tungsten unwrought
- * Antimony unwrought
- Manganese unwrought
- Bolts, nuts, etc. of iron, steel, or copper
- Hand tools and tools for machines-
- Kerosene cooking stoves
- Stainless steelware for table, kitchen, household use
- Enamelware
- * Locks

SITC 7: Machinery and Transport Equipment

- * Electric motors (incl. Universal AC-DC motors), other than direct current
- * Sewing machine
- * Sewing machine (including used for industry)
- * Machine tools
- Reaming or milling machine
- * Electric fans
- Bearings
- Electronic calculator
- Photo-, thermo- copying apparatus
- T.V. set (incl. Video monitors, CKD and SKD)
- Radio, not incorporating a sound recorder or reproducer
- Sound recorders (incl. those incorporating radios or gramophones)
- Compact disc players, sound
- Video recording apparatus
- Line telephone sets
- Radio telephone handsets
- Loudspeakers
- Parts, nes of telecommunication equipment
- Transformers
- Static converters
- Printed circuits
- Insulated wire and cable
- Graphite electrodes
- Diodes, transistors and similar semiconductors
- Electronic integrated circuits and microassemblies
- * Primary cell of Zinc-manganese dioxide
- Storage batteries for motor vehicle
- Electric accumulators
- Electric capacitors
- * Motor vehicles and chassis
- Motorcycles
- * Bicycle
- Containers
- Ship

SITC 8: Miscellaneous Manufactured Articles

- Lamps and lighting fittings
- Mattress supports and articles of bedding
- Suitcase, artificial leather
- Garments not knitted or crocheted
- Garments knitted or crocheted
- Garments knitted or crocheted of cotton
- Garments knitted or crocheted of wool or fine hair
- Garment knitted and crocheted of silk
- Garments, knitted or crocheted, of other fibres
- Handkerchiefs
- Textile stocking and socks
- Textile gloves
- Leather garments
- Leather gloves
- Fur garments
- Headgear
- Footwear, of which:
- Footwear with rubber or plastic outer soles and uppers
- Plastic slippers
- * Leather shoes
- * Cloth shoes w/ outer of rubber or artif plastic mat (incl gym shoes)
- Parts of footwear, gaiters and the like
- Electrical measuring instruments
- * General camera
- * Flashlight
- * Wrist watch
- Watch movements, assembled
- * Clock
- Articles of plastic materials
- Toy
- Video games
- * Footballs, basketballs and volleyballs
- * Pencil
- Artificial flowers
- * Umbrella
- * Bristle brush
- Bamboo plaited (other than furniture)
- Rattan plaited products (other than furniture)
- Grass plaited products
- Osier plaited products (other than furniture)
- * Vacuum flasks

* indicates series for which data was available for the full period 1985:4 to 2001:4 (balanced data set)

1/ From China's Customs Statistics, General Administration of Customs of the People's Republic of China

Laspeyres Indices, Balanced Data 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	69.0	88.4	91.6	101.9	90.4	78.1	73.6	77.7
1987	79.5	99.1	96.4	115.8	83.3	88.3	87.8	89.7
1988	80.9	100.7	101.3	122.7	93.1	92.8	89.3	89.3
1989	77.4	99.5	107.1	123.3	94.8	97.3	98.0	100.1
1990	77.2	108.6	111.7	140.7	100.7	98.0	99.2	113.7
1991	94.3	125.1	123.4	145.6	103.4	97.1	97.8	100.0
1992	123.7	168.6	162.8	200.8	91.9	92.5	96.3	96.5
1993	130.3	174.6	188.5	235.2	91.7	91.2	87.6	88.8
1994	158.4	214.3	204.0	261.6	84.7	91.0	98.4	98.1
1995	192.9	242.0	207.6	244.8	103.0	107.8	104.2	106.0
1996	170.1	216.0	216.8	257.5	106.2	107.2	107.5	110.1
1997	199.7	263.8	250.9	283.4	109.3	108.2	105.7	107.9
1998	202.8	251.8	247.2	280.1	106.7	102.8	100.8	99.1
1999	208.2	259.3	280.3	313.3	98.8	94.8	93.1	96.6
2000	281.2	347.6	338.2	357.9	96.5	95.6	98.6	101.7
2001	319.4	346.0	352.8	348.9	98.3	97.3	97.1	98.5

1/ (1985:4 = 100). Breaks in the series were comprised of beer (92:1), electric motors (92:1), and pencils (94:1).

Laspeyres Indices, Full Data 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	71.0	92.2	94.1	104.9	90.9	79.1	81.6	82.6
1987	84.6	99.4	103.4	124.4	86.3	95.5	94.1	93.4
1988	91.6	110.1	112.1	137.7	96.3	95.3	95.6	93.8
1989	91.0	115.0	124.5	144.1	97.2	99.9	105.6	104.2
1990	92.9	129.3	133.0	169.1	101.6	103.1	106.4	117.2
1991	117.7	152.2	155.3	188.5	106.6	98.8	108.4	106.6
1992	181.0	245.9	240.8	315.1	93.6	96.1	113.4	112.0
1993	204.3	262.7	296.3	388.9	100.7	106.1	108.1	105.3
1994	264.5	364.7	366.3	485.9	102.0	110.0	118.5	118.0
1995	366.9	462.3	421.1	484.6	123.4	126.1	126.9	127.0
1996	337.9	429.6	455.2	519.4	124.1	123.7	128.4	132.1
1997	400.6	524.3	523.0	585.3	128.4	127.7	130.3	132.0
1998	442.7	549.3	542.4	607.2	129.3	122.1	123.7	120.8
1999	465.8	581.1	654.2	736.3	118.4	115.3	116.9	117.3
2000	663.3	810.2	835.8	891.2	118.7	118.8	124.0	125.0
2001	773.4	850.5	889.1	986.2	125.4	123.6	133.2	134.9

2/ (1985:4 = 100). Breaks in the series were comprised of beer (92:1), electric motors (92:1), pencils (94:1), radioactive chemical elements (95:4, 98:1, 98:2, 99:1, 99:4, 00:1, 00:3) ships (91:1, 94:4), and pearls (93:1, 01:1).

Laspeyres Indices, Balanced Data SITC 0 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	67.7	90.3	93.0	94.5	96.4	103.3	97.2	95.9
1987	65.4	81.4	78.3	93.2	100.3	113.0	101.7	100.3
1988	60.2	80.3	82.0	100.0	112.1	121.2	108.6	118.9
1989	62.3	79.6	89.3	102.1	118.8	122.2	116.4	121.4
1990	67.8	85.6	89.6	110.7	122.4	118.7	122.7	120.7
1991	73.1	100.4	108.6	133.9	106.1	101.9	106.5	110.0
1992	95.0	113.8	131.3	166.8	97.7	108.1	109.6	112.4
1993	104.3	136.2	150.4	194.4	97.5	98.3	97.2	101.5
1994	115.6	163.5	159.8	177.1	92.8	109.5	127.4	123.2
1995	107.1	130.8	110.5	150.1	127.6	153.4	127.6	124.4
1996	110.1	140.4	140.5	163.1	118.7	118.6	124.3	127.8
1997	122.7	184.4	189.3	244.5	116.1	111.9	111.2	112.6
1998	151.2	193.2	211.5	262.4	104.3	108.8	105.6	104.3
1999	172.1	198.7	236.8	275.4	101.3	92.5	90.5	98.1
2000	230.4	266.0	306.6	301.7	91.7	88.2	86.1	94.2
2001	251.5	305.4	303.1	353.6	88.7	83.8	85.0	99.3

1/ (1985:4 = 100).

Laspeyres Indices, Full Data SITC 0 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	67.4	88.8	92.9	97.1	96.4	102.3	97.0	95.4
1987	68.8	83.8	80.7	95.7	98.9	111.4	101.6	100.0
1988	63.3	85.3	87.3	102.8	111.6	120.6	109.4	118.0
1989	65.5	85.6	93.3	102.6	119.1	121.6	115.0	117.8
1990	68.8	92.6	93.1	113.5	119.1	116.7	120.0	118.1
1991	78.0	105.8	113.7	134.4	105.2	96.8	104.6	107.4
1992	94.2	111.8	124.5	155.9	96.7	103.8	103.7	106.1
1993	99.9	129.7	141.3	182.1	92.8	93.2	92.6	96.9
1994	108.7	155.9	148.9	164.0	88.9	105.0	120.8	117.0
1995	105.5	126.1	103.0	135.6	121.0	143.1	121.2	118.3
1996	103.1	132.7	130.3	151.8	112.7	112.2	116.9	120.0
1997	114.5	168.4	170.6	218.9	109.2	106.1	105.5	107.6
1998	139.1	175.5	191.3	236.0	99.2	103.7	100.2	99.2
1999	160.5	186.8	209.3	244.4	96.2	88.6	85.2	91.5
2000	218.1	250.9	261.3	267.0	86.3	84.6	83.2	90.0
2001	228.7	279.1	268.5	308.6	84.6	80.1	81.2	94.1

2/ (1985:4 = 100).

Laspeyres Indices, Balanced Data SITC 1 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	58.8	82.7	66.6	43.6	85.8	106.7	100.7	110.0
1987	35.9	98.1	47.8	86.8	90.5	114.3	110.3	117.3
1988	57.4	78.0	85.1	88.3	108.8	111.1	119.0	121.6
1989	54.8	85.9	79.2	125.0	113.1	125.2	117.0	124.4
1990	72.6	120.3	80.1	114.4	106.4	101.4	102.3	103.8
1991	135.7	166.3	236.3	187.7	116.2	115.5	110.9	111.0
1992	97.5	190.3	158.1	180.0	117.8	142.2	124.6	121.8
1993	134.4	229.6	269.9	170.0	117.2	107.0	101.2	91.8
1994	135.7	274.6	207.5	250.8	70.5	69.5	76.5	76.8
1995	184.2	256.5	230.3	225.4	80.6	76.9	84.6	88.6
1996	153.6	170.6	155.8	197.8	95.5	97.8	106.9	111.8
1997	140.4	227.0	200.7	298.5	140.3	137.6	137.9	129.6
1998	162.8	262.7	245.1	327.8	117.3	99.7	119.9	106.8
1999	302.5	372.7	224.2	352.8	109.8	100.7	98.0	100.8
2000	216.1	324.6	286.5	341.9	98.4	90.7	83.1	71.8
2001	253.1	426.3	398.9	439.2	74.9	84.9	74.4	75.0

1/ (1985:4 = 100). Break in the series was comprised of beer (92:1).

Laspeyres Indices, Full Data SITC 1 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	58.8	82.7	66.6	43.6	85.8	106.7	100.7	110.0
1987	35.9	98.1	47.8	86.8	90.5	114.3	110.3	117.3
1988	57.4	78.0	85.1	88.3	108.8	111.1	119.0	121.6
1989	54.8	85.9	79.2	125.0	113.1	125.2	117.0	124.4
1990	72.6	120.3	80.1	114.4	106.4	101.4	102.3	103.8
1991	135.7	166.3	236.3	187.7	116.2	115.5	110.9	111.0
1992	97.5	140.1	152.0	239.5	117.8	136.9	121.9	125.6
1993	117.4	213.3	249.6	381.5	105.3	126.4	119.2	110.4
1994	188.3	312.7	302.9	399.9	79.9	100.2	103.2	104.8
1995	208.0	364.2	359.9	438.9	109.0	119.9	117.5	133.7
1996	222.9	333.7	315.2	372.2	121.2	126.5	140.2	144.5
1997	125.7	151.4	135.4	250.0	173.9	168.5	173.3	161.3
1998	104.1	180.4	153.3	222.0	162.6	146.9	154.9	143.0
1999	95.3	120.3	75.6	132.1	146.4	136.4	127.4	137.5
2000	80.9	108.2	96.3	136.1	138.7	126.6	122.0	107.4
2001	93.4	156.2	151.9	203.7	105.9	117.4	101.6	103.9

2/ (1985:4 = 100). Break in the series was comprised of beer (92:1)

Laspeyres Indices, Balanced Data SITC 2 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	86.2	105.6	86.6	90.0	101.8	91.4	92.8	92.2
1987	95.6	127.8	113.8	103.0	89.9	91.7	90.1	102.5
1988	88.5	99.5	94.5	106.6	110.8	107.3	107.3	105.6
1989	68.7	95.1	96.2	86.7	120.5	119.4	117.2	121.8
1990	50.2	76.9	72.9	89.5	119.9	115.6	112.2	113.9
1991	72.2	88.7	64.7	84.1	110.5	111.1	102.2	103.7
1992	80.4	104.2	83.7	104.4	96.0	89.6	99.2	103.0
1993	70.2	90.8	93.1	139.7	97.5	95.2	80.8	84.8
1994	109.8	143.1	110.0	145.2	90.1	94.0	102.7	110.7
1995	104.8	105.4	64.7	104.8	124.6	132.9	116.1	125.0
1996	78.2	92.0	79.7	106.3	126.7	124.1	125.9	128.7
1997	78.8	80.7	77.6	99.6	128.1	130.1	124.3	128.3
1998	69.9	89.7	81.5	112.1	125.2	107.7	115.2	113.5
1999	107.5	115.1	120.4	151.5	109.5	105.5	106.4	106.6
2000	136.7	149.2	125.8	116.4	112.2	116.2	114.9	117.3
2001	119.0	114.9	105.7	113.5	117.4	112.7	106.5	104.8

1/ (1985:4 = 100).

Laspeyres Indices, Full Data SITC 2 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	79.8	97.8	85.0	86.3	100.1	91.3	92.6	90.8
1987	85.8	112.0	105.9	98.3	90.4	89.4	88.1	98.4
1988	79.2	92.4	87.2	103.1	104.3	101.6	100.9	98.8
1989	65.6	87.7	90.3	87.2	112.3	112.2	110.8	113.6
1990	50.4	72.5	70.2	89.1	109.7	106.8	103.6	105.0
1991	68.7	83.9	63.8	81.3	102.1	101.3	94.5	95.8
1992	75.5	97.7	78.0	98.0	89.1	83.5	91.6	95.1
1993	66.0	84.3	87.1	126.6	89.7	87.4	75.9	79.4
1994	97.2	124.7	98.0	130.0	84.0	88.0	95.4	103.1
1995	93.5	100.1	67.6	102.8	116.5	125.2	117.5	117.3
1996	71.4	83.7	74.4	96.4	121.4	119.8	121.0	122.3
1997	76.2	79.6	76.9	92.8	121.4	124.0	117.0	121.8
1998	67.3	79.4	76.9	100.9	118.4	104.6	109.6	108.1
1999	93.1	100.0	104.2	131.8	102.7	101.1	100.9	101.9
2000	115.9	129.4	112.0	107.0	106.2	109.1	109.7	110.3
2001	109.8	104.4	97.3	107.1	112.5	110.1	104.4	102.7

2/ (1985:4 = 100).

Laspeyres Indices, Balanced Data SITC 3 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	66.6	78.7	89.4	92.4	80.6	50.7	43.8	51.2
1987	70.4	77.7	78.7	100.6	63.9	67.8	71.3	68.5
1988	75.7	77.5	83.0	95.7	66.6	63.3	60.8	53.6
1989	61.6	69.6	78.8	100.3	61.2	66.3	69.5	68.8
1990	61.4	72.6	85.6	99.1	70.5	66.7	67.8	105.1
1991	64.3	81.7	82.2	85.4	88.7	70.4	71.8	75.0
1992	69.4	81.2	77.7	85.8	72.0	71.3	76.8	76.1
1993	55.9	73.8	74.7	78.6	73.3	75.3	71.7	69.1
1994	63.0	66.9	74.3	92.3	62.1	62.3	68.9	68.3
1995	74.3	85.2	84.3	97.7	70.1	74.0	75.4	73.9
1996	65.8	78.3	92.3	112.3	78.8	80.1	80.5	85.2
1997	77.1	112.3	89.7	104.7	89.2	83.5	78.1	77.8
1998	72.2	90.5	92.5	93.3	75.1	65.2	63.4	61.6
1999	62.9	80.4	77.4	95.3	56.1	57.6	62.6	68.7
2000	77.7	115.2	97.4	174.0	73.3	74.4	91.2	92.7
2001	139.1	110.5	146.0	127.1	84.1	83.8	82.5	79.9

1/ (1985:4 = 100).

Laspeyres Indices, Full Data SITC 3 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	66.6	78.9	89.3	92.3	80.7	50.8	43.8	51.2
1987	70.2	77.6	78.5	100.3	64.0	67.8	71.3	68.5
1988	75.5	77.4	82.7	95.4	66.6	63.4	60.8	53.6
1989	61.4	69.4	78.5	100.0	61.3	66.3	69.5	68.9
1990	61.3	72.4	85.3	98.8	70.5	66.8	67.8	105.1
1991	64.1	81.4	82.0	85.2	88.8	70.4	71.8	75.1
1992	69.2	80.7	77.3	85.6	72.0	71.2	76.7	76.0
1993	55.6	73.6	74.3	78.2	73.1	75.2	71.6	69.0
1994	62.7	66.5	73.9	91.7	62.0	62.2	68.8	68.2
1995	73.8	84.6	83.6	97.0	70.0	74.0	75.4	73.9
1996	65.3	77.8	91.8	111.6	78.7	80.0	80.4	85.0
1997	76.8	111.3	89.0	103.8	89.1	83.5	78.1	77.8
1998	71.7	89.8	91.8	92.7	75.1	65.2	63.4	61.6
1999	62.4	79.9	76.8	94.6	56.1	57.6	62.6	68.6
2000	56.5	85.9	77.5	128.9	70.1	71.4	86.2	87.6
2001	100.2	83.4	103.8	180.4	79.6	79.8	123.0	95.2

2/ (1985:4 = 100).

Laspeyres Indices, Balanced Data SITC 4 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	29.7	52.8	84.0	124.7	105.0	91.9	83.1	79.1
1987	22.1	28.4	18.2	29.1	92.5	89.5	97.3	88.5
1988	11.4	13.8	8.0	11.6	99.2	102.5	126.7	127.4
1989	5.4	7.6	43.2	52.9	138.2	130.8	104.3	98.2
1990	44.2	103.1	61.4	36.4	106.3	109.3	120.0	118.9
1991	43.4	76.4	18.6	36.2	123.3	131.3	139.7	116.3
1992	16.3	28.3	24.5	50.1	128.7	116.2	116.7	101.4
1993	25.0	64.6	35.1	114.5	104.0	105.3	115.9	110.2
1994	53.7	125.0	69.4	226.7	115.1	123.2	137.9	129.3
1995	119.6	541.7	125.3	121.3	136.0	131.2	121.7	126.0
1996	125.2	184.1	164.5	358.0	113.6	110.0	113.2	109.7
1997	355.6	406.4	314.6	369.0	106.3	107.7	110.3	115.5
1998	262.0	152.9	72.3	56.2	117.3	118.4	127.9	129.4
1999	29.9	29.8	43.3	66.7	139.1	128.5	129.5	125.4
2000	44.2	23.0	53.2	75.4	109.6	120.4	97.2	88.0
2001	73.9	43.3	58.8	59.4	78.1	87.9	90.6	88.5

1/ (1985:4 = 100).

Laspeyres Indices, Full Data SITC 4 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	31.1	59.7	104.9	132.0	104.3	92.6	80.1	77.1
1987	27.5	46.5	41.0	50.2	87.9	89.3	95.8	94.7
1988	16.2	33.1	30.4	27.3	101.6	107.0	115.2	110.2
1989	11.4	17.3	73.2	72.9	111.5	104.9	93.5	91.5
1990	53.7	122.3	77.2	46.5	97.4	100.5	110.2	110.8
1991	51.0	95.0	28.1	47.8	116.3	124.7	133.9	119.0
1992	21.5	37.4	32.4	66.2	131.6	118.8	119.4	103.7
1993	33.0	85.3	46.3	151.2	106.3	107.7	118.5	112.7
1994	70.9	165.1	91.7	299.4	117.7	126.0	141.1	132.2
1995	157.9	715.4	165.4	160.2	139.1	134.2	124.5	128.8
1996	165.4	243.2	217.2	472.8	116.2	112.5	115.7	112.2
1997	469.7	536.8	415.5	487.3	108.7	110.2	112.8	118.1
1998	346.0	202.0	95.5	74.2	120.0	121.1	130.8	132.4
1999	39.5	39.3	57.2	88.1	142.2	131.4	132.4	128.3
2000	58.4	30.4	70.3	99.6	112.1	123.1	99.4	90.0
2001	97.7	57.2	77.7	78.4	79.9	89.9	92.7	90.5

2/ (1985:4 = 100).

Laspeyres Indices, Balanced Data SITC 5 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	67.2	93.4	101.6	129.0	99.5	102.3	101.6	96.6
1987	89.8	136.3	129.3	156.9	94.8	97.6	99.1	105.5
1988	110.9	136.7	127.5	178.7	105.1	115.3	113.3	113.4
1989	114.4	143.5	161.4	190.3	111.4	114.2	113.9	109.4
1990	126.9	181.4	160.8	194.3	107.9	116.2	117.0	151.8
1991	122.2	173.1	186.6	225.9	113.5	119.2	115.7	119.1
1992	132.6	197.9	193.4	253.5	114.9	117.7	111.6	103.6
1993	130.8	152.8	210.4	273.8	110.0	109.3	100.7	102.0
1994	162.7	222.5	220.4	349.7	98.9	105.1	108.2	107.0
1995	227.0	277.2	218.2	308.9	116.2	119.9	134.6	136.0
1996	158.5	248.8	270.2	383.6	135.9	134.3	132.6	127.2
1997	258.0	320.5	349.0	395.5	130.7	132.3	129.4	127.8
1998	293.9	386.7	354.5	422.2	125.0	114.7	105.8	101.9
1999	290.2	385.2	446.4	491.8	101.7	94.0	91.5	92.1
2000	402.0	475.7	481.3	482.6	93.3	93.0	94.4	92.7
2001	447.0	457.7	485.0	444.0	91.7	93.7	93.2	91.3

1/ (1985:4 = 100).

Laspeyres Indices, Full Data SITC 5 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	68.6	94.2	102.5	129.4	98.8	101.9	102.4	96.3
1987	100.6	150.1	142.5	173.9	92.6	95.2	96.5	102.0
1988	123.0	152.7	141.2	199.4	102.5	111.4	109.9	110.0
1989	126.5	159.1	165.0	198.0	108.1	106.9	108.7	100.9
1990	142.5	184.7	167.8	229.4	99.4	107.3	109.1	125.7
1991	158.4	194.1	188.6	247.2	104.6	115.4	110.6	110.0
1992	156.9	213.0	214.9	508.6	108.5	111.2	117.4	101.4
1993	258.4	356.5	349.5	804.6	103.6	106.1	171.6	148.4
1994	406.6	580.1	544.6	841.8	136.5	145.9	171.5	166.4
1995	549.8	712.4	834.8	1100.5	184.9	187.2	180.0	184.0
1996	630.8	839.0	871.1	1148.2	198.8	189.3	180.3	174.1
1997	742.4	909.0	956.0	1115.0	184.4	185.3	174.8	181.7
1998	792.7	1066.2	1034.5	1254.4	198.2	177.9	165.2	155.8
1999	917.1	1151.4	1305.8	2010.0	160.5	164.9	151.1	111.8
2000	1265.1	1521.6	1478.7	1647.8	150.4	152.4	149.8	147.8
2001	1428.2	1597.1	1667.2	1778.5	155.7	151.5	146.1	146.0

2/ (1985:4 = 100). Breaks in the series were comprised of radioactive chemical elements (95:4, 98:1, 98:2, 99:1, 99:4, 00:1, 00:3).

Laspeyres Indices, Balanced Data SITC 6 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	59.7	88.1	91.6	121.7	100.2	106.1	103.6	101.9
1987	84.3	113.1	110.3	137.1	103.3	103.7	108.1	113.2
1988	79.1	121.0	117.1	150.1	117.8	119.6	117.9	120.2
1989	86.5	116.5	118.8	136.1	123.5	127.9	132.0	132.1
1990	77.5	137.2	132.1	188.0	132.0	128.6	129.7	128.5
1991	110.8	156.7	150.7	181.8	126.7	128.1	130.9	129.8
1992	123.9	197.5	168.9	229.8	120.8	119.3	124.1	118.5
1993	128.5	186.8	201.7	288.0	117.1	114.0	107.7	107.3
1994	169.8	247.0	206.3	309.7	108.3	121.0	132.2	127.3
1995	260.9	346.4	279.5	329.1	133.2	135.7	138.6	142.2
1996	184.2	263.6	249.3	309.4	147.8	145.6	143.5	141.4
1997	241.1	306.2	284.7	302.2	140.3	146.5	146.1	147.9
1998	212.2	260.7	242.5	280.5	148.1	153.3	149.0	140.5
1999	213.3	270.4	297.0	318.8	136.9	137.4	135.5	137.7
2000	309.1	384.3	350.9	331.4	135.0	138.9	141.2	142.6
2001	304.6	350.6	332.5	343.5	139.5	143.5	139.3	133.1

1/ (1985:4 = 100).

Laspeyres Indices, Full Data SITC 6 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	61.9	90.1	93.7	117.3	100.7	104.9	103.4	101.7
1987	83.5	111.4	107.4	133.9	103.8	104.9	110.0	115.2
1988	77.5	113.9	112.0	144.8	119.4	120.0	117.9	120.0
1989	82.9	109.8	111.3	127.4	123.6	126.9	129.5	131.0
1990	73.3	123.9	122.3	168.9	131.3	127.0	127.7	127.1
1991	99.5	146.2	140.8	163.5	123.4	124.9	127.7	127.4
1992	112.1	171.1	152.1	199.0	120.3	119.9	123.0	120.3
1993	113.6	159.0	175.7	248.5	115.9	112.5	108.3	108.9
1994	150.3	212.3	194.2	292.0	109.4	124.9	134.1	130.1
1995	242.7	318.3	257.3	296.7	141.4	145.9	144.2	145.7
1996	169.3	235.6	229.9	276.7	148.3	147.8	146.8	146.0
1997	218.7	287.4	284.3	300.3	145.3	148.2	155.0	156.4
1998	207.1	261.6	247.9	280.7	156.5	156.1	150.1	140.0
1999	212.3	259.2	322.2	349.7	135.4	134.3	133.0	137.4
2000	323.0	400.3	393.6	472.2	148.6	149.3	147.4	144.4
2001	420.0	471.3	469.5	468.7	141.0	142.9	139.9	138.2

2/ (1985:4 = 100). Breaks in the series were comprised of pearls (93:1, 01:1).

Laspeyres Indices, Balanced Data SITC 7 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	84.6	106.6	129.9	191.7	105.5	105.2	96.7	89.7
1987	205.4	255.5	335.8	471.4	60.8	76.7	60.3	78.3
1988	367.5	656.3	613.4	797.2	80.7	57.7	60.2	68.3
1989	555.4	848.9	900.8	1043.5	75.6	61.5	60.0	73.9
1990	744.4	1210.6	1355.9	1477.5	74.4	71.5	66.4	76.7
1991	1210.0	1667.2	1642.1	2084.2	74.6	72.3	67.5	68.1
1992	2067.7	3409.5	2918.8	3709.8	66.0	59.7	59.3	60.5
1993	2491.8	3708.6	3701.8	4774.8	64.6	65.9	58.0	64.1
1994	3187.4	5462.8	5211.6	7250.3	62.4	55.3	52.2	56.6
1995	5027.4	6938.2	6469.9	6867.6	66.1	61.1	59.7	63.5
1996	5144.2	7089.5	6435.6	6888.5	60.9	67.1	62.2	63.4
1997	5878.9	7881.1	7619.3	8285.3	66.6	64.3	60.3	62.1
1998	6812.0	8073.3	7380.2	8899.4	68.1	64.2	57.3	58.0
1999	6466.0	8989.6	8862.3	9945.5	66.9	62.7	57.0	55.7
2000	8994.9	11558.3	11278.2	10577.1	63.3	60.9	59.6	60.0
2001	9519.2	11825.8	10598.5	10355.0	65.6	63.2	67.8	67.2

1/ (1985:4 = 100).

Laspeyres Indices, Full Data SITC 7 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	69.0	90.2	115.0	132.5	83.8	85.9	81.0	76.8
1987	139.0	175.8	291.4	329.7	50.6	62.8	49.8	57.4
1988	254.5	461.7	404.0	521.2	60.4	44.9	46.4	51.9
1989	342.5	536.5	615.2	729.4	54.0	53.8	57.3	62.5
1990	556.9	943.4	1176.2	1343.7	59.1	61.0	40.2	63.9
1991	977.3	1184.8	1197.7	1779.6	61.9	44.3	59.1	50.7
1992	2755.9	4182.5	3659.8	6135.4	40.1	46.7	73.0	68.7
1993	3533.5	4787.4	5813.3	8566.5	63.9	94.8	76.1	76.7
1994	5263.7	7717.7	8628.0	12434.7	82.4	82.5	81.0	88.2
1995	9813.8	12230.9	12791.6	14955.2	90.6	82.7	90.8	95.5
1996	11302.9	14183.2	16287.8	17373.8	86.8	85.4	91.8	99.0
1997	12967.6	17636.9	18710.3	21241.3	94.6	92.3	92.6	95.0
1998	17928.6	22479.8	23034.1	26275.4	92.1	83.1	87.0	90.3
1999	20131.5	26383.2	29618.2	32830.6	92.8	89.0	90.1	89.3
2000	31360.4	38967.9	41826.4	42536.9	88.2	88.1	93.0	93.7
2001	35912.4	40193.2	42419.1	47507.1	98.4	96.0	104.9	111.4

2/ (1985:4 = 100). Breaks in the series were comprised of electric motors (92:1) & ships (91:1, 94:4)

Laspeyres Indices, Balanced Data SITC 8 1/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	129.7	163.8	194.9	214.3	88.2	87.6	87.2	142.1
1987	284.9	379.7	391.1	540.6	120.5	132.8	136.8	130.0
1988	421.5	476.9	502.6	634.3	129.3	138.7	141.9	146.6
1989	516.2	655.9	683.2	862.5	147.2	147.5	157.8	158.1
1990	648.9	834.8	791.5	1083.2	156.5	165.8	178.1	180.9
1991	822.6	1013.1	1162.4	1350.6	170.1	170.7	172.8	181.1
1992	2268.6	3206.9	3367.9	3827.6	150.8	151.4	158.0	162.2
1993	3020.1	3732.9	4327.5	4735.9	154.4	150.3	154.9	154.7
1994	3575.0	4447.4	4797.3	5631.7	143.0	152.5	155.0	156.6
1995	4274.5	5041.7	5155.8	5211.4	155.9	154.9	156.0	161.4
1996	4404.4	4868.4	5140.5	5547.2	154.9	156.2	160.3	167.9
1997	4725.2	5798.4	6043.5	6166.6	166.2	164.2	163.0	171.5
1998	4980.2	6302.8	6270.9	6327.6	173.8	161.1	165.0	167.8
1999	5098.4	6409.6	7075.4	7326.2	171.3	161.6	156.8	162.9
2000	6825.1	8105.0	8335.3	7372.8	156.2	150.4	151.8	157.8
2001	7423.4	8274.9	8409.1	7651.4	152.3	151.3	150.9	155.0

1/ (1985:4 = 100). Break in the series was comprised of pencils (94:1).

Laspeyres Indices, Full Data SITC 8 2/

	Volume				Price			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1986	98.4	134.7	121.9	143.5	89.9	78.1	114.2	109.1
1987	143.3	130.3	171.0	215.8	99.7	133.0	122.5	108.0
1988	205.5	201.8	219.3	280.0	107.3	103.9	123.7	114.9
1989	230.8	267.1	299.8	361.7	108.5	110.9	136.9	124.2
1990	251.1	308.7	302.1	394.5	113.0	126.5	152.7	145.0
1991	312.7	376.6	429.2	537.0	128.4	128.3	153.8	147.0
1992	628.6	852.3	878.2	1084.0	119.1	119.9	145.6	144.6
1993	759.2	923.5	1066.7	1327.7	124.5	124.1	137.9	130.3
1994	1072.9	1466.5	1579.1	1918.8	120.3	127.2	138.2	133.2
1995	1407.9	1748.0	1759.6	1787.9	133.8	134.8	143.3	137.3
1996	1417.9	1702.0	1884.2	1997.1	131.4	132.4	141.8	145.1
1997	1690.5	2073.8	2131.1	2253.3	135.1	135.9	146.0	146.5
1998	1878.3	2256.9	2170.0	2246.8	143.7	135.2	143.4	136.9
1999	1869.4	2311.8	2521.0	2693.9	131.0	129.2	136.5	135.3
2000	2549.6	2912.8	3054.1	2838.4	130.3	130.7	138.2	139.8
2001	2664.2	2941.1	3082.6	2850.7	135.1	134.4	141.1	136.8

2/ (1985:4 = 100). Break in the series was comprised of pencil (94:1).

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