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AN IMPERFECT COMPETITION MODEL IN AN INDUSTRY WITH DIFFERENTIATED DOMESTIC AND FOREIGN PRODUCTS

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ABSTRACT: In this paper a simplified model for the demand for and prices of clothing and footwear was formulated and estimated. The model was based on imperfect competition in a small open economy with free entry, symmetric firms and differentiated domestic and foreign products. The industry price was modelled by a mark-up over marginal costs. The mark-up depended on the conjectural variations elasticity, which reflects the degree of competition, and on the demand elasticities. The conjectural variations elasticity was assumed to vary over time.

KEY WORDS: Imperfect competition, conjectural variations

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1. Introduction

The purpose of this paper is to build a simple model of the demand for domestically produced and imported commodities and their prices in an industry with imperfect competition, symmetric firms and differentiated domestic and foreign products. The model should also be such that it could be parameterized and estimated. No preassumptions are made regarding the mode of competition, and the conjectural variations elasticity is allowed to vary over time. This paper relies mostly on Venables (1985) and Ilmakunnas (1985).

The estimation is made on data of clothing and footwear consumption and imports into Finland. The consumption of clothing and footwear is 5 % of total private consumption and their imports are 4 % of the total imports of goods. The production of the textile and clothing industry is 6 % of total manufacturing production. The share is growing in imports, stable in consumption, and declining in production.

In section 2 the model is derived. In section 3 the demand function is parameterized and in section 4 the price function is derived. Section 5 introduces the data and section 6 the estimation results. Section 7 includes conclusions. The first two appendixes contain some derivations of a more technical nature, while the third includes data and graphs.

2. The model

The two economies are labelled by the superscripts h=home and f=foreign. They both have an industry where firms compete with other domestic firms and with imports. The domestically produced goods are assumed to be homogeneous, but differentiated from homogenous imported goods. Production happens in both countries under increasing returns to scale and constant marginal costs. The industries are characterized by free entry and symmetric firms.

The number of domestic firms is n_1 and there are n_2 foreign firms. Total production in the home country is denoted by $X_1 = n_1 x_1$, of which $X_1^h = n_1 x_1^h$ is sold domestically and $X_1^f = n_1 x_1^f$ is exported. The foreign firms produce $X_2 = n_2 x_2$, sell $X_2^f = n_2 x_2^f$ in the foreign market and export $X_2^h = n_2 x_2^h$ to the home market. The markets are segmented and the prices on these markets are denoted by p_1^h, p_2^h and p_1^f, p_2^f.

We thus have the inverse demand equations:

$$p_1^h = p_1^h(\underset{-}{n_1 x_1^h},\ \underset{+}{n_2 x_2^h},\ \underset{+}{m^h}) \text{ , where } m^h \text{ is domestic real expenditure.}$$

$$p_2^h = p_2^h(\underset{+}{n_1 x_1^h},\ \underset{-}{n_2 x_2^h},\ \underset{+}{m^h}) \tag{1}$$

$$p_1^f = p_1^f(\underset{-}{n_1 x_1^f},\ \underset{+}{n_2 x_2^f},\ \underset{+}{m^f}) \text{ , where } m^f \text{ is foreign real expenditure.}$$

$$p_2^f = p_2^f(\underset{+}{n_1 x_1^f},\ \underset{-}{n_2 x_2^f},\ \underset{+}{m^f})$$

Free entry occurs and the number of firms is endogenous so that firms' profits are driven down to zero.

Profit maximization by each domestic firm i implies that increasing sales on the home market gives:

$$\delta\pi_{1i}/\delta x_{1i}^h = (p_1^h - b_{1i}) + ((\delta p_1^h/\delta X_1^h)*(\delta X_1^h/\delta x_{1i}^h) + (\delta p_1^h/\delta X_2^h)*(\delta X_2^h/\delta x_{1i}^h))*x_{1i}^h \tag{2}$$

$$= 0, \text{ where } b_{1i} = \text{marginal costs}$$

This profit maximization condition (2) for domestic firm i's sales on the home market can be written as:

$$p^h_1(1 + e^h_{11}\epsilon^h_{11i} + e^h_{12}\epsilon^h_{21i}) = b_{1i} \qquad (3)$$

where $e^h_{11} = (\delta p^h_1/\delta X^h_1)*(X^h_1/p^h_1)$ and $e^h_{12} = (\delta p^h_1/\delta X^h_2)*(X^h_2/p^h_1)$ are the elasticities of the inverse demand function p^h_1 with respect to domestic supply X^h_1 and imports X^h_2.

The two terms $\epsilon^h_{11i} = (\delta X^h_1/\delta x^h_{1i})*(x^h_{1i}/X^h_1)$ and $\epsilon^h_{21i} = (\delta X^h_2/\delta x^h_{1i})*(x^h_{1i}/X^h_2)$ are firm i's conjectural variations elasticities. The term ϵ^h_{11i} is domestic firm i's conjectural variations elasticity with respect to other domestic firms' production. Its first part $\delta X^h_1/\delta x^h_{1i}$ can be written as $1 + \sum_{j\neq i}\delta x^h_{1j}/\delta x^h_{1i}$, where the summation is over the anticipated changes in the outputs of the other domestic firms, following a change in the output of firm i.

If firms follow Cournot-conjenctures, $\delta x^h_{1j}/\delta x^h_{1i} = 0$ for $j\neq i$. The term $e^h_{11}\epsilon^h_{11i}$ can then be written as $(x^h_{1i}/X^h_1)*e^h_{11}$ and the firm i conjectures the price change to be proportional to its market share times the elasticity. If $\sum_{j\neq i}\delta x^h_{1j}/\delta x^h_{1i} < 0$, firms conjecture the markets to be more competitive than in Cournot. The price p^h_1 will then be lower. If all the symmetric firms change their output just as much as firm i, $\epsilon^h_{11i} = (1+\sum_{j\neq i}\delta x^h_{1j}/\delta x^h_{1i})(x^h_{1i}/X^h_1) = (1+ (n-1)\delta x^h_{1i}/\delta x^h_{1i})(x^h_{1i}/nx^h_{1i}) = 1$.

The term $\delta X^h_2/\delta x^h_{1i}$ in the elasticity ϵ^h_{21i} can be seen as a corresponding conjectural response in the foreign firms' exports to the domestic market.

We make the small open economy hypothesis that foreign firms' exports to the domestic market X^h_2 do not react to domestic firms' changes in their output x^h_{1i}. This assumption means that $\epsilon^h_{21i} = 0$ as $\delta X^h_2/\delta x^h_{1i} = 0$.

The profit maximizing condition (3) for domestic firms' production at the domestic markets reduces to:

$$p^h_1(1 + e^h_{11}\epsilon^h_{11i}) = b_{1i} \quad \Leftrightarrow \quad p^h_1 = b_{1i}/(1 + e^h_{11}\epsilon^h_{11i}) \qquad (4)$$

This means that domestic producers use a mark-up pricing strategy. The mark-up in price over the marginal costs depends on the price elasticity and on the conjectural variations elasticity.

Profit maximization for domestic producers sales at the export market ($\delta\pi_{1i}/\delta x^f_{1i} = 0$) gives a corresponding equation to (3):

$$p^f_1(1 + e^f_{11}\epsilon^f_{11i} + e^f_{12}\epsilon^f_{21i}) = b_{1i} + t_1, \quad \text{where } t_1 \text{ are (specific) tariffs.} \tag{5}$$

Domestic producers' market share in the foreign market is negligible and we can thus assume $e^f_{11} = 0$ and $e^f_{12} = 0$. This means that domestic producers' changes in quantity do not result in changes in the market price.[1)] The quantity exported is determined by demand conditions on the foreign market. The profit maximization equation (5) simplifies to:

$$\bar{p}^f_1 = b_{1i} + t_1 \tag{6}$$

Domestic firms sell their goods abroad at prices set according to their (constant) marginal costs plus transport costs and (specific) tariffs. Export volumes are determined by foreign demand. Free entry occurs also in the foreign industry and the number of firms is endogenous.

Profit maximization for foreign firms' export sales on the home market ($\delta\pi_{2i}/\delta x^h_{2i} = 0$) gives an equation similar to (5):

$$p^h_2(1 + e^h_{22}\epsilon^h_{22i} + e^h_{21}\epsilon^h_{12i}) = b_{2i} + t_2 \tag{7}$$

We assume that foreign producers' export prices are determined abroad. The import prices p^f_2 are thus fixed for the domestic market. This means that $e^h_{22} = e^h_{21} = 0$. The profit maximization equation (7) simplifies to

$$\bar{p}^h_2 = b_{2i} + t_2 \tag{8}$$

The import price for foreign firms' production on domestic markets is their (constant) marginal cost plus transport costs and (specific) tariffs. Import volumes are determined by domestic demand.

Domestic firms will produce ($n_1 > 0$) provided that $(p^h_1 - b_{1i})x^h_{1i} - f_{1i} \geq 0$, where f_{1i} are fixed costs. When $n_1 > 0$, domestic firms' exports will depend on foreign demand with prices $\bar{p}^f_1 = b_{1i} + t_1$. Similar conditions apply also for the foreign firms.

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1) Because the domestic producers' market share is small, it is also true that $x^f_{1i}/X^f_2 \approx 0$ and thus $\epsilon^f_{21i} = 0$.

To get the market price equations we aggregate the above firm's price equations:

$$\sum_i S^h_{1i} p^h_i (1 + e^h_{11} \epsilon^h_{11i}) = \sum_i S^h_{1i} b_{1i}, \quad \text{where } S^h_{1i} = x^h_{1i}/X^h_1 \text{ is firm i's market share.}$$

and further:

$$p^h_1(1 + e^h_{11} \sum_i S^h_{1i} \epsilon^h_{11i}) = b_1 \qquad \Leftrightarrow$$

$$p^h_1(1 + e^h_{11} \epsilon^h_{11}) = b_1, \qquad \text{where } \sum_i S^h_{1i} \epsilon^h_{11i} = \epsilon^h_{11} \tag{9}$$

Similarly from (6) and (8) we get:

$$\bar{p}^f_1 = b_1 + t_1 \tag{10}$$

$$\bar{p}^h_2 = b_2 + t_2. \tag{11}$$

3. Demand functions

In this chapter the functional forms are introduced for the demand function which corresponds to the inverse demand equation $p^h_1 = p^h_1(n_1 x^h_1, n_2 x^h_1, m^h)$ as well as for the demand for imports $x^h_2 = x^h_2(p^h_1, \bar{p}^h_2, m^h)$.

We use the demand equation:[1)]

$$d\ln x_i = a_i + b_i(d\ln m) + \sum_j c_{ij} d\ln p_j, \quad \text{where} \tag{12}$$

x_i = quantity demand of product i
m = real expenditure
p_j = price of good j
a_i, b_i, c_i are parameters which can be interpreted as
- a_i = constant
- b_i = income elasticicty
- c_{ii} = own price elasticicty
- c_{ij} = cross price elasticicty (measure of substitutability)

and dln denotes logarithmic difference (log per cents)

We are not estimating any total demand system and we can assume that $\delta m/\delta p = 0$.

1) Sato (1972)

We thus have (dropping superscripts h)

$$\begin{aligned} d\ln x_1 &= a_1 + b_1 d\ln m + c_1 d\ln p_1 + c_{12} d\ln \bar{p}_2 \\ d\ln x_2 &= a_2 + b_2 d\ln m + c_2 d\ln \bar{p}_2 + c_{21} d\ln p_1 \end{aligned} \quad (13)$$

We also have restrictions: $c_{12} = c_{21}$ and $c_1 c_2 - c_{12} c_{21} > 0$.
These two equations determine the demand.

4. Price function

If we take in the domestic market price equation (9) e^h_{11} and ϵ^h_{11} as constants and take logarithmic differences of both sides of the equation we get:

$$d\ln p^h_1 = d\ln b_1. \quad (14)$$

Taking logarithmic differences we lose the constant multipliers. We cannot then infer anything from the 'estimation', because the equation just states that changes in the prices and in the marginal costs have a one-to-one relation.

Similar problems arise, however, also if we try to estimate the equation without taking log-differences. Prices and costs are normally available only as indexed data. Let $P^h_{1t} = p^h_{1t}/p^h_{10}$ be the domestic price index at time t, at the base period t = 0 and $P^h_{10} = 1$ and define the index for costs $B_{1t} = b_{1t}/b_{10}$ similarly. Let the index of the mark-up factor be MU^h_{1t}. The market price equation can then be written as:.

$$P^h_{1t} = MU^h_{1t} * B_{1t}. \quad (15)$$

If the inverse demand and conjectural elasticities are constant, MU^h_{1t} is unity all the time and the conjectural variations elasticity ϵ^h_{11} cannot be identified.

Insted, we assume the conjectural variations elasticity to vary over time. We take log-differences of the price equation and get:

$$d\ln p^h_1 = - d\ln (1 + e^h_{11}\epsilon^h_{11}) + d\ln b_1$$
$$\Leftrightarrow$$
$$d\ln p^h_1 = A + d\ln b_1, \quad \text{where} \quad A = - d\ln (1 + e^h_{11}\epsilon^h_{11}) \quad (16)$$

We can estimate this equation and get an estimate for the parameter A. We can then solve from the demand equations for e^h_{11} and thereafter solve for the time path of ϵ^h_{11}. The resulting ϵ^h_{11} will be monotonically decreasing or increasing over time (see Appendix I(2)). From indexed price and cost data we cannot determine the absolute level of the competiton parameter ϵ^h_{11}.

Another approach was used by Appelbaum (1982), who let the conjectural variations parameter ϵ vary over time as a function of some exogenous variables.

In order to get a functional form for the marginal costs b, we let costs C_i for a single firm be determined by a simple Cobb-Douglas production function plus fixed costs. The Cobb-Douglas production function $x_i = \alpha' l_i^{\beta'}$ (l=labour) gives rise to a cost function:

$$C_i = \alpha w^{\beta} x_i^{\sigma} + f_i, \tag{17}$$

where w is the price (unit labour costs) of the factor of production (labour).

In the following we assume $\sigma = 1$ which gives constant marginal costs. This implies also the restriction β=1.

The industry cost function is then $C = \alpha w^{\beta} X + F$, where $X = \sum_i x_i$ and $F = \sum_i f_i$. Average costs are declining: $AC = C/X = \alpha w + F/X$, and the marginal costs are constant as a function of output, but increasing as a function of w: $MC = b = \alpha w$.

Clothing and footwear industry is very labour-intensive and unit labour costs are taken as a proxy for all variable costs.

Taking log-differences gives:

$$b_1 = \alpha w_1 \quad \Rightarrow \quad d\ln b_1 = d\ln w_1 \tag{18}$$

Substituting (18) for $d\ln b_1$ in the market price equation (16) we get the market price equation with variable conjectural variation elasticities and expressed in a log-difference form as:

$$d\ln p^h_1 = - d\ln (1 + e^h_{11}\epsilon^h_{11}) + d\ln w_1 = A + d\ln w_1 \tag{19}$$

This last equation gives the functional form for the market price to be estimated with data on prices and wages.

5. Data

The model was estimated for clothing and footwear. The time series were collected from various sources. The series were all yearly data and covered the years 1949-1987. After log-differencing the series included 38 yearly observations.

The series were the following:

p_1^h: price of domestic production sold domestically, measured by

implicit deflator of production (value added):

1949-60 textile industries and footwear, clothing and sewing industries

1960-87 textile, wearing apparel and leather industries

p_2^h: price of imports, measured by

1949-87 unit value index of imports of clothing and footwear for consumption

x_1^h: quantity of domestic production sold domestically, measured by

1949-87 The value of domestic production consumed domestically is the value of total domestic consumption of clothing and footwear minus the value of imports of clothing and footwear. The log-difference of quantity x_1^h was then the the log-difference of the value minus the log-difference of the price p_1^h.

x_2^h: quantity of imports, measured by

1949-87 volume index of imports of clothing and footwear for consumption

m^h: private real expenditure, measured by

1949-87 private consumption expenditure in fixed prices

w_1 wage costs, measured by

1949-87 unit labour costs

6. Estimation results

The demand equations were the following for log-changes:

$$x_1 = a_1 + b_1 m + c_1 p_1 + c_{12} \bar{p}_2$$
$$x_2 = a_2 + b_2 m + c_2 \bar{p}_2 + c_{21} p_1$$

The signs of the parameters were expected to be: $b_1, b_2, c_{12}, c_{21} > 0$, $c_1, c_2 < 0$, and it was expected that $c_{12} = c_{21}$ and $c_1 c_2 - c_{12} c_{21} > 0$.

The equations were first estimated without the restriction $c_{12} = c_{21}$ by SURE. The statistical program RATS was used in the estimation. The estimation results for the SURE-estimation are given below.

Dependent variable X_1 Independent variables m, p_1, p_2

$R^2 = 0.54$

DW = 3.0

	coeff.	t-value
constant	- .056	-3.3
m	1.87	6.5
p_1	- .42	-2.4
p_2	.38	3.2

Dependent variable X_2 Independent variables m, p_2, p_1

$R^2 = 0.34$

DW = 1.7

	coeff.	t-value
constant	.026	.5
m	2.46	3.0
p_2	- .67	-2.0
p_1	.01	.0

All the parameter estimates had correct signs. The price of domestic clothing and footwear does not significantly explain the import volume of clothing and footwear. The restriction $c_1 c_2 - c_{12} c_{21} > 0$ is valid for the estimated coefficients.

Next the hypothesis H_0: $c_{12} = c_{21}$ was tested using the likelihood ratio test. The value of the $CHI^2(1)$-statistics was $0.484 < 2.71 = CHI^2(1)_{0.1}$ and H_0 was valid, and the restriction $c_{12} = c_{21}$ did hold.

The estimation results for the restricted equations are given below:

Dependent variable X_1 Independent variables m, p_1, p_2

$R^2 = 0.54$

DW = 3.0

	coeff.	t-value
constant	- .057	-3.4
m	1.85	6.4
p_1	- .37	-2.3
p_2	.35	3.2

Dependent variable X_2 Independent variables m, p_2, p_1

$R^2 = 0.33$

DW = 1.7

	coeff.	t-value
constant	.015	.3
m	2.37	2.9
p_2	- .82	-3.1
p_1	.35	3.2

From the restricted demand equations we could calculate (Appendix I(1)) the value of e^h_{11} to be -4.38. We get the estimate of A from equation (16) to be the average of dlnp-dlnw=-0.00128. The time path of ϵ_t would then be ϵ_t=-0.00029 + 1.001*ϵ_{t-1} and the value of ϵ_t would very slowly decrease.

If all firms changed their output by the same amount than firm i, ϵ would equal 1. In Cournot-competition ϵ_i would be equal to the firms market share x_i/X. Then $\epsilon = \sum_i S_i \epsilon_i$, where $S_i = x_i/X$ (see page 5). We get $\epsilon = \sum_i S_i S_i = \sum_i S_i^2 \in (0,1)$ (Herfindal index). If markets were more competitive than in Cournot, ϵ would be smaller.

A decreasing ϵ_t implies increasing competition, although in this experiment the increase in competiton is more or less insignificant. Growing import penetration could be one source of the increased competition.

Care should be used in interpreting the results of this experiment.
The cost function was simple and probably underspecified. Marginal costs may be non-constant and e.g. the technical change and the prices of capital and intermediate products should be modelled in the cost function. At the present model the averege change of unit labour costs above the average change of domestic product prices is seen as increased competition.

7. Conclusions

In this paper a simplified model for the demand for and prices of clothing and footwear was formulated and estimated. The model was based on imperfect competition in a small open economy with free entry, symmetric firms and differentiated domestic and foreign products. The demand equations were simple log-linear. The estimation gave the correct signs and realistic magnitudes for the demand elasticities.

The industry price was modelled by a mark-up over marginal costs. The mark-up depended on the conjectural variations elasticity, which reflects the degree of competition, and on the demand elasticities. The conjectural variations elasticity was assumed to vary over time. The model was very simplified in order to concentrate on some basic aspects of the estimation of an imperfect competition model. The over-simplification may unfortunately also have obscured the results to some degree.

(1) Derivation of the inverse demand elasticity e_{11}

We have the demand equations:

$X_1 = X_1(p_1, p_2, m^h)$

$X_2 = X_2(p_1, p_2, m^h)$

Total differentiation of these demand equations (assuming $dm^h = 0$) gives:

$dX_1 = (\delta X_1/\delta p_1)dp_1 + (\delta X_1/\delta p_2)dp_2$

$dX_2 = (\delta X_2/\delta p_1)dp_1 + (\delta X_2/\delta p_2)dp_2$

Putting this in a matrix form and inverting gives:

$$\begin{bmatrix} dp_1 \\ dp_2 \end{bmatrix} = \frac{\begin{bmatrix} \delta X_2/\delta p_2 & -\delta X_1/\delta p_2 \\ -\delta X_2/\delta p_1 & \delta X_1/\delta p_1 \end{bmatrix}}{(\delta X_1/\delta p_1)(\delta X_2/\delta p_2)-(\delta X_1/\delta p_2)(\delta X_2/\delta p_1)} = \begin{bmatrix} dX_1 \\ dX_2 \end{bmatrix}$$

The condition for inverting is $(\delta X_1/\delta p_1)(\delta X_2/\delta p_2)-(\delta X_1/\delta p_2)(\delta X_2/\delta p_1) \neq 0$

From this we can get:

$(\delta p_1/\delta X_1)(X_1/p_1) = e_{11} = c_{22}/(c_{11}c_{22} - c_{12}c_{21})$, where

$c_{11} = (\delta X_1/\delta p_1)(p_1/X_1)$

$c_{22} = (\delta X_2/\delta p_2)(p_2/X_2)$

$c_{12} = (\delta X_1/\delta p_2)(p_2/X_1)$

$c_{21} = (\delta X_2/\delta p_1)(p_1/X_2)$

We can see that $e_{11} \neq 1/c_{11}$ and $e_{12} \neq 1/c_{12}$.

(2) Solving ϵ_{11}

We have the equation $A = -\,d\ln\,(1 + e^h_{11}\epsilon^h_{11})$.

For simplicity of expression we drop the sub- and superscripts.

$A = -\,d\ln\,(1 + e\epsilon)$

<=>

$$A = -\,(\,\ln(1 + e\epsilon_t) - \ln(1 + e\epsilon_{t-1})\,) = -\ln \frac{1 + e\epsilon_t}{1 + e\epsilon_{t-1}}$$

<=>

$$\exp(A) = \frac{1 + e\epsilon_{t-1}}{1 + e\epsilon_t}$$

<=>

$\epsilon_t = (1-\exp(A))/(\exp(A)*e) + \epsilon_{t-1}/\exp(A)$

==NAMS

OBS$	x2	p2	m	p1	x1	w	fitx1	fitx2	fitp1

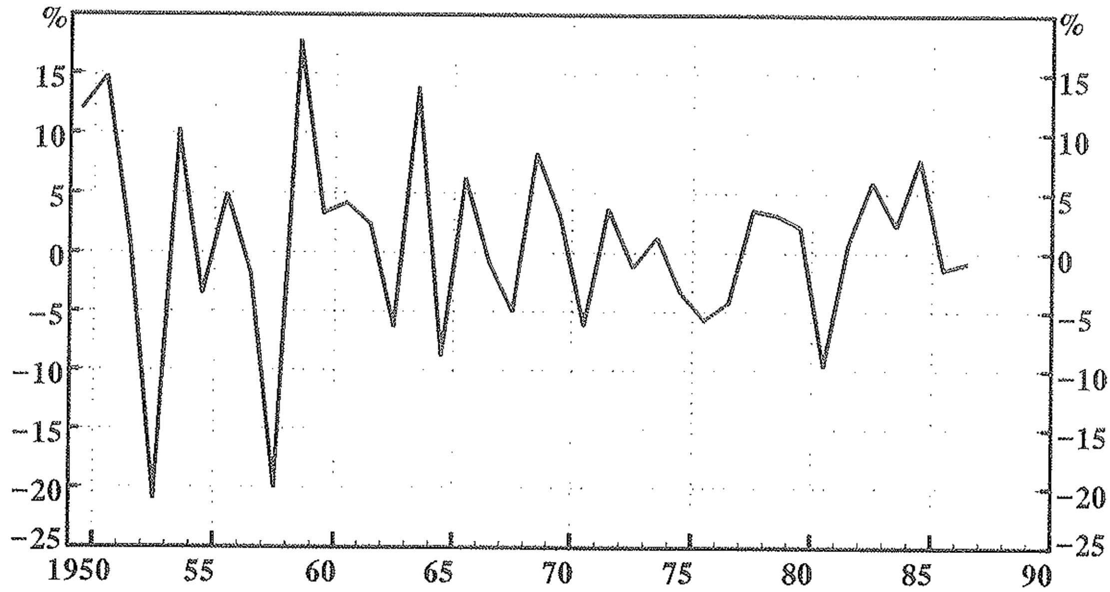
END

==DATA

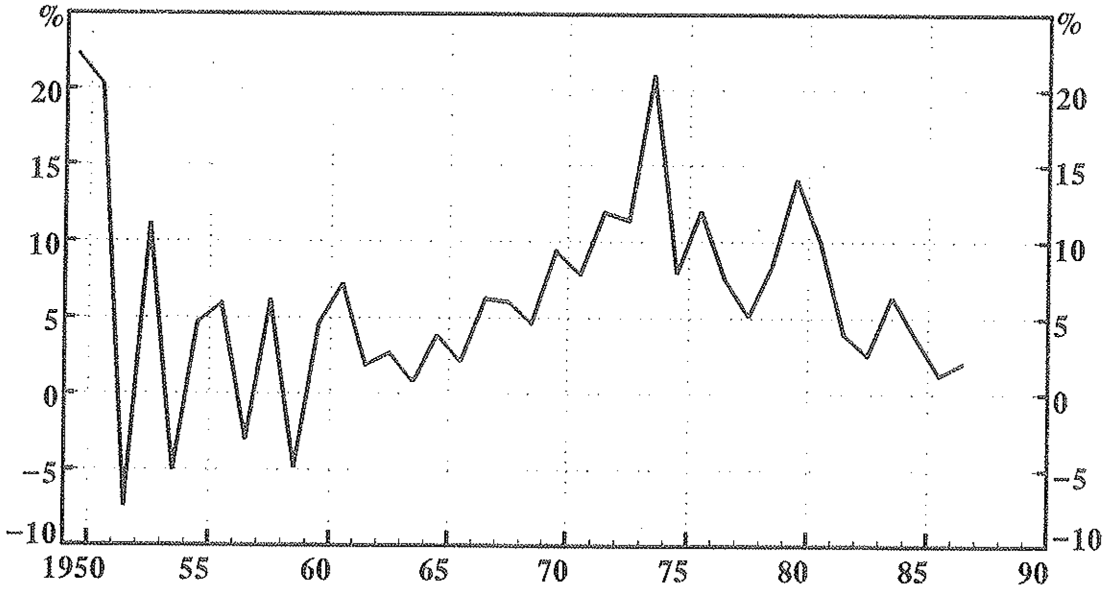
1950	-33.894	36.883	8.979	22.275	12.098	13.015	15.383	0.257	9.991
1951	26.877	19.750	7.433	20.287	14.799	23.581	7.330	9.952	15.958
1952	41.278	-20.186	6.046	-7.471	0.854	6.409	1.330	29.800	6.259
1953	-38.669	-10.558	-1.911	11.180	-21.010	-4.980	-17.043	9.483	-0.174
1954	-18.061	-3.540	6.728	-5.039	10.350	-4.497	7.449	18.607	0.099
1955	13.674	-4.485	8.183	4.679	-3.550	0.592	6.171	26.204	2.973
1956	1.778	-1.057	4.158	5.913	4.961	7.527	-0.550	14.267	6.890
1957	-16.226	16.309	-1.952	-3.061	-1.763	2.433	-2.469	-17.589	4.013
1958	-3.158	14.519	-2.683	6.183	-20.013	7.334	-7.906	-14.650	6.782
1959	18.721	-3.555	6.953	-4.877	17.849	-0.248	7.801	19.211	2.499
1960	10.713	-1.426	7.904	4.601	3.364	1.726	6.743	23.005	3.614
1961	18.828	-4.167	7.352	7.244	4.187	3.366	3.783	24.860	4.540
1962	34.422	-3.803	5.839	1.880	2.441	4.054	3.120	19.112	4.929
1963	13.645	-0.893	4.321	2.670	-6.311	5.413	1.025	13.396	5.696
1964	33.866	-0.775	5.372	0.769	13.917	7.257	3.722	15.134	6.738
1965	3.852	-2.157	5.437	3.879	-8.805	4.497	2.198	17.500	5.179
1966	26.789	-3.525	2.517	2.093	6.323	4.578	-3.008	11.073	5.225
1967	16.404	5.103	2.084	6.219	-0.801	4.378	-2.366	4.398	5.112
1968	-11.597	16.940	0.067	6.032	-5.049	5.112	-1.924	-10.163	5.527
1969	41.562	-4.602	10.195	4.653	8.394	1.095	9.860	31.064	3.258
1970	36.071	0.445	7.300	9.369	3.205	4.594	4.487	21.689	5.234
1971	-22.256	4.773	1.662	7.853	-6.041	18.592	-3.874	4.233	13.140
1972	19.640	7.743	8.050	11.907	3.808	1.688	7.452	18.362	3.593
1973	22.939	8.636	5.779	11.382	-1.201	8.304	3.758	12.059	7.329
1974	1.332	7.783	1.764	21.021	1.359	26.110	-7.578	6.571	17.386
1975	10.404	5.029	3.099	7.926	-3.366	23.980	-1.154	7.458	16.184
1976	6.592	5.540	0.739	12.042	-5.682	12.840	-6.886	2.865	9.891
1977	7.672	13.035	-1.201	7.525	-4.164	7.233	-6.183	-9.451	6.724
1978	-13.079	11.413	2.444	5.117	3.622	1.417	0.901	-0.304	3.439
1979	30.148	5.585	5.344	8.428	3.259	4.135	3.003	12.505	4.975
1980	21.940	10.314	1.988	14.159	2.233	8.136	-3.714	2.647	7.235
1981	1.390	6.579	1.206	10.009	-9.680	9.491	-4.900	2.417	8.000
1982	10.831	5.288	4.555	3.940	0.796	6.770	3.123	9.319	6.463
1983	0.265	8.100	2.528	2.547	6.013	3.510	0.871	1.721	4.622
1984	-1.333	12.386	2.711	6.420	2.290	4.157	1.242	-0.019	4.987
1985	14.310	7.659	3.146	3.757	7.949	3.527	1.407	3.969	4.632
1986	17.193	-1.418	4.019	1.193	-1.358	2.845	0.837	12.596	4.246
1987	27.007	-5.162	5.010	2.046	-0.785	1.625	1.053	18.315	3.557

END

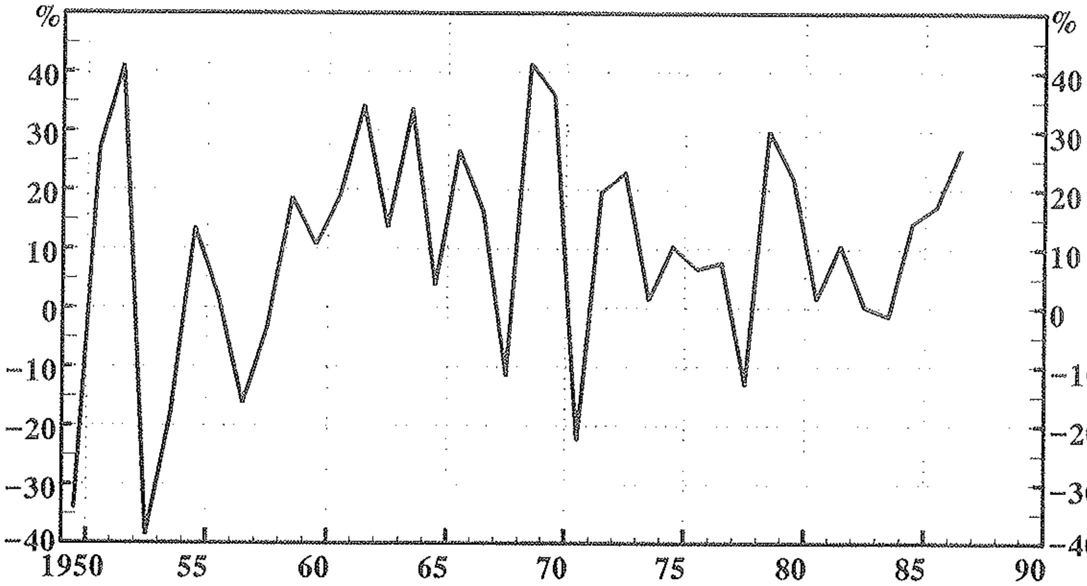
Volume change of domestic demand for domestic clothing and footwear



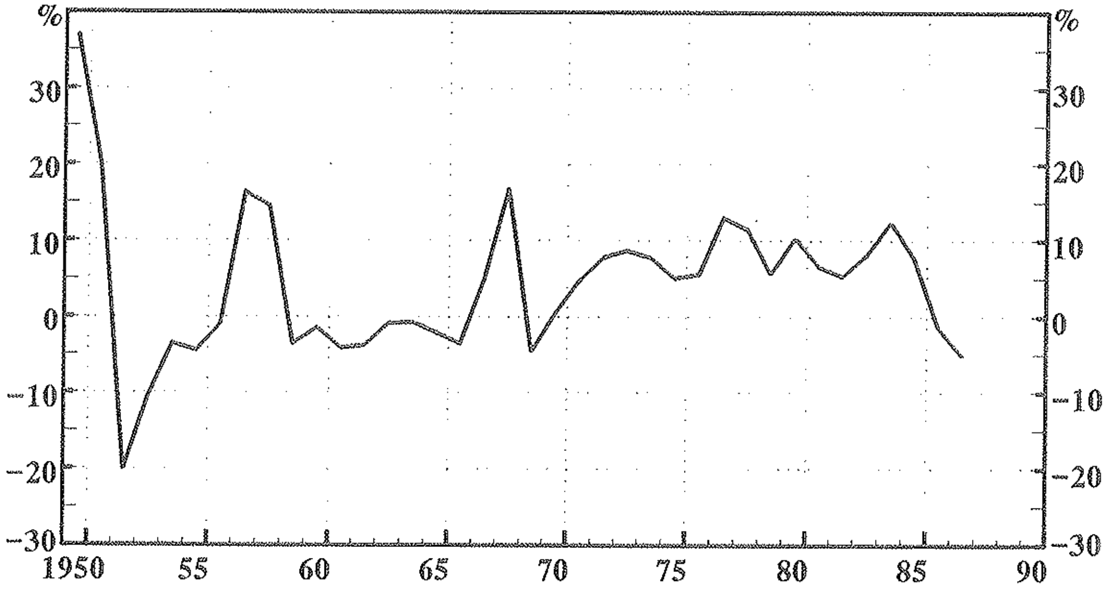
Price change of domestic demand for domestic clothing and footwear



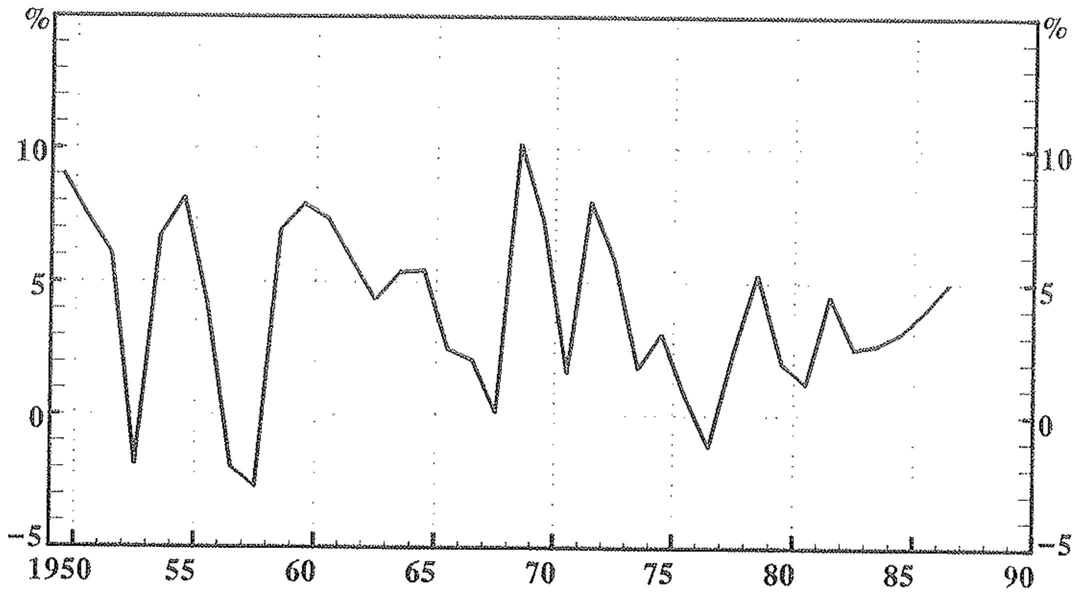
Volume change of clothing and footwear imports



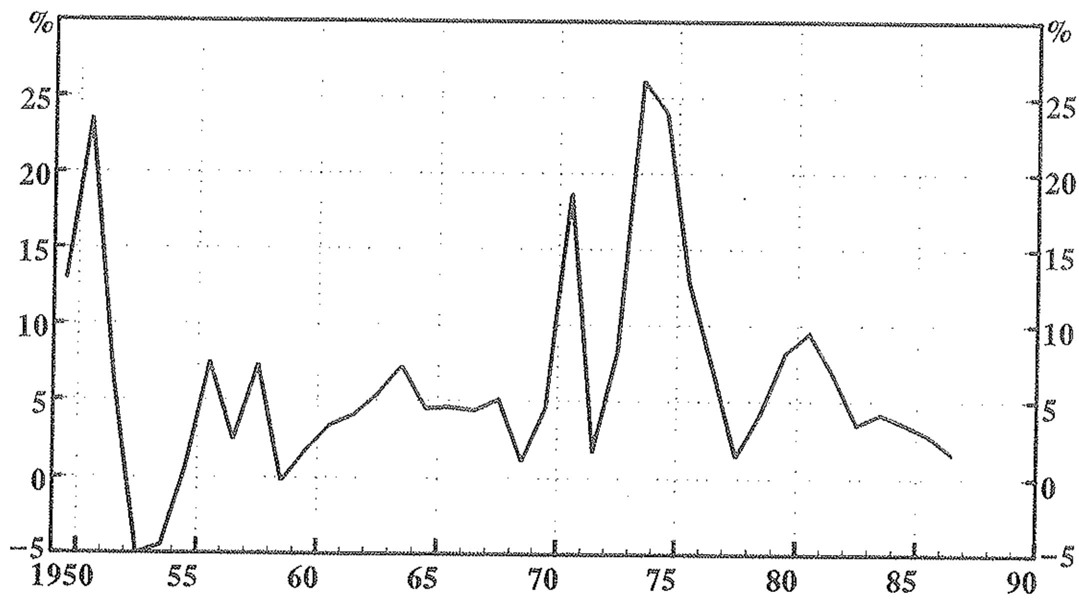
Price change of clothing and footwear imports



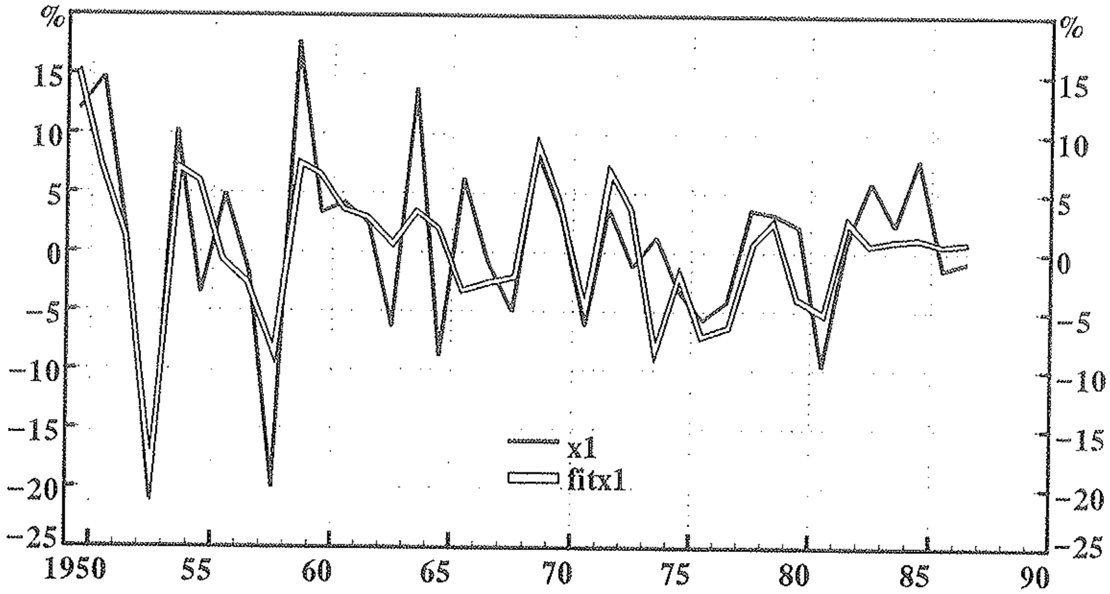
Volume change of private consumption expenditure



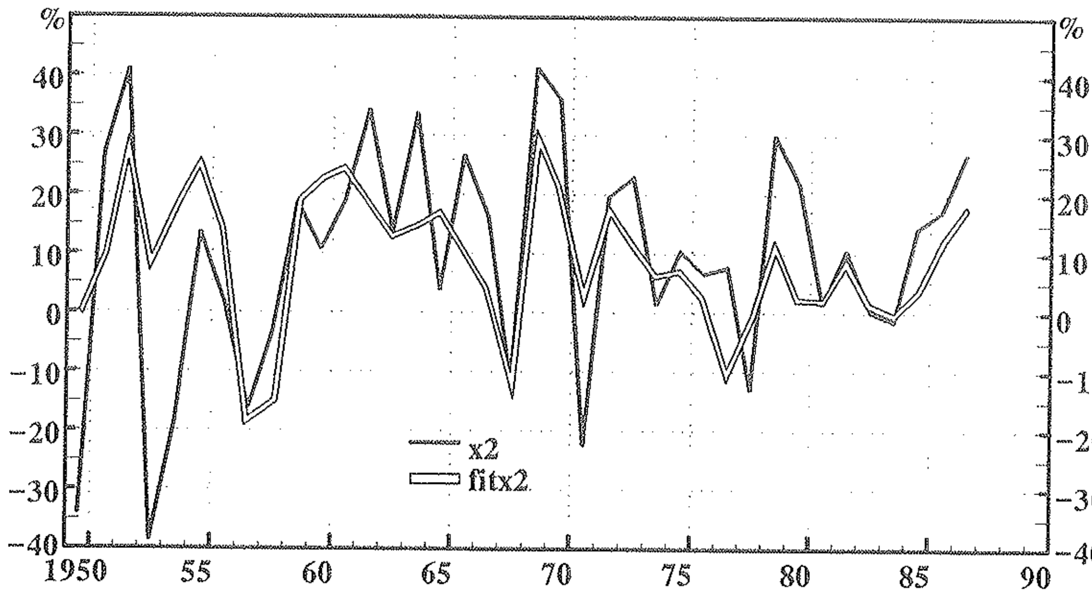
Change of unit labour costs



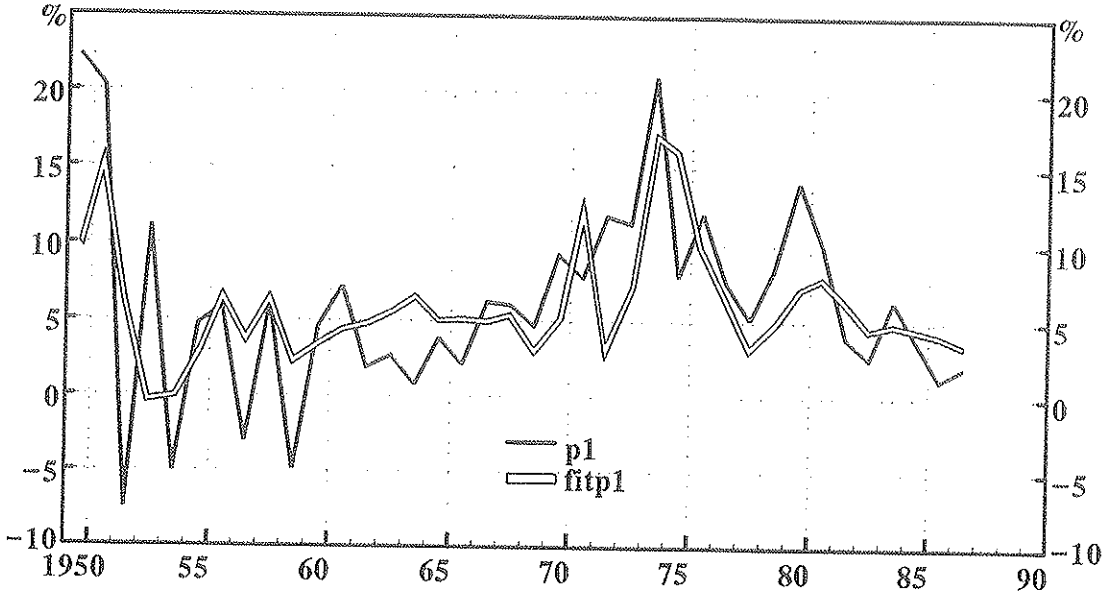
Volume change of domestic demand for domestic clothing and footwear



Volume change of imports of clothing and footwear



Price change of domestic demand for domestic clothing and footwear



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