

## Measuring the Interaction of Structural Changes with Inflation

### Abstract

The paper is organized in four chapters. The first of them describes the methodological framework of the investigation, insisting especially on defining the sectoral changes and relative prices, as well as on their interaction (as expected and as real processes); the theoretical considerations are algebraically formalized in order to be analyzed statistically.

The second chapter is devoted to the data problems, with emphasis on the configuration of input-output tables utilized in application and the main streams identified in structural evolution of the Romanian economy during 1989-2005.

The third – as a main one – contains a detailed econometric analysis. The main assumption of the paper is that the downward price rigidity cannot be separated from the corresponding downward output rigidity. They represent an indestructible tandem. In other words, the downward price rigidity is intimately connected not only to the nominal wage low flexibility, but to the slow employment adjustments, too. This approach has many consequences. From this point of view, the orthogonal regression is admitted as a more suitable method, as compared to direct and reverse OLS.

The paper ends with a short set of concluding remarks, including possible extensions of this research.

JEL Classification: C22, C32, C43, E31

Key-words: structural changes, relative prices, downward price rigidity, downward output rigidity, orthogonal regression

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## Measuring the Interaction of Structural Changes with Inflation

The transition of ex-socialist countries to the market mechanisms involves deep institutional, technological, and managerial transformations, which are accompanied by extensive changes in the structure of demand and supply. These mutations develop under significant and persistent inflationary pressures. Due to these circumstances, we think that the statistical series of emergent economies can also represent a suitable “experimental platform” for measuring the interaction between structural breaks and dynamics of prices. The present paper uses as an example the Romanian experience during the period 1989-2005.

It is organized in four chapters. The first of them describes the methodological framework of our investigation, insisting especially on defining the sectoral changes and relative prices, as well as on their interaction (as expected and as real processes); the theoretical considerations are algebraically formalized in order to be analyzed statistically. The second chapter is dedicated to the data problems, with emphasis on the configuration of input-output tables utilized in the application and the main streams identified in the structural evolution of the Romanian economy. The third – the main one – contains a detailed econometric analysis, implying not only usual procedures (as direct and reverse OLS), but also some less practiced techniques (for instance, orthogonal regression). The paper ends with a short set of concluding remarks. Evoked are also some possible extensions of this research.

## I. Methodological Framework

1. Generally, the structural changes are interpreted as reallocations of production factors across different segments of the given economy. They have been studied from many perspectives, either as the expression of the profound shifts in technology, demographic trends, consumer preferences, world economic environment (Kuznets; Baumol; Bezdek and Wendling; Laitner; Maddison; Ngai and Pissarides; Oulton; van der Linden and Dietzenbacher; Bagnoli, Château, and Sahin), or - more specifically – in relation with the dynamics of prices (Balke and Wynne; Ball and Mankiw; Bomberger and Makinen; Caglayan and Filiztekin; Coorey, Mecagni, and Offerdal; Fielding and Mizen; Laidler; Nautz and Scharff; Ratfai).

The present paper is based on this latter approach. Besides, it operates with a more limited interpretation of the structural changes, focusing on the shifts in weights of different sectors in the global output. Such shifts may or may not involve modifications in the respective production functions.

2. These relative sectoral changes in output are measured by the ratio of the sectoral growth rates to the global growth rate (evidently, both in real terms). Similarly, the relative price variability is defined by the ratio of the sectoral price indices to the corresponding aggregate price index. Such estimations are usual in theoretical and empirical analysis. With this aim, the following symbols will be used:

$i$  – sector;  $i=1, 2, \dots, n$ ;  
 $t$  – current period and  $(t-1)$  – previous one;  
 $V_{it}$  - sectoral output at current prices;  
 $p_{it}$  – sectoral price index;  
 $q_{it}$  – sectoral output index at constant prices;  
 $G_t$  - aggregate output at current prices;  
 $P_t$  – aggregate price index;  
 $Q_t$  – aggregate output index at constant prices;  
 $w_{it}$  – weight of the sector  $i$  in total;  
 $rp_{it}$  – sectoral relative price index;  
 $rq_{it}$  – sectoral relative output index (structural adjustment);  
 $wrp_{it}$  – weighted sectoral relative price index;  
 $wrq_{it}$  – weighted sectoral relative output index.

3. These magnitudes are linked by several identities and accounting definitions:

$$G_t = \sum V_{it} = \sum (V_{i(t-1)} * q_{it} * p_{it}) \quad [1.1]$$

$$G_t / G_{t-1} = P_t * Q_t \quad [1.2]$$

$$V_{it} / G_t = w_{it} \quad [1.3]$$

$$P_t * Q_t = \sum (w_{i(t-1)} * q_{it} * p_{it}) \quad [1.4]$$

$$rp_{it} = p_{it} / P_t \quad [1.5]$$

$$rq_{it} = q_{it} / Q_t \quad [1.6]$$

$$\sum (w_{i(t-1)} * r_{qi} * r_{pi}) = 1 \quad [1.7]$$

$$wrp_{it} = w_{i(t-1)} * rp_{it} \quad [1.8]$$

$$wrq_{it} = w_{i(t-1)} * rq_{it} \quad [1.9]$$

The relationship between the relative sectoral changes in output and the relative price variability can be empirically researched comparing two pairs of series:  $rp_{it}$  and  $rq_{it}$  or  $wrp_{it}$  and  $wrq_{it}$ . It seems natural to consider more relevant the statistical analysis which involves not only the dynamics of prices and of output themselves, but also the weight of the respective sector in the economy. In other words, the second couple ( $wrp_{it}$  and  $wrq_{it}$ ) will be preferred.

4. It is often admitted that the structural corrections in supply are determined and preceded – always or, at least, commonly – by the modifications in prices of different groups of goods and services.

4.1. This succession is accepted even in the case of supply shocks, taking into account that new input-output coefficients have impact on demand for primary resources and intermediate products. Such an assumption is tempting. Nevertheless, it is not realistic enough. The present paper promotes - as its conceptual cornerstone - another hypothesis, namely that the binomial "relative sectoral changes in output, on one hand, and relative price variability, on the other" can be consistently treated as a strong interdependent relationship, not only as a simple univocal one.

4.2. The expectations theory could be useful in this discussion (Fisher; Sargent; Evans and Ramey). In an extremely simplified scheme, we can distinguish the following categories of economic agents implied in demand-supply mechanisms: households, firms, government, banking system. The transaction decisions of each one of them are based on expectations determined not only by their own preferences and corresponding objective-functions, but also on the predictable reactions of other agents with which they interact.

• Thus, households' intentions for consumption (volume, frequency, shopping basket) and savings are intimately connected with their anticipations regarding the remuneration of production factors (labour income, profits) that depend on

firms' turnover, the direct and indirect taxation, the state budget transfers, the prices (including exchange rate), the interest rate.

- In a similar way, the firms conceive business plans starting from their assumptions concerning their own production costs and desirable investments, on one hand, and the possible changes in domestic demand, in international competitiveness, public policies, prices, interest rate.

- It is also obvious that the Government, building the public budget, must take into account its political objectives, as well as the projections for the most important macroeconomic indicators (which reflect the outcomes of firms, the private and public consumption, the global domestic and external environment, the monetary variables).

- The position of the banking system can also be sketched in a similar manner.

4.3. The above presented considerations are consistent independently of the paradigm adopted for economic expectations - adaptive or rational.

Normally, the expectations forming process is highly complicated and is developing through numerous transparent or informal channels (individual perceptions, micro and macro-forecasts, dynamics of orders, advertising, households and firms surveys, explicit or implicit negotiations, data of capital markets, analytical commentaries, adopted new legislation and parliament debates, Government's and Central Bank's decisions, trade-union requirements, etc). The confrontation among expectations of different agents is iterative and self-corrective. Its final results are contracts and real flows of goods, services, financial resources.

4.4. Consequently, the sectoral and price changes – as the other economic parameters – cannot be dissociated. They are reciprocally conditioned on both levels of economic activity, either in expectations forming process or in transactions themselves. This interpretation has, of course, many cognitive consequences. Some of them – as the causality problem - exceed the intended background of the present paper.

There is however one computational implication, which, in our opinion, cannot be ignored. If the relative price changes (x) and relative sectoral changes in output (y) are interdependent, then the relation  $y=f(x)$  is equally valid as its symmetrical form  $x=f(y)$ . Under these conditions, it seems logical to admit that such a property ought to be also rediscovered in the corresponding econometric coefficients. This question will be further examined from a technical point of view.

## II. Overview of Data Base

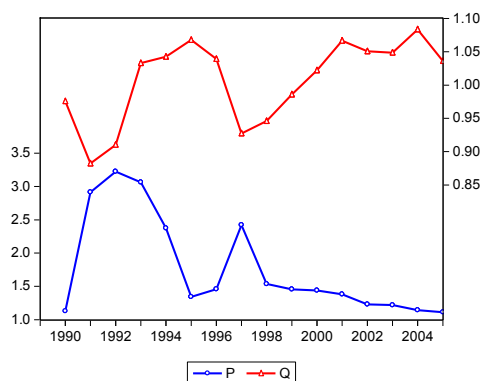
1. The empirical analysis will be based on the annual input-output tables of the Romanian economy for the period 1989-2005. The extended classification of these tables contains 105 branches (National Institute of Statistics-Romania).

Our application introduces several simplifications. Thus, the branches belonging to nuclear and military fields, for which the data were not available, have been excluded. Some related branches have been grouped in order to avoid negative values induced - in different moments (especially at the beginning of transition) - by the Government policies concerning production subsidies and administrated prices. This new classification is described in Appendix 1, comparatively with the official codification; the number of retained sectors (84) remains anyway representative.

The output is approximated by the gross value added (GVA), while the prices are represented by the GVA deflators. Appendix 2 presents detailed data for their annual indices (q and p) and the corresponding sectoral weights (w). On this basis there were computed relative (rq and rp) and weighted relative (wrq and wrp) changes.

2. Interpreting the data included in Appendix 2, we must not forget that the Romania's transition from command to market economy was marked by a high inflation and severe oscillations of the global output (Graph PQ).

Graph PQ



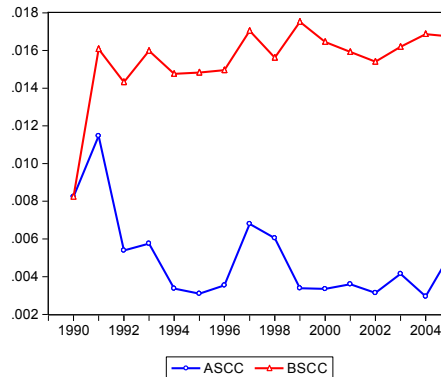
Annual structural changes coefficient (ascc) and base structural changes coefficient (bscc) are estimated as follows:

$$ascc = [(1/n) * \sum (w_{it} - w_{i(t-1)})^2]^{1/2} \quad [II.1]$$

$$bscc = [(1/n) * \sum (w_{it} - w_{i89})^2]^{1/2} \quad [II.2]$$

The coefficients ascc and bscc are presented in Graph SCC

Graph SCC



3. This turbulent context did not mean a chaotic evolution. Despite the oscillations induced by the unstable circumstances of transition and frequent changes in international environment, several trends of economic structure can be, however, distinguished. With this aim, the basic nomenclature of the 84 sectors (defined in Appendix 1) was packed down into 10 groups of branches (Appendix 3). Their shares in the total gross value added are denoted by  $WAG_i$ . Table no. 1 presents this aggregation.

Table no. 1: Aggregated Classification

Group	Main included sectors	Symbol of group's share in total GVA	Trend during 1989-2005
I	Agriculture, forestry, hunting, and fishing	WAG1	Descending
II	Extraction of coal, natural gas, ferrous and non-ferrous metals, stone, sand and clay, chemical minerals, salt	WAG2	Descending
III	Production and distribution of electric power, gas (excluding methane extraction), thermal power, and water	WAG3	Ascending-descending
IV	Production and processing of meat and fish, fruit and vegetables, animal oils and fats, milk, grain mill products, starches, other food products, beverages, tobacco	WAG4	Ascending-descending
V	Textiles and textiles wearing apparel, fur and leather wearing apparel, leather goods and footwear, wood processing, pulp, paper and cardboard, furniture production	WAG5	Descending
VI	Metallic construction and metal products, equipment and machinery for different branches, machine tools, domestic appliances, computers, electric machinery and appliances, radio-T.V. and communications equipment, medical and optical apparatus, precision and watch making instruments, means of road transport, ships and boats, railway and tramway locomotives and rolling stock, aircraft and spacecraft, manufacture of motorcycles and bicycles	WAG6	Descending
VII	Oil processing, basic chemicals, manufacture of pesticides and other agro-chemical substances, paints and varnishes, pharmaceuticals and medicinal products, soap and detergents, perfumes and toilet preparations, man-made fibers, rubber and plastics, glass, refractory and non-refractory ceramic, cement and construction materials, ferrous and non-ferrous metallurgy, other industrial activities	WAG7	Descending
VIII	Constructions	WAG8	Ascending
IX	Transport via railways and pipelines, water and air transport, activities of travel agencies and tour operators, other transports, post, telecommunications	WAG9	Ascending
X	Wholesales and retail trade, hotels and restaurants, financial, banking, insurance, business, and real estate services, computer and related operations, research and development, architectural and engineering activities (including technical consultancy), public administration and defense, education, health and social security, other community and personal service activities	WAG10	Ascending

This aggregation takes into account the main features of the respective sectors. Thus, the first group includes branches that depend significantly on climatic conditions. The production of the second one - practically mining industries - is essentially influenced by the peculiarities of the mineral deposits (due to the strong connection between the extraction and processing of oil, both are included into manufacturing industries). The third group represents quasi-generally used energetic utilities. All industries linked with agriculture are integrated into the fourth. The next one comprises a large variety of labour intensive sectors. The sixth group covers machine building branches, which have a crucial role in the investment process and modern civilization. The rest of the manufacturing industries constitute the seventh group. All infrastructure, productive and civil constructions are reunited into the next group. The ninth one is dedicated to transports and telecommunications. Finally, the tenth group aggregates service activities.

In order to identify the trends which characterize the evolution of these ten groups, the Hodrick-Prescott filter has been applied on the data presented in Appendix 3.

4. The classification described in Table no. 1 has the advantage of being easily translated into the classical three global area decomposition of economic activities (Appendix 3): primary (WPRIM), secondary (WSEC) and tertiary (WTER):

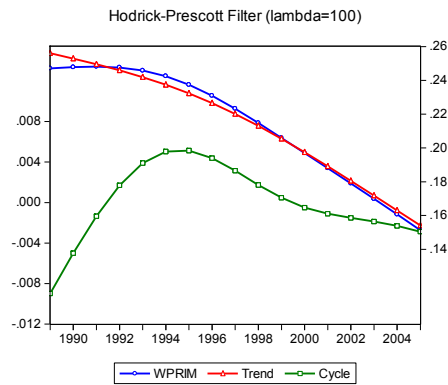
$$WPRIM=WAG1+WAG2+WAG3 \quad [II.3]$$

$$WSEC=WAG4+WAG5+WAG6+WAG7+WAG8 \quad [II.4]$$

$$WTER=WAG9+WAG10 \quad [II.5]$$

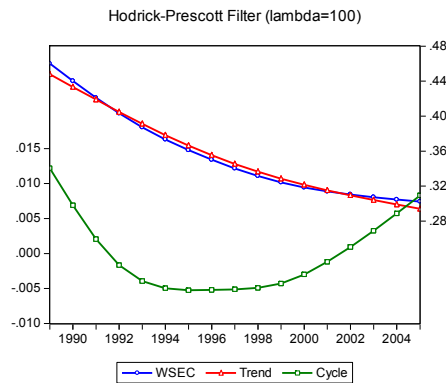
For WPRIM, the descending tendency of its weight in the total gross value added is very clear. It results especially from the persistent decline of the agriculture and other similar branches, on one hand, and the deep restructuring of mining industries (first of all coal production), on the other.

Graph HPWPRIM



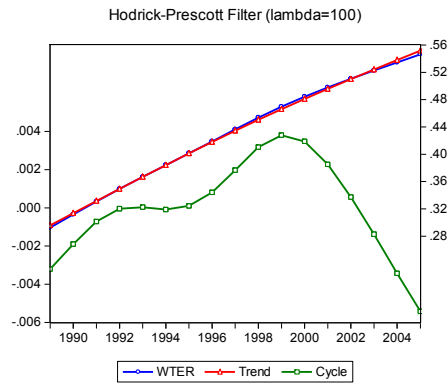
• The share of the secondary area in total gross value added also decreases (Graph HPWSEC), but it visibly tends toward stabilization.

Graph HPWSEC



- In the case of WTER we see a firm ascending trend (Graph HPWTER).

Graph HPWTER

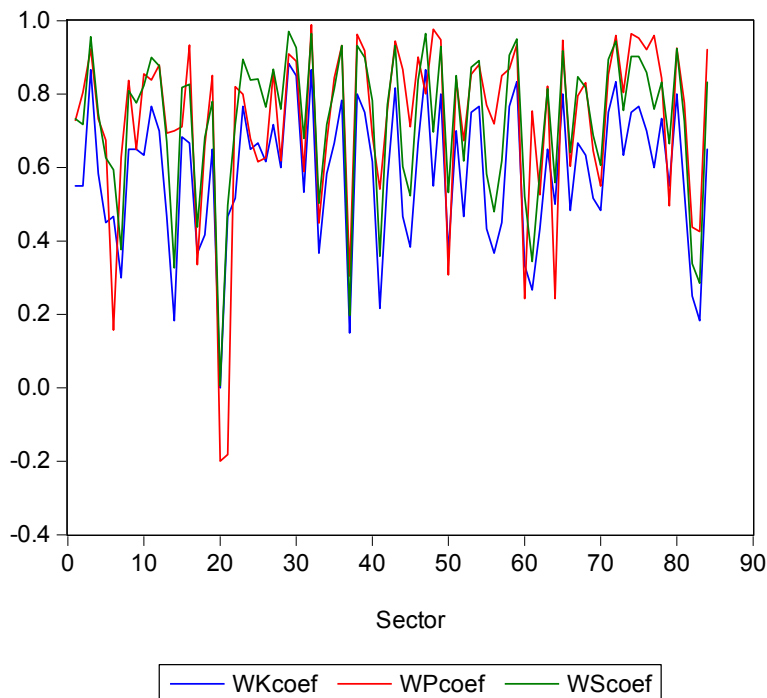


5. All the above presented structural changes were induced by the accommodation of output to domestic demand, and especially by the opening of economy to international markets, first of all by the integration of Romania into European Union. Undoubtedly, under the conditions of such a convulsive process, it is difficult to extract some rules for the correlation between structural changes and prices. Nevertheless, this attempt can be useful, at least from a methodological point of view.

### III. Econometric Analysis

1. As we have already mentioned, the relationship between the relative sectoral changes in output and the relative price variability is examined using their weighted expressions ( $wr_{q_{it}}$  and  $wr_{p_{it}}$  series). As statistical measures of its intensity the correlations Pearson (WPcoef), Spearman (WScoef), and Kendall (WKcoef) have been computed (Appendix 4). Generally, these are positive (only in two cases WPcoef are negative). Graphically, they look as follows (Graph WCOR):

Graph WCOR



The distribution of the obtained correlation coefficients is presented in Table no. 2.

Table no. 2: Correlation coefficients between the sectoral changes and the relative prices, in their weighted determinations ( $wrp_{it}-wrq_{it}$ )

Levels of the correlation coefficients	Number of WPcoef	Number of WScoeff	Number of WKcoef
<0	2	0	0
0...0.1	0	1	1
0.1...0.2	1	1	3
0.2...0.3	2	1	3
0.3...0.4	3	5	7
0.4...0.5	4	3	12
0.5...0.6	4	8	12
0.6...0.7	15	12	19
0.7...0.8	11	14	15
0.8...0.9	22	21	12
0.9...1	20	18	0
Total	84	84	84

Therefore, 72 WPcoef, 73 WScoeff, and 58 WKcoef exceed 0.5. Taking into account these results, the simplest linear regressions have been estimated.

2. The ordinary least square method was applied in both its forms:

- direct (DOLS), which means  $wrp_i=c(i)+c(1i)*wrq_i$ , and
- reverse (ROLS), respectively  $wrq_i=c(2i)+c(3i)*wrp_i$ .

Regarding  $wrp_i$  and  $wrq_i$ , the statistical series deduced from Appendix 2 have been used, without any corrections. Only two dummies have been included, one in equation 20 (for 1990) and another in equation 21 (for 1991).

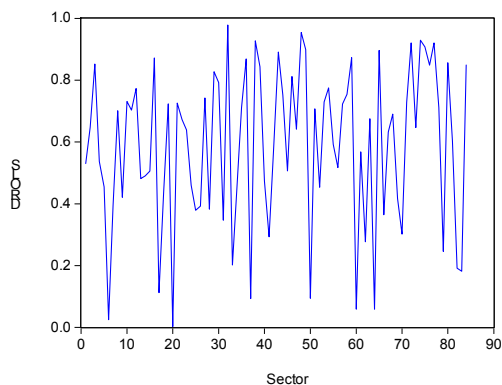
2.1. According to the obtained results, in two thirds of cases the probability of null hypothesis does not exceed 0.5. Concerning  $c(1i)$  and respectively  $c(3i)$  – which define the slopes of regressions – in only two sectors such a probability goes beyond this limit. It is important also to retain that all these essential coefficients are positive (as theoretically expected).

Normally, the regressions could be improved by introducing lags or new explanatory variables. For simplicity, we maintained the same specification for all sectors.

2.2. This option was guided by a supplementary reason. Even improved, the parameters determined in OLS cannot elude a difficult question. As it is known, the separate regressions (DOLS) and (ROLS) are not reversible, except in the trivial case when the correlation Pearson between involved variables is 1 in modulus.

In our applications, such a reversibility requires that the estimates  $c(3i)$  be the opposite of the corresponding  $c(1i)$ . In other words, their product must be equal to unity. This product was calculated for all 84 equations (see Graph DROLS).

Graph DROLS



Therefore, the series of coefficients  $c(1i)$  and  $c(3i)$  are far from being reversible. Under such conditions, it is not indifferent what econometric relationship is adopted for targeted analytical and predictive simulations [ $wrp_i=c(i)+c(1i)*wrq_i$  or  $wrq_i=c(2i)+c(3i)*wrp_i$ ]. A consistent choice would be possible in two situations:

- either there is an indubitable univocal causal relationship between  $wrp_i$  and  $wrq_i$ ,
- or we admit that at least one of regressed series can play the role of independent variable since it was certainly registered without measurement errors.

2.3. Unfortunately, we are not in any of these situations.

- As we have already outlined, theoretically the expression  $wrq=f(wrp)$  is equally valid as its symmetrical form  $wrp=f(wrq)$ . In order to check statistically this assumption, Granger causality test has been applied to these series (Appendix 4). The probability for “ $wrq$  does not Granger cause  $wrp$ ” is less than 0.3 in 10 cases, while that for “ $wrp$  does not Granger

cause wrq” surpasses this limit. In 19 cases the situation is converse (the first sentence has a probability higher than 0.3 and the second one has a lower level). Only two pairs have both probabilities higher than 0.3. For 53 couples, these do not exceed 0.3, more than a half of them being less 0.1. In our opinion, such results of a Granger causality test suggest that the tandem wrq-wrp represents rather an interdependent couple.

- On the other hand, it is obvious that the measurement errors affect both series of data.

3. More adequate in such a situation seems to be the orthogonal regression (Malinvaud; Brooks and Boone; Calafiore; Castellaro and Bormann; Dissanaikie and Wang; Dobrescu; Leng, Zhang, Kleinman, and Zhu; Saman; Schaefer and Visser; Serbinenko). This technique minimizes the orthogonal distance from the observed data points to the regression line. Consequently, it intrinsically observes the reversibility condition.

With the goal to algebraically demonstrate this feature, the slope in wrp=f(wrq) will be noted by b<sub>1</sub> (that is wrp=a<sub>1</sub>+b<sub>1</sub>\*wrq) and the slope in wrq=f(wrp) will be noted by b<sub>2</sub> (respectively wrq=a<sub>2</sub>+b<sub>2</sub>\*wrp). In orthogonal regression, the coefficients b<sub>1</sub> and b<sub>2</sub> are determined as follows:

$$b_1 = \{(\sigma_q^2 - \sigma_p^2) + [(\sigma_q^2 - \sigma_p^2)^2 + 4 * \sigma_{pq}^2]^{1/2}\} / (2 * \sigma_{pq}) \quad [III.1]$$

$$b_2 = \{(\sigma_p^2 - \sigma_q^2) + [(\sigma_p^2 - \sigma_q^2)^2 + 4 * \sigma_{pq}^2]^{1/2}\} / (2 * \sigma_{pq}) \quad [III.2]$$

where:

$\sigma_p^2$  is the variance of wrp,

$\sigma_q^2$  – the variance of wrq, and

$\sigma_{pq}$  represents their covariance.

Substituting

$A = (\sigma_q^2 - \sigma_p^2)$  and

$B = [(\sigma_p^2 - \sigma_q^2)^2 + 4 * \sigma_{pq}^2]^{1/2}$  which is equivalent also to  $[(\sigma_q^2 - \sigma_p^2)^2 + 4 * \sigma_{pq}^2]^{1/2}$ , we have

$$b_1 = \{A + B\} / (2 * \sigma_{pq}) \quad [III.3]$$

$$b_2 = \{-A + B\} / (2 * \sigma_{pq}) \quad [III.4]$$

$$b_1 * b_2 = \{[A + B] / (2 * \sigma_{pq})\} * \{-A + B\} / (2 * \sigma_{pq}) = \frac{B^2 - A^2}{(2 * \sigma_{pq})^2} = \frac{(\sigma_p^2 - \sigma_q^2)^2 - (\sigma_q^2 - \sigma_p^2)^2}{(2 * \sigma_{pq})^2} = \frac{4 * \sigma_{pq}^2 - 4 * \sigma_{pq}^2}{(2 * \sigma_{pq})^2} = 1 \quad [III.5]$$

which means

$$b_1 * b_2 = \frac{(\sigma_p^2 - \sigma_q^2)^2 + 4 * \sigma_{pq}^2 - (\sigma_q^2 - \sigma_p^2)^2}{(2 * \sigma_{pq})^2} = \frac{4 * \sigma_{pq}^2}{(2 * \sigma_{pq})^2} = 1 \quad [III.6]$$

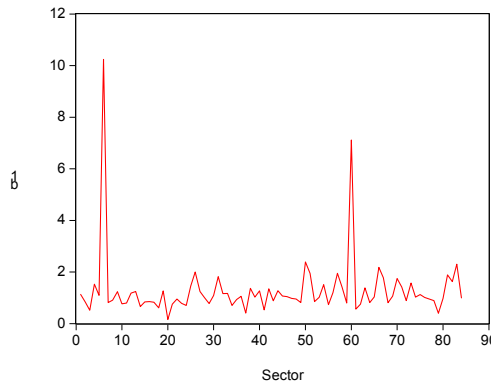
Due to this property, the orthogonal regression is preferable for cases (as the one here examined) in which the direction of causation is not clearly definable or the measurement errors in both series of variables are not excluded.

4. The computational results are synthetically presented in Appendix 5. For avoiding possible confusions with other similar measures of interaction between variables, we will name

- slope b<sub>1</sub> as the orthogonal price elasticity to structural production shifts, and
- slope b<sub>2</sub> (converse relationship) as the orthogonal production elasticity to relative price changes.

4.1. The series of b<sub>1</sub> is described in Graph b1.

Graph b1



A more expressive image can be obtained grouping the series b<sub>1</sub> into five classes.

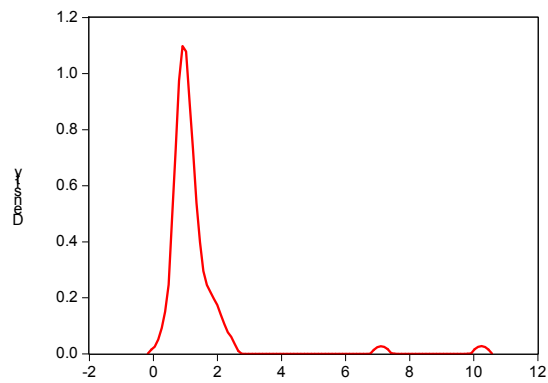


Table no. 3: Classes of b1

Orthogonal price elasticity to structural production shifts	Threshold of class	Number of cases
Very low	<0.7	8
Relatively low	0.7-0.9	22
Moderate	0.9-1.1	20
Relatively high	1.1-1.3	12
Very high	>1.3	22
Total		84

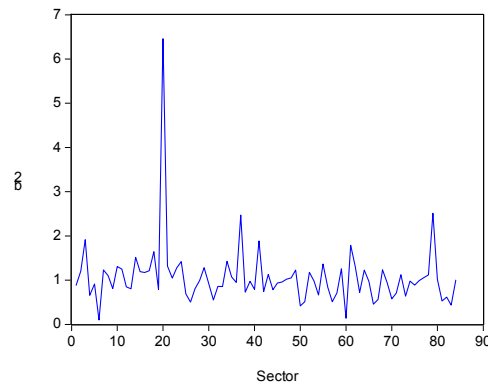
The Kernell density of b1 looks as follows:

Graph b1K



4.2. The series of b2 is presented in Graph b2.

Graph b2



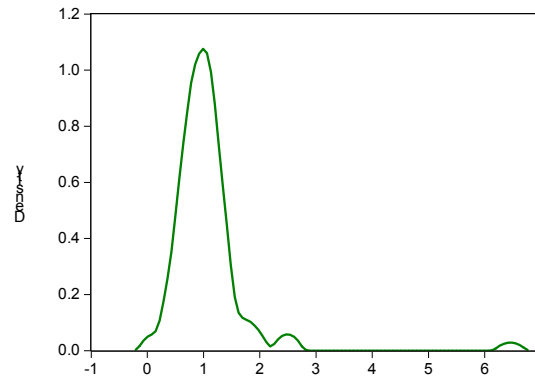
Using the same classification with five groups, the following picture is obtained:

Table no. 4: Classes of b2

Orthogonal production elasticity to relative price changes	Threshold of class	Number of cases
Very low	<0.7	17
Relatively low	0.7-0.9	17
Moderate	0.9-1.1	20
Relatively high	1.1-1.3	16
Very high	>1.3	14
Total		84

The Kernell density of b2 is shown in Graph b2K.

Graph b2K



The mean of b1 is more than b2, which can be interpreted in the sense that the price elasticity to structural shifts is higher comparatively with the converse relationship.

5. One of the most important aspects of examined problems is real-nominal rigidities in economics.

- The slow price adjustment – so-called price rigidity – is largely investigated in Keynesian and post-Keynesian economics. Usually it is associated with the nominal wage rigidity. There are many papers that systematize the huge amount of literature dedicated to these questions. Among them, we will mention some attempts undertaken during the last decade: Akerlof, Dickens, and Perry; Arseneau and S. K. Chugh; Baharad and Eden; Fehr and Goette; Holden and Wulfsberg; Kasuya; Kawaguchi and Ohtake; Koren; Lombardo; Ray, Wood, and Messinger; Roufagalas; Whelan.

- Several studies pay attention to quantity adjustments (Andersen; Hansen; Muller, Bergen, Dutta, and Levy).

The present paper covers both approaches:

a) on one hand, it examines the downward price rigidity under the changing relative prices, and

b) on another hand, the reflex phenomenon – which could be named "downward output rigidity" – is also researched.

The statistical measuring questions are preponderantly discussed.

5.1. The first of them has, as a starting point, the econometric estimation of relative prices:

$$wr_{it} = a_{1i} + b_{1i} * wr_{it} \quad [III.7] \text{ and}$$

$$rp_{it} = c_i * (a_{1i} + b_{1i} * wr_{it}) / w_{i(t-1)} = c_i * (a_{1i} / w_{i(t-1)} + b_{1i} * r_{qit}) \quad [III.8]$$

where  $c_i$  is a correction coefficient. It is introduced in order to ensure the equality  $\sum rp_{it} * wr_{it} = 1$ . From

$$c_i * \sum (a_{1i} / w_{i(t-1)} + b_{1i} * r_{qit}) * wr_{it} = 1 \quad [III.9] \text{ yields}$$

$$c_i = 1 / [\sum (a_{1i} / w_{i(t-1)} + b_{1i} * r_{qit}) * wr_{it}] \quad [III.10]$$

Consequently, the price indices are defined as follows:

$$p_{it} = c_i * (a_{1i} / w_{i(t-1)} + b_{1i} * r_{qit}) * P_t \quad [III.11]$$

The sectoral price indices  $\pi_{it}$  under  $P_t = 1$  (zero inflation) are expressed thus:

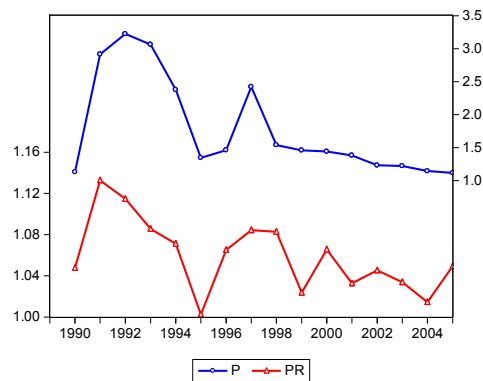
$$\pi_{it} = c_i * (a_{1i} / w_{i(t-1)} + b_{1i} * r_{qit}) \quad [III.12]$$

We introduce now the minimal price indices ( $p_{mit}$ ). These are the lower prices the output can be sold. They are approximated taking into consideration the revealed behaviour of suppliers, respectively in relation with the effectively practiced price indices ( $p_{it}$ ). In our application,  $p_{mit}$  are equal to the weighted mean of  $p_{it} < 1$ ; obviously, we could use the lowest individual level, but an average level seems more credible. If all  $p_{it} > 1$ , the hypothesis  $p_{mit} = 1$  is adopted. Finally, the sectoral price indices under downward price rigidity condition ( $p_{rit}$ ) are defined using the following rule:  $p_{rit} = \pi_{it}$  for  $\pi_{it} > 1$  and  $= p_{mit}$  for  $\pi_{it} < 1$ . The corresponding aggregate index (PR) is computed by

$$PR_t = \sum p_{rit} * wr_{it} \quad [III.13]$$

Graph P-PR presents the series  $PR_t$  comparatively with the registered deflators  $P_t$  in 1990-2005 years.

Graph P-PR



The downward price rigidity played, therefore, an important role during Romanian transition, but the other determinants of inflation were decisive.

5.2. In the methodological framework adopted by the present paper, the output rigidity can be estimated beginning with the computation of the  $wr_{q_{it}}$  equations using both  $\pi_{it}$  and  $p_{rit}$  series of prices:

$$wr_{\pi_{it}} = (a_{2i} + b_{2i} * wr_{\pi_{it}}) \quad [III.14] \text{ and}$$

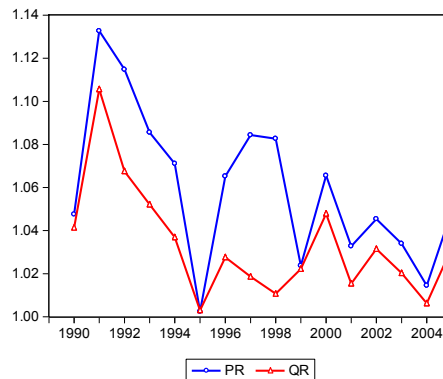
$$wr_{p_{rit}} = (a_{2i} + b_{2i} * wr_{p_{rit}}) \quad [III.15]$$

From each pair  $wr_{\pi_{it}} - wr_{p_{rit}}$  the higher level is chosen, thus obtaining a new series  $wr_{q_{hit}}$ . The aggregate downward output rigidity (QR) is determined as a ratio

$$QR_t = \frac{\sum wr_{q_{hit}}}{\sum wr_{q_{rit}}} \quad [III.16]$$

Graph PR-QR confirms the powerful link between downward price and output rigidities, implied as a matter of fact in the adopted methodology itself.

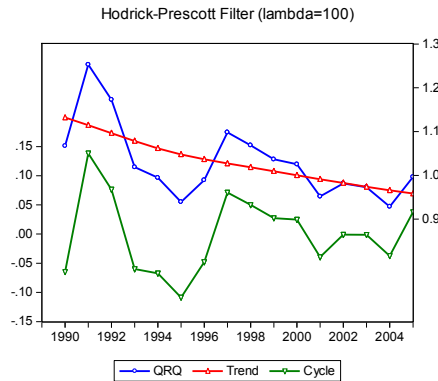
Graph PR-QR



Appendix 5 details the econometric coefficients of orthogonal regressions, price indices under zero aggregate inflation ( $\pi_{it}$ ), price indices under downward price rigidity ( $p_{rit}$ ), GVA indices under downward output rigidity ( $q_{rit}$ ), and a synthesis for total economy.

5.3. Using the Hodrick-Prescott filter, the ratio  $QR_t / Q_t$  (noted QRQ) is shown in Graph HPQRQ:

Graph HPQRQ



The trend is descending, but it engrafts on significant cyclical oscillations.

5.4. The series  $QR_t$  must be cautiously interpreted. Using the chain-indices, as we have done until now, the real  $Q_t$  could be represented as a product of three components, that is the basic level ( $QE_t$ ) compatible with  $\pi_t$  (zero aggregate inflation), the estimated here index  $QR_t$  and the influence of other factors  $OF_t$  (including stochastic disturbances):

$$Q_t = QE_t * QR_t * OF_t \quad [III.17]$$

The paper refers only to the second component, the other two ( $QE_t$  and  $OF_t$ ) remaining so far unknown.

#### IV. Several Final Remarks

1. The main conclusion of the paper is that the downward price rigidity cannot be separated from the corresponding downward output rigidity. They represent an indestructible tandem. In other words, the downward price rigidity is intimately connected not only to the nominal wage low flexibility, but to the slow employment adjustments, too. This approach has many consequences, including the econometric estimations. From this point of view, the orthogonal regression is admitted as a more suitable method, but we do not exclude other algorithms as possible alternatives. It is crucial in this respect to ensure the numerical compatibility of relationships in which dependent and explanatory variables reciprocally change their position.

2. The minimal price level remains an open question, even for statistical analysis.

When all the price indices surpass unity, the problem does not seem too complicated. It is assumed that, under perfect competition and instantaneous adjustments, the modification of sectoral structure of supply according to changes in relative prices does not exclude zero aggregate inflation. The set of price indices  $\pi_{it}$  are estimated just on this premise. Consequently, in the discussed here situation, the hypothesis of minimal prices equal to unity cannot be rejected.

More disputable are the cases in which some sectoral prices exceed unity, while other register deflation. As an initial attempt, we have admitted as minimal the mean (normally weighted) of price indices less than unity. We must recognize that such a solution has been adopted intuitively. Supplementary researches (including sociological) are necessary in order to rationally solve this question.

3. Three components of the aggregate output index in real terms ( $Q_t$ ) can be distinguished:

- a) the basic level ( $QE_t$ ) compatible with  $\pi_{it}$  (zero aggregate inflation);
- b) the index  $QR_t$  proposed in this paper; and
- c) the influence of other factors ( $OF_t$ ), which incorporate again stochastic disturbances.

It would be useless to outline the theoretical and practical importance of autonomous quantification of  $QE_t$ . We are not sure that the standard interpretations of the equilibrium level of output would be sufficient, because of the explicit inter-conditioning of  $QE_t$  with  $\pi_{it}$  prices indices (based on assumption of zero inflation).

A decomposition of  $OF_t$ , with the separation of stochastic disturbances, would also be interesting.

4. We have exemplified the proposed methodology using relatively extended input-output tables (84 sectors). Such exercises are of course laborious; besides, they depend on the frequency of available information. A reduced nomenclature could be more accessible, inclusively for current needs.

But the use of compacted classification must take into account the sectoral differences concerning the price elasticity to supply changes and its counterpart – the production elasticity to price changes. These differences are important and a non-homogenous (from this point of view) aggregation could essentially distort the results.

5. Our attempt has been limited to the illustration of the proposed methodology on statistical series. Adjusting it for predictive simulations represents an exciting future challenge.

## Appendices

### Appendix 1 - Structure of the input-output tables

#### 1A. Official classification of 105 branches (Romanian National Institute of Statistics - RNIS)

Code RNIS	Label
1	Crop production
2	Livestock breeding
3	Auxiliary services
4	Forestry and hunting
5	Logging
6	Fish farming and fishing
7	Coal mining and preparation (bituminous shale included )
8	Extraction of crude petroleum (included service activities incidental)
9	Extraction of natural gas (included service activities incidental)
10	Extraction of radioactive ores
11	Extraction and preparation of ferrous metals
12	Extraction and preparation of rare non-ferrous metals
13	Quarrying of stone
14	Quarrying of sand and clay
15	Mining of chemical minerals
16	Extraction and preparation of salt
17	Extraction and preparation of nonferrous metals
18	Production, processing and preserving of meat and meat products
19	Processing and preserving of fish and fish products
20	Processing and preserving of fruit and vegetables
21	Manufacture of vegetable and animal oils and fats
22	Manufacture of dairy products
23	Manufacture of grain mill products, starches and starch products
24	Manufacture of prepared animal feeds
25	Manufacture of other food products
26	Beverages
27	Tobacco
28	Textiles and textile product
29	Textiles wearing apparel
30	Fur and leather wearing apparel
31	Leather goods and footwear
32	Wood processing (excluding furniture)
33	Pulp, paper and cardboard and paper products
34	Publishing houses, polygraphy, recording and copying
35	Coal coking
36	Crude oil processing
37	Processing of nuclear fuels
38	Manufacture of basic chemicals
39	Manufacture of pesticides and other agro-chemical products
40	Manufacture of paints and varnishes
41	Manufacture of pharmaceuticals and medicinal chemicals
42	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
43	Manufacture of other chemical products n.e.c.
44	Manufacture of man-made fibers
45	Manufacture of rubber products
46	Manufacture of plastic products
47	Manufacture of glass and glass products
48	Manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic products
49	Manufacture of ceramic tiles and flags
50	Manufacture of bricks, tiles and construction products, in baked clay
51	Manufacture of cement, lime and plaster
52	Manufacture of articles of concrete, plaster and cement

53	Cutting, shaping and finishing of ornamental and building stone
54	Manufacture of other non-metallic mineral products n.e.c.
55	Siderurgy and production of ferrous – alloys
56	Manufacture of tubes
57	Other siderurgical products
58	Manufacture of basic precious and non-ferrous metals
59	Casting of metals
<b>Code RNIS</b>	<b>Label</b>
60	Metallic construction and metal products
61	Manufacture of machinery for the production and use of mechanical power
62	Manufacture of general purpose machinery
63	Manufacture of agricultural and forestry machinery
64	Manufacture of machine tools
65	Manufacture of other special purpose machinery
66	Manufacturing of armament, ammunition
67	Manufacture of domestic appliances
68	Computers and office means
69	Electric machinery and appliances
70	Radio, T.V. and communications equipment and apparatus

### 1B. Paper's classification of 84 sectors

Code RNIS*	Paper's Code	Label
1	1	Crop production
2	2	Livestock breeding
3	3	Auxiliary services
5	4	Logging
4+6	5	Forestry, hunting, fish farming, and fishing
7+9+(11...17)	6	Mining industries (without extraction of crude petroleum)
18+19	7	Production, processing and preserving of meat and fish products
20	8	Processing and preserving of fruit and vegetables
21	9	Manufacture of vegetable and animal oils and fats
22	10	Manufacture of dairy products
23	11	Manufacture of grain mill products, starches and starch products
24	12	Manufacture of prepared animal feeds
25	13	Manufacture of other food products
26	14	Beverages
27	15	Tobacco
28	16	Textiles and textile product
29	17	Textiles wearing apparel
30	18	Fur and leather wearing apparel
31	19	Leather goods and footwear
32	20	Wood processing (excluding furniture)
33	21	Pulp, paper and cardboard and paper products
34	22	Publishing houses, polygraphy, recording and copying
35	23	Coal coking
8+36+38	24	Oil extraction and processing, manufacture of basic chemicals
39	25	Manufacture of pesticides and other agro-chemical products
40	26	Manufacture of paints and varnishes
41	27	Manufacture of pharmaceuticals and medicinal chemicals
42	28	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
43	29	Manufacture of other chemical products n.e.c.
44	30	Manufacture of man-made fibers
45	31	Manufacture of rubber products
46	32	Manufacture of plastic products
47	33	Manufacture of glass and glass products
48	34	Manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic products
49	35	Manufacture of ceramic tiles and flags
50	36	Manufacture of bricks, tiles and construction products, in baked clay
51	37	Manufacture of cement, lime and plaster
52	38	Manufacture of articles of concrete, plaster and cement
53	39	Cutting, shaping and finishing of ornamental and building stone
54	40	Manufacture of other non-metallic mineral products n.e.c.
55	41	Siderurgy and production of ferrous – alloy

56+57+58	42	Tubes, other siderurgical products, manufacture of basic precious and non-ferrous metals
59	43	Casting of metals
60	44	Metallic construction and metal products
61	45	Manufacture of machinery for the production and use of mechanical power

Code RNIS*	Paper's Code	Label
62	46	Manufacture of general purpose machinery
63	47	Manufacture of agricultural and forestry machinery
64	48	Manufacture of machine tools
65	49	Manufacture of other special purpose machinery
67	50	Manufacture of domestic appliances
68	51	Computers and office means
69	52	Electric machinery and appliances
70	53	Radio, T.V. and communications equipment and apparatus
71	54	Medical, precision, optical, watchmaking instruments and apparatus
72	55	Means of road transport
73	56	Building and repairing of ships and boats
74	57	Manufacture of railway and tramway locomotives and rolling stock
75	58	Manufacture of aircraft and spacecraft
76	59	Manufacture of motorcycles and bicycles
77	60	Furniture production
78	61	Other industrial activity
79+80+81+82	62	Production and distribution of electric power, gas (excl. methane extraction), thermal power, and water
83	63	Constructions
84	64	Wholesales and retail trade
85	65	Hotels
86	66	Restaurants
87	67	Transport via railways
88	68	Other transports
89	69	Tansports via pipelines
90	70	Water transport
91	71	Air transports
93	72	Activities of travel agencies and tour operators; tourist assistance activities n.e.c.
94	73	Post and courier activities
95	74	Telecommunications
96	75	Financial, banking and insurance activities
97	76	Real estate activities
98	77	Computer and related activities
99	78	Research and development
100	79	Architectural and engineering activities and related technical consultancy
101	80	Miscellaneous business activities n.e.c.
102	81	Public administration and defense; compulsory social security
103	82	Education
104	83	Health and social security
105	84	Other community, social and personal service activities Financial intermediation services indirectly measured (FISIM)

\*The branches 10, 37, 66, and 92 have been excluded.

**Appendix 2 - Statistical data**  
**2A. Annual index of the gross value added (q<sub>it</sub>)**

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average 1990-2005
1	2.06444	1.01262	0.82894	1.18008	1.04928	1.01455	1.00583	1.03783	0.84173	1.09324	0.77448	1.35748	0.89806	1.07962	1.24763	0.80710	1.04890
2	0.98016	0.73434	1.03204	1.04746	0.94278	1.18121	0.82559	0.85678	1.13549	0.89156	0.98360	1.05034	1.03957	0.95555	0.99559	0.88691	0.96465
3	1.58822	0.75496	1.00245	1.09602	1.04117	1.00458	0.86077	0.73370	0.78745	1.02195	0.70552	1.18728	1.02404	1.07384	0.92459	0.96121	0.96583
4	0.87028	0.72281	0.84325	0.95689	1.03481	1.04446	1.00389	0.80476	0.99748	1.21918	1.05442	0.94147	1.03533	0.94356	1.19488	0.78305	0.95628
5	0.97358	0.74197	1.01197	0.89182	1.01986	1.02231	0.99636	1.02171	0.99917	0.93122	1.16315	1.02395	1.09042	1.08488	0.89950	1.06502	0.99126
6	0.28130	0.91599	0.78850	1.01708	0.98252	0.99974	0.76709	0.57619	1.00168	1.41307	1.09233	1.13244	0.95902	0.98861	1.04785	0.94469	0.88723
7	1.17623	0.82813	0.95128	0.91685	1.05083	1.16742	1.11400	0.92603	0.98822	1.16884	1.07868	1.16847	1.00441	1.06008	1.13818	0.96554	1.03855
8	1.06202	0.84510	2.04632	1.05316	1.01165	1.24691	1.18345	1.11382	0.91259	0.74636	1.07592	1.00791	1.01226	1.25570	1.36533	0.99796	1.09243
9	1.90102	1.07888	1.09095	1.01170	0.78550	1.18996	1.29758	0.82373	0.86316	0.91930	1.03949	0.92659	1.10483	0.84375	1.12422	0.98009	1.03653
10	0.93001	0.97436	0.83127	1.07368	1.11753	1.06713	1.11434	1.08907	0.90359	0.85710	0.99263	1.35431	1.10922	1.05746	1.08540	1.05643	1.03136
11	1.63575	0.85297	1.18205	1.21396	0.75695	1.17158	1.46002	0.86221	0.90371	1.07959	1.66707	0.99538	1.30236	1.57710	1.05845	0.88660	1.12907
12	1.23574	1.04800	0.74644	0.90799	0.92733	0.59328	1.05614	0.87333	0.97880	0.66420	1.18517	0.35209	1.11289	1.19190	0.94228	0.98789	0.88789
13	0.88981	0.87523	0.91141	0.89929	1.00046	1.01982	1.41975	0.87971	0.86180	0.98685	1.34598	1.09578	1.07058	1.05110	1.07025	1.08547	1.01817
14	0.92418	0.99687	1.01109	0.94851	1.05974	1.30816	1.24593	0.98662	0.92551	0.65131	1.05065	1.37068	0.97916	1.31675	0.95116	1.08391	1.03512
15	1.68468	0.44939	0.85338	0.99976	0.77931	0.89523	0.95177	1.00979	0.90249	0.39355	1.11302	1.02542	0.91994	0.99550	0.85434	0.74938	0.86753
16	0.89621	0.95871	0.73588	0.99516	1.00217	1.04071	1.18477	0.92219	0.92773	0.98119	1.03499	0.97688	1.07094	1.04517	1.04219	0.93963	0.97996
17	0.79787	0.98931	0.99323	0.79413	1.34236	1.09295	1.15060	1.03857	0.91512	1.07972	1.19663	1.09704	1.04160	1.01458	1.01209	0.95090	1.02305
18	1.21460	0.91020	0.92767	0.82600	0.97537	1.03939	1.02085	1.05408	0.97468	0.83611	0.99972	1.41350	1.06770	1.02834	0.98858	0.99173	1.00853
19	0.76769	0.86795	0.87627	0.89054	0.85980	1.02656	1.22933	0.88335	0.99067	1.04193	1.26377	1.00440	1.03888	1.02875	0.99783	0.95083	0.97456
20	0.65999	0.87880	1.04420	0.88520	1.06156	1.00433	1.46046	0.85407	0.92442	1.21420	1.07849	1.02281	1.05713	1.05455	1.21582	1.03770	1.01361
21	1.05847	0.48333	0.84908	0.92080	0.95722	1.16281	1.23570	0.80874	0.97406	1.13082	1.15268	1.08649	1.21570	0.99443	1.00518	1.03592	0.98401
22	0.90333	0.88231	1.29643	0.94495	1.27200	1.03157	1.28862	0.94584	0.95643	1.27945	1.05994	1.19488	1.08982	1.03307	1.12567	1.08696	1.07816
23	1.11987	0.69309	1.00407	1.74811	0.90482	0.98689	1.27418	0.99210	0.92488	0.50425	1.08144	0.92407	1.01003	1.05348	1.10262	0.18232	0.88940
24	0.64052	1.00716	0.96541	1.18186	1.12131	1.04031	1.00101	0.91681	0.98351	0.87484	1.03677	0.88119	1.08362	1.01003	1.02260	1.06647	0.98130
25	0.12144	1.91170	1.26854	1.11098	0.92238	1.10101	0.81178	0.45826	0.93043	0.79615	1.03981	0.77742	1.09153	1.10894	1.16402	0.83542	0.84147
26	0.96471	0.97427	0.89097	0.74148	0.68276	0.95594	0.66924	0.79619	0.99934	1.20771	1.08375	1.09479	1.00719	0.95672	0.99848	1.16272	0.93581
27	0.58272	1.04915	1.08570	0.98747	0.93427	0.94616	0.95232	0.76656	0.99637	1.05545	1.02013	1.01651	1.08088	1.02590	1.03233	1.06888	0.96488
28	1.17885	0.90835	0.97330	1.01042	0.88824	0.88774	0.84874	0.93532	0.96297	0.92224	0.88743	0.96432	1.21735	1.09408	1.12644	1.01430	0.98319
29	1.16840	0.84923	0.76970	1.00487	0.95480	1.03171	0.86188	0.76496	0.95574	0.85139	0.88932	1.15271	0.99807	0.94102	1.02490	0.84039	0.93416
30	0.94755	0.90845	0.95887	0.84276	0.91272	1.08178	1.06416	0.79179	0.83963	0.93493	0.93152	1.01676	1.09461	0.91622	1.00076	1.04541	0.95151
31	13.93688	0.73931	0.88480	1.06298	0.84482	1.07266	1.11154	0.75487	0.99767	0.90149	0.86320	1.12432	1.10830	1.23458	1.04829	0.95827	1.14592
32	0.90406	0.76077	0.68407	0.95386	0.87754	1.01518	1.03190	0.91966	0.99811	1.11147	1.36845	1.19980	1.10749	1.12110	1.13655	1.09562	1.00415
33	0.76382	0.97502	1.06222	0.78222	0.94170	1.30473	1.11176	0.94210	0.92918	0.89530	1.02938	1.01693	1.11289	0.92595	1.10884	0.95516	0.98274
34	0.61881	0.84231	0.95352	1.02351	0.98776	1.18203	1.64113	0.83099	0.99866	0.99024	0.98835	1.00362	1.02315	1.02128	1.04491	0.91050	0.98536
35	0.50744	0.90910	0.88209	0.99299	1.04351	1.27970	1.00558	0.88079	0.99540	1.23130	1.35125	1.00058	0.80987	1.08562	1.13591	0.87277	0.97710
36	0.61666	0.94295	1.71101	1.45003	1.19404	1.24866	0.94568	0.78269	0.99931	0.91366	1.02676	1.21290	0.85025	0.93605	1.09714	1.03132	1.03101
37	0.94280	0.71706	0.96489	1.02357	0.97698	1.13117	1.02622	0.94347	0.99808	0.99888	1.00728	0.96926	1.08064	0.89232	1.15413	0.99198	0.98361
38	0.89245	0.74529	0.79329	0.76431	0.75695	0.72040	0.86939	0.85001	1.00381	1.01488	0.99408	1.01204	1.12058	1.06191	1.18735	1.03729	0.91564
39	1.48843	0.78296	0.95001	0.94274	0.96856	0.58913	0.47601	0.69699	1.01848	1.11933	1.54202	1.06276	1.08747	1.06123	1.21816	1.58590	0.98790
40	0.61110	0.66897	0.93351	1.63020	0.90187	1.02232	1.03113	0.80960	0.97094	0.75706	0.93192	1.07825	0.99527	1.05806	1.13468	0.94287	0.94411
41	1.09322	0.63628	0.88591	0.97266	1.16020	1.00744	1.36049	0.92793	0.97972	0.70224	1.13468	0.96998	1.14264	0.80024	1.28563	0.96048	0.98268
42	0.57071	1.19669	0.60581	0.95680	1.03498	1.03502	1.00254	0.96372	0.94998	0.69605	1.32831	1.10224	0.93006	0.85584	1.00890	0.99683	0.93081
43	0.91524	0.89018	0.75154	0.69877	1.04134	1.09931	0.89485	0.93849	0.75450	0.72809	1.09632	0.97786	1.20617	0.78026	1.00139	1.19208	0.92188
44	0.74543	0.81153	0.81436	0.88677	1.00650	1.00454	1.05104	0.96218	0.98179	1.03350	1.03098	1.11116	1.04991	0.85897	1.11002	1.08316	0.96473
45	0.89966	0.82897	0.81431	0.73928	0.93916	1.13620	1.04316	0.90103	0.96398	0.94174	1.49959	1.01757	0.91212	0.96699	0.96768	0.93076	0.95707
46	0.85615	0.81020	0.56710	0.91614	1.00555	0.93489	0.52248	0.91979	0.51238	1.00640	1.48572	0.88699	0.97662	1.05639	1.35332	1.15597	0.89792
47	1.75052	0.54450	0.81603	1.00635	1.00640	1.00499	0.89420	0.62924	0.96664	0.75877	0.87517	0.94042	1.23342	0.61701	1.05396	0.83383	0.89832
48	0.86555	0.65663	0.72894	0.77203	0.88895	0.84556	0.68947	0.93373	0.99530	0.68971	1.03280	0.98173	1.12314	1.04614	1.09938	1.20943	0.89460
49	1.00038	0.74172	0.95819	0.71157	0.99300	1.05031	0.91537	0.90161	0.92485	0.97663	0.91985	1.08826	0.95997	1.04695	0.98680	0.89325	0.93629



Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average 1990-2005
50	1.06000	0.84477	0.76839	0.49777	0.98209	1.20111	1.14279	0.84101	0.99799	0.97786	1.41948	0.89205	1.12605	1.13675	1.16950	1.11491	0.98621
51	0.58858	0.65622	0.59161	1.81794	1.03724	1.19982	1.51399	0.95329	0.99905	0.91957	0.82608	0.72459	1.16096	1.36395	1.27248	1.09478	0.99379
52	0.90056	0.70772	0.73838	0.72432	1.59732	1.27784	1.08091	1.00715	0.96811	0.93626	1.00042	1.04961	1.12090	1.04091	1.05471	1.41397	1.01426
53	0.72706	0.88038	0.59038	1.24314	1.33178	1.01499	1.03840	1.03773	0.99916	0.90005	0.99575	1.01712	0.99346	1.01373	1.14797	0.93807	0.97582
54	0.84029	0.40663	0.66819	0.90573	0.89241	1.00639	0.61823	0.94380	0.99385	1.00328	1.48808	0.97021	1.13328	1.11730	1.06255	1.00340	0.90723
55	0.88158	1.38878	0.81019	0.99162	0.96829	1.06998	1.23940	0.98487	0.94262	0.94372	0.92641	1.07082	1.09412	1.08597	1.23042	1.20344	1.04200
56	0.84756	0.69261	1.27040	0.57559	0.93929	1.26196	1.03005	0.96180	0.82946	1.05995	1.21347	1.11346	0.97363	0.80848	1.03607	1.14299	0.96421
57	0.50255	0.82576	0.72526	1.07610	0.72638	0.82411	1.70555	0.94528	0.99942	0.95497	0.93675	0.87086	0.91872	0.93809	0.92548	0.85425	0.89377
58	0.60959	0.94249	0.45117	1.12775	0.90522	0.80359	1.05394	1.01422	0.99423	1.00722	0.83335	1.39761	0.89912	1.28923	1.09038	1.10607	0.93985
59	1.35407	0.81111	0.67842	0.51141	1.42241	0.67457	0.88112	0.64442	0.87249	1.10168	1.07852	1.41954	0.51987	0.96076	1.14704	1.06358	0.90026
60	0.57907	0.90532	0.98157	1.09797	1.17071	1.09444	1.07459	0.95948	0.96641	1.01234	1.17669	1.02662	1.08013	1.08243	1.03597	1.01297	1.00495
61	1.11355	0.98400	0.69799	0.66748	1.36208	1.00380	0.73849	1.11561	0.99913	0.98340	1.14943	1.45970	1.05698	1.03880	1.06354	1.01299	1.00719
62	0.69507	2.80234	0.96453	1.40263	1.08321	1.02274	0.87840	0.81056	0.96772	0.89079	0.85233	0.84764	1.08860	0.97555	0.96511	0.96111	1.01531
63	1.01053	0.80633	0.94366	1.24689	1.27363	1.06750	1.00812	0.80704	0.95543	0.99260	1.06325	1.11070	1.07626	1.07022	1.09128	1.09933	1.03145
64	1.04318	0.74524	0.90553	0.92981	1.03205	1.18870	1.07141	0.90832	1.07597	1.01529	1.01970	1.01561	1.03795	1.15287	1.13865	1.16366	1.02133
65	1.13651	0.72235	1.01818	0.93146	0.93589	2.12967	1.59140	0.88524	0.88465	1.03402	0.89056	1.01082	0.97647	1.03956	1.11748	1.13917	1.05418
66	1.40191	0.67939	0.95727	0.72826	0.72969	1.00280	1.06507	0.69774	0.96248	1.07278	1.11219	1.01195	1.24375	0.94396	0.99541	1.07622	0.96084
67	0.86426	0.77340	0.89329	0.84035	0.94261	0.97608	0.98550	0.88468	0.91119	1.01569	1.18388	0.88034	0.86759	1.00464	0.90846	0.99696	0.92875
68	0.78346	0.89032	0.99833	1.14612	0.95381	0.99717	1.09871	0.93060	0.86560	1.01139	1.03029	1.13152	1.16838	1.16238	0.96549	1.13354	1.01026
69	0.86798	0.89616	0.78631	0.96566	1.09197	1.09317	0.89512	0.85810	0.84679	0.99667	1.09914	1.08318	0.93952	0.90995	0.86746	1.16523	0.95393
70	0.48169	0.51463	0.62575	0.63130	1.45204	1.09498	0.91734	0.63182	0.64444	0.67117	0.99463	1.01802	0.94555	0.63503	0.96526	1.03460	0.79145
71	0.82061	0.87986	1.56776	0.90853	1.26909	1.00155	0.63813	0.79815	0.98355	0.93336	0.78925	0.88642	0.91155	0.97473	0.66499	1.12621	0.92445
72	1.00000	1.13816	0.49884	1.50355	1.06332	1.16335	1.10970	0.82429	1.02704	1.19673	1.35630	1.00196	1.18065	1.12510	1.12937	1.05739	1.06049
73	0.79894	1.82318	1.05713	1.06317	1.34391	1.01806	1.28408	0.95430	1.01793	0.99843	0.75335	1.02267	0.96899	0.84322	1.14974	1.14837	1.05396
74	0.81437	1.29442	1.08974	1.25702	1.05091	1.07467	1.32489	0.98948	1.01802	1.01006	1.08557	1.02478	1.06042	1.09422	1.10985	1.00960	1.07498
75	1.17318	0.99713	1.39651	1.00541	1.01668	1.01351	0.85756	0.77378	1.01937	1.02034	1.02069	1.32039	1.07711	0.93399	1.28260	1.02598	1.04696
76	1.05097	1.05030	2.43718	1.05069	1.13945	1.06419	0.99711	1.00467	0.99806	1.01192	1.08054	1.00914	1.12283	1.00611	1.06722	1.09757	1.10587
77	1.02136	1.20202	0.98857	0.93226	0.97921	1.01568	1.65078	0.84808	0.99126	1.41958	1.37793	1.86872	1.08227	0.96962	0.99353	1.04517	1.12102
78	0.78993	1.02477	0.85177	0.72264	1.01941	1.12259	0.98795	0.86136	0.96904	0.85076	0.97841	0.83187	0.97070	1.00707	1.00481	1.10779	0.93721
79	1.12358	0.98145	1.08478	0.78784	0.88430	1.06316	1.10831	0.90231	0.96947	1.08118	0.82699	1.00503	1.03641	1.08357	1.17846	1.08952	1.00672
80	1.12718	2.36310	0.73162	2.11726	1.01699	1.23443	1.32669	0.82813	0.98997	1.17989	0.87102	2.14640	0.90476	1.16005	1.03938	1.12981	1.18597
81	1.13970	0.91994	1.10809	1.01894	1.09664	1.04437	0.92869	0.96770	0.96638	0.93076	1.19754	0.90751	1.08586	1.05866	0.84855	1.09645	1.01524
82	1.05426	1.16499	0.99239	1.03448	1.00343	1.03452	1.10026	0.90616	0.99634	1.04092	1.04644	0.97322	1.04203	1.00998	1.07854	1.01738	1.02948
83	1.24404	0.97993	0.97204	1.02198	1.09088	1.02700	1.09447	0.88116	1.15674	0.84304	1.10311	0.84124	1.24742	0.95106	1.06323	1.03871	1.02783
84	1.13558	0.76888	0.88016	0.96225	1.15531	1.14477	1.27271	0.96235	1.02819	0.99583	1.17711	1.00105	1.13616	1.00142	1.05665	1.05606	1.03867
Total	0.97569	0.88236	0.91027	1.03288	1.04253	1.06770	1.03914	0.92741	0.94592	0.98594	1.02205	1.06672	1.05074	1.04866	1.08358	1.03607	1.00552

**2B. Annual deflator of the gross value added (p<sub>it</sub>)**

<b>Sector</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>Average 1990-2005</b>
1	1.32859	3.37608	2.90928	3.37996	2.23884	1.36899	1.51394	2.19744	1.21551	1.42584	1.53817	1.31244	1.17934	1.29853	1.16191	0.90343	1.63188
2	1.08323	1.19302	4.74071	2.58309	2.63330	1.47094	1.58137	2.22992	1.61058	0.92612	1.36615	1.65400	1.19342	1.02606	1.05504	1.11680	1.54474
3	1.01051	1.53673	2.48903	3.90502	1.77521	1.13259	1.65505	2.28811	1.29748	1.56137	1.23192	1.53033	1.33917	1.34532	1.10725	1.28108	1.55102
4	1.13688	3.51639	2.36762	3.45333	2.85426	1.29703	1.36006	1.88620	1.67847	1.61468	1.48615	1.28204	1.13749	1.31215	1.12583	1.02493	1.64083
5	1.05775	2.51672	2.62399	3.02445	2.94689	1.31349	1.58033	2.13531	1.61715	1.42901	1.48181	1.37416	1.26031	1.49259	1.11627	1.04795	1.64437
6	1.50431	2.43511	3.85401	2.94837	2.33692	0.94015	1.01627	5.02314	1.98686	1.43376	1.54114	1.39657	1.38172	0.99559	1.17128	1.09314	1.70377
7	1.01064	3.46359	2.57662	3.98324	2.17518	1.36260	1.43541	2.33952	1.53832	1.37136	1.71618	1.37424	1.02629	0.96482	1.12552	1.22130	1.62744
8	1.02083	1.93830	3.02825	3.74228	3.78509	1.24783	1.39627	2.29695	1.32437	1.20601	1.29898	1.40640	1.07971	1.18046	1.09321	1.06308	1.57733
9	1.02641	2.82223	4.24591	3.37709	4.29121	1.24129	1.34250	2.64887	1.30337	1.21724	1.56575	1.41375	1.24837	1.02611	1.14667	1.01915	1.68282
10	1.02393	3.09982	4.41376	3.16830	3.16830	1.21857	1.51918	2.73887	1.27152	1.22697	1.42849	1.33839	1.30285	1.13083	1.05699	1.12429	1.65397
11	1.05915	2.83645	4.04008	4.74270	4.86874	1.26055	1.51278	2.44893	1.23646	1.34587	1.78127	1.19707	1.14137	0.99184	1.17464	1.08012	1.73384
12	1.10637	2.58925	4.17395	4.11007	2.30882	0.97222	1.64185	2.65827	1.07533	1.25766	1.68644	1.48188	1.15782	1.23697	1.17106	1.00615	1.64028
13	1.00817	2.27609	3.54705	3.55008	2.26267	1.21249	1.49875	2.44324	1.32284	1.12154	1.46413	1.38373	1.11446	1.03810	1.12119	1.19483	1.56925
14	1.30100	2.29428	2.81262	3.86696	2.55604	1.39513	1.42992	2.40228	1.18734	1.31325	1.51587	1.39831	1.12207	1.15667	1.18179	1.09294	1.61786
15	1.15430	2.34322	2.48337	2.27866	3.59689	1.20651	1.85128	4.52314	1.50112	1.75688	1.10112	1.22577	1.17998	1.30714	1.01143	1.07840	1.66019
16	1.11649	2.02761	2.43694	2.83877	2.06775	1.21602	1.39908	1.70145	1.36104	1.32413	1.75846	1.43510	1.21782	1.16115	1.14859	1.17014	1.51980
17	1.09820	1.50920	2.93529	3.75785	3.09840	1.28628	1.35228	2.12458	1.22320	1.29736	1.40249	1.40622	1.25116	1.18375	1.21045	1.05596	1.56079
18	1.22838	1.78402	3.14726	3.21328	3.29531	1.23313	1.46874	2.39460	1.19457	1.31466	1.25646	1.35266	1.18173	1.12877	1.20104	1.06986	1.57604
19	1.08896	2.35563	2.96503	3.06391	2.63986	1.20960	1.32329	2.29459	1.32621	1.31573	1.36991	1.74083	1.31386	1.26977	1.15951	1.10681	1.60876
20	1.21609	3.02177	2.83398	3.48172	2.73333	1.27272	1.41008	2.15542	1.27076	1.32926	1.51999	1.42961	1.29522	1.11833	1.16774	1.02122	1.62783
21	1.18546	6.64326	2.49322	2.50499	2.68557	1.38090	1.38643	1.88620	1.63725	1.40926	1.57820	1.38489	1.31113	1.05914	1.07181	0.95278	1.66267
22	1.24902	1.47341	2.14551	3.46992	2.84504	1.47612	2.15259	1.95429	1.36826	1.45353	1.27964	1.31677	1.22453	1.16503	1.11039	1.09332	1.57299
23	1.09938	5.25732	4.93802	3.43184	2.27943	0.44997	1.90191	1.04501	1.49900	1.24185	1.67779	1.36141	1.19344	1.11310	1.37849	0.88368	1.57080
24	1.77731	2.16861	3.18728	2.94978	2.26240	1.17964	1.50432	2.75700	1.56586	1.23089	1.56571	1.27487	1.44754	0.94974	1.01904	1.50958	1.65808
25	1.19720	4.85044	2.99344	2.97422	2.71674	1.19461	1.56838	1.20581	1.43442	1.32683	1.54095	1.32237	1.29855	1.24110	1.22185	1.00070	1.62759
26	1.17133	5.05757	3.04361	2.71891	4.80998	1.28233	1.30100	2.36863	1.46962	1.45233	1.38491	1.38234	1.19944	1.10019	1.13746	1.08951	1.72640
27	1.07283	4.92003	4.15478	3.25255	2.79990	1.37106	1.42579	2.13538	1.56421	1.23746	1.58290	1.41928	1.21408	1.04818	1.16137	1.04099	1.71456
28	1.03763	2.23322	3.85497	1.69978	5.07440	1.20950	1.43927	2.22305	1.53854	1.24374	1.39721	1.20856	1.16483	1.07600	1.10127	1.04468	1.57190
29	1.22985	1.65156	3.81011	2.35854	2.09446	1.32697	1.55868	2.35460	1.21398	1.41194	1.39973	1.31730	1.22072	1.04164	1.04917	1.30560	1.54230
30	1.09106	5.75434	3.15156	2.15127	2.62619	1.41232	1.33559	1.96789	1.35684	1.21521	1.30758	1.32008	1.10347	1.09626	1.08600	1.18782	1.59990
31	1.08026	4.26467	3.87180	3.04608	2.15570	1.33942	1.40503	2.24993	1.37756	1.13282	1.57729	1.36376	1.37996	1.19355	1.14792	1.15678	1.66946
32	1.15726	2.61280	2.84336	2.40201	2.11547	1.23454	1.41452	2.30750	1.45685	1.22464	1.64977	1.39989	1.32944	1.18073	1.18415	1.11156	1.57936
33	1.13158	2.29430	2.81950	3.58055	2.53071	1.27284	1.48301	2.76000	1.37574	1.36604	1.32566	1.47129	1.14892	1.11251	1.16254	1.11764	1.61319
34	1.07608	2.38062	2.95366	4.00367	3.14552	1.29020	1.38995	2.34059	1.41904	1.36640	1.29988	1.33572	1.16837	1.12519	1.17512	1.11934	1.62346
35	1.38269	3.84074	2.90618	3.44906	2.58685	1.42870	1.72015	2.26915	1.46712	1.46086	1.65262	1.40583	1.20493	1.19230	1.15610	1.01081	1.72969
36	1.22549	2.87764	3.51489	3.91672	3.15721	1.28838	1.55736	2.35957	1.54802	1.21620	1.36373	1.57652	1.20181	1.05984	1.27729	1.08987	1.70724
37	1.15488	4.93427	3.94837	2.71601	2.43606	1.26829	1.42682	2.36908	1.53864	1.39782	1.51391	1.39952	1.26090	1.08172	1.21358	1.12185	1.71097
38	1.15651	4.10011	3.40915	2.30055	2.39622	1.19822	1.60285	2.02727	1.51789	1.23166	1.46912	1.53976	1.30718	1.15298	1.21152	1.13844	1.65109
39	1.13717	2.65187	3.16217	3.82361	2.17967	1.16751	1.36326	1.65440	1.39551	1.39150	1.57013	1.37837	1.14081	1.17017	1.12489	1.07386	1.57393
40	1.21271	2.98742	3.58286	3.48421	2.16826	1.21514	1.60147	1.312189	1.40882	1.21822	1.40793	1.42048	1.11094	1.15991	1.14085	1.17157	1.66599
41	1.04331	4.28504	3.72199	3.57002	2.97713	1.19311	1.24838	2.52114	1.22275	1.32707	1.60492	1.37635	1.05690	1.22376	1.56420	0.92325	1.69044
42	1.11476	3.76858	2.86586	2.91611	3.13911	1.30425	1.49126	2.15455	1.24249	1.38438	1.57318	1.41671	1.16663	1.05698	1.21213	1.11204	1.64740
43	1.05851	1.98291	3.03095	2.70015	2.94534	1.32589	1.59534	1.93610	1.24653	1.27283	1.56360	1.58511	1.13517	1.05248	1.14485	1.01662	1.55199
44	1.09511	2.27691	2.92989	3.08069	2.92920	1.15206	1.72638	1.94836	1.32574	1.28149	1.46608	1.41300	1.27599	1.49357	1.19065	1.15571	1.62473
45	1.18214	2.20237	3.13104	3.61411	2.84355	1.17376	1.88787	1.86318	1.40474	1.18082	1.55300	1.55605	1.19893	1.04735	1.33592	1.18345	1.64052
46	1.20219	1.68404	3.88716	2.98112	2.36228	1.13212	1.30363	2.41030	1.41133	1.35147	1.70848	1.55023	1.24550	1.14392	0.90820	1.18303	1.58147
47	1.15197	2.96141	3.07007	2.78309	2.59312	1.21354	1.60586	1.98435	1.88408	1.24416	1.48783	1.46803	1.24556	1.03060	1.24316	1.25771	1.64950
48	1.00925	1.91828	2.81760	3.74640	2.59395	1.21639	1.64366	2.17025	2.43906	1.36714	1.47785	1.61180	1.31886	1.14590	1.18988	1.15300	1.67360
49	1.06000	1.76532	2.89198	3.00793	3.13398	1.21729	1.57860	1.94052	1.33225	1.48336	1.32422	1.62238	1.11148	1.17569	1.15304	1.15573	1.57310

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average 1990-2005
50	1.09141	3.95952	3.86905	2.73326	3.54834	1.49859	1.75039	1.67620	1.33016	1.32658	1.36324	1.35311	1.33996	1.20432	1.14549	1.08071	1.69486
51	1.29428	1.26129	1.59827	2.82654	2.24548	1.28697	1.73858	3.01119	1.27352	1.21527	1.65860	1.19598	1.31739	1.22114	1.17809	1.29958	1.52365
52	1.14962	2.27393	2.42366	4.41413	2.37214	1.33369	1.46280	2.09665	1.30751	1.44533	1.53141	1.57714	1.30928	1.09222	1.17140	1.08749	1.62027
53	1.00865	2.08366	2.65656	3.94191	2.50064	1.24978	1.56965	1.54006	1.51793	1.31294	1.34010	1.24375	1.18793	1.17872	1.17124	1.05327	1.53541
54	1.06045	3.27412	2.94730	2.85194	3.09772	1.31572	1.40883	1.92733	1.37807	1.25094	1.46008	1.42608	1.28721	1.11735	1.15252	0.99438	1.60353
55	1.02197	2.84442	3.22154	2.74595	2.91286	1.35975	1.54716	1.96334	1.28182	1.29827	1.68947	1.71248	1.42384	1.25743	1.25462	1.12073	1.67254
56	1.15742	2.08032	3.27738	2.80485	2.95202	1.33734	1.55518	2.74756	1.20796	1.42963	1.54651	1.44559	1.34189	1.19385	1.19452	1.21788	1.66109
57	1.02440	3.22724	3.71593	2.96409	1.81435	1.20632	1.39840	2.14959	1.62484	1.64190	1.38535	1.50518	1.39397	1.74509	1.16214	1.09145	1.68221
58	1.05027	2.58426	3.01292	3.92045	1.34981	1.17681	1.54074	2.88452	1.59706	1.59312	1.32206	1.63309	1.32989	1.21981	1.25331	1.18694	1.64939
59	1.05504	2.47827	2.17708	3.76164	2.22215	1.05249	1.57372	2.23018	1.34138	1.32175	1.24091	1.42398	1.13563	1.11914	1.31474	1.11656	1.54253
60	1.07288	2.87238	2.60364	3.52967	2.33084	1.14822	1.38313	2.25912	1.49547	1.28431	1.74075	1.37784	1.20622	1.18807	1.12808	1.06250	1.60158
61	1.17636	1.70048	2.15806	3.55966	3.37427	1.35312	1.69593	1.86150	1.46988	1.29546	1.21866	1.35047	1.22876	1.21455	1.10991	1.12779	1.56514
62	0.81758	6.05250	4.67231	2.13200	2.58836	1.28097	1.08189	3.16086	1.50755	2.25116	1.51362	1.44790	1.46306	1.16137	1.11766	1.12793	1.76543
63	1.03870	2.58853	3.19886	2.87551	2.45463	1.37003	1.47432	2.31955	1.48187	1.47244	1.34969	1.42848	1.31007	1.22081	1.16897	1.14684	1.63333
64	1.06619	8.18349	3.16335	2.50164	1.93538	1.55107	1.49105	2.51585	1.66349	1.47086	1.32603	1.27484	1.17749	1.11854	1.16788	1.08171	1.71012
65	1.03497	2.91999	4.51932	3.15170	2.79313	1.73918	1.50957	2.81989	1.56637	1.50181	1.24022	1.33129	1.21425	1.09486	1.12930	1.18029	1.72464
66	1.00900	6.48580	3.19265	3.52480	2.12083	1.05191	1.48739	2.10556	1.69348	1.45622	2.00382	1.17787	1.26956	1.17122	1.01935	1.36351	1.72575
67	1.19508	4.13890	3.74312	2.85735	2.15951	1.16952	1.65685	2.60925	1.64974	1.49526	1.50342	1.59625	1.23784	1.19696	1.10262	0.81826	1.69337
68	1.13700	3.07070	4.02575	3.99118	1.95594	1.20834	1.63383	2.36175	1.55730	1.46474	1.31151	1.34579	1.30980	1.27186	1.10743	1.11904	1.68573
69	1.46183	3.38764	3.50238	6.74435	2.18636	1.40822	1.60469	4.30826	1.09637	1.30643	1.64034	1.51955	1.01001	1.02945	1.03729	1.18099	1.79214
70	1.06827	7.42935	4.03549	5.85031	2.41197	1.19664	2.05301	2.29714	1.46959	1.87696	1.71897	0.93316	1.26074	1.03460	1.19392	0.94549	1.83562
71	1.19764	3.41045	3.65191	3.54960	3.77033	1.26155	1.59241	2.29923	2.13015	1.96224	1.40381	1.38248	1.21838	1.36133	1.13792	1.05751	1.82338
72	1.12232	2.40130	2.09686	4.76735	3.04173	1.41820	1.54390	2.00253	1.79649	1.47314	1.46203	1.27135	1.15619	1.18978	1.17676	1.12306	1.65647
73	1.19892	2.22908	2.61417	2.91961	2.42516	1.30578	1.43299	2.51134	2.06598	1.55998	1.33867	1.23187	1.37180	1.01467	1.11756	1.19196	1.62180
74	1.14737	2.20501	2.34971	3.89031	2.25465	1.52239	1.65311	2.56281	2.11618	1.76914	1.44105	1.41731	1.06153	1.17041	1.15604	1.02850	1.67389
75	1.18056	2.50681	3.98556	3.13152	2.30338	1.49018	1.05399	1.71300	1.49000	1.42600	1.27505	1.40930	1.42224	1.11032	1.19000	1.01800	1.59019
76	1.00638	1.72462	2.32237	2.93785	2.23668	1.48674	1.41168	10.77437	1.57749	1.50901	1.42393	1.34848	1.27275	1.11076	1.14983	1.18709	1.70875
77	1.00650	1.69638	2.76962	4.57352	1.90507	1.32203	1.46985	2.07767	1.63392	1.64762	1.83425	1.51423	1.22242	1.08359	1.10709	1.12689	1.61085
78	1.02909	2.36876	2.60863	3.58934	2.61288	1.49905	1.45526	2.23104	1.66508	1.40889	1.29628	1.34092	1.28836	1.34378	1.15115	0.99538	1.62430
79	1.00127	1.68061	3.44856	2.99552	2.70084	1.37430	1.50320	2.41780	1.73301	1.64191	1.16711	1.22789	1.28919	1.22350	1.13849	1.02384	1.59520
80	1.08363	3.04432	2.45973	4.61677	2.21125	1.38274	1.51457	1.92479	2.07763	1.58397	1.33397	1.56858	1.17624	1.09997	1.13458	1.27798	1.68724
81	1.04062	3.09416	2.69259	2.99430	2.36886	1.59982	1.34213	2.08302	2.02300	1.48500	1.58094	1.35311	1.25822	2.08557	1.15957	1.17760	1.72824
82	1.17913	2.36261	2.62559	2.97335	2.55471	1.42215	1.36119	2.04800	1.94300	1.57398	1.36009	1.37329	1.29970	1.41591	1.25328	1.17626	1.66274
83	1.02276	2.91980	2.62353	2.78112	2.39010	1.34646	1.47484	1.99900	1.84500	1.61712	1.32417	1.36351	1.32060	1.62603	1.24561	1.24046	1.67099
84	1.01168	3.44192	2.30627	3.17479	2.62310	1.44044	1.52084	2.36900	1.83453	1.80903	1.37670	1.21713	1.19214	1.24469	1.17646	1.18789	1.67936
Total	1.12827	2.91400	3.22312	3.06137	2.37536	1.34259	1.45830	2.42066	1.53765	1.45767	1.43965	1.38142	1.23144	1.21894	1.14314	1.11396	1.65315

2C. Sectoral weights ( $w_{it}$ )

Sector	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	0.04683	0.11632	0.15204	0.12506	0.15910	0.15144	0.14664	0.14755	0.14962	0.10535	0.11425	0.09243	0.11175	0.09144	0.10035	0.11742	0.07413
2	0.08450	0.08125	0.02722	0.04542	0.03919	0.03943	0.04776	0.04120	0.03500	0.04405	0.02530	0.02309	0.02722	0.02609	0.02003	0.01698	0.01456
3	0.01870	0.02718	0.01206	0.01026	0.01401	0.01049	0.00832	0.00783	0.00585	0.00411	0.00456	0.00269	0.00332	0.00352	0.00398	0.00329	0.00351
4	0.00265	0.00237	0.00230	0.00157	0.00165	0.00198	0.00187	0.00169	0.00114	0.00131	0.00180	0.00191	0.00157	0.00142	0.00138	0.00150	0.00104
5	0.00478	0.00446	0.00319	0.00296	0.00254	0.00310	0.00290	0.00302	0.00292	0.00325	0.00301	0.00353	0.00337	0.00357	0.00453	0.00367	0.00355
6	0.03148	0.01627	0.01709	0.01773	0.01693	0.01589	0.01060	0.00378	0.00659	0.00791	0.01096	0.01255	0.01342	0.01401	0.01110	0.01099	0.00988
7	0.01679	0.01808	0.01991	0.01662	0.01941	0.01794	0.01992	0.02102	0.02025	0.02118	0.02363	0.02970	0.03236	0.02578	0.02064	0.02134	0.02179
8	0.00271	0.00266	0.00167	0.00352	0.00443	0.00687	0.00745	0.00814	0.00926	0.00770	0.00482	0.00458	0.00440	0.00372	0.00431	0.00520	0.00477
9	0.00073	0.00130	0.00151	0.00239	0.00260	0.00355	0.00366	0.00421	0.00408	0.00316	0.00246	0.00272	0.00242	0.00258	0.00175	0.00182	0.00157
10	0.00411	0.00354	0.00409	0.00512	0.00555	0.00671	0.00608	0.00680	0.00902	0.00713	0.00522	0.00503	0.00618	0.00690	0.00646	0.00598	0.00615
11	0.00042	0.00067	0.00062	0.00100	0.00184	0.00275	0.00283	0.00413	0.00388	0.00298	0.00302	0.00608	0.00492	0.00565	0.00691	0.00694	0.00575
12	0.00361	0.00447	0.00464	0.00493	0.00587	0.00509	0.00205	0.00235	0.00242	0.00175	0.00102	0.00138	0.00049	0.00049	0.00056	0.00050	0.00043
13	0.01839	0.01494	0.01138	0.01255	0.01278	0.01172	0.01010	0.01421	0.01358	0.01065	0.00820	0.01098	0.01130	0.01041	0.00889	0.00861	0.00967
14	0.01636	0.01781	0.01577	0.01511	0.01767	0.01940	0.02468	0.02905	0.03062	0.02315	0.01378	0.01490	0.01938	0.01645	0.01962	0.01780	0.01825
15	0.00647	0.01140	0.00459	0.00332	0.00241	0.00274	0.00206	0.00240	0.00488	0.00455	0.00219	0.00182	0.00155	0.00130	0.00133	0.00092	0.00065
16	0.04442	0.04026	0.02992	0.01830	0.01649	0.01384	0.01221	0.01338	0.00933	0.00811	0.00733	0.00906	0.00862	0.00869	0.00825	0.00797	0.00759
17	0.02415	0.01917	0.01094	0.01088	0.01036	0.01745	0.01710	0.01759	0.01725	0.01329	0.01295	0.01476	0.01546	0.01566	0.01463	0.01447	0.01258
18	0.00134	0.00181	0.00112	0.00112	0.00095	0.00123	0.00110	0.00109	0.00123	0.00098	0.00075	0.00064	0.00083	0.00081	0.00074	0.00071	0.00065
19	0.01336	0.01012	0.00791	0.00701	0.00610	0.00561	0.00486	0.00522	0.00470	0.00425	0.00406	0.00477	0.00566	0.00597	0.00610	0.00570	0.00519
20	0.01185	0.00861	0.00874	0.00882	0.00867	0.01020	0.00909	0.01237	0.01012	0.00818	0.00919	0.01023	0.01015	0.01074	0.00991	0.01136	0.01042
21	0.00411	0.00467	0.00574	0.00414	0.00305	0.00317	0.00355	0.00402	0.00273	0.00300	0.00332	0.00410	0.00419	0.00516	0.00425	0.00370	0.00316
22	0.00392	0.00400	0.00199	0.00189	0.00197	0.00290	0.00307	0.00563	0.00463	0.00417	0.00540	0.00497	0.00531	0.00547	0.00515	0.00520	0.00535
23	0.00089	0.00100	0.00139	0.00235	0.00450	0.00376	0.00116	0.00186	0.00086	0.00082	0.00036	0.00044	0.00038	0.00035	0.00032	0.00039	0.00005
24	0.01626	0.01557	0.02972	0.03118	0.03237	0.03240	0.02795	0.02780	0.03136	0.03331	0.02504	0.02797	0.02132	0.02594	0.01941	0.01650	0.02370
25	0.00322	0.00042	0.00150	0.00195	0.00205	0.00208	0.00191	0.00161	0.00039	0.00036	0.00027	0.00029	0.00020	0.00016	0.00017	0.00020	0.00014
26	0.00205	0.00209	0.00394	0.00365	0.00235	0.00312	0.00267	0.00153	0.00129	0.00130	0.00159	0.00162	0.00166	0.00155	0.00128	0.00117	0.00128
27	0.00303	0.00171	0.00338	0.00520	0.00533	0.00565	0.00511	0.00458	0.00334	0.00358	0.00325	0.00357	0.00349	0.00354	0.00298	0.00288	0.00278
28	0.00248	0.00275	0.00213	0.00273	0.00149	0.00273	0.00204	0.00165	0.00152	0.00155	0.00124	0.00104	0.00083	0.00090	0.00083	0.00083	0.00077
29	0.00461	0.00600	0.00322	0.00322	0.00243	0.00197	0.00188	0.00167	0.00134	0.00107	0.00089	0.00075	0.00078	0.00073	0.00056	0.00049	0.00046
30	0.00143	0.00134	0.00267	0.00276	0.00159	0.00155	0.00165	0.00155	0.00107	0.00084	0.00066	0.00055	0.00050	0.00047	0.00037	0.00032	0.00035
31	0.00026	0.00358	0.00432	0.00505	0.00521	0.00385	0.00385	0.00398	0.00300	0.00284	0.00202	0.00187	0.00194	0.00229	0.00265	0.00257	0.00247
32	0.01168	0.01107	0.00841	0.00558	0.00408	0.00307	0.00268	0.00259	0.00244	0.00244	0.00231	0.00354	0.00404	0.00460	0.00476	0.00517	0.00546
33	0.00431	0.00338	0.00289	0.00295	0.00263	0.00254	0.00295	0.00321	0.00371	0.00326	0.00278	0.00257	0.00261	0.00258	0.00208	0.00217	0.00200
34	0.00184	0.00111	0.00085	0.00082	0.00107	0.00134	0.00143	0.00215	0.00186	0.00182	0.00171	0.00149	0.00136	0.00125	0.00113	0.00112	0.00099
35	0.00041	0.00026	0.00035	0.00031	0.00033	0.00037	0.00047	0.00053	0.00047	0.00048	0.00060	0.00090	0.00086	0.00065	0.00066	0.00070	0.00053
36	0.00043	0.00029	0.00030	0.00062	0.00113	0.00172	0.00193	0.00188	0.00155	0.00165	0.00127	0.00121	0.00157	0.00124	0.00096	0.00109	0.00106
37	0.00238	0.00235	0.00318	0.00413	0.00366	0.00353	0.00353	0.00342	0.00340	0.00359	0.00348	0.00361	0.00332	0.00350	0.00264	0.00299	0.00288
38	0.01136	0.01062	0.01241	0.01145	0.00642	0.00472	0.00284	0.00261	0.00200	0.00210	0.00183	0.00181	0.00192	0.00217	0.00208	0.00241	0.00247
39	0.00076	0.00116	0.00092	0.00095	0.00109	0.00093	0.00045	0.00019	0.00010	0.00010	0.00010	0.00017	0.00017	0.00016	0.00016	0.00018	0.00026
40	0.00169	0.00113	0.00087	0.00099	0.00179	0.00142	0.00123	0.00134	0.00151	0.00142	0.00091	0.00081	0.00084	0.00072	0.00069	0.00072	0.00069
41	0.00369	0.00381	0.00397	0.00447	0.00495	0.00693	0.00580	0.00651	0.00678	0.00559	0.00362	0.00448	0.00406	0.00379	0.00290	0.00471	0.00362
42	0.01352	0.00756	0.01569	0.00957	0.00841	0.01082	0.01038	0.01028	0.00948	0.00773	0.00499	0.00714	0.00757	0.00633	0.00446	0.00440	0.00417
43	0.00849	0.00745	0.00503	0.00391	0.00235	0.00292	0.00297	0.00280	0.00226	0.00146	0.00094	0.00110	0.00116	0.00122	0.00079	0.00073	0.00076
44	0.03269	0.02417	0.01708	0.01390	0.01211	0.01446	0.01167	0.01399	0.01166	0.01045	0.00963	0.00988	0.01053	0.01090	0.01094	0.01167	0.01265
45	0.00672	0.00648	0.00452	0.00393	0.00335	0.00362	0.00337	0.00439	0.00327	0.00305	0.00236	0.00373	0.00401	0.00339	0.00269	0.00280	0.00267
46	0.01633	0.01523	0.00794	0.00597	0.00520	0.00501	0.00369	0.00166	0.00164	0.00082	0.00077	0.00133	0.00124	0.00117	0.00110	0.00109	0.00130
47	0.00471	0.00861	0.00531	0.00453	0.00405	0.00428	0.00364	0.00346	0.00192	0.00240	0.00158	0.00140	0.00131	0.00155	0.00077	0.00082	0.00074
48	0.00768	0.00607	0.00293	0.00205	0.00189	0.00177	0.00127	0.00095	0.00085	0.00143	0.00094	0.00097	0.00104	0.00119	0.00112	0.00118	0.00143
49	0.02637	0.02532	0.01268	0.01198	0.00818	0.01031	0.00919	0.00878	0.00683	0.00579	0.00584	0.00483	0.00578	0.00477	0.00459	0.00422	0.00377

Sector	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
50	0.00226	0.00236	0.00302	0.00307	0.00133	0.00188	0.00236	0.00312	0.00195	0.00178	0.00161	0.00212	0.00173	0.00202	0.00217	0.00234	0.00244
51	0.00502	0.00346	0.00109	0.00035	0.00058	0.00055	0.00059	0.00102	0.00131	0.00114	0.00089	0.00083	0.00049	0.00057	0.00075	0.00091	0.00112
52	0.01218	0.01142	0.00703	0.00429	0.00438	0.00672	0.00798	0.00834	0.00783	0.00682	0.00642	0.00668	0.00750	0.00851	0.00757	0.00755	0.01005
53	0.01301	0.00864	0.00606	0.00324	0.00507	0.00683	0.00604	0.00651	0.00463	0.00483	0.00397	0.00360	0.00309	0.00282	0.00263	0.00286	0.00245
54	0.01677	0.01353	0.00689	0.00463	0.00381	0.00427	0.00394	0.00227	0.00183	0.00173	0.00151	0.00223	0.00209	0.00236	0.00230	0.00228	0.00197
55	0.00865	0.00706	0.01067	0.00949	0.00825	0.00942	0.00956	0.01211	0.01041	0.00866	0.00738	0.00784	0.00976	0.01175	0.01256	0.01565	0.01827
56	0.00501	0.00445	0.00245	0.00348	0.00179	0.00202	0.00237	0.00251	0.00295	0.00203	0.00214	0.00273	0.00298	0.00301	0.00228	0.00227	0.00274
57	0.00751	0.00350	0.00357	0.00328	0.00334	0.00178	0.00123	0.00195	0.00176	0.00196	0.00214	0.00189	0.00168	0.00166	0.00213	0.00185	0.00149
58	0.00349	0.00202	0.00189	0.00087	0.00123	0.00061	0.00040	0.00043	0.00056	0.00061	0.00069	0.00051	0.00079	0.00073	0.00090	0.00100	0.00113
59	0.00204	0.00263	0.00202	0.00102	0.00063	0.00080	0.00040	0.00036	0.00023	0.00019	0.00019	0.00017	0.00024	0.00011	0.00009	0.00011	0.00011
60	0.01593	0.00897	0.00891	0.00777	0.00960	0.01062	0.00930	0.00914	0.00881	0.00876	0.00792	0.01102	0.01058	0.01065	0.01072	0.01011	0.00942
61	0.00503	0.00597	0.00382	0.00196	0.00149	0.00277	0.00262	0.00217	0.00200	0.00203	0.00180	0.00171	0.00229	0.00229	0.00226	0.00216	0.00213
62	0.01415	0.00589	0.03245	0.04887	0.04048	0.04360	0.03984	0.02536	0.02887	0.02903	0.04092	0.03619	0.03017	0.03705	0.03207	0.02794	0.02626
63	0.05993	0.05698	0.04547	0.04681	0.05353	0.06781	0.06914	0.06791	0.05652	0.05507	0.05600	0.05457	0.05876	0.06401	0.06547	0.06741	0.07358
64	0.05125	0.05163	0.12038	0.11761	0.08725	0.07062	0.09077	0.09582	0.09736	0.11992	0.12460	0.11441	0.10053	0.09493	0.09582	0.10285	0.11209
65	0.00323	0.00345	0.00278	0.00436	0.00408	0.00432	0.01117	0.01773	0.01968	0.01876	0.02027	0.01520	0.01389	0.01272	0.01133	0.01154	0.01344
66	0.00718	0.00920	0.01550	0.01616	0.01323	0.00830	0.00610	0.00639	0.00417	0.00468	0.00509	0.00770	0.00623	0.00760	0.00657	0.00538	0.00684
67	0.01838	0.01719	0.02104	0.02399	0.01837	0.01515	0.01206	0.01301	0.01336	0.01382	0.01460	0.01765	0.01683	0.01396	0.01314	0.01063	0.00751
68	0.03488	0.02814	0.02942	0.04032	0.05883	0.04447	0.03736	0.04431	0.04330	0.04017	0.04140	0.03799	0.03926	0.04642	0.05372	0.04636	0.05092
69	0.00235	0.00270	0.00314	0.00295	0.00612	0.00592	0.00636	0.00603	0.00992	0.00634	0.00574	0.00703	0.00785	0.00576	0.00422	0.00307	0.00365
70	0.00600	0.00280	0.00409	0.00352	0.00415	0.00589	0.00538	0.00670	0.00432	0.00282	0.00247	0.00287	0.00185	0.00170	0.00088	0.00081	0.00069
71	0.00150	0.00134	0.00153	0.00300	0.00308	0.00598	0.00526	0.00353	0.00288	0.00416	0.00530	0.00399	0.00332	0.00285	0.00296	0.00181	0.00186
72	0.00000	0.00159	0.00166	0.00059	0.00135	0.00177	0.00204	0.00231	0.00169	0.00215	0.00264	0.00355	0.00307	0.00324	0.00339	0.00364	0.00374
73	0.00172	0.00149	0.00232	0.00218	0.00216	0.00286	0.00265	0.00322	0.00343	0.00496	0.00538	0.00368	0.00315	0.00323	0.00217	0.00225	0.00266
74	0.00873	0.00739	0.00806	0.00704	0.01098	0.01054	0.01202	0.01740	0.01962	0.02909	0.03616	0.03841	0.03786	0.03293	0.03301	0.03419	0.03074
75	0.02285	0.02866	0.02739	0.05200	0.05222	0.04955	0.05217	0.03116	0.01836	0.01920	0.01943	0.01717	0.02169	0.02567	0.02084	0.02567	0.02321
76	0.01135	0.01087	0.00753	0.01454	0.01431	0.01478	0.01630	0.01516	0.02799	0.07908	0.08402	0.08778	0.08107	0.08951	0.07830	0.07756	0.08749
77	0.00225	0.00209	0.00163	0.00152	0.00207	0.00157	0.00147	0.00235	0.00184	0.00205	0.00334	0.00573	0.01100	0.01125	0.00925	0.00821	0.00837
78	0.00972	0.00716	0.00664	0.00503	0.00416	0.00449	0.00527	0.00501	0.00428	0.00475	0.00396	0.00341	0.00258	0.00250	0.00265	0.00247	0.00236
79	0.01082	0.01103	0.00696	0.00887	0.00668	0.00646	0.00658	0.00725	0.00703	0.00813	0.01004	0.00658	0.00551	0.00569	0.00591	0.00639	0.00618
80	0.00104	0.00115	0.00317	0.00195	0.00607	0.00553	0.00658	0.00874	0.00619	0.00877	0.01140	0.00900	0.02055	0.01690	0.01688	0.01607	0.02009
81	0.02758	0.02962	0.03224	0.03281	0.03192	0.03360	0.03914	0.03224	0.02889	0.03887	0.03738	0.04806	0.04005	0.04228	0.07307	0.05803	0.06487
82	0.02450	0.02758	0.02902	0.02579	0.02530	0.02628	0.02696	0.02668	0.02201	0.02933	0.03343	0.03231	0.02931	0.03066	0.03433	0.03745	0.03880
83	0.01874	0.02159	0.02362	0.02055	0.01863	0.01968	0.01897	0.02023	0.01585	0.02328	0.02208	0.02190	0.01705	0.02170	0.02626	0.02808	0.03132
84	0.01396	0.01452	0.01470	0.01017	0.00991	0.01217	0.01399	0.01790	0.01814	0.02355	0.02952	0.03248	0.02686	0.02811	0.02743	0.02752	0.02989
Total	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

### Appendix 3 - Aggregated groups of sectors

#### 3A. Aggregated 10 groups of sectors

Symbol	Label	Paper's sectors included in the group
AG1	Agriculture, forestry, hunting, and fishing	1...5
AG2	Mining industries (without oil extraction)	6
AG3	Production and distribution of electric and thermal energy	62
AG4	Food industries, beverages, tobacco	7...15
AG5	Textiles, leather goods, pulp and paper, furniture	16...21, 60
AG6	Equipments, machinery, transport tools, other metal products	44...59
AG7	Other manufacturing industries	22...43, 61
AG8	Constructions	63
AG9	Transport, post, and telecommunications	67...74
AG10	Trade, commercial and public services	64...66, 75...84

#### Annual index of the gross value added (q)

Groups	AG1	AG2	AG3	AG4	AG5	AG6	AG7	AG8	AG9	AG10	Total
1990	1.36635	0.27997	0.69180	1.07807	0.79822	0.85301	0.83990	1.00577	0.78280	1.09849	0.97569
1991	0.87510	0.91446	2.79764	0.84379	0.91649	0.75795	0.89050	0.80498	0.91608	0.92415	0.88236
1992	0.85820	0.77710	0.95058	0.94931	0.85537	0.76253	0.84822	0.93001	0.93576	1.01690	0.91027
1993	1.13780	1.01830	1.40433	0.95357	0.93445	0.85949	1.01479	1.24840	1.03273	0.96405	1.03288
1994	1.03012	0.98357	1.08437	1.01194	1.08710	1.03806	1.01113	1.27499	1.00950	1.02864	1.04253
1995	1.05023	1.00351	1.02660	1.13646	1.06755	1.05073	1.02717	1.07153	1.02286	1.10840	1.06770
1996	0.96107	0.76924	0.88087	1.21969	1.20759	1.01225	1.02042	1.01095	1.06767	1.05466	1.03914
1997	0.99735	0.58238	0.81926	0.97017	0.94867	0.95196	0.90505	0.81571	0.91287	0.90633	0.92741
1998	0.88601	0.99025	0.95668	0.91259	0.92754	0.93696	0.95882	0.94454	0.89178	1.00951	0.94592
1999	1.03117	1.41071	0.88930	0.86517	1.06643	0.95270	0.89671	0.99094	0.99985	1.00172	0.98594
2000	0.81955	1.09288	0.85276	1.12908	1.14339	1.04510	1.06875	1.06379	1.05406	1.05587	1.02205
2001	1.27348	1.12625	0.84302	1.15326	1.03810	1.03584	1.00041	1.10464	1.03004	1.03005	1.06672
2002	0.93841	0.96465	1.09500	1.04146	1.07589	1.04885	1.06844	1.08259	1.06149	1.08140	1.05074
2003	1.05056	0.98690	0.97386	1.15606	1.03725	0.99452	0.98954	1.06837	1.08343	1.04456	1.04866
2004	1.20103	1.06082	0.97706	1.08480	1.06893	1.12420	1.08985	1.10479	1.01017	1.06751	1.08358
2005	0.82634	0.94450	0.96092	1.01080	0.98526	1.12387	1.02962	1.09911	1.07562	1.09618	1.03607

#### Annual deflator of the gross value added (p)

Groups	AG1	AG2	AG3	AG4	AG5	AG6	AG7	AG8	AG9	AG10	Total
1990	1.14993	1.50723	0.81917	1.10034	1.11961	1.09651	1.24068	1.04072	1.16246	1.07184	1.12827
1991	2.38154	2.43755	6.05855	2.64013	2.35743	2.28690	2.93539	2.59112	3.44393	4.10012	2.91400
1992	3.18512	3.92711	4.76094	3.15729	2.70156	3.09399	3.27264	3.25954	3.70029	3.08253	3.22312
1993	3.19796	2.93856	2.12490	3.69322	3.20117	3.12089	2.86515	2.86594	3.78176	2.86628	3.06137
1994	2.29166	2.33527	2.58654	2.61967	2.52795	2.72328	2.58873	2.45290	2.12958	2.23770	2.37536
1995	1.37707	0.94161	1.28297	1.28631	1.24359	1.24416	1.22539	1.37217	1.26220	1.48700	1.34259
1996	1.53681	1.01769	1.08340	1.46132	1.38030	1.58360	1.50524	1.47638	1.65595	1.38090	1.45830
1997	2.18709	4.98444	3.13650	2.46567	2.04775	1.96810	2.34098	2.30168	2.52312	2.68732	2.42066
1998	1.32441	2.02762	1.53847	1.34602	1.35651	1.40642	1.47357	1.51227	1.70369	1.74360	1.53765
1999	1.29552	1.43796	2.25775	1.31052	1.31826	1.35110	1.28826	1.47675	1.58524	1.52806	1.45767
2000	1.49870	1.54208	1.51454	1.56340	1.55084	1.48847	1.50213	1.35051	1.41275	1.37912	1.43965
2001	1.39136	1.40576	1.45743	1.37466	1.44613	1.52021	1.36020	1.43788	1.41293	1.33290	1.38142
2002	1.18292	1.37702	1.45808	1.09728	1.25109	1.28426	1.27772	1.30561	1.18529	1.24005	1.23144
2003	1.25114	0.99723	1.16328	1.05875	1.16783	1.24788	1.06563	1.22282	1.21000	1.28548	1.21894
2004	1.12930	1.15842	1.10538	1.12346	1.14781	1.18432	1.12476	1.15613	1.10980	1.15721	1.14314
2005	0.94823	1.09983	1.13483	1.14867	1.07173	1.13659	1.21117	1.15385	1.06541	1.15903	1.11396

### Weights of groups (w)

Groups	AG1	AG2	AG3	AG4	AG5	AG6	AG7	AG8	AG9	AG10	Total
1989	0.15744	0.03148	0.01415	0.06960	0.11517	0.17043	0.10375	0.05993	0.07356	0.20448	1
1990	0.23158	0.01627	0.00589	0.07488	0.09360	0.14497	0.09464	0.05698	0.06263	0.21856	1
1991	0.19681	0.01709	0.03245	0.06398	0.07329	0.09514	0.11297	0.04547	0.07125	0.29156	1
1992	0.18526	0.01773	0.04887	0.06455	0.05805	0.07609	0.10767	0.04681	0.08360	0.31137	1
1993	0.21649	0.01693	0.04048	0.07257	0.05522	0.06517	0.09869	0.05353	0.10505	0.27585	1
1994	0.20643	0.01589	0.04360	0.07677	0.06213	0.07434	0.10308	0.06781	0.09258	0.25736	1
1995	0.20748	0.01060	0.03984	0.07883	0.05722	0.06771	0.09057	0.06914	0.08312	0.29548	1
1996	0.20129	0.00378	0.02536	0.09231	0.06281	0.07184	0.09156	0.06791	0.09651	0.28665	1
1997	0.19452	0.00659	0.02887	0.09798	0.05418	0.05964	0.08636	0.05652	0.09852	0.31680	1
1998	0.15807	0.00791	0.02903	0.08227	0.04658	0.05370	0.08350	0.05507	0.10350	0.38038	1
1999	0.14892	0.01096	0.04092	0.06433	0.04553	0.04805	0.06705	0.05600	0.11368	0.40455	1
2000	0.12365	0.01255	0.03619	0.07718	0.05459	0.05074	0.07362	0.05457	0.11517	0.40174	1
2001	0.14722	0.01342	0.03017	0.08300	0.05549	0.05428	0.06817	0.05876	0.11318	0.37631	1
2002	0.12606	0.01401	0.03705	0.07328	0.05757	0.05651	0.07191	0.06401	0.11009	0.38950	1
2003	0.13027	0.01110	0.03207	0.07047	0.05461	0.05461	0.05930	0.06547	0.11348	0.40863	1
2004	0.14286	0.01099	0.02794	0.06911	0.05402	0.05861	0.05910	0.06741	0.10275	0.40722	1
2005	0.09678	0.00988	0.02626	0.06904	0.04902	0.06435	0.06437	0.07358	0.10176	0.44495	1

### 3B. Classical areas

Symbol	Label	Included above defined groups
WPRIM	Primary	WAG1...WAG3
WSEC	Secondary	WAG4...WAG8
WTER	Tertiary	WAG9. WAG10

### Weights of classical areas (w)

	WPRIM	WPSEC	WPTER	Total
1989	0.20307	0.51889	0.27804	1
1990	0.25374	0.46506	0.28119	1
1991	0.24636	0.39084	0.36281	1
1992	0.25187	0.35317	0.39496	1
1993	0.27391	0.34519	0.38090	1
1994	0.26592	0.38413	0.34994	1
1995	0.25792	0.36348	0.37860	1
1996	0.23042	0.38641	0.38317	1
1997	0.22999	0.35468	0.41533	1
1998	0.19501	0.32111	0.48387	1
1999	0.20080	0.28096	0.51824	1
2000	0.17239	0.31070	0.51691	1
2001	0.19082	0.31969	0.48949	1
2002	0.17712	0.32329	0.49959	1
2003	0.17343	0.30446	0.52211	1
2004	0.18179	0.30824	0.50997	1
2005	0.13293	0.32036	0.54671	1

## Appendix 4 - Statistical analysis

### 4A. Correlation coefficients (Pearson, Kendall, Spearman)

	Pearson coefficient	Kendall's tau	Spearman's rho
wrp1-wrq1	0.72815	0.55000	0.73235
wrp2-wrq2	0.80484	0.55000	0.71765
wrp3-wrq3	0.92325	0.86667	0.95588
wrp4-wrq4	0.73266	0.58333	0.74706
wrp5-wrq5	0.67423	0.45000	0.62647
wrp6-wrq6	0.15745	0.46667	0.59412
wrp7-wrq7	0.62824	0.30000	0.37647
wrp8-wrq8	0.83703	0.65000	0.80882
wrp9-wrq9	0.64885	0.65000	0.77647
wrp10-wrq10	0.85512	0.63333	0.82353
wrp11-wrq11	0.83849	0.76667	0.90000
wrp12-wrq12	0.87909	0.70000	0.87647
wrp13-wrq13	0.69380	0.46667	0.67059
wrp14-wrq14	0.69999	0.18333	0.32647
wrp15-wrq15	0.71106	0.68333	0.81765
wrp16-wrq16	0.93371	0.66667	0.82647
wrp17-wrq17	0.33534	0.36667	0.43824
wrp18-wrq18	0.66081	0.41667	0.68235
wrp19-wrq19	0.85042	0.65000	0.77941
wrp20-wrq20	-0.19963	0.00000	0.00588
wrp21-wrq21	-0.18183	0.46667	0.49706
wrp22-wrq22	0.82003	0.51667	0.71765
wrp23-wrq23	0.79942	0.76667	0.89412
wrp24-wrq24	0.67842	0.65000	0.83824
wrp25-wrq25	0.61546	0.66667	0.84118
wrp26-wrq26	0.62651	0.61667	0.76471
wrp27-wrq27	0.86156	0.71667	0.86765
wrp28-wrq28	0.61869	0.60000	0.75882
wrp29-wrq29	0.90947	0.88333	0.97059
wrp30-wrq30	0.88997	0.85000	0.92647
wrp31-wrq31	0.58910	0.53333	0.67941
wrp32-wrq32	0.98903	0.86667	0.96471
wrp33-wrq33	0.44890	0.36667	0.50294
wrp34-wrq34	0.67133	0.58333	0.71765
wrp35-wrq35	0.84359	0.66667	0.81471
wrp36-wrq36	0.93183	0.78333	0.93235
wrp37-wrq37	0.30456	0.15000	0.19706
wrp38-wrq38	0.96295	0.80000	0.93235
wrp39-wrq39	0.91843	0.75000	0.90000
wrp40-wrq40	0.68840	0.61667	0.78235
wrp41-wrq41	0.54101	0.21667	0.35882
wrp42-wrq42	0.75725	0.56667	0.77059
wrp43-wrq43	0.94398	0.81667	0.93235
wrp44-wrq44	0.86692	0.46667	0.60294
wrp45-wrq45	0.71146	0.38333	0.52353
wrp46-wrq46	0.90092	0.66667	0.83824
wrp47-wrq47	0.80095	0.86667	0.96471
wrp48-wrq48	0.97672	0.55000	0.69706
wrp49-wrq49	0.94800	0.80000	0.92941
wrp50-wrq50	0.30731	0.36667	0.53235
wrp51-wrq51	0.84102	0.70000	0.85000
wrp52-wrq52	0.67324	0.46667	0.61765
wrp53-wrq53	0.85386	0.75000	0.87353
wrp54-wrq54	0.88022	0.76667	0.89118
wrp55-wrq55	0.76981	0.43333	0.58235
wrp56-wrq56	0.71886	0.36667	0.47941
wrp57-wrq57	0.85031	0.45000	0.61765
wrp58-wrq58	0.86829	0.76667	0.90588
wrp59-wrq59	0.93413	0.83333	0.95000
wrp60-wrq60	0.24304	0.33333	0.52059
wrp61-wrq61	0.75345	0.26667	0.34412
wrp62-wrq62	0.52603	0.43333	0.58824
wrp63-wrq63	0.82142	0.65000	0.81471
wrp64-wrq64	0.24320	0.50000	0.55882
wrp65-wrq65	0.94637	0.80000	0.91765
wrp66-wrq66	0.60361	0.48333	0.64118
wrp67-wrq67	0.79515	0.66667	0.84706
wrp68-wrq68	0.83055	0.63333	0.81765
wrp69-wrq69	0.64547	0.51667	0.68824



wrp70-wrq70	0.54925	0.48333	0.60588
wrp71-wrq71	0.85331	0.75000	0.89412
wrp72-wrq72	0.95926	0.83333	0.94412
wrp73-wrq73	0.80396	0.63333	0.75588
wrp74-wrq74	0.96404	0.75000	0.90294
wrp75-wrq75	0.95264	0.76667	0.90294
wrp76-wrq76	0.92089	0.70000	0.85882
wrp77-wrq77	0.95925	0.60000	0.75882
wrp78-wrq78	0.84318	0.73333	0.83235
wrp79-wrq79	0.49603	0.55000	0.66471
wrp80-wrq80	0.92532	0.80000	0.92353
wrp81-wrq81	0.77654	0.53333	0.72647
wrp82-wrq82	0.43739	0.25000	0.33824
wrp83-wrq83	0.42591	0.18333	0.28529
wrp84-wrq84	0.92132	0.65000	0.83235

#### 4B. Granger causality test (G.C.)

wrq does not G.C. wrp		wrp does not G.C. wrq	
F-Statistic	Prob.	F-Statistic	Prob.
1.60689	0.25309	11.33287	0.00348
0.17079	0.84567	13.32445	0.00204
1.79466	0.22084	6.49114	0.01798
0.54827	0.59609	9.40059	0.00625
3.34380	0.08205	5.72367	0.02490
1.44812	0.28494	40.72717	0.00003
4.93799	0.03569	12.16234	0.00276
4.71379	0.03976	3.64789	0.06914
5.80272	0.02405	12.65117	0.00243
2.84345	0.11038	1.36468	0.30364
7.11210	0.01404	1.83526	0.21454
4.52373	0.04367	6.08705	0.02128
1.41489	0.29221	0.55876	0.59055
4.47316	0.04479	7.06359	0.01431
7.40711	0.01254	2.26990	0.15916
1.32156	0.31389	5.27193	0.03052
2.90089	0.10658	4.63381	0.04135
0.23815	0.79290	4.49137	0.04439
5.16401	0.03208	2.70993	0.11989
5.59521	0.02636	1.78844	0.22183
4.23412	0.05058	15.18735	0.00131
0.16393	0.85128	11.48044	0.00334
3.90307	0.06018	6.39576	0.01870
0.51883	0.61199	0.49422	0.62568
14.20025	0.00164	5.63516	0.02590
5.11707	0.03279	24.49771	0.00023
3.39184	0.07983	23.37247	0.00027
2.56883	0.13104	6.35142	0.01904
11.79943	0.00305	32.22619	0.00008
5.74344	0.02469	187.04439	0.00000
8.37711	0.00882	20.93821	0.00041
32.08742	0.00008	6.10801	0.02109
13.11908	0.00215	5.56794	0.02668
17.08791	0.00086	6.85700	0.01552
17.34459	0.00082	1.08140	0.37941
6.73130	0.01631	2.98856	0.10108
10.98594	0.00384	4.15913	0.05258
3.00612	0.10002	205.32877	0.00000
5.36248	0.02928	4.01594	0.05668
1.90133	0.20476	2.13086	0.17474
1.23712	0.33522	5.83447	0.02372
4.31604	0.04850	2.47926	0.13878
4.07070	0.05507	22.56143	0.00031
0.84278	0.46185	5.43303	0.02835
0.85683	0.45643	1.77023	0.22474
8.13381	0.00961	13.47721	0.00196
47.06994	0.00002	0.17073	0.84572
0.86523	0.45322	2.96683	0.10241
0.21523	0.81039	22.99755	0.00029
1.34639	0.30794	1.59389	0.25552
4.58894	0.04228	4.32280	0.04833
2.91688	0.10555	5.21593	0.03132
1.65493	0.24432	7.88170	0.01052
15.04424	0.00135	0.83677	0.46420
3.09232	0.09501	20.18445	0.00047

6.38767	0.01876	0.97930	0.41228
1.50755	0.27247	1.23500	0.33578
4.70905	0.03986	14.13992	0.00167
40.71037	0.00003	43.47583	0.00002
0.16064	0.85399	9.80732	0.00549
0.49463	0.62545	0.84149	0.46235
0.83861	0.46348	32.41054	0.00008
12.47112	0.00255	1.69031	0.23809
6.58420	0.01731	15.45322	0.00123
30.57579	0.00010	0.50724	0.61839
25.35975	0.00020	35.51232	0.00005
2.78554	0.11439	6.06132	0.02151
1.43023	0.28882	18.59659	0.00064
0.76090	0.49509	20.78245	0.00042
3.09899	0.09464	6.90375	0.01523
2.99464	0.10071	3.59522	0.07119
1.55381	0.26322	2.61752	0.12705
1.51757	0.27043	4.65967	0.04083
1.55007	0.26396	26.63669	0.00017
7.86611	0.01058	3.67649	0.06806
0.72861	0.50900	61.35885	0.00001
10.99390	0.00383	2.05268	0.18432
0.83769	0.46384	29.17487	0.00012
2.39371	0.14670	0.72621	0.51005
6.51245	0.01782	0.51779	0.61256
0.39812	0.68285	16.10724	0.00106
0.26614	0.77216	20.47467	0.00045
1.69264	0.23769	17.98405	0.00072
0.75913	0.49584	20.11893	0.00048

## Appendix5 - Orthogonal regression

### 5A. Econometric coefficients

l	wrp <sub>i</sub> =a1(i)+b1(i)*wrq <sub>i</sub>			wrq <sub>i</sub> =a2(i)+b2(i)*wrp <sub>i</sub>	
	a1	b1	a2	b2	b1*b2
1	-0.02168	1.13144	0.01916	0.88383	1
2	0.00453	0.83199	-0.00545	1.20194	1
3	0.00289	0.52154	-0.00554	1.91741	1
4	-0.00078	1.52379	0.00051	0.65626	1
5	-0.00029	1.09459	0.00026	0.91358	1
6	-0.10678	10.24298	0.01042	0.09763	1
7	0.00306	0.81322	-0.00376	1.22969	1
8	-0.00003	0.90919	3.76E-05	1.09988	1
9	-0.00054	1.23644	0.00044	0.80877	1
10	0.00122	0.76523	-0.00159	1.30679	1
11	0.00040	0.79936	-0.00051	1.25100	1
12	-0.00014	1.17837	0.00012	0.84863	1
13	-0.00353	1.24210	0.00284	0.80509	1
14	0.00566	0.65924	-0.00858	1.51689	1
15	0.00083	0.83807	-0.00099	1.19322	1
16	0.00094	0.85289	-0.00111	1.17248	1
17	0.00156	0.82504	-0.00189	1.21207	1
18	0.00034	0.60957	-0.00056	1.64051	1
19	-0.00150	1.26915	0.00118	0.78793	1
20	0.01880	0.15483	0.02075	6.45877	1
21	0.04466	0.75824	0.00424	1.31884	1
22	-0.00023	0.95290	0.00024	1.04943	1
23	0.00015	0.78252	-0.00020	1.27793	1
24	0.00786	0.70527	-0.01114	1.41789	1
25	-0.00020	1.45298	0.00014	0.68824	1
26	-0.00152	1.99528	0.00076	0.50118	1
27	-0.00058	1.24156	0.00047	0.80544	1
28	-0.00004	1.00770	4.3E-05	0.99236	1
29	0.00030	0.78022	-0.00039	1.28169	1
30	-0.00005	1.08570	4.45E-05	0.92106	1
31	-0.00261	1.81787	0.00144	0.55009	1
32	-0.00081	1.16144	0.00069	0.86100	1
33	-0.00048	1.16593	0.00041	0.85769	1
34	0.00039	0.70137	-0.00056	1.42579	1
35	0.00006	0.93135	-6.7E-05	1.07371	1
36	-0.00005	1.05504	4.58E-05	0.94783	1
37	0.00209	0.40461	-0.00516	2.47153	1
38	-0.00078	1.36992	0.00057	0.72997	1

39	0.00000	1.02714	2.7E-06	0.97357	1
40	-0.00019	1.26502	0.00015	0.79050	1
41	0.00232	0.53028	-0.00437	1.88578	1
42	-0.00209	1.35244	0.00154	0.73941	1
43	0.00029	0.88425	-0.00032	1.13091	1
44	-0.00318	1.27563	0.00249	0.78393	1
45	-0.00009	1.06868	8.41E-05	0.93573	1
46	0.00012	1.04619	-0.00011	0.95585	1
47	0.00026	0.97998	-0.00026	1.02043	1
48	0.00026	0.95193	-0.00027	1.05050	1
49	0.00149	0.81544	-0.00183	1.22633	1
50	-0.00287	2.39059	0.00120	0.41831	1
51	-0.00093	1.94349	0.00048	0.51454	1
52	0.00084	0.85001	-0.00098	1.17645	1
53	-0.00035	1.02281	0.00034	0.97770	1
54	-0.00105	1.50729	0.00069	0.66344	1
55	0.00242	0.73400	-0.00330	1.36240	1
56	-0.00039	1.19553	0.00032	0.83645	1
57	-0.00164	1.95246	0.00084	0.51217	1
58	-0.00028	1.41000	0.00020	0.70922	1
59	0.00010	0.79491	-0.00013	1.25800	1
60	-0.06018	7.11350	0.00846	0.14058	1
61	0.00094	0.55902	-0.00168	1.78884	1
62	0.00947	0.75827	-0.01249	1.31879	1
63	-0.02525	1.38498	0.01823	0.72203	1
64	0.01914	0.81482	-0.02349	1.22726	1
65	-0.00050	1.03054	0.00049	0.97037	1
66	-0.00775	2.17794	0.00356	0.45915	1
67	-0.00940	1.77758	0.00529	0.56256	1
68	0.00829	0.81091	-0.01023	1.23319	1
69	0.00030	1.06138	-0.00028	0.94217	1
70	-0.00080	1.74393	0.00046	0.57342	1
71	-0.00056	1.41582	0.00039	0.70631	1
72	0.00010	0.88875	-0.00011	1.12518	1
73	-0.00179	1.57114	0.00114	0.63648	1
74	-0.00100	1.02535	0.00098	0.97528	1
75	-0.00570	1.12553	0.00507	0.88847	1
76	0.00047	1.01195	-0.00047	0.98819	1
77	-0.00024	0.94892	0.00025	1.05383	1
78	0.00063	0.89271	-0.00071	1.12018	1
79	0.00416	0.39795	-0.01045	2.51286	1
80	-0.00063	0.98196	0.00064	1.01837	1
81	-0.03210	1.89236	0.01696	0.52844	1
82	-0.01886	1.62677	0.01159	0.61472	1
83	-0.02816	2.30350	0.01222	0.43412	1
84	-0.00025	0.99938	0.00025	1.00062	1

5B. Price indices under zero aggregate inflation ( $\pi_{it}$ )

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	1.67626	0.98868	0.79108	1.06138	0.95421	0.90408	0.97127	1.22334	0.91118	1.05984	0.65693	1.15020	0.77405	0.91125	1.09491	0.68079
2	0.77211	0.66518	0.98898	0.89470	0.82623	1.00444	0.77505	0.96039	1.19274	0.86429	0.96416	0.96914	0.99098	0.91526	0.99828	0.95676
3	0.87109	0.49122	0.72535	0.79179	0.69212	0.74323	0.79897	0.85418	0.98140	1.25654	0.97723	1.57761	1.38004	1.33099	1.17992	1.33127
4	0.92331	0.81652	0.95544	0.86600	0.98953	1.06271	1.08035	0.93839	0.97232	1.30151	1.11846	0.89296	1.00325	0.80746	1.12228	0.61554
5	0.89633	0.76145	1.00481	0.80472	0.91246	0.92746	0.97529	1.21478	1.11913	0.95612	1.13257	0.92554	1.05266	1.03393	0.85214	1.02357
6	-0.38128	3.61787	2.33964	3.85345	3.18610	2.78463	-2.57786	23.93155	-5.65424	1.20059	1.18679	2.26032	1.39354	1.99849	0.28329	-0.36813
7	1.00931	0.82905	0.89430	0.85913	0.93029	1.02811	1.05140	1.04674	1.05796	1.12028	0.97205	0.94846	0.87312	0.92407	1.01011	0.88066
8	0.84814	0.76274	1.80303	0.86986	0.83242	1.02521	1.05694	1.18894	0.92339	0.69104	0.93483	0.81269	0.86929	1.06031	1.14629	0.84926
9	1.44909	0.97190	1.00006	0.93258	0.68793	1.18846	1.43074	1.05937	1.05218	0.99147	1.02034	0.83446	1.07699	0.77020	0.97928	0.85090
10	0.89048	1.05678	0.88792	0.97980	0.98941	0.91791	1.04651	1.17773	0.91534	0.84463	0.96072	1.15820	1.00598	0.93107	0.96206	0.96110
11	1.98994	1.22648	1.50957	1.27279	0.76121	0.99338	1.29779	0.91914	0.91740	1.02135	1.41478	0.77520	1.07434	1.25103	0.84558	0.72524
12	1.26287	1.21723	0.83495	0.95612	0.97562	0.60928	1.15984	1.14954	1.22967	0.72387	1.21333	0.27739	0.97182	1.04169	0.78907	0.83283
13	0.81674	0.88535	0.83187	0.75878	0.87166	0.85879	1.38180	1.01627	0.92150	0.92157	1.18618	0.91080	0.95434	0.88990	0.83623	0.87114
14	0.84226	0.94447	0.97614	0.92910	0.94249	1.06644	1.04542	0.97937	0.87719	0.68696	1.07080	1.17061	0.90735	1.15070	0.87359	0.98441
15	1.36726	0.44407	0.86097	1.00600	0.92343	0.97522	1.19904	1.37466	1.02495	0.52227	1.27095	1.20334	1.26923	1.40657	1.29534	1.46763
16	0.69850	0.84469	0.64251	0.82810	0.83485	0.87258	1.07621	1.00408	0.99118	0.97531	0.97652	0.84476	0.98005	0.94163	0.94173	0.87142
17	0.64183	0.89486	0.92944	0.73768	1.15477	0.90614	1.03030	1.10699	0.93953	1.03185	1.06921	0.91073	0.92018	0.88265	0.88405	0.84541
18	0.87931	0.72620	0.82347	0.75067	0.88483	0.84330	0.93055	1.09791	0.95755	0.87260	1.03262	1.27781	1.03019	0.99964	1.02607	1.04139
19	0.76927	0.97788	0.91944	0.83436	0.76185	0.92395	1.22222	1.00675	0.10675	0.99848	1.17985	0.83984	0.99070	0.97569	0.92955	0.88052
20	0.69239	0.98449	0.99484	1.00783	1.05071	0.92203	1.14910	0.88128	1.01715	1.20627	1.03970	0.90739	0.96564	0.90367	1.00926	0.85747
21	0.96422	0.59468	0.81431	0.91225	1.03280	1.16325	1.26640	1.04472	1.28458	1.27876	1.19270	1.01273	1.16177	0.93191	0.98950	1.05390
22	0.71413	0.79528	1.10482	0.70941	0.99411	0.81491	1.13369	1.01695	0.96526	1.19305	0.92985	0.97379	0.94560	0.88013	0.95177	0.93295
23	0.92985	0.68438	0.86839	1.31828	0.67920	0.74161	1.12018	1.00578	0.99936	0.59532	1.24136	0.98269	1.16589	1.20679	1.28805	0.51852
24	0.82143	1.16447	0.90220	1.00423	0.95316	0.90195	0.98492	1.07109	1.04013	0.87080	1.01289	0.82410	1.09741	0.96485	1.07850	1.17479
25	0.10173	2.36883	1.68281	1.38210	1.12851	1.35803	1.05375	0.64533	0.96206	0.61449	0.69782	0.33604	0.08156	0.25616	0.37957	1.03690
26	1.06627	1.31188	1.39619	1.06233	0.62576	1.25965	0.73212	0.78760	0.97730	1.28656	1.13767	1.05579	0.99722	0.82334	0.65150	0.91741
27	0.47630	1.00965	1.16579	1.01918	0.95482	0.96711	1.04949	0.98253	1.19761	1.17832	1.04280	0.97287	1.11148	1.03107	0.99444	1.05377
28	1.04172	0.90823	0.94200	0.91968	0.78957	0.79736	0.82210	1.08208	1.05441	0.92434	0.82656	0.82971	1.11644	0.98556	1.00307	0.91317
29	0.86845	0.71275	0.67228	0.80957	0.79938	0.88134	0.82957	0.90286	1.07423	0.96921	1.00375	1.18976	1.13427	1.09634	1.28992	1.22883
30	0.88596	0.96167	1.00302	0.82339	0.87590	1.03685	1.10993	0.97908	0.97119	0.98237	0.90223	0.90378	1.03600	0.83025	0.87793	0.92406
31	13.90900	0.70579	1.03548	1.28305	0.92496	1.11261	1.29825	0.89891	1.10681	0.74978	0.23633	0.49170	0.57200	0.98311	0.77681	0.64926
32	0.87424	0.82545	0.69230	0.87997	0.74222	0.81612	0.87386	0.91773	0.94587	0.98909	1.18674	1.02938	1.02578	1.04712	1.05670	1.04764
33	0.69643	1.01992	1.06533	0.68408	0.83030	1.20047	1.11310	1.13229	1.07499	0.92239	0.98669	0.88405	1.05396	0.82991	0.97152	0.83531
34	0.57237	0.91147	1.06813	1.11705	0.98428	1.03802	1.41878	0.88713	1.00671	0.93133	0.89441	0.88209	0.97492	0.98001	1.03398	0.94717
35	0.55138	1.06406	0.96263	1.04182	1.06448	1.24796	1.06094	1.09449	1.17503	1.30756	1.31446	0.89945	0.79108	1.04107	1.07894	0.85370
36	0.48084	0.85572	1.62547	1.33097	1.10944	1.16977	0.95882	0.94518	1.14525	0.95835	1.00558	1.10670	0.82404	0.88671	1.02575	0.98279
37	1.09922	1.08142	0.96686	0.85903	0.90296	0.98871	1.01505	1.11692	1.10045	1.00216	0.98169	0.90274	1.04573	0.92428	1.22998	1.06111
38	1.02843	0.96371	1.00809	0.89692	0.83162	0.73702	0.89472	1.04776	1.12706	1.05144	0.89284	0.83129	1.05708	1.01081	1.13598	1.02567
39	1.35703	0.80816	0.95256	0.88619	0.90587	0.54690	0.47603	0.82789	1.13921	1.14916	1.49862	0.96107	1.04809	1.00421	1.14578	1.52073
40	0.58909	0.70204	0.95846	1.70894	0.93951	1.04367	1.12672	1.05045	1.23791	0.84474	0.92732	0.99421	0.97162	0.99162	1.05490	0.86516
41	1.06158	0.88107	0.98019	0.96582	1.00791	0.81031	1.12165	0.96922	0.94258	0.80138	1.20962	0.95447	1.14990	0.99929	1.43928	0.96149
42	0.55273	1.38522	0.68357	0.98128	1.04170	1.08479	1.13162	1.31424	1.20315	0.69210	1.31825	1.05454	0.92281	0.76047	0.79688	0.80790
43	0.74924	0.82718	0.70117	0.63659	0.95636	0.97806	0.87938	1.08956	0.87910	0.85703	1.23105	1.02159	1.26382	0.87564	1.18946	1.37776
44	0.76153	0.92600	0.85090	0.82137	0.92210	0.95087	1.04331	1.19802	1.11127	1.04350	0.94095	0.96077	0.97369	0.73951	1.02370	1.03676
45	0.84381	0.88026	0.83419	0.70364	0.89081	1.07918	1.07261	1.11248	1.12231	1.00178	1.50547	0.94989	0.90650	0.94188	0.92790	0.90675
46	0.80316	0.86089	0.59400	0.89860	0.98202	0.91147	0.57199	1.21151	0.67501	1.22503	1.64658	0.91462	1.06864	1.13427	1.42399	1.24559
47	1.57357	0.56415	0.82596	0.95909	0.96079	0.95299	0.93691	0.80798	1.20018	0.87006	0.98572	0.99996	1.34842	0.72875	1.29511	1.07754
48	0.76200	0.66723	0.75721	0.79307	0.90141	0.87183	0.85468	1.34241	1.37535	0.85403	1.21533	1.08754	1.26460	1.14336	1.20337	1.29722
49	0.77491	0.66178	0.86978	0.65079	0.91293	0.91851	0.90290	1.05231	1.07385	1.07668	0.97375	1.08887	1.00430	1.10699	1.07547	1.03246

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
50	1.15192	0.95703	0.95351	0.20598	0.09294	1.12877	1.44891	1.36413	1.11492	0.77267	1.51563	0.61521	0.90958	1.15216	1.26607	1.31757
51	0.85616	1.04514	0.36588	0.73699	0.30525	0.46069	1.27540	1.18587	1.41393	1.00640	0.51200	0.18237	0.22783	0.88710	1.04402	1.00033
52	0.74069	0.67124	0.72050	0.75019	1.42168	1.10774	1.01406	1.11867	1.03268	0.93971	0.94697	0.91772	1.01964	0.92533	0.94498	1.24176
53	0.63824	0.87120	0.53960	1.06479	1.17781	0.89351	0.98850	1.19212	1.06207	0.87024	0.89371	0.83776	0.85474	0.84895	0.95778	0.78510
54	1.07271	0.54881	0.85060	1.03891	0.96687	1.14055	0.64728	1.17255	1.07137	0.93862	1.47771	0.86016	1.12708	1.14156	1.03173	0.97748
55	0.81854	1.33183	0.78441	0.90997	0.92833	0.96276	1.15726	1.07046	1.01901	0.99252	0.97742	0.99766	1.01363	0.94895	1.03397	0.98419
56	0.83463	0.75717	1.34649	0.52660	0.82029	1.18485	1.04802	1.18699	0.96980	1.10688	1.21944	1.05599	0.97967	0.77938	0.98078	1.12271
57	0.68357	1.20841	0.97693	1.45505	0.82735	0.56970	1.92498	1.25484	1.19552	1.06831	1.00862	0.69329	0.73291	0.74749	0.90528	0.70731
58	0.69616	1.21785	0.49240	1.16064	0.95236	0.59108	0.76344	0.98719	1.04755	1.00146	0.73515	1.24949	0.86030	1.33331	1.12182	1.20021
59	1.00162	0.68443	0.57331	0.46908	1.18917	0.61201	0.95759	0.91382	1.24443	1.45462	1.36080	1.58080	0.83080	1.65501	1.99314	1.70978
60	0.38614	0.52107	0.81905	-0.17424	1.63893	1.57567	0.90955	0.84468	0.45807	0.43715	0.58390	1.32164	1.62556	1.66099	1.19570	0.98020
61	0.71553	0.69381	0.60066	0.79551	1.29516	0.83819	0.77382	1.20711	1.11870	1.03116	1.13245	1.25387	0.97396	0.94555	0.97002	0.95866
62	1.05024	3.57138	0.97610	1.16023	0.97266	0.91541	0.90100	1.13279	1.16694	1.02212	0.85005	0.82481	1.10104	0.94399	0.97816	1.01863
63	0.87954	0.73127	0.78463	1.07402	1.16162	0.98215	1.00324	0.91097	1.00666	0.94579	0.97415	0.93473	0.99029	1.00094	1.01684	1.06996
64	1.08041	0.94137	0.86397	0.84984	0.97654	1.14292	1.07753	1.09058	1.18762	1.00919	0.95108	0.89997	0.99660	1.07787	1.06394	1.07601
65	0.90730	0.62051	0.86618	0.77209	0.76355	1.88147	1.57205	1.04424	0.99190	1.06517	0.85923	0.90042	0.92277	0.96467	1.02619	1.06465
66	1.78000	0.74220	1.59553	1.00142	0.89348	1.07826	0.98648	0.46482	0.37913	0.72140	0.83294	1.01103	1.33525	0.92366	0.82820	0.80424
67	0.92265	0.89887	1.15617	0.99975	1.04270	0.97455	0.92913	1.06366	1.06596	1.16286	1.39236	0.89147	0.91019	1.01126	0.78078	0.80675
68	0.77163	0.98941	1.04372	1.04827	0.84034	0.91560	1.10669	1.09396	0.98693	1.04924	1.00147	1.02919	1.11440	1.05833	0.88355	1.04166
69	0.93067	1.05728	0.90243	1.03773	1.10494	1.10347	0.98592	1.12792	1.03653	1.13223	1.17475	1.06937	0.98867	0.95594	0.92795	1.26226
70	0.63182	0.65030	0.89413	0.79557	2.12861	1.60332	1.42609	1.16812	1.06043	0.91283	1.35129	1.32206	1.13815	0.57584	0.64485	0.74203
71	0.71237	0.88544	1.84990	1.00489	1.46871	1.19808	0.78309	1.15983	1.35239	1.21928	0.97254	0.98961	1.06190	1.10056	0.68580	1.20263
72	***	1.07394	0.48653	1.38346	0.93160	0.99290	1.02225	0.90971	1.08112	1.13607	1.19700	0.82291	1.03183	0.96621	0.96234	0.91250
73	0.21187	1.81783	0.93678	0.75550	1.13896	0.84451	1.29632	1.15839	1.23489	1.24292	0.81165	0.97310	0.88093	0.69657	0.84599	0.92201
74	0.64299	1.21633	0.98276	1.04793	0.89671	0.90871	1.25469	1.13263	1.11243	1.02661	1.04432	0.91508	1.00960	1.02090	1.02749	0.94756
75	0.95815	0.95387	1.35317	0.93488	0.94079	0.92479	0.84026	0.82638	0.95394	0.87685	0.81725	1.01261	0.89198	0.76639	1.06656	0.87195
76	0.98247	1.10963	2.47041	1.00702	1.08427	1.00956	1.02538	1.23239	1.13561	1.05563	1.05829	0.91874	1.08866	0.95882	1.01031	1.05344
77	0.77056	1.04833	0.78857	0.66430	0.73923	0.72854	1.37945	0.83802	0.91488	1.26375	1.18890	1.54687	0.95708	0.84106	0.85079	0.90709
78	0.68377	1.00013	0.82904	0.71114	0.97513	1.04676	0.99293	1.04398	1.12269	0.91264	0.99762	0.84080	1.07037	1.09033	1.07451	1.18237
79	0.73135	0.72875	0.95542	0.73221	0.91389	1.00850	1.08273	1.05027	1.05641	0.95792	0.72440	0.96083	1.14856	1.12176	1.14569	1.04435
80	0.46270	1.85469	0.52716	1.60334	0.81345	0.99138	1.18772	0.87999	0.97941	1.11526	0.76934	1.81907	0.81611	1.03050	0.91161	1.00815
81	0.90833	0.79054	1.16535	0.84228	0.93753	0.86888	0.89306	1.06982	0.86921	0.97076	1.33678	0.89892	1.15559	1.13060	1.05043	1.41624
82	0.85750	1.30151	1.00128	0.85155	0.78086	0.83292	1.04866	0.96462	0.90567	1.08573	1.08379	0.85931	0.97098	0.93479	1.07785	1.06877
83	1.24509	1.11498	1.12965	0.86160	0.85519	0.76118	0.96551	0.87104	1.09934	0.76778	1.19124	0.50640	1.08411	0.77710	1.19702	1.27643
84	0.99436	0.75909	0.84611	0.85984	1.03044	1.01979	1.23687	1.11843	1.13400	1.00946	1.12436	0.88776	1.07286	0.92876	0.97285	0.98657

5C. Price indices under downward price rigidity (pr<sub>it</sub>)

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	0.16608	0.13350	0.13846	0.15166	0.16013	0.13010	0.14194	0.20200	0.13314	0.12380	0.08658	0.13529	0.09551	0.09121	0.12651	0.08543
2	0.06940	0.06762	0.03086	0.04606	0.03544	0.04381	0.03794	0.03806	0.05011	0.03689	0.02435	0.02203	0.02693	0.02304	0.01837	0.01391
3	0.02651	0.02325	0.01328	0.01089	0.01399	0.00773	0.00689	0.00620	0.00487	0.00535	0.00315	0.00473	0.00447	0.00480	0.00401	0.00406
4	0.00218	0.00194	0.00213	0.00145	0.00164	0.00206	0.00195	0.00146	0.00120	0.00211	0.00207	0.00157	0.00155	0.00124	0.00171	0.00106
5	0.00427	0.00375	0.00357	0.00255	0.00249	0.00275	0.00278	0.00404	0.00345	0.00294	0.00388	0.00316	0.00368	0.00382	0.00342	0.00386
6	0.00742	0.06110	0.03464	0.06728	0.05085	0.04143	0.00782	0.00235	0.00698	0.01362	0.01390	0.03013	0.01707	0.02640	0.00974	0.00936
7	0.02043	0.01697	0.02081	0.01475	0.01957	0.02017	0.02245	0.02197	0.02238	0.02813	0.02493	0.03085	0.03093	0.02525	0.02190	0.01857
8	0.00250	0.00255	0.00675	0.00359	0.00430	0.00823	0.00897	0.01162	0.00893	0.00540	0.00508	0.00403	0.00424	0.00472	0.00623	0.00467
9	0.00207	0.00159	0.00181	0.00234	0.00196	0.00470	0.00653	0.00396	0.00392	0.00292	0.00255	0.00220	0.00274	0.00201	0.00177	0.00161
10	0.00348	0.00413	0.00373	0.00532	0.00595	0.00615	0.00683	0.00941	0.00862	0.00574	0.00507	0.00739	0.00657	0.00674	0.00623	0.00586
11	0.00141	0.00079	0.00121	0.00150	0.00134	0.00300	0.00516	0.00384	0.00371	0.00334	0.00696	0.00529	0.00655	0.01062	0.00613	0.00555
12	0.00578	0.00647	0.00381	0.00434	0.00522	0.00222	0.00241	0.00254	0.00308	0.00109	0.00143	0.00043	0.00052	0.00058	0.00044	0.00045
13	0.01371	0.01482	0.01140	0.01093	0.01226	0.00961	0.01908	0.01370	0.01237	0.00987	0.01281	0.01052	0.01151	0.01011	0.00798	0.00843
14	0.01305	0.02012	0.01730	0.01387	0.01796	0.02534	0.03093	0.03091	0.02996	0.01417	0.01517	0.02242	0.01806	0.02377	0.01564	0.01833
15	0.01528	0.00581	0.00430	0.00323	0.00180	0.00224	0.00226	0.00359	0.00477	0.00168	0.00303	0.00211	0.00173	0.00174	0.00135	0.00098
16	0.03336	0.04374	0.02419	0.01763	0.01585	0.01178	0.01499	0.01336	0.00915	0.00787	0.00742	0.00774	0.00879	0.00839	0.00747	0.00675
17	0.01615	0.02149	0.01194	0.00837	0.01540	0.01619	0.01951	0.02180	0.01669	0.01502	0.01622	0.01417	0.01532	0.01459	0.01241	0.01240
18	0.00147	0.00187	0.00115	0.00090	0.00089	0.00101	0.00108	0.00136	0.00126	0.00077	0.00076	0.00109	0.00087	0.00079	0.00069	0.00070
19	0.00860	0.00995	0.00761	0.00604	0.00503	0.00498	0.00702	0.00501	0.00526	0.00449	0.00592	0.00419	0.00560	0.00571	0.00522	0.00489
20	0.00655	0.00858	0.01003	0.00762	0.00928	0.00885	0.01468	0.01139	0.01006	0.01216	0.01008	0.00915	0.01021	0.01046	0.01123	0.01063
21	0.00430	0.00256	0.00535	0.00369	0.00289	0.00402	0.00535	0.00367	0.00361	0.00439	0.00447	0.00423	0.00563	0.00474	0.00390	0.00390
22	0.00297	0.00400	0.00313	0.00173	0.00241	0.00228	0.00432	0.00584	0.00468	0.00646	0.00560	0.00542	0.00550	0.00522	0.00510	0.00510
23	0.00095	0.00078	0.00153	0.00524	0.00390	0.00272	0.00160	0.00200	0.00084	0.00039	0.00047	0.00037	0.00042	0.00042	0.00042	0.00006
24	0.00877	0.02069	0.03152	0.03583	0.03481	0.02847	0.02692	0.02943	0.03392	0.02738	0.02572	0.02156	0.02413	0.02420	0.01976	0.01995
25	0.00033	0.00218	0.00353	0.00289	0.00205	0.00292	0.00157	0.00079	0.00039	0.00027	0.00027	0.00020	0.00015	0.00016	0.00017	0.00015
26	0.00216	0.00303	0.00539	0.00262	0.00154	0.00352	0.00172	0.00132	0.00136	0.00205	0.00192	0.00175	0.00159	0.00137	0.00107	0.00123
27	0.00148	0.00206	0.00470	0.00507	0.00478	0.00484	0.00491	0.00379	0.00421	0.00451	0.00338	0.00331	0.00399	0.00357	0.00282	0.00313
28	0.00312	0.00283	0.00228	0.00267	0.00127	0.00181	0.00167	0.00180	0.00164	0.00135	0.00108	0.00088	0.00107	0.00093	0.00087	0.00076
29	0.00479	0.00577	0.00272	0.00313	0.00223	0.00168	0.00156	0.00138	0.00145	0.00089	0.00078	0.00097	0.00084	0.00072	0.00069	0.00049
30	0.00123	0.00138	0.00283	0.00225	0.00140	0.00163	0.00187	0.00132	0.00095	0.00078	0.00061	0.00049	0.00054	0.00040	0.00031	0.00030
31	0.05220	0.00300	0.00435	0.00666	0.00422	0.00430	0.00535	0.00324	0.00350	0.00240	0.00170	0.00183	0.00205	0.00265	0.00232	0.00222
32	0.00947	0.00955	0.00632	0.00516	0.00343	0.00238	0.00266	0.00256	0.00257	0.00272	0.00367	0.00410	0.00437	0.00515	0.00528	0.00573
33	0.00276	0.00380	0.00359	0.00223	0.00238	0.00373	0.00351	0.00369	0.00392	0.00274	0.00280	0.00229	0.00292	0.00221	0.00207	0.00186
34	0.00095	0.00106	0.00095	0.00090	0.00101	0.00154	0.00320	0.00193	0.00198	0.00170	0.00165	0.00131	0.00132	0.00120	0.00112	0.00093
35	0.00018	0.00029	0.00034	0.00031	0.00036	0.00055	0.00048	0.00055	0.00059	0.00078	0.00104	0.00079	0.00066	0.00070	0.00074	0.00055
36	0.00022	0.00031	0.00093	0.00116	0.00143	0.00236	0.00176	0.00159	0.00187	0.00146	0.00128	0.00152	0.00127	0.00107	0.00100	0.00106
37	0.00253	0.00207	0.00337	0.00410	0.00343	0.00370	0.00354	0.00389	0.00395	0.00364	0.00343	0.00306	0.00357	0.00288	0.00346	0.00304
38	0.01069	0.00897	0.01090	0.00847	0.00466	0.00249	0.00238	0.00251	0.00240	0.00227	0.00178	0.00160	0.00216	0.00222	0.00259	0.00248
39	0.00157	0.00103	0.00096	0.00086	0.00101	0.00040	0.00200	0.00014	0.00012	0.00013	0.00024	0.00016	0.00018	0.00017	0.00020	0.00041
40	0.00087	0.00086	0.00089	0.00267	0.00155	0.00142	0.00137	0.00123	0.00191	0.00101	0.00083	0.00081	0.00080	0.00072	0.00076	0.00061
41	0.00439	0.00275	0.00387	0.00421	0.00555	0.00530	0.00852	0.00652	0.00702	0.00368	0.00486	0.00389	0.00507	0.00289	0.00496	0.00420
42	0.00646	0.01420	0.01044	0.00887	0.00869	0.01138	0.01133	0.01404	0.01145	0.00505	0.00855	0.00777	0.00670	0.00501	0.00377	0.00395
43	0.00651	0.00752	0.00415	0.00264	0.00235	0.00294	0.00256	0.00309	0.00180	0.00100	0.00125	0.00103	0.00168	0.00088	0.00086	0.00115
44	0.02042	0.02223	0.01528	0.01193	0.01169	0.01294	0.01231	0.01739	0.01345	0.01143	0.00971	0.00989	0.01052	0.00865	0.01148	0.01265
45	0.00523	0.00608	0.00404	0.00281	0.00302	0.00416	0.00363	0.00474	0.00374	0.00292	0.00521	0.00338	0.00348	0.00303	0.00223	0.00235
46	0.01172	0.01398	0.00495	0.00530	0.00502	0.00400	0.00186	0.00200	0.00089	0.00102	0.00185	0.00103	0.00123	0.00133	0.00196	0.00152
47	0.01330	0.00531	0.00476	0.00442	0.00391	0.00384	0.00313	0.00234	0.00235	0.00171	0.00135	0.00123	0.00207	0.00089	0.00097	0.00071
48	0.00557	0.00452	0.00234	0.00153	0.00161	0.00122	0.00084	0.00128	0.00124	0.00092	0.00115	0.00097	0.00141	0.00136	0.00137	0.00179
49	0.02210	0.02129	0.01334	0.00825	0.00779	0.00932	0.00810	0.00898	0.00717	0.00618	0.00525	0.00536	0.00531	0.00527	0.00450	0.00376

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
50	0.00282	0.00226	0.00255	0.00148	0.00125	0.00239	0.00376	0.00385	0.00230	0.00164	0.00339	0.00165	0.00186	0.00252	0.00296	0.00332
51	0.00259	0.00269	0.00071	0.00062	0.00058	0.00048	0.00109	0.00125	0.00195	0.00107	0.00072	0.00052	0.00054	0.00072	0.00092	0.00096
52	0.00919	0.00916	0.00570	0.00301	0.00953	0.00891	0.00842	0.01013	0.00828	0.00609	0.00629	0.00613	0.00816	0.00818	0.00697	0.01280
53	0.00792	0.00862	0.00393	0.00415	0.00762	0.00581	0.00604	0.00868	0.00519	0.00408	0.00387	0.00320	0.00292	0.00264	0.00267	0.00242
54	0.01549	0.00624	0.00506	0.00421	0.00326	0.00459	0.00234	0.00271	0.00207	0.00165	0.00325	0.00189	0.00254	0.00287	0.00233	0.00216
55	0.00640	0.01480	0.00949	0.00912	0.00766	0.00909	0.01319	0.01377	0.01057	0.00823	0.00669	0.00786	0.01030	0.01179	0.01475	0.01789
56	0.00363	0.00350	0.00461	0.00194	0.00162	0.00282	0.00246	0.00309	0.00259	0.00242	0.00310	0.00301	0.00277	0.00225	0.00213	0.00282
57	0.00316	0.00396	0.00284	0.00497	0.00232	0.00108	0.00390	0.00249	0.00222	0.00203	0.00198	0.00144	0.00147	0.00144	0.00165	0.00142
58	0.00178	0.00263	0.00093	0.00111	0.00107	0.00036	0.00041	0.00047	0.00062	0.00063	0.00056	0.00084	0.00068	0.00120	0.00102	0.00128
59	0.00283	0.00242	0.00151	0.00051	0.00102	0.00040	0.00034	0.00025	0.00027	0.00030	0.00027	0.00036	0.00012	0.00016	0.00019	0.00019
60	0.00773	0.00920	0.00961	0.00826	0.01768	0.01715	0.00962	0.00945	0.00900	0.00833	0.00912	0.01402	0.01768	0.01826	0.01225	0.00969
61	0.00470	0.00666	0.00293	0.00127	0.00252	0.00218	0.00186	0.00315	0.00237	0.00208	0.00229	0.00293	0.00230	0.00220	0.00216	0.00202
62	0.01058	0.06679	0.03439	0.07700	0.04206	0.03823	0.03368	0.02510	0.03447	0.02681	0.03413	0.02684	0.03442	0.03340	0.02794	0.02640
63	0.05460	0.05207	0.04714	0.06069	0.07597	0.06659	0.06730	0.05909	0.05747	0.05244	0.05826	0.05311	0.06019	0.06539	0.06704	0.07653
64	0.05920	0.04360	0.11975	0.10587	0.08638	0.08986	0.10084	0.10235	0.13152	0.12463	0.12431	0.10165	0.09930	0.11249	0.10713	0.12429
65	0.00342	0.00282	0.00311	0.00393	0.00367	0.01623	0.02689	0.01767	0.01840	0.02096	0.01766	0.01345	0.01290	0.01222	0.01199	0.01351
66	0.01837	0.00709	0.02601	0.01141	0.00926	0.00840	0.00625	0.00480	0.00424	0.00472	0.00553	0.00738	0.00984	0.00662	0.00548	0.00522
67	0.01502	0.01507	0.02387	0.01952	0.01732	0.01350	0.01144	0.01320	0.01371	0.01655	0.02355	0.01359	0.01389	0.01353	0.01001	0.00955
68	0.02290	0.02840	0.03367	0.04690	0.05382	0.03803	0.04371	0.04864	0.03963	0.04324	0.04180	0.04148	0.04865	0.05446	0.04347	0.05284
69	0.00195	0.00290	0.00271	0.00286	0.00709	0.00669	0.00548	0.00630	0.00920	0.00725	0.00725	0.00763	0.00702	0.00484	0.00314	0.00435
70	0.00242	0.00163	0.00281	0.00215	0.01231	0.00968	0.00677	0.00533	0.00312	0.00178	0.00325	0.00362	0.00189	0.00100	0.00071	0.00076
71	0.00103	0.00133	0.00489	0.00265	0.00551	0.00672	0.00323	0.00353	0.00406	0.00480	0.00409	0.00328	0.00305	0.00291	0.00165	0.00236
72	0.00000	0.00220	0.00091	0.00119	0.00138	0.00192	0.00222	0.00205	0.00199	0.00296	0.00419	0.00311	0.00356	0.00336	0.00340	0.00347
73	0.00115	0.00560	0.00269	0.00225	0.00317	0.00230	0.00424	0.00384	0.00456	0.00625	0.00396	0.00344	0.00290	0.00252	0.00209	0.00233
74	0.00596	0.01318	0.00965	0.00898	0.01107	0.00964	0.01923	0.02103	0.02349	0.03059	0.04011	0.03444	0.03858	0.03508	0.03474	0.03157
75	0.02633	0.03239	0.05687	0.05062	0.05093	0.04350	0.04306	0.02600	0.01979	0.01840	0.01941	0.02153	0.02223	0.02215	0.02631	0.02374
76	0.01201	0.01436	0.04981	0.01489	0.01696	0.01487	0.01604	0.02025	0.08745	0.08568	0.09400	0.07749	0.09431	0.08321	0.07792	0.08655
77	0.00192	0.00299	0.00177	0.00137	0.00194	0.00117	0.00321	0.00215	0.00193	0.00373	0.00535	0.01553	0.01133	0.01008	0.00770	0.00774
78	0.00644	0.00831	0.00622	0.00352	0.00407	0.00495	0.00501	0.00486	0.00492	0.00380	0.00379	0.00248	0.00256	0.00261	0.00264	0.00312
79	0.01019	0.01227	0.00829	0.00677	0.00567	0.00649	0.00760	0.00741	0.00761	0.00854	0.00813	0.00596	0.00624	0.00660	0.00736	0.00702
80	0.00098	0.00573	0.00255	0.00640	0.00592	0.00634	0.00998	0.00780	0.00648	0.01170	0.00972	0.03292	0.01770	0.01926	0.01476	0.01766
81	0.02926	0.03088	0.04573	0.03236	0.03358	0.02856	0.03498	0.03599	0.02952	0.03563	0.05855	0.03816	0.04783	0.04826	0.06011	0.08698
82	0.02270	0.04739	0.03168	0.02583	0.02435	0.02121	0.02993	0.02607	0.02319	0.03362	0.03710	0.02751	0.02906	0.02861	0.03683	0.03930
83	0.02975	0.02674	0.02850	0.02033	0.01949	0.01482	0.01998	0.01923	0.02130	0.01843	0.02838	0.01612	0.02194	0.01906	0.03085	0.03593
84	0.01615	0.01266	0.01421	0.00948	0.01132	0.01331	0.02120	0.02077	0.02236	0.02401	0.03822	0.02845	0.03116	0.02601	0.02602	0.02767
PR <sub>t</sub>	1.04755	1.13268	1.11482	1.08555	1.07110	1.00246	1.06519	1.08435	1.08272	1.02368	1.06552	1.03274	1.04538	1.03391	1.01448	1.04942

5D. GVA indices under downward output rigidity (qr<sub>t</sub>)

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
1	0.08854	0.12081	0.13970	0.13648	0.15334	0.14017	0.14504	0.17870	0.14130	0.11784	0.11393	0.11312	0.11364	0.09490	0.11627	0.11152
2	0.07382	0.08077	0.02690	0.04484	0.03853	0.04215	0.04844	0.04211	0.04473	0.04245	0.02388	0.02145	0.02698	0.02394	0.01858	0.01408
3	0.02569	0.04047	0.01520	0.01258	0.01953	0.01017	0.00944	0.00831	0.00546	0.00436	0.00301	0.00261	0.00325	0.00344	0.00346	0.00285
4	0.00212	0.00189	0.00196	0.00146	0.00159	0.00189	0.00184	0.00155	0.00124	0.00163	0.00183	0.00165	0.00154	0.00139	0.00153	0.00139
5	0.00417	0.00386	0.00319	0.00275	0.00243	0.00289	0.00284	0.00361	0.00325	0.00310	0.00337	0.00324	0.00350	0.00364	0.00397	0.00370
6	0.01282	0.01617	0.01433	0.01710	0.01569	0.01474	0.01140	0.01077	0.01102	0.01135	0.01170	0.01320	0.01225	0.01316	0.01139	0.01138
7	0.01613	0.01587	0.01820	0.01506	0.01852	0.01891	0.02199	0.02329	0.02258	0.02542	0.02448	0.03087	0.03430	0.02594	0.02187	0.01959
8	0.00257	0.00262	0.00334	0.00361	0.00458	0.00778	0.00870	0.01068	0.00944	0.00770	0.00501	0.00459	0.00467	0.00437	0.00548	0.00512
9	0.00130	0.00146	0.00166	0.00224	0.00240	0.00385	0.00467	0.00404	0.00391	0.00297	0.00247	0.00243	0.00255	0.00239	0.00182	0.00175
10	0.00319	0.00330	0.00320	0.00496	0.00559	0.00646	0.00673	0.00888	0.00930	0.00684	0.00496	0.00602	0.00654	0.00686	0.00653	0.00593
11	0.00055	0.00052	0.00066	0.00109	0.00165	0.00291	0.00409	0.00426	0.00398	0.00331	0.00483	0.00637	0.00610	0.00833	0.00724	0.00722
12	0.00399	0.00474	0.00365	0.00412	0.00498	0.00349	0.00213	0.00240	0.00264	0.00146	0.00117	0.00118	0.00052	0.00055	0.00054	0.00049
13	0.01494	0.01349	0.01106	0.01215	0.01245	0.01095	0.01408	0.01447	0.01294	0.01074	0.01067	0.01089	0.01154	0.01070	0.00925	0.00901
14	0.01232	0.01694	0.01448	0.01271	0.01669	0.02280	0.03055	0.03458	0.03431	0.02320	0.01380	0.01788	0.01955	0.02014	0.01806	0.01800
15	0.00957	0.01102	0.00392	0.00299	0.00170	0.00220	0.00196	0.00295	0.00497	0.00392	0.00233	0.00162	0.00136	0.00120	0.00106	0.00063
16	0.03954	0.04056	0.03036	0.01866	0.01694	0.01306	0.01431	0.01464	0.00974	0.00817	0.00729	0.00849	0.00880	0.00848	0.00801	0.00721
17	0.02095	0.01890	0.01043	0.01025	0.01260	0.01727	0.01947	0.02170	0.01775	0.01473	0.01489	0.01440	0.01603	0.01578	0.01398	0.01371
18	0.00137	0.00206	0.00110	0.00113	0.00089	0.00115	0.00114	0.00141	0.00137	0.00090	0.00071	0.00079	0.00085	0.00077	0.00068	0.00065
19	0.00940	0.00898	0.00691	0.00627	0.00567	0.00527	0.00586	0.00532	0.00514	0.00453	0.00496	0.00458	0.00560	0.00577	0.00565	0.00518
20	0.00670	0.00174	0.00317	0.00443	0.00586	0.00772	0.01444	0.02065	0.01349	0.01075	0.00870	0.00694	0.01030	0.01198	0.01161	0.01229
21	0.00367	0.00388	0.00523	0.00347	0.00259	0.00331	0.00437	0.00398	0.00306	0.00349	0.00366	0.00392	0.00486	0.00481	0.00399	0.00358
22	0.00345	0.00395	0.00255	0.00207	0.00230	0.00272	0.00390	0.00626	0.00494	0.00547	0.00556	0.00532	0.00557	0.00563	0.00539	0.00534
23	0.00086	0.00093	0.00139	0.00376	0.00517	0.00355	0.00147	0.00220	0.00090	0.00075	0.00037	0.00035	0.00036	0.00034	0.00033	0.00025
24	0.00780	0.01456	0.02687	0.03326	0.03260	0.03029	0.02788	0.03107	0.03511	0.03159	0.02481	0.02470	0.02203	0.02434	0.01854	0.01634
25	0.00187	0.00083	0.00188	0.00199	0.00173	0.00209	0.00153	0.00116	0.00040	0.00037	0.00031	0.00032	0.00027	0.00024	0.00025	0.00026
26	0.00186	0.00214	0.00352	0.00252	0.00186	0.00273	0.00202	0.00147	0.00139	0.00160	0.00167	0.00162	0.00159	0.00149	0.00134	0.00130
27	0.00237	0.00186	0.00365	0.00474	0.00457	0.00487	0.00479	0.00410	0.00369	0.00387	0.00320	0.00326	0.00360	0.00341	0.00286	0.00292
28	0.00261	0.00252	0.00203	0.00253	0.00143	0.00220	0.00194	0.00181	0.00164	0.00147	0.00120	0.00098	0.00096	0.00093	0.00087	0.00080
29	0.00474	0.00640	0.00331	0.00341	0.00252	0.00184	0.00187	0.00158	0.00145	0.00094	0.00076	0.00076	0.00074	0.00064	0.00054	0.00038
30	0.00121	0.00123	0.00252	0.00238	0.00142	0.00152	0.00173	0.00144	0.00100	0.00081	0.00062	0.00050	0.00052	0.00045	0.00035	0.00032
31	0.00345	0.00318	0.00390	0.00500	0.00411	0.00379	0.00419	0.00345	0.00326	0.00285	0.00248	0.00236	0.00246	0.00268	0.00274	0.00270
32	0.00949	0.00911	0.00719	0.00512	0.00397	0.00285	0.00286	0.00275	0.00268	0.00277	0.00306	0.00384	0.00426	0.00484	0.00503	0.00536
33	0.00330	0.00302	0.00305	0.00274	0.00252	0.00303	0.00322	0.00353	0.00383	0.00299	0.00276	0.00240	0.00277	0.00248	0.00214	0.00206
34	0.00148	0.00088	0.00073	0.00074	0.00094	0.00143	0.00233	0.00227	0.00211	0.00185	0.00173	0.00136	0.00132	0.00119	0.00110	0.00095
35	0.00028	0.00023	0.00030	0.00028	0.00032	0.00042	0.00046	0.00056	0.00053	0.00060	0.00077	0.00081	0.00082	0.00066	0.00070	0.00060
36	0.00036	0.00029	0.00051	0.00083	0.00123	0.00196	0.00180	0.00173	0.00172	0.00154	0.00126	0.00131	0.00147	0.00115	0.00098	0.00106
37	0.00132	0.00113	0.00244	0.00425	0.00330	0.00348	0.00371	0.00428	0.00409	0.00373	0.00330	0.00290	0.00343	0.00294	0.00287	0.00268
38	0.00910	0.00804	0.00970	0.00826	0.00494	0.00326	0.00251	0.00257	0.00221	0.00218	0.00182	0.00176	0.00204	0.00217	0.00229	0.00237
39	0.00100	0.00100	0.00086	0.00085	0.00099	0.00071	0.00041	0.00017	0.00011	0.00011	0.00015	0.00016	0.00018	0.00016	0.00018	0.00026
40	0.00119	0.00094	0.00081	0.00149	0.00148	0.00132	0.00125	0.00127	0.00163	0.00117	0.00083	0.00079	0.00080	0.00072	0.00073	0.00066
41	0.00301	0.00197	0.00297	0.00376	0.00503	0.00621	0.00790	0.00753	0.00767	0.00516	0.00389	0.00369	0.00442	0.00276	0.00350	0.00417
42	0.00934	0.00928	0.01195	0.00849	0.00802	0.01022	0.01022	0.01153	0.00998	0.00671	0.00641	0.00711	0.00690	0.00593	0.00449	0.00444
43	0.00717	0.00712	0.00478	0.00375	0.00222	0.00291	0.00283	0.00313	0.00204	0.00118	0.00099	0.00095	0.00133	0.00097	0.00073	0.00081
44	0.02250	0.02004	0.01450	0.01253	0.01136	0.01328	0.01204	0.01564	0.01266	0.01104	0.00960	0.00994	0.01053	0.01050	0.01128	0.01198
45	0.00539	0.00543	0.00388	0.00347	0.00301	0.00374	0.00347	0.00465	0.00352	0.00294	0.00341	0.00340	0.00367	0.00307	0.00242	0.00246
46	0.01243	0.01274	0.00670	0.00515	0.00477	0.00425	0.00320	0.00181	0.00133	0.00084	0.00110	0.00105	0.00116	0.00115	0.00139	0.00119
47	0.00731	0.00749	0.00459	0.00418	0.00371	0.00390	0.00323	0.00299	0.00209	0.00196	0.00133	0.00116	0.00154	0.00122	0.00076	0.00064
48	0.00603	0.00536	0.00249	0.00171	0.00159	0.00135	0.00098	0.00107	0.00097	0.00109	0.00093	0.00084	0.00112	0.00116	0.00115	0.00134
49	0.02341	0.02559	0.01211	0.01170	0.00753	0.00979	0.00875	0.00950	0.00716	0.00582	0.00514	0.00462	0.00529	0.00464	0.00423	0.00351



Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
50	0.00229	0.00215	0.00240	0.00238	0.00172	0.00209	0.00263	0.00298	0.00211	0.00187	0.00222	0.00200	0.00189	0.00217	0.00235	0.00249
51	0.00269	0.00234	0.00099	0.00065	0.00076	0.00070	0.00087	0.00110	0.00143	0.00107	0.00091	0.00086	0.00072	0.00076	0.00088	0.00095
52	0.01020	0.01088	0.00643	0.00367	0.00633	0.00777	0.00854	0.00999	0.00853	0.00656	0.00617	0.00623	0.00802	0.00840	0.00743	0.01005
53	0.01027	0.00780	0.00566	0.00372	0.00618	0.00631	0.00618	0.00793	0.00515	0.00461	0.00399	0.00352	0.00323	0.00292	0.00281	0.00283
54	0.01263	0.00862	0.00479	0.00388	0.00314	0.00392	0.00315	0.00246	0.00200	0.00177	0.00217	0.00203	0.00226	0.00242	0.00227	0.00217
55	0.00635	0.00952	0.00974	0.00862	0.00719	0.00906	0.01177	0.01437	0.01116	0.00841	0.00653	0.00736	0.01018	0.01189	0.01439	0.01769
56	0.00382	0.00361	0.00309	0.00301	0.00172	0.00232	0.00240	0.00281	0.00272	0.00221	0.00251	0.00274	0.00277	0.00268	0.00219	0.00246
57	0.00384	0.00301	0.00262	0.00328	0.00243	0.00155	0.00206	0.00209	0.00192	0.00191	0.00195	0.00171	0.00166	0.00164	0.00183	0.00168
58	0.00213	0.00194	0.00140	0.00092	0.00103	0.00053	0.00046	0.00050	0.00061	0.00063	0.00065	0.00065	0.00073	0.00089	0.00091	0.00104
59	0.00244	0.00280	0.00216	0.00105	0.00081	0.00066	0.00035	0.00029	0.00023	0.00021	0.00019	0.00021	0.00015	0.00009	0.00010	0.00011
60	0.01021	0.00957	0.00958	0.00947	0.01067	0.01081	0.00969	0.00965	0.00960	0.00957	0.00951	0.01051	0.01088	0.01095	0.01026	0.00985
61	0.00535	0.00776	0.00445	0.00156	0.00177	0.00248	0.00273	0.00301	0.00233	0.00206	0.00196	0.00215	0.00230	0.00220	0.00225	0.00202
62	0.00710	0.01524	0.02928	0.06229	0.03943	0.04014	0.03683	0.02538	0.03194	0.02664	0.03815	0.02688	0.03132	0.03363	0.02887	0.02504
63	0.05629	0.05455	0.04768	0.05453	0.06313	0.06632	0.06831	0.06344	0.05931	0.05584	0.05762	0.05506	0.06024	0.06449	0.06629	0.07031
64	0.04447	0.03616	0.10903	0.10948	0.08108	0.07557	0.09655	0.10476	0.11842	0.12505	0.12195	0.10339	0.09947	0.10209	0.10163	0.11233
65	0.00333	0.00344	0.00291	0.00439	0.00419	0.00838	0.01752	0.01845	0.01943	0.01988	0.01895	0.01382	0.01338	0.01239	0.01177	0.01241
66	0.00943	0.00729	0.01491	0.01099	0.00923	0.00767	0.00632	0.00626	0.00533	0.00550	0.00575	0.00713	0.00738	0.00683	0.00626	0.00576
67	0.01483	0.01398	0.01897	0.01878	0.01607	0.01360	0.01166	0.01308	0.01330	0.01433	0.01673	0.01426	0.01435	0.01323	0.01191	0.01061
68	0.02334	0.02411	0.02763	0.04190	0.05750	0.03998	0.04075	0.04955	0.04247	0.04175	0.04091	0.03799	0.04373	0.05036	0.04908	0.04933
69	0.00178	0.00241	0.00239	0.00260	0.00609	0.00588	0.00562	0.00613	0.00940	0.00648	0.00607	0.00680	0.00703	0.00490	0.00341	0.00336
70	0.00315	0.00188	0.00256	0.00232	0.00552	0.00587	0.00486	0.00494	0.00309	0.00193	0.00237	0.00263	0.00166	0.00137	0.00091	0.00087
71	0.00122	0.00123	0.00240	0.00252	0.00359	0.00545	0.00388	0.00329	0.00315	0.00397	0.00403	0.00318	0.00288	0.00260	0.00226	0.00193
72	-0.00001	0.00181	0.00156	0.00081	0.00131	0.00187	0.00223	0.00228	0.00195	0.00264	0.00344	0.00350	0.00345	0.00341	0.00356	0.00362
73	0.00199	0.00287	0.00252	0.00242	0.00271	0.00268	0.00332	0.00351	0.00384	0.00507	0.00435	0.00342	0.00306	0.00307	0.00237	0.00246
74	0.00762	0.00974	0.00870	0.00817	0.01098	0.01032	0.01569	0.02020	0.02226	0.03010	0.03781	0.03526	0.03826	0.03377	0.03406	0.03257
75	0.02452	0.02936	0.03800	0.04826	0.04872	0.04578	0.04858	0.03060	0.02063	0.02050	0.02127	0.02052	0.02350	0.02644	0.02481	0.02537
76	0.01055	0.01146	0.01792	0.01400	0.01487	0.01428	0.01605	0.01800	0.08144	0.08203	0.08740	0.07923	0.08674	0.08434	0.07771	0.08027
77	0.00210	0.00256	0.00179	0.00173	0.00229	0.00154	0.00238	0.00253	0.00204	0.00298	0.00443	0.00959	0.01135	0.01136	0.00898	0.00810
78	0.00779	0.00731	0.00597	0.00449	0.00384	0.00456	0.00516	0.00515	0.00468	0.00415	0.00372	0.00275	0.00239	0.00234	0.00248	0.00256
79	0.01078	0.01402	0.00625	0.01009	0.00522	0.00593	0.00746	0.00868	0.00822	0.00912	0.01323	0.00544	0.00546	0.00559	0.00655	0.00633
80	0.00147	0.00282	0.00354	0.00382	0.00641	0.00622	0.00860	0.00885	0.00682	0.01060	0.01153	0.01730	0.02066	0.01837	0.01631	0.01713
81	0.03020	0.03078	0.03682	0.03293	0.03278	0.03239	0.03638	0.03519	0.03107	0.03691	0.04337	0.03991	0.04142	0.04222	0.05752	0.06040
82	0.02451	0.03366	0.02946	0.02620	0.02612	0.02505	0.02897	0.02741	0.02409	0.03117	0.03387	0.02954	0.02909	0.02926	0.03434	0.03620
83	0.02235	0.02268	0.02381	0.02044	0.01977	0.01890	0.02018	0.02033	0.01979	0.02137	0.02364	0.02081	0.02025	0.02105	0.02587	0.02778
84	0.01414	0.01308	0.01344	0.00963	0.01047	0.01267	0.01757	0.02028	0.02083	0.02404	0.03346	0.02962	0.02908	0.02660	0.02694	0.02741
QR <sub>i</sub>	1.04133	1.10558	1.06756	1.05210	1.03687	1.00295	1.02764	1.01864	1.01064	1.02221	1.04782	1.01540	1.03142	1.02029	1.00622	1.03229

## 5E. Synthesis (total economy)

Year	PR	Q	P	QR	QE*OF
1990	1.04755	0.97569	1.12827	1.04133	0.93696
1991	1.13268	0.88236	2.91400	1.10558	0.79809
1992	1.11482	0.91027	3.22312	1.06756	0.85267
1993	1.08555	1.03288	3.06137	1.05210	0.98174
1994	1.07110	1.04253	2.37536	1.03687	1.00546
1995	1.00246	1.06770	1.34259	1.00295	1.06455
1996	1.06519	1.03914	1.45830	1.02764	1.01119
1997	1.08435	0.92741	2.42066	1.01864	0.91043
1998	1.08272	0.94592	1.53765	1.01064	0.93597
1999	1.02368	0.98594	1.45767	1.02221	0.96452
2000	1.06552	1.02205	1.43965	1.04782	0.97541
2001	1.03274	1.06672	1.38142	1.01540	1.05054
2002	1.04538	1.05074	1.23144	1.03142	1.01872
2003	1.03391	1.04866	1.21894	1.02029	1.02781
2004	1.01448	1.08358	1.14314	1.00622	1.07688
2005	1.04942	1.03607	1.11396	1.03229	1.00366

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