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**TRADE AND EXCHANGE RATE  
VARIABILITY: NEW EVIDENCE FROM EU  
COUNTRIES**

*Abstract:*

One of the central topics of the debate about the advantages and disadvantages of EMU is whether exchange rate variability has positive or negative effects on trade. Advocates of a regime of fixed rates emphasised its advantages in terms of co-ordination and credibility of economic policies, as well as its role in promoting international trade. The supporters of flexible exchange rates highlight its greater capacity to achieve domestic policy objectives. They also say there are no negative effects on trade as financial mechanisms can assure risks derived from it.

Although there is an extensive literature on this topic, there is no clear conclusion about it. In fact, most empirical studies have failed to obtain a clear significant relationship between both variables (exchange rate variability and trade – growth-). The objective of this paper is not to test the existence or not of this relationship but to make a preliminary description of the potential explanatory factors of the different results by previous authors. With this aim, data for the European Union countries for the period 1973-1997 relating trade and exchange rates is analysed using different econometric techniques in the framework of a gravity model.

## **1. Introduction and objectives**

One of the topics where economists have focused their interest in the last two decades has been the analysis of the economic and monetary unification process in Europe. The starting point of this literature is the optimum currency areas theory. The first contributions in this framework highlight as the main cost of joining a currency area, the loss of the exchange rate at a national level, which had been acting as a stabilisation mechanism against asymmetric shocks. Nevertheless, more recent studies have not focused only in costs, but also in benefits. In this context, the effects on trade (and growth) of reducing the exchange rate variability between countries taking part in a currency area has been extensively analysed. However, it is important to remark that this topic is not only analysed in the framework of the optimum currency areas literature but also because it is of interest itself. As it can be shown in figure 1, the number of bibliographic references found in Econlit database searching for “trade and exchange rate” and “optimum currency areas” is higher for the first search term although there is a certain relationship between both. The idea is that the reduction of uncertainty in the evolution of the exchange rate should increase trade flows among participating countries. In other words, the assumption is that there is a negative relationship between bilateral exchange rate variability and trade flows. The literature previously mentioned has focused in testing the validity of this assumption. The empirical results, however, are not conclusive: some authors find a negative and significant, although small, effect of exchange rate variability on trade while others do not find this connection.

The objective of this paper is not to test the existence or not of this relationship but to make a preliminary description of the potential explanatory factors of the different results by previous authors. With this aim, data for the European Union countries for the period 1973-1997 relating trade and exchange rates is analysed using different econometric techniques in the framework of a gravity model. The paper is organised as follows: first, previous results are briefly summarised; next, the econometric results are presented; and, last, the paper ends with the main conclusions.

## **2. Previous results: the empirical puzzle**

As it has been explained in the introduction, there is a huge empirical literature that relates exchange rate variability and trade (see Sekkat, 1997). Different sets of countries, time periods, models and econometric techniques have been considered. In

this section, the most representative studies will be summarised to shed light on the potential explanatory factors of their incoherence.

Most contributions on this topic rely on two different specifications of trade relationships: imports/exports functions and gravity equations, and three different econometric techniques (cross-section regressions, time-series analysis and the panel data approach). These two criteria (the specification and the technique) will be used to organise the exposition in this section.

## **2.1. Imports/exports functions**

The usual specification of imports/exports functions considers that trade between countries can be explained by differences in domestic and foreign prices, the level of countries income and the exchange rate risk. This specification has been extensively used in the international trade literature, especially in the framework of macroeconometric models.

### *Cross section results*

The first studies in this context used cross section data to test the existence of an inverse relationship between exchange rate variability and trade. In this sense, in most of them data averages over a certain time period have usually been used to reduce the influence of outliers and of business cycle dynamics.

Hooper and Kohlhagen (1978) and Cushman (1983) analyse the impact of nominal and real exchange rate variability, respectively, on bilateral trade flows from 1965 to 1977 for Canada, France, Germany, Japan, the United Kingdom and the United States. The impact of the exchange rate variability on trade has, generally, the expected sign but is significant in only a few cases. De Grauwe and de Bellefroid (1987) and De Grauwe (1987) also apply cross-section techniques to 90 bilateral trade flows among 10 industrialised countries distinguishing between the period 1960-1969 and 1973-1984 with the same objective. Both papers (in the second a relative price variable is included) find that a negative and significant relationship cannot be rejected. Another paper using this approach is Savvides (1992). He uses a wider set of countries than previous studies for the period 1973-1986 and finds no evidence of this relationship for developing countries as well as for the full sample of countries but the opposite for industrialised ones.

So, the evidence from this approach does not permit to extract any general conclusion about the considered relationship as it does not provide any possible explanation about the incoherence between industrialised vs. developed countries empirical evidence.

### *Time series results*

As Rose (1999) highlights, time series literature on this topic has also found difficult to establish a consensual view about the considered relationship.

On one hand, Bailey *et al.* (1986) analyse this relationship applying time series techniques to data on exports and exchange rate variability from the big seven industrial countries in the period 1973-1984. Their results indicate that exchange rate variability has not discouraged exports from any of the considered countries. More recently, Fountas and Kyriacos (1999) analyse the effects of the Exchange Rate Mechanism in *intra*-EU exports estimating error correction models (based on the usual specification of export functions) for France, Germany, Italy and United Kingdom using quarterly data for the period I/1973-II/1996. Their results are similar to the previous ones.

On the other hand, Peree and Steinherr (1989) find evidence in favour of the existence of a negative relationship between exchange rate variability and trade flows during the period 1960-1985 using annual data for the United Kingdom, Belgium, Germany and Japan but not for the United States. Caporale and Doroodian (1994) test if real exchange rate volatility (estimated using a GARCH model) has a negative effect on the value of U.S. imports from Canada using monthly data from January 1974 to December 1992. The relationship between both variables is specified using an imports function which is estimated in levels. Their main conclusion is the existence of a negative and statistically significant effect of exchange rate variability on trade flows, an opposite result to Peree and Steinherr (1989).

## **2.2. The gravity model**

The gravity model is a simple empirical model that explains the size of bilateral trade between countries. In particular, it explains international trade flows as being proportional to the economic size of involved countries and inversely proportional to the distance between them. Its similarity to the physical Newton equation to describe the force of gravity gives it the name. The basic specification is usually augmented including a number of dummy variables to control for different factors that might affect

transaction costs (e.g. a common border, language culture or trade arrangements among countries). This model has proved to be unusually successful as an empirical tool, although it has been criticised at both a theoretical and empirical level. On one hand, at a theoretical level, Deardoff (1995), among others, remarks that as the gravity equation can be derived from many models, it would not be valid to test any of them. On the other hand, at the empirical level, different recent studies have questioned the validity of the usual functional form (Sanzo *et al.*, 1993) or the limited number and the characteristics of the explanatory variables included in the specification (Mátyás, 1998).

### *Cross section results*

The gravity model has been estimated using cross-section data and time series data. With respect to the results obtained using cross-section data, one of the first studies is Thursby and Thursby (1987). In their paper, both authors analyse the effect of exchange rate variability on trade applying the gravity model using a sample of seventeen countries for the period 1974-82. They find a statistically significant negative relationship. Frankel and Wei (1993) examine the impact of nominal and real exchange rate volatility on trade volume equations based on the gravity model using cross-section data. They estimate three separate equations for 1980, 1985 and 1990 using information for 63 countries. For nominal exchange rate variability they find a significant effect for 1980, no significant effect in 1985 and an unexpected positive effect for 1990. The results for real exchange variability are similar, although for the 1990 sample, a negative and significant relationship is found. Pugh *et al.* (1998) also consider a cross-section approach using a gravity model for European countries taking as endogenous the level of *intra*-European trade and using average data for 1984-1990. With this specification, they also find a negative and significant relationship between trade and exchange rate variability. Moreover, they also estimate a conventional aggregate import demand equation in growth rates using panel data techniques for industrial OECD countries for the period 1980-1992 including real effective exchange rate variability as a potential explanatory variable. Although data sets and applied econometric techniques are different, results are similar.

### *Panel data results*

The literature using the gravity model following a time series approach is very scarce. Most authors have better used panel data techniques. Using panel data allows to

capture the relationships between the relevant variables over a longer period and to control for individual or time fixed effects when necessary.

Apart from the previously cited paper of Pugh *et al.* (1998), Dell'Ariccia (1998) also analyses the effect of exchange rate variability on bilateral trade flows through a gravity equation using a panel data for the European Union countries for the period 1975-1994. As in Pugh *et al.* (1998), he finds a negative and significant relationship between both variables. However, the most exhaustive analysis in this framework is Rose (1999). Although the main objective of his paper is to assess the effect of currency unions on trade, there is a vast analysis of the effects of exchange rate variability on trade. A gravity model is estimated using a panel data set that includes bilateral observations for five years spanning 1970 through 1990 for 186 countries and a statistically significant and negative effect is found. The obtained results are also robust to different specifications and sub-samples of the considered data set.

### **2.3. Summary**

The main idea of the previous summary is that no general conclusion can be extracted from the available empirical evidence, but why are the results so different? Two different possible explanations have been suggested in the previous literature. First, a group of authors (as for example, Frankel and Goldstein, 1989, or Friberg and Vredin, 1996) affirm that the reason not to find a negative relationship between exchange rate variability and trade is the existence of financial mechanisms that can assure this risk. This argument explains satisfactorily the lack of evidence supporting the predicted relationship but it fails to explain why sometimes this relationship is found. The second group of authors, as for example Bini-Smaghi (1991), remark the existence of measurement and econometric problems. Following this second line of reasoning, and from the analysis of the previous literature, the inconsistencies between the different works seem to be related to:

#### 1. Differences in the data sets:

- Time periods: There seems to be no relationship in the seventies, a significant relationship in the eighties and no clear result for the nineties. Is there structural instability in this relationship?

- Considered countries: the evidence of a significant relationship is clearer for developed countries. In this sense, our attention will be focused in European Union countries.
  - The measurement of exchange rate variability: although no mention has been done in this section, there are differences on how the different authors measure this variable.
2. The applied econometric techniques: cross-section analysis and panel data seem to be more favourable not to reject the considered relationship than time series approach.

Although these statements seem to be quite evident, no systematic effort has been made to isolate the effect of each one in explaining the differences among the previous empirical studies. It is important to highlight that the specification of an imports/exports function or a gravity equation does not seem to have relevant effects on the found results. For this reason, in the next section a gravity model is estimated using different econometric techniques: panel data, cross-section regression and time-series techniques with the aim of explaining the different empirical results found in the literature. In this sense, the considered data set comprises information for European Union countries for two different periods (1973-1997 and 1984-1997) and two different measures of exchange rate variability are considered.

### 3. Empirical evidence

#### 3.1. The gravity equation

The initial specification of the gravity model used in this paper is the following:

$$lTRADE_{ijt} = \mathbf{b}_0 + \mathbf{b}_1 \cdot lDIST_{ij} + \mathbf{b}_2 \cdot BORD_{ij} + \mathbf{b}_3 \cdot l(GDP_{it} + GDP_{jt}) + \mathbf{b}_4 \cdot EU_{ijt} + \mathbf{g}_j + u_{ijt}$$

where  $lTRADE_{ijt}$  is the natural logarithm of gross bilateral trade between countries  $i$  and  $j$  at time  $t$ ;  $lDIST_{ij}$  is the logarithm of the distance between capital cities of countries  $i$  and  $j$ ;  $BORD_{ij}$  is a dummy variable which takes value 1 when countries  $i$  and  $j$  have a common border and 0 otherwise;  $l(GDP_{it} + GDP_{jt})$  is the logarithm of the joint gross domestic product of countries  $i$  and  $j$  at time  $t$ ;  $EU_{ijt}$  is a dummy variables which takes value 1 if countries  $i$  and  $j$  are members of the European Union at time  $t$  and 0

otherwise;  $g$  are a set of dummy variables which take value 1 when country  $j$  takes part in the considered bilateral relationship and 0 otherwise; last,  $u_{ijt}$  is a random error term. As in Pugh *et al.* (1998) the relative price variable has been excluded from the specification as it is a potential source of multicollinearity that could seriously affect the results. In the rest of the paper, this basic specification will be augmented with two different measures of exchange rate variability to test its effects on trade flows, a common time trend and other variables depending on the considered econometric technique. In the same way and due to econometric restrictions, some of the explanatory variables will have to be excluded from the model.

### 3.2. The data set

As it has been previously mentioned, the empirical analysis will focus only in countries belonging to the European Union and the full time period considered is 1973-1997. The two unique remarkable facts are that Belgium and Luxembourg are considered as one only country and that Greece relationships will only be considered from 1984 to 1997 due to data restrictions. Tables 1 and 2 show the considered fourteen countries and the 91 (78 when Greece cannot be considered) bilateral relationships among them.

The source for annual bilateral trade data is the OECD Monthly Foreign Trade Statistics – Series A; for GDP data at current prices is the OECD Main Economic Indicators. For distances between countries, data comes from Rose (1999) and last, the source for bilateral exchange rate at a daily frequency is the Board of Governors of the Federal Reserve System web page (<http://www.bog.frb.fed.us>).

Concerning the exchange rate variability, two different measures will be considered: the standard deviation of the first differences of logarithms of the daily exchange rates between countries  $i$  and  $j$  during the whole year (denoted by DAYV), and the standard deviation of the first differences of logarithms of the average monthly exchange rates between countries  $i$  and  $j$  during the whole year (MONTHV). The first measure reflects the idea that agents are worried by unanticipated and sudden changes in the exchange rates, while the second measure assumes a more distant view of these changes, although both measures reflect short-term variability. In fact, this is the kind of variability that cannot be assured through financial mechanisms (see Sekkat, 1997).



### 3.3. Panel data results

In this section, the results of estimating two different sets of models using the previously presented panel data for two time periods (1973-1997 and 1984-1997) are shown. The first set of models are inspired in a specification of the gravity model where no measure of exchange rate variability is included, while the second set of models include one of the two considered measures of this variable. In the first set of models, the goodness of fit of the gravity model will be assessed whereas in the second, our attention will be focused on the effects of the inclusion of the exchange rate variability on trade flows. The analysis of different time periods is related to the idea that one of the potential explanatory factors of the disagreements between different studies is related to structural instability.

The results of the first set models are shown in table 3 for the 1973-1997 panel and in table 4 for the 1984-1997 panel. In both cases, the gravity model explains practically all the variance of the endogenous variable. Regarding the considered explanatory variables, they are significant at the usual levels in nearly all cases and the coefficients have the expected signs and magnitudes. The GDP variable, the common border and the European Union dummies have the expected positive impact while the distance has a negative effect on trade. An additional interesting feature is that the value for the European Union dummy coefficient is similar to the one found by Frankel and Wei (1993) but loses significance in the 1984-1997 panel.

As usual in panel data analysis, the effects of introducing a time trend or fixed time effects are also considered. The inclusion of a time trend can be interpreted as capturing the effects of changes in world aggregate GDP on bilateral trade flows. As pointed by Dell’Ariccia (1998, p. 7), this specification imposes a restriction: “we are assuming that trade between Germany and Italy reacts in the same way to a change in US or France income”. The inclusion of the time trend or fixed time effects provides similar results: the effects of GDP and the EU dummy on trade are lower, although highly significant in nearly all cases.

A major advantage of using panel data is the ability to control for possibly unobservable country-pair individual effects. For this reason, we have also considered the inclusion of individual fixed and random effects<sup>1</sup>. As Egger (2000) affirms, from a theoretical point of view, fixed effects seem more reasonable in this kind of specification than random effects. The inclusion of fixed effects permits to control for certain unobservable characteristics (for example, a long tradition of trade between

countries or the existence of highly-developed commercial networks) that, if omitted, would bias the estimation and affect the results. In the various considered models, the values of the Hausman tests reinforce this idea. In any case, the results are similar to the previous ones.

Once the performance of the gravity model has been analysed, the second set of models test the significance of an adverse effect of exchange rate variability on trade through the inclusion of one of the two proposed measures. In table 5 for the 1973-1997 panel and in table 6 for the 1984-1997 panel, the results for the different models are shown<sup>2</sup>. The most interesting feature is that the panel for the most recent period provides a much clearer picture of a negative relationship between trade and exchange rate variability. Nearly in all cases, and with independence of the considered definition, the exchange rate variability measure has a negative and significant effect on bilateral trade. The inclusion of a time trend or individual fixed or random effects reduces the magnitude of the associated coefficient, and only when including fixed time effects, it loses significance. Results for the 1973-1997 are completely different. The only case when a significant and negative relationship is found is in the time trend specification.

The panel data approach seems to reinforce the idea that the considered time period can have a high influence when measuring the effects of exchange rate variability on trade. In this sense, the different possible specifications when working with panel data do not seem to have relevant effects on the results.

### **3.4. Cross-section results**

Taking into account the main results from the panel data approach, instead of averaging the data as it is usual when using cross-section data, we have preferred to estimate year-by-year equations using data for the 91 considered bilateral relationships. The results of estimating a cross-section version of the gravity model are shown in table 7 and figures 2 and 3<sup>3</sup>. The goodness of fit of the model is similar to the panel data approach and the results for the rest of explanatory variables are close to the findings by other authors from cross-section regressions. Regarding the exchange rate variability, the results are very similar for both measures. Only in 1984 for the DAYV variable and in 1985 for the MONTHV variable, the coefficient is not significant at the usual levels. For the rest of years (equations), the coefficient is negative and significant. One interesting feature to highlight from these cross-section results is that during the seventies and in the beginnings of the eighties the effect of the exchange rate variability

on trade seems to decrease along time while in the late eighties and nineties it seems to be increasing. This fact, which is coherent with the panel data evidence, reinforce the idea that the considered period can explain a big amount of the differences between previous results.

### **3.5. Time series results**

In the first group of columns of tables 8 and 11, the results for the time series approach to the basic gravity model for the 91 bilateral trade relationships in the 1973-1997 period are shown<sup>4</sup>. Although the gravity equation still shows a good performance, now only 8 of the 91 considered relationships a negative and significant effect is found for the DAYV measure and 14 for the MONTHV. When including a time trend, (first group of columns of tables 9 and 12), the results are similar: 6 for the DAYV and 16 for the MONTHV. So, our results are in line with the previous studies summarised in the second section of the paper. However, when the values of the Durbin-Watson statistics are considered, most regressions denote first order autocorrelation of the residuals. In fact, only in 14 of the 182 regressions when trend is not included and in 20 when a time trend is included the null hypothesis of first order autocorrelation could be rejected. For this reason, we have automatically corrected this fact in every equation. The results are shown in the second group of columns of the previously mentioned tables. Using this specification, in 61 of the 182 regressions when trend is not included and in 54 when a time trend is included, the residuals show the adequate behaviour. But, what has happened to the significance and the sign of the exchange rate variability measures? When no time trend is included, only in 4 cases for the DAYV variable and 6 for the MONTHV variable, a negative and significant relationship is found. The same holds when a time trend is included.

When using time series data, it is widely known that if the considered series are integrable of order 1, the proper dynamic specification involves using first differences of the data. For this reason, we have considered estimating the gravity equation in first difference. The first feature that should be remarked from the results (shown in tables 10 and 13) is that the  $R^2$  statistics are substantially lower than in the previous models. The second feature is that only in 5 cases when no trend is included and 1 when it is included for the DAYV variable and 1 and 2 for the MONTHV variable are negative and statistically significant. Using different automatic dynamic specifications do not explain the puzzle, but a deeper analysis of the results permits to affirm that when the

proper dynamic specification is considered, a negative and significant relationship is found. In fact, when the proper econometric specification is chosen and this small number of cases are taken together, they represent more than the thirty per cent of the considered relationships.

Last, we have estimated the initial time series equations (in levels and with no dynamic specification) not for the 1973-1997 period but for the 1984-1997. Now, 15 negative and significant relationships have been found for the DAYV variable (table 14) when no time trend is included and 18 when the time trend is included and 19 and 17, respectively, for the MONTHV (table 15). The rejection of first order autocorrelation is also higher: in 30 relationships when no time trend is included and 57 when it is included, the residuals. The considered time period also affects the results.

#### **4. Conclusions**

Using a common data set for European Union countries and applying three different econometric techniques for two different periods (1973-1997 and 1984-1997), we have attempted to explain why the results of previous authors who have analysed the relationship between exchange rate stability and trade flows have been so different. In this sense, the empirical analysis carried out in the paper shows that:

- i. Time structural instability seems to be the most important factor explaining these differences. In this sense, during the seventies and in the beginnings of the eighties the effect of the exchange rate variability on trade seems to decrease along time while in the late eighties and nineties it seems to be increasing. This fact, which is probably related to the evolution of European monetary arrangements, will be the object of further research. Time-varying econometric techniques, such as state-space models, could be specially indicated in this context. In fact, recent studies, such as Kalijaran (1999), have successfully applied this technique in a gravity model specification.
- ii. When adopting a time series approach, it is very important to investigate adequately which is the proper dynamic specification for the considered bilateral relationship, being this, one of our next future lines of improvement of the paper. Our preliminary results in this field have shown that when controlling properly this fact, a negative and significant relationship between exchange rate variability and trade is usually found.

## 5. Acknowledgements

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## 6. Final notes

<sup>1</sup> This necessary implies not including country dummies and other time-invariant variables.

<sup>2</sup> Only information for the variables of interest are shown. Full results available from authors on request.

<sup>3</sup> Only results involving exchange rate variability measures are shown.

<sup>4</sup> See final note 3.

## 7. References

- Bailey, M. Tavlás, G. and Ulan, M. (1986), 'Exchange Rate Variability and Trade Performance: Evidence for Big Seven Industrial Countries', *Weltwirtschaftliches Archiv*, 122 (3), 466-477.
- Bini-Smaghi, L. (1991), 'Exchange Rate Variability and Trade: Why is it so Difficult to Find Any Empirical Relationship?', *Applied Economics*, 23, 927-936.
- Caporale, T. and Doroodian, K. (1994), 'Exchange Rate Variability and the Flow of International Trade', *Economics Letters*, 46, 49-54.
- Cushman, D. (1983), 'The Effects of Real Exchange Rate Risk on International Trade', *Journal of International Economics*, 15, 45-63.
- Deardoff, A. (1995), *Determinants of Bilateral Trade: Does Gravity Work in a Neoclassical World?*, NBER Working Paper 5377.
- Dell'Ariccia, G. (1998), *Exchange Rate Fluctuations and Trade Flows: Evidence from the European Union*, IMF Working Paper 98/107.
- de Grauwe, P. (1987), 'Did the Exchange Rate Stability Within the EMS Contribute to More Trade?', in Visser, H. and Schoorl, E. (eds.): *Trade in Transit. World Trade and World Economy Past, Present and Future*, Kluwer Academic Press, Ingham, Massachussets, Dordrecht and Lancaster, pp. 237-248.
- de Grauwe, P. and de Bellefroid, B. (1987), 'Long-run Exchange Rate Variability and International Trade', in Arndt, S. and Richardson, J. (eds.): *Real Financial Linkages among Open Economies*, MIT Press, Cambridge (Massachussets) and London, pp. 193-212.
- Egger, P. (2000), 'A Note on the Proper Econometric Specification of the Gravity Equation', *Economics Letters*, 66, 25-31.
- Fountas, S. and Kyriacos, A. (1999), 'Has the European Monetary System Led to More Exports? Evidence from four European Union Countries', *Economics Letters*, 62, 357-363.
- Frankel, J. and Goldstein, M. (1989), *Exchange Rate Volatility and Misalignment: Evaluating Some Proposals for Reform*, NBER Working Paper 2894.
- Frankel, J. and Wei, S. (1993), *Trade Blocs and Currency Blocs*, NBER Working Paper 4335.
- Friberg, R. and Vredin, A. (1996), *Exchange Rate Uncertainty and the Microeconomics Benefits of EMU*, Stockholm School of Economics Working Paper Series in Economics and Finance 127.
- Hooper, P. and Kohlhagen, S. (1978), 'The Effect of Exchange Rate Uncertainty on the Prices and Volume of International Trade', *Journal of International Economics*, 8, 483-511.
- Kalirajan, K (1999), 'Stochastic Varying Coefficients Gravity Model: an Application in Trade Analysis', *Journal of Applied Statistics*, 26, 185-193
- Mátyás, L. (1998), 'The Gravity Model: Some Econometric Considerations', *World Economy*, 21, 397-401.
- Peree, E. and Steinherr, A. (1989), 'Exchange Rate Uncertainty and Foreign Trade', *European Economic Review*, 33, 1241-1264.
- Pugh, G., Tyrrell, D., Rodecki, P. and Tarnawa, L. (1998), *Exchange Rate Variability, International Trade and Monetary Cooperation in Europe: Some Quantitative Evidence for The Single Currency Debate*, Staffordshire University Business School Working Paper 98-9.
- Rose, A. (1999), *One Money, One Market: Estimating the Effect of Common Currencies on Trade*, NBER Working Paper 7432.
- Sanso, M.; Cuairan, R. and Sanz, F. (1993), 'Bilateral Trade Flows, The Gravity Equation and Functional Form', *Review of Economics and Statistics*, 75, 266-275.
- Savvides, A. (1992), 'Unanticipated Exchange Rate Variability and the Growth of International Trade', *Weltwirtschaftliches Archiv*; 128,446-463
- Sekkat, K. (1997), 'Exchange Rate Variability and EU Trade', *Economic Papers*, 127.
- Thursby, J. and Thursby, M. (1987), 'Bilateral Trade Flows, the Linder Hypothesis and Exchange Risk', *The Review of Economics and Statistics*, 69, 488-495.

## 8. Tables and figures

Figure 1. Number of references in Econlit database

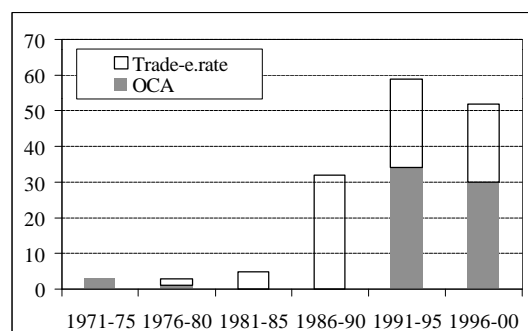


Table 1. Equivalence codes for the considered countries

Code	Country	Code	Country	Code	Country	Code	Country
1	Austria	5	France	9	Italy	13	Sweden
2	Benelux	6	Germany	10	Netherlands	14	United Kingdom
3	Denmark	7	Greece	11	Portugal		
4	Finland	8	Ireland	12	Spain		

Table 2. Equivalence codes for the considered bilateral relationships

Code	Country1	Country2	Code	Country1	Country2	Code	Country1	Country2
1	Austria	Benelux	32	Denmark	Netherlands	63	Germany	U. K.
2	Austria	Denmark	33	Denmark	Portugal	64	Greece	Ireland
3	Austria	Finland	34	Denmark	Spain	65	Greece	Italy
4	Austria	France	35	Denmark	Sweden	66	Greece	Netherlands
5	Austria	Germany	36	Denmark	U. K.	67	Greece	Portugal
6	Austria	Greece	37	Finland	France	68	Greece	Spain
7	Austria	Ireland	38	Finland	Germany	69	Greece	Sweden
8	Austria	Italy	39	Finland	Greece	70	Greece	U. K.
9	Austria	Netherlands	40	Finland	Ireland	71	Ireland	Italy
10	Austria	Portugal	41	Finland	Italy	72	Ireland	Netherlands
11	Austria	Spain	42	Finland	Netherlands	73	Ireland	Portugal
12	Austria	Sweden	43	Finland	Portugal	74	Ireland	Spain
13	Austria	U. K.	44	Finland	Spain	75	Ireland	Sweden
14	Benelux	Denmark	45	Finland	Sweden	76	Ireland	U. K.
15	Benelux	Finland	46	Finland	U. K.	77	Italy	Netherlands
16	Benelux	France	47	France	Germany	78	Italy	Portugal
17	Benelux	Germany	48	France	Greece	79	Italy	Spain
18	Benelux	Greece	49	France	Ireland	80	Italy	Sweden
19	Benelux	Ireland	50	France	Italy	81	Italy	U. K.
20	Benelux	Italy	51	France	Netherlands	82	Netherlands	Portugal
21	Benelux	Netherlands	52	France	Portugal	83	Netherlands	Spain
22	Benelux	Portugal	53	France	Spain	84	Netherlands	Sweden
23	Benelux	Spain	54	France	Sweden	85	Netherlands	U. K.
24	Benelux	Sweden	55	France	U. K.	86	Portugal	Spain
25	Benelux	U. K.	56	Germany	Greece	87	Portugal	Sweden
26	Denmark	Finland	57	Germany	Ireland	88	Portugal	U. K.
27	Denmark	France	58	Germany	Italy	89	Spain	Sweden
28	Denmark	Germany	59	Germany	Netherlands	90	Spain	U. K.
29	Denmark	Greece	60	Germany	Portugal	91	Sweden	U. K.
30	Denmark	Ireland	61	Germany	Spain			
31	Denmark	Italy	62	Germany	Sweden			

Table 3. Panel data results 1973-1997 (I)

Panel 1973-1997	Pooled regression with country dummies						Fixed effects						Random effects					
	Coeff.	T	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
LTRADE	-0.93	-28.54	-1.01	-35.89	-1.04	-38.72	-	-	-	-	-	-	-	-	-	-	-	-
LDIST	0.33	8.00	0.22	6.05	0.19	5.53	-	-	-	-	-	-	-	-	-	-	-	-
BORD	0.95	60.11	0.24	7.99	0.03	0.95	1.10	114.37	0.67	23.41	0.30	7.39	1.11	114.53	0.71	25.37	0.39	9.82
LGDP	0.36	9.95	0.18	5.53	0.19	5.96	0.12	4.39	0.06	2.27	0.10	3.74	0.12	4.56	0.07	2.64	0.11	4.08
EU	-	-	0.07	26.17	-	-	-	-	0.04	16.11	-	-	-	-	0.04	14.73	-	-
TREND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FIXED TIME EF.	-	-	-	-	yes	yes	-	-	-	-	yes	yes	-	-	-	-	yes	yes
R <sup>2</sup>	0.93		0.95		0.96		0.98		0.98		0.99		0.99		0.99		0.99	
N	1950		1950		1950		1950		1950		1950		1950		1950		1950	
Hausman	-		-		-		-		-		-		-48.70?		92.31		92.34	

Table 4. Panel data results 1984-1997 (I)

	Pooled regression with country dummies						Fixed effects						Random effects					
	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
LTRADE	-1.07	-29.27	-1.10	-34.24	-1.11	-37.96	-	-	-	-	-	-	-	-	-	-	-	-
LDIST	0.06	1.20	0.03	0.61	0.02	0.41	-	-	-	-	-	-	-	-	-	-	-	-
BORD	0.62	24.72	0.07	2.01	-0.17	-4.70	0.91	64.52	0.58	19.71	0.07	2.02	0.91	64.81	0.60	20.62	0.10	3.22
EU	0.32	7.12	0.07	1.73	0.08	2.02	0.10	3.76	0.01	0.37	0.00	0.08	0.10	3.80	0.01	0.57	0.01	0.29
TREND	-	-	0.08	19.82	-	-	-	-	0.04	12.85	-	-	-	-	0.04	12.27	-	-
FIXED TIME EF.	-	-	-	-	yes	yes	-	-	-	-	yes	yes	-	-	-	-	yes	yes
R <sup>2</sup>	0.94		0.96		0.96		0.99		0.99		0.99		0.99		0.99		0.99	
N	1274		1274		1274		1274		1274		1274		1274		1274		1274	
Hausman	-		-		-		-		-		-		11.92		28.56		155.89	

Table 5. Panel data results 1973-1997 (II)

Variable	Coeff.	t	Time trend	Time effect	Fixed effects	Random effects
DAYV	-0.02	-0.07	-	-	-	-
DAYV	0.15	1.19	-	-	yes	-
DAYV	0.15	1.19	-	-	-	yes
DAYV	-0.42	-2.13	yes	-	-	-
DAYV	-0.10	-0.80	yes	-	yes	-
DAYV	-0.07	-0.55	yes	-	-	yes
DAYV	-0.19	-0.93	-	yes	-	-
DAYV	-0.08	-0.66	-	yes	yes	-
DAYV	-0.08	-0.67	-	yes	-	yes
MONTHV	0.00	-0.01	-	-	-	-
MONTHV	0.04	0.89	-	-	yes	-
MONTHV	0.04	0.89	-	-	-	yes
MONTHV	-0.16	-2.16	yes	-	-	-
MONTHV	-0.04	-0.86	yes	-	yes	-
MONTHV	-0.03	-0.64	yes	-	-	yes
MONTHV	-0.10	-1.30	-	yes	-	-
MONTHV	-0.05	-0.99	-	yes	yes	-
MONTHV	-0.03	-0.75	-	yes	-	yes

Table 6. Panel data results 1984-1997 (II)

Variable	Coeff.	t	Time trend	Time effect	Fixed effects	Random effects
DAYV	-0.62	-2.92	-	-	-	-
DAYV	-0.18	-1.75	-	-	yes	-
DAYV	-0.17	-1.71	-	-	-	yes
DAYV	-0.46	-2.49	yes	-	-	-
DAYV	-0.21	-2.21	yes	-	yes	-
DAYV	-0.20	-2.10	yes	-	-	yes
DAYV	-0.05	-0.28	-	yes	-	-
DAYV	0.01	0.14	-	yes	yes	-
DAYV	0.01	0.11	-	yes	-	yes
MONTHV	-0.18	-2.27	-	-	-	-
MONTHV	-0.06	-1.46	-	-	yes	-
MONTHV	-0.05	-1.42	-	-	-	yes
MONTHV	-0.14	-2.11	yes	-	-	-
MONTHV	-0.06	-1.82	yes	-	yes	-
MONTHV	-0.06	-1.73	yes	-	-	yes
MONTHV	-0.03	-0.38	-	yes	-	-
MONTHV	0.01	0.25	-	yes	yes	-
MONTHV	0.01	0.23	-	yes	-	yes



Table 7. Cross-section results

Year	N	DAYV			MONTHV		
		Coeff.	t	R <sup>2</sup>	Coeff.	t	R <sup>2</sup>
1973	78	-78.02	-2.79	0.94	-8.73	-2.16	0.94
1974	78	-98.36	-3.29	0.95	-13.85	-2.71	0.95
1975	78	-140.89	-3.37	0.96	-18.69	-3.11	0.96
1976	78	-135.91	-2.79	0.96	-23.10	-2.82	0.96
1977	78	-198.24	-3.55	0.96	-43.13	-3.59	0.96
1978	78	-74.61	-3.70	0.97	-18.37	-3.41	0.97
1979	78	-126.84	-2.74	0.97	-17.91	-2.12	0.97
1980	78	-97.69	-2.66	0.97	-16.07	-3.34	0.97
1981	78	-52.36	-3.00	0.97	-10.03	-2.65	0.97
1982	78	-60.08	-2.42	0.97	-9.01	-1.77	0.97
1983	78	-68.82	-2.10	0.97	-20.63	-1.68	0.97
1984	91	-33.20	-1.68	0.97	-11.40	-2.77	0.97
1985	91	-28.51	-2.08	0.97	0.03	0.17	0.97

year	N	DAYV			MONTHV		
		Coeff.	t	R <sup>2</sup>	Coeff.	t	R <sup>2</sup>
1986	91	-52.70	-2.55	0.97	-42.64	-3.54	0.97
1987	91	-73.56	-3.87	0.97	-14.56	-3.27	0.97
1988	91	-72.11	-3.74	0.97	-15.50	-3.72	0.97
1989	91	-50.79	-2.88	0.97	-11.56	-3.13	0.97
1990	91	-58.49	-2.64	0.97	-23.24	-4.02	0.97
1991	91	-56.44	-4.42	0.97	-11.70	-4.50	0.97
1992	91	-61.71	-4.34	0.97	-11.26	-3.28	0.97
1993	91	-77.04	-3.60	0.97	-15.02	-3.50	0.97
1994	91	-94.19	-3.74	0.97	-21.97	-3.58	0.97
1995	91	-60.76	-3.39	0.97	-6.88	-1.78	0.97
1996	91	-104.54	-3.16	0.97	-25.08	-2.85	0.97
1997	91	-88.46	-3.15	0.97	-19.93	-3.05	0.97

Figure 2. Time evolution of the DAYV coefficient ( $\pm 2 \cdot S.E.$ )

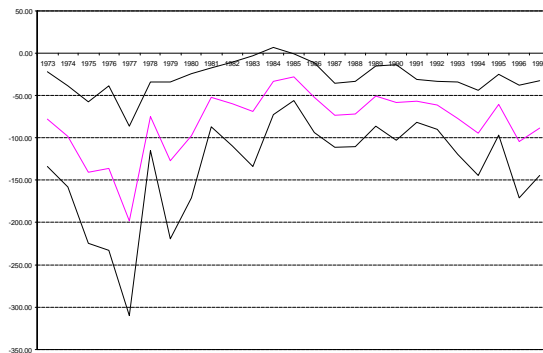


Figure 3. Time evolution of the MONTHV coefficient ( $\pm 2 \cdot S.E.$ )

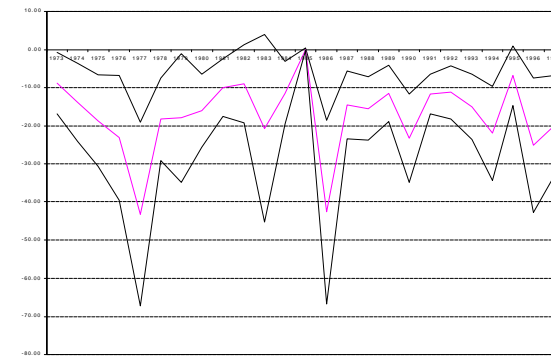


Table 8. Time series results for the DAYV variable (no time trend included 1973-1997)

Code	N	Static specification				AR (1)			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
1	25	-31.58	-1.75	0.98	0.83	-12.14	-1.44	0.99	2.20
2	25	-6.49	-0.64	0.97	0.37	-8.91	-2.21	0.99	2.01
3	25	-1.99	-0.23	0.98	1.01	-11.14	-1.50	0.99	2.27
4	25	0.25	1.80	0.99	1.54	0.14	1.01	0.99	1.91
5	25	-64.77	-2.35	0.93	1.74	-14.94	-1.26	0.98	1.40
6	16	12.12	0.83	0.93	1.70	9.51	0.43	0.89	2.01
7	25	12.40	1.49	0.98	1.32	-2.80	-0.47	0.98	2.04
8	25	-16.93	-1.81	0.99	1.10	-9.40	-1.24	0.99	2.07
9	25	-9.79	-0.98	0.99	1.40	-13.06	-1.31	0.99	1.74
10	25	-8.92	-0.33	0.93	0.34	-5.89	-0.50	0.98	1.47
11	25	-0.40	-0.02	0.96	0.56	4.92	0.86	1.00	1.81
12	25	-3.84	-0.60	0.98	1.00	-2.65	-0.47	0.98	1.83
13	25	-8.28	-0.81	0.94	0.38	-5.43	-1.18	0.98	1.45
14	25	5.04	0.58	0.99	1.60	3.66	0.46	0.99	1.79
15	25	-8.13	-0.65	0.97	0.74	-2.97	-0.27	0.97	1.58
16	25	0.09	0.96	0.99	2.05	0.09	0.91	0.99	1.65
17	25	-78.18	-2.25	0.88	0.80	-14.58	-0.67	0.94	1.84
18	16	5.00	0.32	0.93	1.26	-7.44	-1.17	0.98	1.60
19	25	16.48	1.56	0.93	0.88	-1.00	-1.00	0.97	2.10
20	25	-4.93	-0.73	0.99	2.08	-5.48	-0.71	0.99	0.99
21	25	-48.83	-2.60	0.97	0.52	-42.75	-3.43	0.98	1.40
22	25	-1.94	-0.09	0.96	0.60	14.53	1.26	0.98	1.87
23	25	-22.40	-1.43	0.97	0.62	-2.01	-0.31	0.99	1.76
24	25	-4.59	-0.39	0.96	0.83	-4.21	-0.38	0.97	1.51
25	25	-7.39	-1.03	0.97	0.64	-6.04	-1.52	0.99	1.71
26	25	-8.28	-0.88	0.96	0.60	1.29	0.23	0.98	1.68
27	25	0.21	1.46	0.99	1.53	0.10	0.70	0.99	1.95
28	25	-12.53	-0.44	0.87	0.47	0.20	0.02	0.96	2.19
29	16	-1.35	-0.14	0.96	0.95	-5.02	-0.56	0.98	2.72
30	25	18.34	1.91	0.94	0.81	10.54	1.61	0.97	2.54
31	25	1.37	0.19	0.99	1.01	3.95	0.71	0.99	1.68
32	25	-5.80	-0.41	0.97	1.20	0.61	0.05	0.97	1.57
33	25	-9.05	-0.41	0.94	0.35	6.57	0.66	0.98	1.52
34	25	-11.54	-1.01	0.98	0.38	-9.87	-2.70	1.00	2.14
35	25	-3.06	-0.41	0.97	0.75	-2.49	-0.46	0.98	1.50
36	25	2.31	0.47	0.96	0.87	1.67	0.40	0.97	1.66
37	25	0.28	1.14	0.97	0.92	0.06	0.36	0.98	1.49
38	25	-35.26	-1.69	0.89	1.51	-4.03	-0.37	0.97	1.68
39	16	-20.30	-1.41	0.94	1.16	-11.36	-0.81	0.94	1.68
40	25	12.47	1.08	0.92	1.60	9.74	0.77	0.91	1.51
41	25	-26.58	-2.75	0.99	1.84	-5.57	-0.57	0.99	1.92
42	25	-17.59	-1.27	0.97	1.21	-15.70	-1.03	0.97	1.76
43	25	0.02	0.00	0.95	0.71	-9.67	-0.85	0.97	1.89
44	25	-0.33	-0.03	0.98	0.84	-3.64	-0.48	0.98	1.54
45	25	-25.70	-4.53	0.98	1.46	-20.19	-3.00	0.98	1.31
46	25	-8.53	-1.44	0.98	1.95	-7.97	-1.25	0.97	1.54

Code	N	Static specification				AR (1)			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
47	25	0.08	0.22	0.90	0.46	-0.13	-0.87	0.97	1.76
48	16	0.05	0.44	0.98	1.40	-0.05	-0.44	0.97	1.65
49	25	0.41	1.24	0.94	1.02	0.16	0.60	0.95	1.53
50	25	0.15	0.91	0.98	0.89	0.06	0.50	0.99	2.05
51	25	0.23	1.74	0.98	0.90	0.13	1.43	0.99	1.46
52	25	0.43	1.27	0.97	0.91	-0.06	-0.34	0.98	2.35
53	25	0.34	1.54	0.99	0.73	0.08	0.90	1.00	2.50
54	25	0.16	0.99	0.98	1.28	0.08	0.58	0.98	1.48
55	25	0.42	2.98	0.99	1.54	0.28	1.84	0.99	1.72
56	16	-28.48	-1.10	0.66	0.68	-12.44	-0.72	0.76	2.02
57	25	49.35	3.61	0.89	0.94	6.54	0.99	0.97	1.92
58	25	-28.08	-1.38	0.90	0.81	13.43	1.19	0.96	1.58
59	25	-158.93	-5.21	0.94	1.33	19.21	0.56	0.96	1.54
60	25	-41.78	-1.28	0.90	0.56	5.71	0.45	0.98	1.81
61	25	-23.90	-0.84	0.91	0.53	5.48	0.57	0.98	1.65
62	25	-24.44	-1.17	0.85	0.55	-4.17	-0.41	0.96	1.63
63	25	52.11	3.18	0.90	0.74	2.64	0.46	0.98	1.73
64	16	-12.77	-0.62	0.63	1.18	-19.39	-0.84	0.54	1.51
65	16	7.26	0.65	0.97	1.65	10.38	0.77	0.95	1.92
66	16	8.05	0.87	0.97	1.61	7.08	0.70	0.97	1.88
67	16	-32.48	-1.47	0.93	1.30	-33.36	-1.06	0.91	2.13
68	16	-26.49	-1.92	0.98	1.28	-6.65	-0.54	0.98	1.75
69	16	-32.62	-2.45	0.94	1.26	-28.57	-1.53	0.91	1.99
70	16	3.54	0.36	0.96	1.38	-3.48	-0.72	0.98	2.29
71	25	-14.96	-1.34	0.93	0.49	-9.93	-1.54	0.97	1.76
72	25	12.06	1.16	0.95	0.89	-3.80	-0.60	0.97	1.76
73	25	-1.88	-0.13	0.93	0.78	-15.12	-1.71	0.96	1.89
74	25	7.16	0.45	0.91	0.42	-7.83	-1.33	0.99	1.85
75	25	-2.94	-0.29	0.93	0.91	-1.89	-0.24	0.95	1.85
76	25	7.09	0.95	0.97	0.58	-1.16	-0.21	0.98	1.61
77	25	-10.28	-1.49	0.99	1.42	-0.65	-0.09	0.99	1.53
78	25	1.07	0.10	0.99	0.91	7.56	0.87	0.99	2.02
79	25	-2.09	-0.18	0.98	0.84	8.28	0.91	0.99	1.98
80	25	-21.21	-2.75	0.98	1.87	-17.57	-2.25	0.98	1.76
81	25	1.43	0.23	0.98	0.84	2.68	0.56	0.99	1.80
82	25	-5.24	-0.18	0.93	0.45	1.44	0.10	0.98	1.79
83	25	-23.10	-1.53	0.97	0.55	-2.13	-0.42	0.99	2.23
84	25	-2.50	-0.17	0.94	0.57	1.15	0.12	0.96	1.74
85	25	1.19	0.17	0.97	1.18	1.35	0.24	0.98	1.57
86	25	-9.67	-0.54	0.98	0.75	-0.50	-0.04	0.99	1.35
87	25	-0.37	-0.03	0.94	1.17	5.52	0.62	0.96	1.95
88	25	-2.17	-0.27	0.97	1.30	3.59	0.48	0.98	2.23
89	25	-11.79	-1.23	0.97	1.11	-5.32	-0.77	0.97	1.44
90	25	-5.42	-0.71	0.98	0.76	-5.98	-1.43	0.99	2.16
91	25	-9.11	-1.57	0.97	1.39	-8.04	-1.48	0.97	1.82

Table 9. Time series results for the DAYV variable (time trend included 1973-1997)

Code	N	Static specification				AR (1)			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
1	25	-22.65	-1.67	0.99	1.39	-12.00	-1.32	0.99	2.10
2	25	-5.28	-0.52	0.97	0.41	-8.95	-2.17	0.99	2.02
3	25	-1.83	-0.21	0.98	1.00	-11.28	-1.53	0.99	2.29
4	25	0.09	0.63	0.99	1.39	0.00	-0.01	0.99	1.99
5	25	-32.24	-1.45	0.96	1.33	-14.90	-1.29	0.98	1.48
6	16	14.97	1.22	0.95	2.10	19.92	1.52	0.97	2.29
7	25	12.27	1.62	0.98	1.26	0.70	0.10	0.98	1.75
8	25	-16.33	-1.75	0.99	1.23	-9.75	-1.23	0.99	2.09
9	25	-5.21	-0.58	0.99	1.59	-9.34	-0.95	0.99	1.69
10	25	-16.49	-0.62	0.94	0.40	-4.52	-0.41	0.99	1.68
11	25	15.12	1.04	0.98	0.44	4.95	0.86	1.00	1.86
12	25	-3.83	-0.65	0.99	1.20	-2.84	-0.50	0.99	1.79
13	25	-9.08	-0.90	0.95	0.36	-4.29	-1.07	0.99	1.46
14	25	3.43	0.40	0.99	1.75	2.82	0.35	0.99	1.82
15	25	-5.65	-0.58	0.98	1.29	-4.35	-0.41	0.98	1.52
16	25	0.07	0.71	0.99	2.05	0.07	0.64	0.99	1.64
17	25	-48.31	-1.55	0.92	0.77	-17.89	-0.77	0.94	1.68
18	16	5.01	0.31	0.93	1.25	-5.76	-0.98	0.99	1.86
19	25	15.83	1.84	0.96	1.07	-3.09	-0.43	0.97	1.92
20	25	-4.35	-0.61	0.99	2.07	-4.90	-0.62	0.99	1.95
21	25	-38.84	-2.16	0.97	0.60	-42.40	-3.28	0.99	1.36
22	25	-6.96	-0.44	0.98	0.98	11.92	0.95	0.98	1.62
23	25	-13.01	-1.08	0.98	0.62	-2.64	-0.37	0.99	1.58
24	25	-6.59	-0.67	0.97	1.29	-6.07	-0.58	0.97	1.37
25	25	-7.05	-0.96	0.97	0.59	-5.66	-1.41	0.99	1.64
26	25	-9.69	-0.99	0.96	0.66	1.44	0.24	0.98	1.68
27	25	0.13	0.80	0.99	1.44	0.01	0.04	0.99	1.98
28	25	-21.76	-1.22	0.95	0.93	-3.25	-0.28	0.97	1.86
29	16	-2.86	-0.30	0.96	1.07	-5.12	-0.54	0.98	2.74
30	25	19.07	2.90	0.98	1.26	13.66	1.70	0.98	2.00
31	25	-1.00	-0.13	0.99	1.08	3.23	0.55	0.99	1.70
32	25	-8.34	-0.59	0.97	1.31	-2.41	-0.20	0.97	1.61
33	25	-22.06	-0.93	0.94	0.47	5.11	0.52	0.99	1.65
34	25	-14.00	-1.82	0.99	0.46	-9.76	-2.55	1.00	2.05
35	25	-10.15	-1.50	0.98	1.17	-5.61	-0.96	0.98	1.54
36	25	1.01	0.27	0.98	1.43	1.96	0.53	0.98	1.74
37	25	0.14	0.53	0.97	0.98	0.04	0.19	0.98	1.49
38	25	-19.85	-1.35	0.95	1.29	-4.36	-0.39	0.97	1.75
39	16	-19.98	-1.32	0.94	1.14	-14.10	-0.93	0.94	1.82
40	25	12.60	1.05	0.92	1.62	6.90	0.54	0.91	1.46
41	25	-26.89	-2.71	0.99	1.88	-5.27	-0.53	0.99	1.91
42	25	-14.98	-1.33	0.98	1.52	-12.51	-0.96	0.98	1.67
43	25	-2.00	-0.11	0.95	0.75	-9.59	-0.82	0.97	1.86
44	25	0.50	0.05	0.98	0.80	-3.27	-0.43	0.99	1.57
45	25	-25.13	-4.49	0.98	1.48	-20.37	-2.98	0.98	1.35
46	25	-8.64	-1.37	0.98	1.95	-8.11	-1.20	0.97	1.54

Code	N	Static specification				AR (1)			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
47	25	-0.39	-1.26	0.94	0.64	-0.13	-0.84	0.97	1.74
48	16	0.07	0.51	0.98	1.46	-0.01	-0.04	0.97	1.68
49	25	0.26	0.72	0.94	0.92	-0.02	-0.06	0.96	1.51
50	25	0.27	1.65	0.98	1.23	0.10	0.71	0.99	2.07
51	25	0.22	1.53	0.98	0.90	0.10	1.03	0.99	1.45
52	25	-0.02	-0.07	0.98	0.86	-0.05	-0.22	0.99	1.82
53	25	-0.07	-0.55	1.00	1.29	0.06	0.56	1.00	1.90
54	25	0.10	0.57	0.98	1.27	0.02	0.14	0.98	1.49
55	25	0.32	2.28	0.99	1.37	0.16	1.33	0.99	1.84
56	16	-22.34	-0.96	0.75	0.88	-8.47	-0.49	0.78	2.30
57	25	26.89	2.80	0.96	1.07	7.53	1.04	0.97	1.70
58	25	-26.53	-1.51	0.93	0.86	15.07	1.35	0.96	1.76
59	25	-129.34	-2.90	0.94	1.14	28.77	0.88	0.97	1.79
60	25	-24.16	-1.34	0.97	0.99	3.08	0.22	0.98	1.52
61	25	-3.11	-0.17	0.96	0.49	4.83	0.46	0.98	1.50
62	25	-23.75	-1.72	0.94	0.83	-6.58	-0.60	0.96	1.43
63	25	29.31	1.85	0.93	0.56	2.70	0.48	0.99	1.94
64	16	-6.28	-0.43	0.83	2.28	-13.50	-0.72	0.70	1.93
65	16	6.88	0.61	0.97	1.62	10.03	0.69	0.95	1.89
66	16	7.91	0.83	0.97	1.61	8.62	0.94	0.98	2.23
67	16	-38.38	-1.67	0.94	1.46	-42.83	-1.28	0.93	2.30
68	16	-21.63	-1.97	0.99	2.01	-6.58	-0.49	0.99	1.67
69	16	-36.08	-2.57	0.95	1.57	-14.84	-0.78	0.93	2.17
70	16	6.61	0.71	0.97	1.39	-3.32	-0.58	0.98	2.30
71	25	-10.93	-0.91	0.94	0.45	-9.68	-1.45	0.98	1.63
72	25	12.29	1.62	0.97	1.12	-0.57	-0.08	0.98	1.63
73	25	7.16	0.60	0.96	1.08	-12.39	-1.23	0.97	1.68
74	25	12.39	1.16	0.96	0.56	-7.38	-1.19	0.99	1.74
75	25	3.04	0.40	0.97	1.25	0.45	0.05	0.97	1.51
76	25	7.42	0.81	0.97	0.58	-0.17	-0.03	0.98	1.55
77	25	-13.34	-1.95	0.99	1.72	-4.14	-0.55	0.99	1.65
78	25	-0.92	-0.08	0.99	0.93	7.03	0.80	0.99	2.02
79	25	-5.24	-0.48	0.99	0.98	6.65	0.78	0.99	2.10
80	25	-20.29	-2.55	0.98	1.90	-17.67	-2.21	0.98	1.76
81	25	1.91	0.30	0.98	0.81	2.36	0.48	0.99	1.81
82	25	-11.14	-0.50	0.96	0.67	1.03	0.07	0.98	1.60
83	25	-10.86	-1.06	0.99	0.61	-2.87	-0.53	0.99	2.10
84	25	-3.58	-0.27	0.96	0.74	0.47	0.05	0.97	1.50
85	25	1.46	0.21	0.97	1.16	1.53	0.28	0.98	1.63
86	25	-7.84	-0.71	0.99	1.07	0.01	0.00	1.00	2.03
87	25	4.09	0.38	0.95	1.38	4.96	0.54	0.96	2.02
88	25	-1.96	-0.25	0.98	1.34	2.26	0.31	0.98	2.27
89	25	-11.65	-1.28	0.97	1.20	-5.34	-0.82	0.98	1.50
90	25	-5.54	-1.44	1.00	1.59	-5.31	-1.14	1.00	1.78
91	25	-10.01	-1.69	0.98	1.36	-8.82	-1.61	0.98	1.80

Table 10. Time series results for the DAYV variable (equation in differences 1974-1997)

Code	N	No time trend				Time trend			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
1	23	-124.74	-4.00	0.51	0.85	-16.23	-1.16	0.94	2.04
2	23	49.34	2.15	0.56	0.99	0.55	0.04	0.89	1.03
3	23	13.08	1.32	0.63	1.12	13.59	1.38	0.65	1.20
4	23	-0.20	-0.37	0.15	0.16	-0.23	-1.46	0.93	0.76
5	23	-35.30	-2.75	0.28	0.91	-52.30	-3.03	0.35	1.13
6	14	5.39	0.52	0.34	1.90	6.56	0.54	0.34	1.92
7	23	20.71	1.51	0.46	1.41	3.55	0.43	0.83	1.47
8	23	56.89	1.49	0.19	0.77	51.27	1.36	0.25	0.75
9	23	26.12	1.31	0.17	0.83	11.04	0.42	0.20	0.75
10	23	-41.97	-1.96	0.33	0.42	-1.46	-0.06	0.49	0.29
11	23	8.97	0.48	0.31	0.99	16.99	1.06	0.52	0.84
12	23	59.89	1.90	0.90	0.76	-8.40	-0.47	0.98	0.76
13	23	-25.56	-2.19	0.26	0.84	-10.62	-1.03	0.54	0.79
14	23	8.71	0.73	0.24	0.79	15.02	1.26	0.33	0.82
14	23	-0.96	-0.08	0.35	0.45	2.47	0.41	0.85	1.81
16	23	0.35	1.36	0.73	0.44	0.10	0.71	0.93	0.49
17	23	22.13	1.10	0.79	0.65	-4.09	-0.31	0.92	0.70
18	14	-18.11	-1.39	0.18	1.49	2.74	0.16	0.33	1.32
19	23	0.40	0.07	0.46	0.63	-1.78	-0.35	0.58	0.90
20	23	-3.17	-0.43	0.04	0.57	-0.35	-0.05	0.12	0.54
21	23	16.81	0.71	0.35	0.36	-10.82	-0.83	0.83	1.41
22	23	-3.31	-0.29	0.05	0.65	13.07	0.80	0.13	0.64
23	23	-1.02	-0.11	0.68	0.81	-7.46	-0.99	0.80	1.13
23	23	4.91	0.43	0.54	0.57	3.34	0.39	0.76	1.02
25	23	-4.15	-0.29	0.33	0.31	-3.86	-0.26	0.33	0.31
26	23	15.25	0.67	0.11	0.25	-8.16	-0.63	0.74	0.46
27	23	-0.27	-1.06	0.36	0.35	-0.09	-0.64	0.83	0.80
28	23	-1.68	-0.21	0.60	0.68	7.40	1.09	0.77	0.79
29	14	-7.31	-0.79	0.05	2.19	-5.13	-0.48	0.06	2.29
30	23	2.24	0.40	0.17	1.13	2.19	0.38	0.17	1.14
31	23	4.49	0.58	0.18	1.08	3.75	0.56	0.40	1.33
32	23	-21.31	-1.70	0.12	0.84	1.29	0.12	0.55	0.98
33	23	10.87	0.92	0.05	0.70	-22.22	-1.53	0.36	0.80
34	23	19.28	2.05	0.35	1.13	1.57	0.24	0.76	1.36
35	23	2.16	0.14	0.00	0.31	-0.24	-0.03	0.77	1.22
36	23	8.45	0.41	0.19	0.20	6.40	0.98	0.92	0.73
37	23	-0.08	-0.39	0.43	1.50	-0.07	-0.36	0.45	1.51
38	23	-7.11	-1.01	0.59	1.23	-7.14	-0.99	0.59	1.23
39	14	-14.48	-1.33	0.52	1.62	-9.15	-0.95	0.67	2.05
40	23	-23.94	-2.20	0.29	1.33	-4.08	-0.43	0.62	1.70
41	23	-1.95	-0.13	0.68	0.63	-5.25	-0.67	0.92	1.49
42	23	-16.54	-1.07	0.30	0.78	-11.70	-0.92	0.56	1.01
43	23	4.57	0.40	0.55	1.34	1.67	0.14	0.57	1.30
44	23	5.08	0.55	0.15	1.21	4.96	0.55	0.24	1.37
45	23	-11.25	-1.95	0.71	0.89	-10.89	-1.85	0.71	0.91
46	23	6.42	0.72	0.47	0.98	-12.28	-1.54	0.72	0.98

Code	N	No time trend				Time trend			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
47	23	-0.26	-1.35	0.11	0.57	-0.21	-1.40	0.50	0.89
48	14	0.29	0.96	0.07	0.86	0.10	0.42	0.50	1.13
49	23	0.25	0.70	0.02	0.44	0.33	1.24	0.48	0.79
50	23	0.06	0.21	0.69	0.50	-0.08	-0.58	0.93	1.12
51	23	-0.24	-0.63	0.03	0.44	-0.21	-1.13	0.78	1.36
52	23	-0.38	-0.75	0.06	0.42	-0.20	-0.70	0.72	1.22
53	23	0.12	0.44	0.21	0.71	0.10	0.47	0.57	0.85
54	23	0.00	0.01	0.58	0.60	-0.04	-0.44	0.86	1.43
55	23	-0.09	-0.19	0.20	0.26	0.15	0.69	0.85	0.56
56	14	-5.58	-0.99	0.72	1.72	-3.52	-0.49	0.72	1.69
57	23	9.50	1.11	0.11	0.69	-1.43	-0.18	0.39	0.96
58	23	9.65	1.68	0.17	0.50	11.77	2.02	0.24	0.64
59	23	22.33	2.59	0.39	1.07	-12.56	-0.85	0.55	0.99
60	23	25.66	3.58	0.42	0.75	2.66	0.37	0.72	1.40
61	23	8.66	1.11	0.12	0.39	0.79	0.09	0.20	0.41
62	23	-0.61	-0.20	0.35	1.28	-0.54	-0.17	0.36	1.30
63	23	18.39	2.86	0.31	0.65	10.72	1.61	0.46	0.53
64	14	-8.18	-0.33	0.12	0.84	-5.91	-0.26	0.32	1.09
65	14	7.90	0.69	0.41	1.28	13.19	1.37	0.63	1.97
66	14	-10.95	-0.88	0.10	1.05	7.60	0.68	0.52	1.23
67	14	-14.57	-1.09	0.09	1.98	-22.57	-1.35	0.13	2.03
68	14	-10.65	-0.60	0.17	0.95	-8.17	-0.40	0.17	0.96
69	14	-15.55	-1.03	0.33	0.82	-5.38	-0.45	0.63	1.99
70	14	1.09	0.11	0.25	0.96	-0.27	-0.04	0.75	2.73
71	23	18.52	2.26	0.51	1.02	19.34	2.30	0.52	1.07
72	23	7.58	1.06	0.22	1.03	2.89	0.47	0.47	1.50
73	23	54.63	2.91	0.29	1.99	57.22	2.89	0.30	2.02
74	23	58.16	2.65	0.25	0.91	58.38	2.65	0.28	0.94
75	23	50.94	2.96	0.35	1.17	46.71	2.54	0.36	1.17
76	23	29.18	3.19	0.32	1.19	28.12	3.11	0.37	1.26
77	23	-12.00	-0.72	0.21	0.57	4.48	0.37	0.64	0.98
78	23	-39.48	-2.81	0.38	1.25	-17.49	-1.05	0.49	1.07
79	23	-28.80	-1.22	0.16	0.55	-13.35	-0.58	0.31	0.54
80	23	-15.33	-1.15	0.07	0.81	-15.33	-1.08	0.07	0.81
81	23	16.36	2.42	0.66	0.96	11.44	2.15	0.81	0.97
82	23	11.63	1.40	0.14	1.01	15.64	1.34	0.15	1.06
83	23	24.30	1.52	0.57	0.85	-0.86	-0.06	0.76	0.91
84	23	17.19	1.05	0.35	0.43	9.57	0.75	0.63	0.79
85	23	-4.53	-0.56	0.45	0.68	-8.14	-1.32	0.71	1.04
86	23	-13.35	-1.14	0.93	0.80	-0.99	-0.12	0.97	1.35
87	23	7.00	0.37	0.31	0.46	2.45	0.19	0.70	0.80
88	23	3.45	0.23	0.17	0.45	-2.04	-0.15	0.33	0.62
89	23	-13.53	-1.26	0.48	0.68	-15.05	-2.39	0.83	2.01
90	23	9.32	1.01	0.63	0.73	2.01	0.40	0.90	1.24
91	23	-26.38	-1.91	0.86	0.96	-4.54	-0.64	0.97	0.72

Table 11. Time series results for the MONTHV variable (no time trend included 1973-1997)

Code	N	Static specification				AR (1)			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
1	25	-11.62	-1.76	0.98	0.81	-4.56	-1.27	0.99	1.84
2	25	0.88	0.18	0.97	0.50	-3.57	-1.51	0.99	2.42
3	25	-1.23	-0.64	0.98	1.04	-3.53	-1.69	0.99	2.40
4	25	0.37	1.77	0.99	1.52	0.20	1.00	0.99	1.91
5	25	-84.70	-2.41	0.94	1.95	-105.46	-2.98	0.93	1.75
6	16	0.84	0.24	0.93	1.69	3.20	0.62	0.89	1.99
7	25	2.45	1.35	0.98	1.10	0.89	0.61	0.98	1.96
8	25	-1.71	-1.05	0.99	1.13	1.19	0.88	0.99	1.95
9	25	-1.65	-0.35	0.99	1.50	-17.23	-1.42	0.99	2.28
10	25	-11.07	-2.33	0.95	0.70	-2.93	-1.23	0.98	1.59
11	25	-2.60	-0.60	0.96	0.57	0.94	0.84	1.00	1.79
12	25	-2.36	-1.74	0.98	1.21	-1.24	-0.94	0.99	1.97
13	25	1.02	0.52	0.94	0.51	-0.73	-0.78	0.98	1.54
14	25	-10.62	-2.63	0.99	1.84	-12.20	-3.34	0.99	1.89
15	25	-2.86	-0.95	0.97	0.72	-1.38	-0.51	0.97	1.63
16	25	0.13	0.96	0.99	2.03	0.90	0.90	0.99	1.66
17	25	-14.85	-1.52	0.87	0.54	-7.06	-1.38	0.95	1.79
18	16	-1.78	-0.50	0.93	1.74	-2.89	-1.78	0.99	1.53
19	25	2.60	1.01	0.93	0.67	-0.87	-0.65	0.97	2.18
20	25	-0.17	-0.13	0.99	1.90	0.86	0.55	0.99	1.85
21	25	-8.13	-1.48	0.96	0.64	-5.86	-1.62	0.98	1.95
22	25	-4.59	-1.17	0.96	0.79	1.63	0.69	0.98	2.00
23	25	-3.44	-0.98	0.97	0.51	-0.19	-0.14	0.99	1.72
24	25	-2.84	-1.05	0.96	0.87	-1.73	-0.72	0.97	1.55
25	25	-3.34	-2.47	0.98	0.90	-1.06	-1.27	0.99	1.73
26	25	-2.57	-1.02	0.96	0.54	-0.95	-0.51	0.98	1.76
27	25	0.32	1.49	0.99	1.52	0.15	0.75	0.99	1.95
28	25	-18.19	-1.55	0.88	0.54	-5.63	-1.11	0.97	2.10
29	16	-3.15	-1.26	0.97	1.31	-4.08	-1.19	0.98	2.69
30	25	2.88	1.20	0.94	0.75	1.02	0.66	0.96	2.44
31	25	-0.85	-0.57	0.99	1.09	0.54	0.40	0.99	1.69
32	25	-11.90	-2.06	0.98	1.28	-8.01	-1.50	0.98	1.65
33	25	-11.24	-2.71	0.95	1.00	0.48	0.21	0.98	1.52
34	25	-4.31	-1.67	0.98	0.37	-2.31	-2.85	1.00	1.91
35	25	-2.74	-1.56	0.97	0.82	-1.70	-1.12	0.98	1.66
36	25	0.65	0.61	0.96	0.86	0.92	0.99	0.97	1.71
37	25	0.35	0.96	0.97	0.89	0.07	0.25	0.98	1.49
38	25	-9.22	-1.85	0.90	1.39	-5.24	-1.77	0.96	1.57
39	16	-7.72	-2.98	0.96	2.01	-4.67	-1.37	0.94	1.90
40	25	1.48	0.49	0.92	1.45	0.92	0.29	0.91	1.46
41	25	-5.39	-2.03	0.98	1.62	0.27	0.11	0.98	1.77
42	25	-4.37	-1.36	0.97	1.21	-5.06	-1.26	0.97	1.88
43	25	-3.37	-1.00	0.95	0.72	-2.57	-1.13	0.97	1.92
44	25	1.61	0.69	0.98	0.85	1.08	0.68	0.98	1.40
45	25	-8.05	-5.23	0.98	1.92	-7.15	-4.17	0.98	1.61
46	25	-0.65	-0.46	0.97	1.92	-0.47	-0.32	0.97	1.56

Code	N	Static specification				AR (1)			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
47	25	0.02	0.22	0.90	0.46	-0.04	-0.88	0.97	1.76
48	16	0.02	0.42	0.98	1.40	-0.02	-0.45	0.97	1.65
49	25	0.13	1.20	0.94	1.02	0.05	0.59	0.95	1.53
50	25	0.05	0.88	0.98	0.89	0.02	0.51	0.99	2.05
51	25	0.07	1.72	0.98	0.90	0.04	1.42	0.99	1.46
52	25	0.13	1.25	0.97	0.90	-0.02	-0.32	0.98	2.35
53	25	0.11	1.54	0.99	0.73	0.03	0.92	1.00	2.50
54	25	0.05	0.99	0.98	1.27	0.03	0.59	0.98	1.48
55	25	0.13	2.92	0.99	1.52	0.09	1.83	0.99	1.72
56	16	-9.08	-1.78	0.70	1.03	-3.49	-0.82	0.77	2.02
57	25	7.73	2.05	0.86	0.60	0.19	0.13	0.97	1.82
58	25	-3.15	-0.85	0.90	0.65	3.21	1.57	0.97	1.53
59	25	-35.79	-4.46	0.93	0.72	-66.01	-3.60	0.94	1.03
60	25	-4.82	-0.64	0.89	0.46	0.34	0.12	0.98	1.87
61	25	-3.84	-0.66	0.91	0.51	2.29	1.17	0.98	1.63
62	25	-3.05	-0.62	0.84	0.47	-0.86	-0.37	0.96	1.63
63	25	5.24	1.27	0.86	0.31	0.94	0.81	0.98	1.76
64	16	-6.48	-1.78	0.70	1.45	-9.95	-3.42	0.71	1.32
65	16	0.99	0.44	0.96	1.62	0.88	0.31	0.95	1.92
66	16	1.13	0.55	0.97	1.60	-1.57	-0.59	0.97	1.93
67	16	-11.94	-3.07	0.95	2.06	-23.13	-5.02	0.95	1.82
68	16	-4.94	-1.30	0.98	1.39	2.89	0.77	0.98	1.67
69	16	-9.66	-3.95	0.96	1.98	-8.42	-2.25	0.93	1.95
70	16	0.65	0.36	0.96	1.36	-0.69	-1.01	0.98	2.30
71	25	-5.10	-2.16	0.94	0.75	-1.76	-1.25	0.97	1.81
72	25	3.29	1.40	0.95	0.87	-0.73	-0.54	0.97	1.78
73	25	0.92	0.27	0.93	0.83	-2.63	-1.22	0.96	2.06
74	25	-1.66	-0.43	0.91	0.42	-2.00	-1.49	0.99	1.88
75	25	-1.77	-0.81	0.94	0.99	-0.32	-0.20	0.95	1.87
76	25	0.80	0.28	0.97	0.48	1.07	0.56	0.98	1.57
77	25	-2.02	-1.63	0.99	1.45	-0.32	-0.24	0.99	1.56
78	25	1.86	0.89	0.99	0.89	1.62	0.91	0.99	1.98
79	25	1.66	0.56	0.98	0.72	3.53	1.76	0.99	1.79
80	25	-4.06	-2.27	0.98	1.70	-2.30	-1.30	0.98	1.72
81	25	-0.84	-0.70	0.98	0.97	0.38	0.41	0.99	1.82
82	25	-5.94	-1.08	0.94	0.52	-1.46	-0.56	0.98	1.77
83	25	-2.60	-0.75	0.97	0.43	0.52	0.44	0.99	1.76
84	25	-2.57	-0.78	0.94	0.58	-1.17	-0.57	0.96	1.91
85	25	-0.67	-0.46	0.97	1.17	0.53	0.45	0.98	1.57
86	25	-2.63	-0.68	0.98	0.79	0.57	0.35	0.99	1.75
87	25	-2.27	-0.99	0.95	1.24	-0.20	-0.11	0.96	1.98
88	25	1.90	1.18	0.98	1.08	2.12	1.32	0.98	2.16
89	25	-2.70	-1.22	0.97	1.15	-1.53	-0.98	0.98	1.46
90	25	-1.37	-0.81	0.98	0.82	-0.89	-0.86	0.99	2.06
91	25	-2.06	-1.84	0.98	1.69	-1.37	-1.19	0.97	1.80

Table 12. Time series results for the MONTHV variable (time trend included 1973-1997)

Code	N	Static specification				AR (1)			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
1	25	-13.17	-3.02	0.99	1.81	-5.48	-1.58	0.99	2.27
2	25	0.06	0.01	0.97	0.50	-3.59	-1.48	0.99	2.41
3	25	-1.22	-0.59	0.98	1.04	-3.22	-1.47	0.99	2.40
4	25	0.12	0.60	0.99	1.38	0.00	0.00	0.99	1.99
5	25	-25.61	-0.81	0.96	1.31	11.29	0.78	0.98	1.51
6	16	2.04	0.67	0.95	1.85	0.00	0.00	0.96	2.08
7	25	1.70	0.97	0.98	0.96	0.58	0.41	0.98	1.78
8	25	-1.57	-0.96	0.99	1.25	1.18	0.84	0.99	1.96
9	25	-1.00	-0.25	0.99	1.68	-10.19	-0.94	0.99	2.20
10	25	-10.29	-2.21	0.95	0.72	-2.46	-1.10	0.99	1.78
11	25	2.49	0.81	0.98	0.40	0.61	0.52	1.00	1.83
12	25	-2.23	-1.79	0.99	1.45	-1.49	-1.12	0.99	1.93
13	25	1.12	0.57	0.95	0.48	-0.52	-0.64	0.99	1.57
14	25	-9.35	-2.23	0.99	1.89	-10.79	-2.90	0.99	1.92
15	25	-3.30	-1.45	0.98	1.29	-2.89	-1.12	0.98	1.66
16	25	0.11	0.72	0.99	2.03	0.10	0.63	0.99	1.65
17	25	-12.98	-1.66	0.92	0.69	-7.27	-1.33	0.95	1.67
18	16	-1.82	-0.49	0.93	1.73	-2.36	-1.43	0.99	1.85
19	25	1.89	0.88	0.95	0.74	-0.43	-0.29	0.97	1.94
20	25	-0.04	-0.03	0.99	1.90	0.86	0.53	0.99	1.85
21	25	-9.00	-1.87	0.97	0.81	-6.50	-1.70	0.98	1.84
22	25	-2.77	-0.91	0.98	1.06	1.24	0.48	0.98	1.70
23	25	0.41	0.14	0.98	0.52	-0.30	-0.21	0.99	1.54
24	25	-3.03	-1.39	0.97	1.39	-2.33	-1.02	0.97	1.40
25	25	-3.31	-2.34	0.98	0.89	-0.93	-1.14	0.99	1.66
26	25	-2.80	-1.08	0.96	0.56	-0.96	-0.49	0.98	1.76
27	25	0.20	0.85	0.99	1.44	0.02	0.10	0.99	1.97
28	25	-8.59	-1.10	0.95	0.74	-5.51	-0.96	0.97	1.81
29	16	-4.01	-1.66	0.97	1.63	-5.22	-1.39	0.98	2.83
30	25	2.39	1.34	0.97	1.05	1.31	0.75	0.97	2.00
31	25	-1.13	-0.74	0.99	1.18	0.43	0.31	0.99	1.72
32	25	-10.61	-1.76	0.98	1.27	-6.91	-1.27	0.98	1.65
33	25	-10.63	-2.49	0.95	0.96	0.86	0.39	0.99	1.60
34	25	-1.62	-0.81	0.99	0.40	-2.42	-2.98	1.00	2.05
35	25	-3.04	-2.03	0.98	1.22	-2.23	-1.48	0.98	1.67
36	25	-0.14	-0.17	0.98	1.46	0.53	0.64	0.98	1.76
37	25	0.12	0.30	0.97	0.96	0.02	0.06	0.98	1.50
38	25	-7.57	-2.34	0.96	1.28	-4.14	-1.40	0.97	1.78
39	16	-7.68	-2.83	0.96	1.97	-7.41	-2.18	0.95	1.72
40	25	1.54	0.48	0.92	1.46	0.33	0.10	0.91	1.42
41	25	-5.51	-2.02	0.98	1.64	0.25	0.10	0.99	1.76
42	25	-5.92	-2.45	0.98	1.59	-6.74	-2.23	0.98	1.94
43	25	-3.88	-1.11	0.95	0.80	-2.55	-1.08	0.97	1.91
44	25	1.86	0.82	0.98	0.82	1.10	0.69	0.99	1.41
45	25	-8.03	-5.50	0.99	1.99	-7.50	-4.57	0.98	1.64
46	25	-0.60	-0.42	0.97	1.94	-0.45	-0.29	0.97	1.56

Code	N	Static specification				AR (1)			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
47	25	-0.12	-1.28	0.94	0.64	-0.04	-0.84	0.97	1.74
48	16	0.02	0.49	0.98	1.45	0.00	-0.05	0.97	1.68
49	25	0.08	0.67	0.94	0.91	-0.01	-0.08	0.96	1.51
50	25	0.08	1.62	0.98	1.21	0.03	0.72	0.99	2.07
51	25	0.07	1.51	0.98	0.90	0.03	1.03	0.99	1.45
52	25	-0.01	-0.08	0.98	0.86	-0.01	-0.22	0.99	1.81
53	25	-0.02	-0.51	1.00	1.28	0.02	0.59	1.00	1.90
54	25	0.03	0.57	0.98	1.27	0.01	0.15	0.98	1.49
55	25	0.10	2.24	0.99	1.35	0.05	1.35	0.99	1.85
56	16	-8.59	-1.96	0.80	1.36	-2.11	-0.48	0.77	2.26
57	25	2.46	0.96	0.95	0.69	0.22	0.14	0.97	1.61
58	25	-3.30	-1.03	0.93	0.72	3.55	1.79	0.97	1.75
59	25	-26.17	-3.20	0.94	0.76	-7.45	-0.96	0.97	1.88
60	25	-2.36	-0.56	0.97	0.77	0.16	0.05	0.98	1.54
61	25	3.22	0.83	0.97	0.49	2.19	1.05	0.98	1.50
62	25	-4.48	-1.37	0.93	0.77	-1.19	-0.47	0.96	1.44
63	25	2.43	0.74	0.92	0.30	0.86	0.76	0.99	1.97
64	16	-3.84	-1.39	0.85	2.33	-6.46	-1.95	0.78	1.79
65	16	0.42	0.18	0.97	1.61	0.59	0.19	0.95	1.90
66	16	0.93	0.42	0.97	1.61	0.82	0.26	0.97	2.30
67	16	-12.05	-3.04	0.96	2.19	-21.37	-5.79	0.97	2.35
68	16	-3.73	-1.21	0.99	2.18	1.06	0.27	0.99	1.60
69	16	-9.94	-3.95	0.96	2.26	-6.74	-2.19	0.95	2.26
70	16	1.85	1.07	0.97	1.42	-0.92	-0.95	0.98	2.27
71	25	-4.47	-1.77	0.94	0.64	-2.07	-1.45	0.98	1.69
72	25	2.14	1.18	0.97	0.99	-0.15	-0.10	0.98	1.63
73	25	1.63	0.59	0.96	1.04	-1.85	-0.74	0.97	1.78
74	25	-0.88	-0.33	0.96	0.34	-1.94	-1.37	0.99	1.77
75	25	-1.04	-0.64	0.97	1.26	-0.54	-0.33	0.97	1.51
76	25	0.30	0.09	0.97	0.50	1.21	0.55	0.98	1.47
77	25	-2.43	-2.00	0.99	1.71	-0.74	-0.56	0.99	1.66
78	25	1.64	0.74	0.99	0.89	1.50	0.83	0.99	1.98
79	25	1.21	0.44	0.99	0.82	3.14	1.68	0.99	1.94
80	25	-3.88	-2.14	0.98	1.73	-2.39	-1.32	0.98	1.72
81	25	-0.79	-0.60	0.98	0.95	0.55	0.59	0.99	1.79
82	25	-2.97	-0.68	0.96	0.64	-1.49	-0.53	0.98	1.59
83	25	1.66	0.70	0.99	0.57	0.14	0.11	0.99	1.94
84	25	-2.68	-0.93	0.96	0.76	-1.42	-0.62	0.97	1.65
85	25	-0.55	-0.37	0.97	1.14	0.87	0.76	0.98	1.67
86	25	-0.71	-0.29	0.99	1.03	0.02	0.01	1.00	2.03
87	25	-1.75	-0.81	0.96	1.40	-0.37	-0.20	0.96	2.05
88	25	2.13	1.37	0.98	1.15	1.93	1.22	0.98	2.18
89	25	-2.37	-1.12	0.97	1.21	-1.45	-0.99	0.98	1.54
90	25	-0.16	-0.18	0.99	1.56	-0.40	-0.33	0.99	1.79
91	25	-2.09	-1.84	0.98	1.68	-1.34	-1.16	0.97	1.79

Table 13. Time series results for the MONTHV variable (equation in differences 1974-1997)

Code	N	No time trend				Time trend			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
1	23	-29.14	-1.49	0.21	0.36	-3.72	-0.65	0.94	2.16
2	23	19.01	1.38	0.51	0.44	9.57	1.49	0.90	1.35
3	23	2.97	1.32	0.63	0.88	4.39	1.91	0.68	1.00
4	23	-0.41	-0.52	0.15	0.17	-0.33	-1.40	0.93	0.75
5	23	-14.47	-0.84	0.05	0.98	-10.77	-0.37	0.06	0.96
6	14	1.66	0.70	0.35	1.80	2.02	0.73	0.35	1.81
7	23	2.66	0.84	0.42	1.24	0.25	0.14	0.83	1.42
8	23	6.30	0.95	0.14	0.76	6.24	0.96	0.22	0.76
9	23	19.59	2.34	0.29	0.96	17.79	1.65	0.29	0.93
10	23	-13.13	-2.34	0.37	0.67	-8.57	-1.68	0.55	0.60
11	23	0.22	0.06	0.30	0.92	2.95	0.90	0.51	0.79
12	23	4.44	0.55	0.89	0.67	-0.48	-0.13	0.98	0.74
13	23	-3.93	-1.64	0.19	0.66	-2.11	-1.11	0.54	0.83
14	23	-3.59	-0.52	0.23	0.72	-1.40	-0.20	0.29	0.75
14	23	-0.60	-0.21	0.35	0.43	-1.31	-0.92	0.85	1.87
16	23	0.54	1.43	0.74	0.46	0.14	0.69	0.93	0.49
17	23	6.98	1.41	0.79	0.67	-0.84	-0.25	0.92	0.69
18	14	-5.86	-1.62	0.21	1.50	-0.93	-0.19	0.33	1.35
19	23	-0.21	-0.17	0.46	0.61	-0.99	-0.86	0.59	0.95
20	23	1.09	0.79	0.06	0.48	1.75	1.29	0.18	0.52
21	23	3.36	0.56	0.34	0.34	-5.27	-1.65	0.84	1.47
22	23	5.95	2.11	0.21	0.78	7.79	2.84	0.35	0.97
23	23	-0.25	-0.12	0.68	0.82	-1.15	-0.66	0.80	1.14
23	23	0.30	0.11	0.54	0.54	-0.89	-0.45	0.76	0.96
25	23	-4.13	-1.59	0.39	0.45	-4.23	-1.55	0.39	0.46
26	23	-3.63	-0.53	0.10	0.23	-0.99	-0.26	0.74	0.48
27	23	-0.43	-1.14	0.37	0.37	-0.12	-0.59	0.83	0.80
28	23	-4.86	-1.30	0.63	0.67	-2.44	-0.77	0.76	0.74
29	14	-4.29	-1.67	0.18	1.82	-4.00	-1.44	0.19	1.90
30	23	0.54	0.40	0.17	1.17	0.55	0.40	0.17	1.18
31	23	-2.16	-1.27	0.22	0.94	-1.46	-0.95	0.41	1.14
32	23	-6.19	-0.93	0.04	0.58	3.76	0.75	0.56	0.98
33	23	-3.34	-0.83	0.05	0.69	-6.12	-1.78	0.38	1.03
34	23	0.97	0.34	0.23	0.64	-2.97	-1.88	0.79	1.26
35	23	-3.97	-0.99	0.04	0.40	-0.27	-0.13	0.77	1.22
36	23	5.07	1.23	0.24	0.23	2.97	2.47	0.94	0.97
37	23	-0.13	-0.43	0.43	1.50	-0.13	-0.42	0.45	1.51
38	23	-1.33	-0.79	0.58	1.24	-1.41	-0.80	0.58	1.24
39	14	-2.48	-1.00	0.49	1.77	-0.20	-0.09	0.65	2.08
40	23	-5.50	-1.83	0.24	1.26	-0.44	-0.18	0.61	1.71
41	23	-1.39	-0.35	0.68	0.61	-2.17	-1.10	0.92	1.55
42	23	-0.35	-0.09	0.27	0.86	-2.84	-0.92	0.56	1.07
43	23	0.38	0.15	0.55	1.32	0.44	0.17	0.57	1.32
44	23	4.38	2.24	0.30	1.30	4.05	2.11	0.36	1.38
45	23	-2.75	-1.58	0.69	0.79	-3.18	-1.79	0.71	0.87
46	23	1.78	0.88	0.47	0.99	-1.58	-0.87	0.70	1.00

Code	N	No time trend				Time trend			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
47	23	-0.08	-1.33	0.11	0.57	-0.06	-1.39	0.49	0.89
48	14	0.09	0.97	0.07	0.87	0.03	0.44	0.50	1.14
49	23	0.07	0.64	0.02	0.44	0.10	1.19	0.48	0.79
50	23	0.02	0.19	0.69	0.50	-0.02	-0.58	0.93	1.12
51	23	-0.07	-0.62	0.03	0.44	-0.06	-1.14	0.78	1.36
52	23	-0.11	-0.71	0.05	0.42	-0.06	-0.66	0.72	1.22
53	23	0.04	0.41	0.21	0.71	0.03	0.46	0.57	0.85
54	23	0.00	0.03	0.58	0.60	-0.01	-0.43	0.86	1.43
55	23	-0.04	-0.23	0.20	0.26	0.05	0.66	0.85	0.56
56	14	-1.07	-0.82	0.71	1.73	-0.57	-0.37	0.72	1.70
57	23	2.92	1.45	0.14	0.72	1.87	1.09	0.42	1.05
58	23	2.46	2.58	0.28	0.67	2.73	2.88	0.35	0.86
59	23	6.24	3.33	0.47	1.18	2.25	0.83	0.55	1.04
60	23	4.06	1.55	0.18	0.44	0.55	0.33	0.72	1.40
61	23	3.00	1.89	0.20	0.54	1.92	1.00	0.23	0.45
62	23	-0.31	-0.43	0.35	1.32	-0.36	-0.49	0.36	1.36
63	23	1.05	0.66	0.07	0.21	0.19	0.14	0.39	0.38
64	14	-7.18	-1.64	0.27	1.19	-6.20	-1.52	0.42	1.41
65	14	2.52	1.12	0.44	1.42	2.57	1.36	0.63	1.96
66	14	-0.59	-0.20	0.05	0.82	2.90	1.25	0.56	1.44
67	14	-5.25	-1.86	0.21	2.07	-6.57	-2.09	0.27	2.12
68	14	3.28	0.73	0.18	1.42	5.09	1.02	0.23	1.62
69	14	-3.83	-1.15	0.34	0.84	-2.18	-0.84	0.65	1.95
70	14	0.77	0.44	0.26	1.02	-0.01	-0.01	0.75	2.74
71	23	1.06	0.54	0.40	0.63	1.31	0.63	0.41	0.66
72	23	0.55	0.32	0.19	1.04	0.40	0.28	0.47	1.54
73	23	10.00	2.15	0.19	1.81	10.72	2.15	0.19	1.86
74	23	4.35	0.70	0.04	0.58	4.90	0.78	0.07	0.60
75	23	6.87	1.53	0.18	0.87	6.10	1.37	0.23	0.92
76	23	10.70	2.86	0.27	1.50	10.58	2.91	0.34	1.60
77	23	0.09	0.03	0.19	0.54	2.63	1.36	0.66	1.13
78	23	-4.64	-1.04	0.20	0.75	1.21	0.29	0.46	0.79
79	23	-4.34	-0.62	0.12	0.45	-1.19	-0.18	0.30	0.50
80	23	-1.57	-0.51	0.03	0.72	-1.43	-0.42	0.03	0.73
81	23	1.20	0.78	0.58	0.73	1.30	1.14	0.78	0.71
82	23	1.66	0.65	0.08	1.00	1.40	0.53	0.09	0.99
83	23	2.35	0.60	0.53	0.63	-3.06	-1.01	0.77	0.88
84	23	2.66	0.73	0.34	0.43	-0.16	-0.05	0.62	0.77
85	23	0.92	0.54	0.45	0.83	-1.14	-0.82	0.69	1.00
86	23	-2.57	-0.94	0.93	0.79	-0.70	-0.39	0.97	1.37
87	23	-2.73	-0.70	0.33	0.53	1.16	0.42	0.70	0.82
88	23	3.85	1.34	0.23	0.41	2.59	0.93	0.35	0.46
89	23	-3.17	-1.30	0.48	0.70	-2.87	-1.92	0.82	1.81
90	23	0.79	0.37	0.62	0.63	-0.61	-0.54	0.90	1.04
91	23	-3.23	-1.06	0.85	0.76	-2.60	-2.04	0.98	0.90

Table 14. Time series results for the DAYV variable (Static specification – period 1984-1997)

Code	N	No time trend				Time trend			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
1	16	11.21	0.59	0.97	1.10	14.16	0.76	0.98	1.34
2	16	-4.03	-0.74	0.99	1.23	-3.59	-0.63	0.99	1.28
3	16	-16.49	-1.64	0.98	2.00	-11.60	-1.35	0.98	2.80
4	16	0.04	0.40	0.99	1.51	0.02	0.17	0.99	1.34
5	16	-27.34	-0.55	0.83	1.40	-11.01	-0.27	0.90	1.23
6	16	18.59	0.93	0.92	1.70	21.44	1.36	0.96	2.85
7	16	-1.39	-0.13	0.96	1.28	1.27	0.19	0.99	1.42
8	16	-4.10	-0.53	0.99	1.64	-3.95	-0.48	0.99	1.65
9	16	2.06	0.12	0.98	1.64	0.06	0.00	0.98	1.30
10	16	-9.07	-0.50	0.98	0.92	-8.29	-0.44	0.98	1.13
11	16	-15.85	-0.72	0.98	1.53	-9.69	-0.71	0.99	0.86
12	16	-13.22	-1.26	0.98	1.94	-10.20	-0.87	0.99	1.97
13	16	-4.74	-0.92	0.99	1.62	-4.94	-0.91	0.99	1.75
14	16	8.54	1.04	0.98	1.32	6.09	0.69	0.98	1.51
15	16	-27.40	-2.62	0.98	1.47	-27.56	-3.11	0.99	2.41
16	16	0.03	0.37	0.99	1.33	0.06	0.66	0.99	1.32
17	16	-62.62	-0.97	0.72	0.88	-104.01	-1.72	0.80	1.30
18	16	-2.68	-0.18	0.95	0.57	1.15	0.09	0.96	1.07
19	16	-17.46	-1.57	0.92	0.97	-10.04	-0.98	0.95	0.94
20	16	-7.68	-0.77	0.97	1.71	-7.94	-0.66	0.97	1.73
21	16	-67.75	-2.73	0.95	0.94	-75.35	-2.72	0.95	1.08
22	16	-43.33	-1.90	0.98	1.18	-41.97	-1.75	0.98	1.31
23	16	-29.23	-1.52	0.98	1.02	-25.21	-1.65	0.99	1.25
24	16	-13.48	-0.52	0.94	0.62	-44.10	-2.01	0.97	1.76
25	16	-14.12	-2.06	0.97	1.12	-7.68	-1.94	0.99	1.41
26	16	-11.56	-1.22	0.94	0.78	-14.95	-1.96	0.97	1.66
27	16	0.02	0.17	0.98	1.48	0.02	0.17	0.98	1.48
28	16	-6.79	-0.29	0.80	0.95	-19.13	-0.89	0.86	1.26
29	16	3.44	0.40	0.97	1.52	3.88	0.42	0.97	1.56
30	16	-9.23	-0.53	0.80	0.96	4.50	0.40	0.93	1.49
31	16	2.59	0.30	0.95	1.01	-2.29	-0.25	0.96	1.33
32	16	2.90	0.21	0.95	1.20	-4.54	-0.34	0.96	1.63
33	16	-8.68	-0.48	0.96	1.07	-0.44	-0.03	0.98	1.94
34	16	-6.13	-0.49	0.98	0.58	-7.31	-1.02	0.99	1.28
35	16	7.29	0.53	0.90	0.42	-6.00	-0.48	0.94	1.08
36	16	7.29	1.25	0.93	1.56	5.19	0.88	0.94	1.51
37	16	-0.09	-0.39	0.95	1.23	0.01	0.06	0.96	1.61
38	16	6.40	0.21	0.74	1.11	-9.93	-0.32	0.79	1.08
39	16	-17.24	-1.11	0.93	1.08	-16.16	-1.12	0.95	1.73
40	16	-2.84	-0.19	0.88	1.50	-6.60	-0.44	0.90	1.19
41	16	-22.67	-2.11	0.96	2.35	-20.51	-1.89	0.96	2.45
42	16	-24.60	-1.86	0.96	2.01	-32.24	-2.98	0.98	1.69
43	16	7.23	0.52	0.97	1.78	11.06	0.78	0.97	1.90
44	16	-12.13	-1.03	0.98	1.20	-14.14	-1.96	0.99	1.49
45	16	-37.07	-6.72	0.98	2.42	-32.80	-6.79	0.99	2.73
46	16	-16.39	-3.04	0.97	2.13	-16.22	-2.84	0.97	2.14

Code	N	No time trend				Time trend			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
47	16	-0.46	-1.26	0.80	0.89	-0.56	-1.57	0.83	0.90
48	16	-0.04	-0.40	0.98	1.36	0.00	-0.03	0.98	1.41
49	16	0.35	0.82	0.83	0.73	-0.11	-0.49	0.96	2.18
50	16	-0.03	-0.14	0.94	1.09	0.06	0.32	0.95	1.24
51	16	0.11	0.65	0.95	0.84	0.06	0.33	0.95	0.92
52	16	0.01	0.04	0.98	0.94	0.09	0.45	0.99	1.20
53	16	0.31	1.47	0.98	0.77	0.09	0.92	1.00	1.34
54	16	0.00	0.00	0.94	0.75	-0.02	-0.08	0.94	0.76
55	16	0.21	1.54	0.98	0.84	0.10	0.89	0.99	1.33
56	16	-19.87	-0.63	0.56	0.62	-19.93	-0.65	0.62	0.73
57	16	6.61	0.37	0.85	0.84	1.60	0.11	0.90	0.83
58	16	9.52	0.32	0.72	0.58	-3.35	-0.08	0.72	0.63
59	16	-27.11	-4.14	0.92	2.24	-26.93	-3.97	0.92	2.18
60	16	-78.35	-1.64	0.86	0.75	-64.70	-1.66	0.92	0.87
61	16	31.52	0.55	0.84	0.52	-1.17	-0.02	0.87	0.46
62	16	6.06	0.16	0.72	0.68	-69.64	-1.30	0.79	1.01
63	16	9.73	0.66	0.86	0.77	7.07	0.48	0.88	0.71
64	16	-17.24	-0.94	0.58	1.60	-8.54	-0.52	0.72	2.27
65	16	8.43	0.72	0.96	1.87	8.19	0.67	0.96	1.87
66	16	8.52	0.90	0.97	2.22	9.72	1.07	0.98	2.69
67	16	-24.18	-0.79	0.91	1.21	-25.62	-0.92	0.93	1.62
68	16	-16.43	-1.08	0.98	0.96	-10.84	-0.97	0.99	1.62
69	16	-18.14	-0.97	0.92	1.38	-15.24	-0.90	0.94	2.33
70	16	-0.23	-0.04	0.98	2.87	0.23	0.04	0.98	2.82
71	16	-36.49	-2.79	0.91	1.33	-16.76	-1.90	0.97	2.00
72	16	-5.78	-0.34	0.87	0.86	4.35	0.29	0.92	0.76
73	16	-19.81	-1.51	0.88	1.36	-13.55	-0.88	0.89	1.31
74	16	-54.92	-3.50	0.88	1.45	-32.75	-3.14	0.96	1.64
75	16	-27.96	-2.13	0.86	0.78	-13.36	-2.74	0.98	1.95
76	16	-9.62	-0.56	0.94	0.46	-8.24	-0.87	0.98	1.33
77	16	-13.89	-1.25	0.96	1.09	-22.19	-1.92	0.97	1.74
78	16	-7.65	-0.82	0.99	1.84	-11.09	-1.23	0.99	2.23
79	16	-23.16	-1.37	0.98	1.34	-27.56	-2.39	0.99	2.35
80	16	-52.70	-4.00	0.96	2.55	-53.38	-3.67	0.96	2.57
81	16	-7.67	-1.30	0.97	1.70	-4.22	-0.66	0.98	1.52
82	16	-30.28	-0.82	0.91	0.80	-28.10	-0.75	0.92	0.97
83	16	-40.72	-1.78	0.97	0.67	-28.51	-2.62	0.99	2.10
84	16	-20.61	-0.44	0.84	0.32	-79.39	-2.56	0.95	1.66
85	16	-1.59	-0.18	0.93	1.00	0.02	0.00	0.94	1.00
86	16	-54.81	-2.27	0.98	1.13	-33.57	-2.62	1.00	2.03
87	16	-40.37	-1.92	0.93	0.74	-24.71	-2.18	0.98	2.45
88	16	-1.03	-0.26	0.99	1.83	-3.54	-0.86	0.99	2.09
89	16	-63.53	-5.38	0.99	1.75	-63.77	-5.47	0.99	1.80
90	16	-18.69	-3.44	0.99	1.32	-11.98	-2.55	0.99	1.35
91	16	-12.01	-2.24	0.96	2.56	-12.24	-2.18	0.97	2.48



Table 15. Time series results for the MONTHV variable (Static specification – period 1984-1997)

Code	N	No time trend				Time trend			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
1	16	-11.95	-1.81	0.98	1.88	-10.17	-1.39	0.98	1.84
2	16	-5.99	-2.72	0.99	1.62	-5.86	-2.48	1.00	1.57
3	16	-5.95	-3.10	0.98	2.96	-4.15	-1.79	0.99	3.15
4	16	0.05	0.32	0.99	1.51	0.02	0.11	0.99	1.35
5	16	-13.50	-0.82	0.83	1.39	-11.08	-0.77	0.90	1.19
6	16	0.93	0.17	0.91	1.57	4.32	0.96	0.95	2.20
7	16	1.35	0.70	0.96	1.55	1.14	0.98	0.99	1.84
8	16	-0.34	-0.23	0.99	1.62	-0.30	-0.19	0.99	1.64
9	16	-38.32	-0.77	0.98	1.94	-55.11	-1.10	0.99	1.69
10	16	-15.65	-3.06	0.99	1.48	-15.28	-2.89	0.99	1.54
11	16	-8.32	-1.55	0.98	1.43	-4.46	-1.26	0.99	0.84
12	16	-2.62	-1.37	0.99	2.00	-2.11	-0.99	0.99	2.02
13	16	-0.67	-0.76	0.99	1.72	-0.73	-0.76	0.99	1.87
14	16	-15.08	-2.58	0.99	1.35	-14.81	-2.63	0.99	1.69
15	16	-7.02	-3.13	0.98	1.29	-7.33	-4.27	0.99	2.19
16	16	0.04	0.34	0.99	1.33	0.09	0.62	0.99	1.32
17	16	-8.87	-0.47	0.70	0.61	-23.33	-1.24	0.78	0.75
18	16	-5.50	-1.57	0.96	1.02	-3.13	-0.88	0.97	1.26
19	16	-1.55	-0.71	0.91	0.90	-0.25	-0.13	0.94	0.97
20	16	-0.83	-0.42	0.97	1.59	-0.71	-0.33	0.97	1.56
21	16	-23.83	-3.71	0.96	1.27	-23.77	-3.51	0.96	1.28
22	16	-6.72	-0.85	0.97	0.83	-8.79	-1.05	0.97	1.08
23	16	-4.82	-1.06	0.98	1.01	-1.78	-0.44	0.99	0.83
24	16	-4.73	-0.98	0.94	0.65	-7.56	-1.92	0.97	1.59
25	16	-2.48	-2.21	0.97	1.12	-1.00	-1.33	0.99	1.21
26	16	-5.71	-2.69	0.96	0.73	-6.84	-6.05	0.99	2.30
27	16	0.03	0.14	0.98	1.48	0.03	0.14	0.98	1.48
28	16	3.35	0.26	0.80	0.96	-11.09	-0.84	0.86	1.03
29	16	-1.75	-0.56	0.97	1.69	-1.77	-0.49	0.97	1.69
30	16	-1.81	-0.56	0.80	0.99	0.46	0.22	0.93	1.55
31	16	-0.53	-0.24	0.95	1.08	-1.33	-0.61	0.96	1.48
32	16	-16.27	-2.82	0.97	1.40	-16.15	-3.48	0.98	2.02
33	16	-5.89	-0.61	0.97	0.99	-15.40	-2.20	0.99	2.96
34	16	-7.25	-1.99	0.98	1.22	-3.00	-1.17	0.99	1.40
35	16	-1.76	-0.41	0.90	0.51	-5.39	-1.60	0.95	1.80
36	16	1.79	1.88	0.94	1.63	1.34	1.26	0.95	1.52
37	16	-0.19	-0.55	0.95	1.28	-0.02	-0.06	0.96	1.62
38	16	-1.25	-0.17	0.74	1.19	-9.38	-1.18	0.81	1.27
39	16	-7.27	-2.34	0.95	1.81	-5.96	-1.76	0.96	2.15
40	16	0.67	0.21	0.88	1.61	-0.46	-0.14	0.90	1.23
41	16	-4.55	-1.29	0.95	1.73	-3.65	-1.00	0.96	1.89
42	16	-3.04	-0.89	0.95	2.25	-8.67	-2.88	0.98	2.04
43	16	-0.50	-0.13	0.96	1.70	2.85	0.56	0.97	1.87
44	16	1.84	0.56	0.98	1.63	-2.30	-0.93	0.99	1.12
45	16	-8.09	-4.40	0.97	2.17	-6.95	-4.09	0.98	2.39
46	16	-1.60	-1.18	0.96	1.97	-1.58	-1.11	0.96	2.03

Code	N	No time trend				Time trend			
		Coeff.	t	R <sup>2</sup>	DW	Coeff.	t	R <sup>2</sup>	DW
47	16	-0.14	-1.26	0.80	0.89	-0.17	-1.57	0.83	0.90
48	16	-0.01	-0.41	0.98	1.36	0.00	-0.04	0.98	1.40
49	16	0.11	0.80	0.83	0.73	-0.04	-0.51	0.96	2.18
50	16	-0.01	-0.14	0.94	1.09	0.02	0.32	0.95	1.24
51	16	0.03	0.65	0.95	0.84	0.02	0.33	0.95	0.92
52	16	0.00	0.06	0.98	0.94	0.03	0.47	0.99	1.19
53	16	0.09	1.46	0.98	0.77	0.03	0.93	1.00	1.34
54	16	0.00	0.00	0.94	0.75	-0.01	-0.08	0.94	0.76
55	16	0.07	1.55	0.98	0.83	0.03	0.93	0.99	1.32
56	16	-12.14	-1.72	0.64	1.11	-13.10	-1.98	0.72	1.33
57	16	1.08	0.35	0.85	0.92	0.18	0.07	0.90	0.84
58	16	5.34	1.02	0.74	0.47	6.30	0.84	0.74	0.48
59	16	-25.10	-3.36	0.89	1.49	-26.04	-3.34	0.90	1.80
60	16	13.04	0.65	0.83	0.60	0.04	0.00	0.89	0.53
61	16	26.50	2.56	0.89	0.97	21.39	1.79	0.90	0.75
62	16	3.52	0.50	0.73	0.63	-4.66	-0.49	0.76	0.82
63	16	2.30	0.99	0.87	0.86	2.29	1.01	0.89	0.82
64	16	-7.70	-2.52	0.71	2.43	-5.43	-1.73	0.78	2.60
65	16	0.73	0.28	0.96	1.83	0.35	0.13	0.96	1.83
66	16	-0.22	-0.08	0.97	2.19	1.61	0.55	0.98	2.59
67	16	-19.70	-3.55	0.96	2.29	-17.60	-3.30	0.96	2.78
68	16	1.08	0.21	0.97	0.79	-0.23	-0.06	0.99	1.60
69	16	-8.35	-2.42	0.94	1.91	-6.89	-2.02	0.95	2.72
70	16	-0.40	-0.36	0.98	2.91	-0.35	-0.25	0.98	2.89
71	16	-6.40	-2.87	0.92	1.29	-3.17	-2.20	0.97	1.68
72	16	0.25	0.08	0.87	0.79	1.60	0.61	0.92	0.86
73	16	-2.12	-0.73	0.86	1.44	-0.69	-0.22	0.88	1.38
74	16	-9.56	-3.04	0.86	1.52	-5.25	-2.40	0.95	1.36
75	16	-3.98	-1.67	0.85	0.89	-1.29	-1.25	0.98	1.86
76	16	-2.91	-0.71	0.94	0.62	0.67	0.28	0.98	1.18
77	16	-2.94	-1.44	0.96	1.27	-3.57	-1.74	0.97	1.66
78	16	-0.12	-0.06	0.99	1.62	-0.91	-0.44	0.99	1.86
79	16	-2.34	-0.60	0.97	1.34	-4.20	-1.45	0.99	1.99
80	16	-5.93	-1.58	0.92	1.76	-5.63	-1.43	0.92	1.73
81	16	-1.26	-1.44	0.97	1.64	-0.70	-0.71	0.98	1.48
82	16	-0.88	-0.07	0.91	0.74	-4.01	-0.29	0.91	0.95
83	16	-10.67	-2.00	0.97	1.11	-4.83	-1.48	0.99	1.46
84	16	-6.12	-0.75	0.85	0.36	-11.19	-2.00	0.94	1.51
85	16	0.49	0.32	0.93	0.92	1.04	0.61	0.94	0.95
86	16	-17.10	-1.89	0.98	1.28	-4.85	-0.77	0.99	1.28
87	16	-7.60	-1.29	0.92	0.99	-4.53	-1.40	0.98	2.40
88	16	0.35	0.49	0.99	1.81	-0.54	-0.54	0.99	1.99
89	16	-9.88	-3.29	0.97	1.77	-9.99	-3.27	0.97	1.93
90	16	-3.61	-5.20	0.99	1.44	-2.64	-2.68	0.99	1.30
91	16	-1.37	-1.36	0.95	2.45	-1.36	-1.28	0.95	2.43