

On Real and Monetary Causes for Business Cycles in West Germany

By Joachim Scheide, The Kiel Institute of World Economics

The view that monetary policy has an important influence on economic fluctuations has been rejected by the works on real business cycle theory. This proposition is, in part, based on theoretical models in which movements of output are due to shocks in technology only. For example, in the model of *Kydland/Prescott* (1982), money plays no role¹. The force of the new view on business cycles also comes from empirical investigations. It is claimed by economists analyzing economic time series that the behavior of those variables commonly associated with business cycles (GNP, employment, investment, and so on) can be characterized by a random walk; this hypothesis, too, implies that the largest part of economic fluctuations can be attributed to real shocks which have, by definition, persistent effects on the level of activity². A further empirical challenge to the theory of monetary business cycles comes from a somewhat different angle, namely the analysis of vector autoregressions³. On the basis of their findings, several authors reject the view that money has any significant impact on output movements. It is this characteristic of the real business cycle theory that distinguishes it from the alternative theories (*McCallum*, 1986, 398).

In this paper, we want to investigate whether the hypothesis of the irrelevance of monetary policy holds up for West Germany. In particular, we want to analyze the effects of both monetary policy and various real variables on the development of output to see which group performs better or whether both are important. By "performing" we simply mean whether Granger-causality is present⁴.

1 The Data and the Method of Investigation

The variable representing our measure of output is real domestic expenditures⁵. This measure is preferred over real GNP because of the relatively large external sector in West Germany; as has been shown in various studies, the causal link between, for example, monetary policy and domestic demand is closer than

¹ *Lucas* (1987) discusses ways to incorporate money into this neoclassical model.

² The evidence on this hypothesis is mixed, which is also due to the fact that one cannot conclusively discriminate between models that contain a unit root and models with autoregressive coefficients slightly less than one. For a detailed analysis of U.S. data, see *Nelson/Plosser* (1982). The limits of such tests are discussed by *McCallum* (1986). For an empirical analysis for West German data see *Scheide* (1989).

³ Notably *Sims* (1980).

⁴ For a discussion of the meaning and limits of the concept of causality see *Granger* (1980).

⁵ Real GNP minus real net exports.

that between money and GNP⁶. Another reason for this choice is that we also want to look at the possible impact of exports. Given real domestic demand as the variable to be explained, the role of six candidates for explaining cycles is investigated. As far as monetary factors are concerned, the influence of the real money supply M 1 is tested. We also analyze the role of real interest rates⁷. The real variables are those which are commonly referred to when business cycle movements are explained. Not all of them are supply side shocks or “shocks to technology” as mentioned in the real business cycle theory, but they nevertheless reflect influences from the real side. The variables under investigation are terms of trade, real exports, real government expenditures, and real wages⁸. Therefore, we can test the importance of

- the oil price shocks, which led to a sharp decline of the terms of trade in the 1970s and a strong increase in the 1980s;
- the economic activity in other countries, which is, at least to a large extent, exogenous to the West German economy;
- government activity⁹ which, supposedly, played a major role for the economic performance, especially in the late 1960s and in the 1970s; and
- the behavior of labor unions, which has been called aggressive in the 1970s and thus is held to have had an impact on economic activity.

In the tests, only real variables are used. Although it is true that vector autoregressions can be viewed as reduced forms of, possibly, a variety of structural models, they are not immune to the Lucas-critique. In using the real money supply and real interest rates, we come relatively close to shocks of monetary policy¹⁰.

Quarterly data are available from 1960 onwards. Since causality tests require stationarity of the series, we transformed the data by taking the seasonal differences¹¹ of the logs (except for the interest rate). Since some of the original series exhibit a quadratic trend, we also used a linear trend for the growth rates.

⁶ See, for example, *Scheide* (1984).

⁷ The money supply M 1 is deflated with the price index of nominal domestic demand; the real interest rate is approximated by the current nominal rate (3-month money market rate) minus the percentage change of the deflator over the previous year.

⁸ The terms of trade are defined as the ratio between the export and import deflator (NIA-basis). We further weighted the changes of this variable in order to take account of the growing importance of the external sector; this means, since the sum of exports and imports has grown over time relative to GNP, a one percent change of the terms of trade is more important in, say, 1985 than it was in 1965. Real exports are taken from the NIA. Real government expenditures are outlays of total government divided by the GNP deflator. Real wages are wages and salaries according to the NIA, also divided by the GNP deflator.

⁹ The measure of government expenditures is – as far as the impact on output is concerned – less disputed than taxes or budget deficits. See *Barro* (1987).

¹⁰ This interpretation is, however, to be taken with some caution since both the real money supply and real interest rates are also affected by real shocks. We assume throughout the paper that these effects are not dominant, but instead that actions of the central bank play the major role.

¹¹ Differencing is done also in the light of the hypothesis that economic time series are difference- rather than trend-stationary.

To test for Granger-causality, we will use the procedure which has been proposed by several authors and which, for the case of West Germany, has been applied by *Scheide* (1984). This means that the lag length in the vector autoregressions will be chosen according to Akaike's FPE-criterion (final prediction error) which can be preferred over the usual practice of ad-hoc lags¹². The search procedure for the minimum FPE in a system of equations can be described as follows:

1. We will first run univariate autoregressions for a variable y and choose the lag length according to the minimum FPE (optimum is $N-1$).
2. We will then add the second variable x testing all lags. Causality runs from x to y if for any number of lags the FPE is smaller than in the univariate case for y with lag length $N-1$; the optimal system is $y, x (N-1, N-2)$.
3. Steps 1 and 2 will be taken to test for reversed causality, i.e., whether y causes x .
4. A third variable z will be added to the optimal system of y and x to see whether z causes y , or, in the other case, causes x .

This procedure is a shortcut for testing all possible lag lengths¹³, but it seems fairly powerful¹⁴.

The FPE is defined as follows:

$$\text{FPE} = \frac{1}{T} \cdot \frac{T+q}{T-q} \cdot \text{SSR} \quad (1)$$

where T is the number of observations, q is the number of estimated coefficients, and the sum of squared residuals is SSR. In other words, the reduction of the SSR in the regression has to be sufficiently large to outweigh the "penalty" of an increase in q by the addition of another lag.

The tests will be performed for the period 1964:1 to 1987:4¹⁵, i.e., there are 96 observations for each equation. The univariate autoregression will be run for the variable y (seasonal difference of the log) according to:

$$y_t = c + bt + \sum_{i=1}^N a_i \cdot y_{t-i} + u_t; \quad N = 1, 2, \dots, 8. \quad (2)$$

where c is a constant and t takes account of the fact that a trend is present in some of the variables. Lags up to eight quarters will be tested. With the optimal

¹² It is common practice to set the lag length ad hoc; usually, lags of 4, 6 or 8 quarters are used. The results, however, can be biased: existing causality may not be detected, or there may be a spurious causality. Examples are discussed by *Scheide* (1984, 79 ff.).

¹³ As an example, in a system of three variables, 512 equations would have to be estimated if we test up to 8 lags.

¹⁴ For examples supporting this view, see *Hsiao* (1981) and *Scheide* (1984).

¹⁵ This allows us to check relatively long lags.

Table 1 a
Causality Tests for Real Domestic Demand and Six Other Variables¹

Added variable	Optimal lag length for added variable	FPE ²	Significance level residuals ³	Causality (yes/no)
Real M1	1	0.265	0.728	yes
Real interest rate	1	0.282	0.793	yes
Terms of trade	2	0.291	0.701	yes
Government expenditures	1	0.310	0.737	no
Real exports	5	0.298	0.658	yes
Real wages	1	0.304	0.826	no

¹ For the univariate regression of real domestic demand, the optimal lag length is 4, and the FPE is 0.304×10^{-3} .

² Multiplied by 10^3 .

³ The significance level for the rejection of the null hypothesis of white-noise residuals (based on the estimates of the Q-statistic with 27 autocorrelations).

lag length being $N-1$, we will then test whether x causes y ¹⁶:

$$y_t = c + bt + \sum_{i=1}^{N-1} a_i \cdot y_{t-i} + \sum_{j=1}^N d_j \cdot x_{t-j} + v_t; \quad N = 1, 2, \dots, 8. \quad (3)$$

Causality is present if the minimum of the FPE for any of the equations (3) will be lower than the minimum in the univariate case (2). Reversed causality (does y cause x ?) and the influence of other variables (e.g., does z cause x or y ?) will be tested accordingly.

¹⁶ u_t and v_t are the error terms to which the usual assumptions apply.

Table 1 b
Causality Tests for Six Variables and Real Domestic Demand

Variable	Optimal lag length for the uni- variate case (FPE ¹)	Optimal lag length for added variable: domestic demand (FPE ¹)	Significance level residual ²	Causality (yes/no)
Real M1	6 (0.304)	5 (0.303)	0.245	yes
Real interest rate	1 (1490)	1 (1520)	0.561	no
Terms of trade	7 (0.0227)	1 (0.0230)	0.738	no
Real govern- ment expendi- tures	2 (0.365)	1 (0.373)	0.143	no
Real exports	8 (1.26)	1 (1.30)	0.838	no
Real wages	7 (0.144)	3 (0.128)	0.778	yes

¹ FPE multiplied by 10³. ² See Table 1 a.

2 What Causes Output?

As a first step, we analyze the impact of the aforementioned variables on real domestic demand – and vice versa – in various bivariate systems (Table 1 a and 1 b). Given the optimum in the univariate regression for real domestic demand (with lag 4), the six variables mentioned are each, separately, added to this equation. It turns out that our output measure is caused by real M 1, real interest rates, terms of trade and – with the smallest reduction of the FPE – real exports (Table 1 a). For the latter, however, the sum of the coefficients is negative which seems implausible¹⁷. The other results are roughly in line with previous studies on West Germany. Somewhat surprisingly, though, no causal role can be attributed to real government expenditures and real wages.

In the tests for causality in the opposite direction we find that real domestic demand causes the real money supply, although the reduction of the FPE is only minimal (Table 1 b). While there is no impact on other variables, real domestic demand is causal with respect to real wages (with a positive sign). This result is compatible with the hypothesis of a procyclical behavior of real wages¹⁸. In all equations, the tests for autocorrelation in the residuals (based on the Q-statistic) are favorable, i.e., the hypothesis of white noise in the residuals cannot be rejected.

After this preliminary search procedure we will continue with a more detailed analysis in order to find out whether monetary policy still has an effect on output even if other hypotheses are tested or other variables are included. For this purpose, we will use those variables which were found to have a significant impact on real domestic demand, namely real M 1, the real interest rate and the terms of trade.

3 Do Interest Rates Dominate the Money Supply as a Causal Factor?

An important contribution in the debate on real versus monetary business cycle theory is the empirical study by *Sims* (1980) in which it is shown that the explanatory power of the money supply vanishes if the interest rate is included in the system of vector autoregressions¹⁹. While this is viewed by some as evidence against monetarism – at least in its rational expectations version –, the result

¹⁷ One might expect a positive sign because a good export performance is supposed to boost investment spending. However, the result is not at variance with other investigations; for example, it appears also in *Scheide* (1987, 39), where a different method is used.

¹⁸ See, for example, *Scheide* (1984, 101 ff.), where the same result is obtained.

¹⁹ The result for the United States is based on the estimates of the decomposition of variance. In *Sims'* paper, the contribution of innovations in the nominal money stock is substantially reduced (from 37 to 4 percent in the postwar period) if the nominal interest rate is added to the system which includes industrial production. In other words, the money supply is not Granger-causal anymore in the extended system.

Table 2a
Causality Tests for Real Domestic Demand, Real Money Supply
and Real Interest Rates

Bivariate system ¹ (FPE ²)	Added variable (optimal lag)	FPE ² of three-variable system	Significance level residual ³	Causality of added variable (yes/no)
Domestic demand/ money supply (0.264)	Interest rate (1)	0.266	0.793	no
Domestic demand/ interest rate (0.282)	Money supply (1)	0.266	0.793	yes

¹ Optimal system according to Table 1 a.

^{2, 3} See Table 1 a.

Table 2b
Causality Tests for Real Money Supply and Real Interest Rates

Variable (Lag ¹)	Added variable (optimal lag)	FPE ²	Significance level residual ³	Causality (yes/no)
Money supply (6)	Interest rate (2)	0.198	0.777	yes
Interest rate (1)	Money supply (2)	1500	0.878	no

¹ Optimal lag for univariate case. See Table 1 b.

^{2, 3} See Table 1 a.

Table 2c
Causality Tests for Real Money Supply, Real Interest Rates
and Real Domestic Demand

Bivariate System ¹ (FPE ²)	Added variable (optimal lag)	FPE ²	Significance level residual ³	Causality of added variable (yes/no)
Money supply/ interest rate (0.198)	Domestic demand (1)	0.198	0.791	no
Interest rate/ money supply (1500)	Domestic demand (1)	1530	0.858	no

¹ Optimal system according to Table 2 b.

^{2, 3} See Table 1 a.

does in no way imply that actions of the central bank have no impact on output. For this to be true "... it would have to be shown that neither money stock nor interest rate innovations had appreciable explanatory power for output" (McCallum, 1986, 401). Since the U.S. Fed, as well as many other central banks including the Deutsche Bundesbank, pursued an interest rate policy, actions of the monetary authority may show up in the interest rate in addition to or instead of the money supply.

Starting from our results for the bivariate systems where both the real money supply and the real interest rate are causal for real domestic demand, we now test whether one of the two variables of monetary policy dominates the other. Given the optimal lag structure (see Table 1 a) for domestic demand/money supply (4,1) and domestic demand/interest rate (4,1), we add the respective third variable, again testing all lags up to eight quarters (Table 2 a). It turns out that in the first case the interest rate does not improve the result in the output/money-system; the FPE does not decline, the interest rate is no longer causal. For the second case, we can say that the money supply is again causal, and, as the optimal three-variable system happens to be the same²⁰, the impact of the interest rate disappears. Since we can assume to have found the optimal system²¹, we must conclude that, if anything, the causal role of the money supply for output is stronger than that of the interest rate.

To complete the test, we also have to investigate all other possible directions of causality. For the bivariate case of the money supply and the interest rate, it turns out that the interest rate causes money (Table 2 b); in fact, according to the reduction of the FPE, the influence is very strong, and, as to be expected, the sign is negative. There is no causality in the opposite direction. When domestic demand is added to both optimal bivariate systems, no additional explanatory power can be detected, domestic demand is not causal for either the money supply or the interest rate (Table 2 c)²².

While the latter result is not surprising in the light of our previous findings (especially Table 1 b), the causality structures found in Tables 2 a and 2 b need interpretation. First of all, it cannot be said that money plays no role in explaining output movements. Even if the significance of money vanished²³ as the interest rate is added to the system, we could not conclude that monetary policy has no effect. It is true, according to neoclassical theory, that real interest rates are affected by a real disturbance²⁴; however, they do not only reflect changes in the real economy but also actions of the central bank. Although the results

²⁰ The lags are (4, 1, 1) for the system of three variables in both cases; thus the equations are identical.

²¹ Of the possible 512 equations in the three-variable system with up to eight lags.

²² We obtain the same results as in Table 2 c if we change the order of the added variables, i.e., if we add the money supply to the interest rate/domestic demand-system and the interest rate to the money supply/domestic demand-system.

²³ Table 2 a says it does *not*.

²⁴ See Barro (1987) for several examples.

concerning the link between the real interest rate and the real money supply are surprising²⁵ and will need further empirical study, we can say that actions of the central bank, via changes in interest rates or in the money supply, obviously affect output. This result contradicts the notion that monetary policy does not matter.

4 The Impact of Real and Monetary Variables on Output

In Section 2 we found that, among others, both the real money supply and the terms of trade are causal for real domestic demand if a two-variable system is considered. We now test the joint hypothesis by adding the respective third variable to the optimal two-variable system. If the influence of the terms of trade variable is analyzed, we find that this relative price does not improve the system of domestic demand/money supply (Table 3 a), i.e., it is not causal in the three-variable system. This means that the effects of the money supply dominate, which is also revealed by the second result: real M1 is causal for domestic demand in the three-variable system²⁶. It seems, therefore, that even when real shocks are considered, the impulses from the money supply variable (real M1) are more important.

Turning to the analysis of causality in the opposite direction, we find causality running from the terms of trade to the money supply but not vice versa (Table 3 b). While the latter result may be surprising, the former shows that there may either be a reaction of the central bank after a change in the terms of trade (for example, more monetary expansion in the case of a revaluation of the D-Mark, which is in accordance with casual observations) or that a terms of trade improvement raises real M1 simply by reducing the price level. If real domestic demand is included, these results do not change much; it is – as before – only slightly causal with respect to real M1 (i.e., the FPE declines only marginally) and not causal for the terms of trade (Table 3 c).

To sum up, the results of this section are in favor of the view of monetary business cycles because the money supply shows a strong causal link with output. Interest rates and terms of trade are, by themselves, also important; their relevance, however, is significantly reduced or even vanishes if the money supply is taken into account.

²⁵ One would expect, if anything, causality in the opposite direction, i.e., money to cause interest rates.

²⁶ We left out the real interest rate in this analysis. Similar tests, however, were also run for the three-variable system including domestic demand, interest rate and terms of trade. It turns out that in this case, both variables are causal with respect to domestic demand.

Table 3 a
Causality Tests for Real Domestic Demand, Real Money Supply
and Terms of Trade

Bivariate System ¹ (FPE ²)	Added variable (optimal lag)	FPE ² for the added variable	Significance level residual ³	Causality of added variable (yes/no)
Domestic demand/ money supply (0.264)	Terms of trade (2)	0.266	0.587	no
Domestic demand/ terms of trade (0.291)	Money supply (1)	0.266	0.587	yes

¹ Optimal system according to Table 1 a.

^{2, 3} See Table 1 a.

Table 3 b
Causality Tests for Real Money Supply and Terms of Trade

Variable (Lag ¹)	Added variable (optimal lag)	FPE ²	Significance level residual ³	Causality (yes/no)
Money supply (6)	Terms of trade (1)	0.296	0.645	yes
Terms of trade (7)	Money supply (5)	0.0227	0.771	no

¹ Optimal lag for univariate case. See Table 1 b.

^{2, 3} See Table 1 a.

Table 3 c
Causality Tests for Real Money Supply, Terms of Trade
and Real Domestic Demand

Bivariate System ¹ (FPE ²)	Added variable (optimal lag)	FPE ²	Significance level residual ³	Causality of added variable (yes/no)
Money supply/ terms of trade (6,1)	Domestic demand (5)	0.295	0.235	yes
Terms of trade/ money supply (7,5)	Domestic demand (1)	0.0232	0.772	no

¹ Optimal system according to Table 3 b.

^{2, 3} See Table 1 a.

5 Summary and Conclusions

The results of the causality tests suggest that monetary policy still plays an important role for output movements in West Germany. The money supply is strongly causal with respect to domestic demand, and it dominates the other variables (interest rates, terms of trade). The role of interest rates is interesting since they are a causal prior for the money supply. At least in part, this can be attributed to the way monetary policy has been pursued in West Germany. During most of the time of the estimation period, the Deutsche Bundesbank used interest rates as the instrument for monetary policy; therefore, the response of the money supply is not surprising.

These results concerning the strong effects of monetary policy are in accordance with other studies on West Germany²⁷. After all, the business cycles of the postwar period were closely connected with changes in monetary policy. Without oversimplification it can be said that there was no recession without a marked deceleration of monetary expansion, and no boom without rapid monetary expansion. Since money has a lead of several quarters²⁸, this relationship is not one of reversed causality.

Many reservations have been made with respect to real business cycle theory²⁹. One concerns the timing of some variables in relation to output movements. For example, a favorable supply shock should raise the profitability of investment (*Brunner/Meltzer*, 1986, 4). Therefore, one would expect investment activity to accelerate early in the cycle. This, however, is not a regularity of business cycles. Furthermore, we can very often observe changes in real variables which are closely related to changes in monetary policy. The large ups and downs of (real) exchange rates are one example. It would be hard to explain, for example, the sharp trend changes of the US-dollar solely as a response to real shocks. Instead, these changes coincided with changes in the course (or regime) of monetary policy.

It is true, supply shocks have at times been substantial. The oil price increases of the seventies and the decline since late 1985 implied large changes in the "oil bill", adding up to one or two percent of GNP in the case of West Germany. However, we experienced much sharper downturns of economic activity in 1974/75 and 1980/82; if we relied on the real business cycle view, we would have to say that there must have been an extremely large "multiplier". And above all, real shocks of this magnitude could not always be observed in earlier periods. For example, in the course of the recession of 1966/67, such real shocks were not present at all; nevertheless, that recession was about as severe as the downturns in 1974/75 and 1980/82. So it is difficult to make out real shocks of the magnitude and frequency which would be sufficient to account for all economic fluctuations.

²⁷ Contributions by *Trapp* (1976) and *Scheide* (1984) come to the same conclusions.

²⁸ This is the result of several studies. See, for example, *Scheide* (1987).

²⁹ See, for example, *McCallum* (1986) and *Brunner/Meltzer* (1986).

The neoclassical real business cycle theory has radical implications for stabilization policies derived from the Keynesian paradigm; but this is not surprising or new. However, since the view that monetary policy plays no role could not be validated, the idea of monetarist prescriptions cannot be dismissed. In particular, a rule for monetary policy, based on the instrument of the money supply³⁰, would help to stabilize the development of output.

References

- Barro, Robert J. (1987): *Macroeconomics* (2nd ed.). New York.
- Brunner, Karl/Meltzer, Allan H. (Eds.) (1986): *Real Business Cycles, Real Exchange Rates, and Actual Policies*. Carnegie-Rochester Conference Series on Public Policy 25, Amsterdam.
- Doan, Thomas A. (1988): RATS, Version 3.00. Evanston.
- Dotsey, Michael/King, Robert G. (1988): *Rational Expectations Business Cycle Models: A Survey*. Federal Reserve Bank of Richmond, *Economic Review* 74/2, 3–15.
- Friedman, Milton (1977): Nobel Lecture: Inflation and Unemployment. *Journal of Political Economy* 85, 451–472.
- Granger, Clive W.J. (1980): Testing for Causality. A Personal Viewpoint. *Journal of Economic Dynamics and Control* 2, 329–352.
- Hall, Bronwyn H./Rebecca Schnake, Clint Cummins (1987), TSP, Version 4.1. Palo Alto.
- Hsiao, Cheng (1981): Autoregressive Modelling and Money-Income Causality Detection. *Journal of Monetary Economics* 7, 85–106.
- Kydland, Finn E./Prescott, Edward C. (1982): Time to Build and Aggregate Fluctuations. *Econometrica* 50, 1345–1370.
- Langfeldt, Enno/Scheide, Joachim/Trapp, Peter (1989): The Case for Money Supply Rules. *Geld und Währung (Monetary Affairs)* 5, 30–47.
- Lucas, Robert E. (1987): *Models of Business Cycles*. Oxford.
- McCallum, Bennett T. (1986): On “Real” and “Sticky-Price” Theories of the Business Cycle. *Journal of Money, Credit, and Banking* 18, 397–414.
- Nelson, Charles R./Plosser, Charles I. (1982): Trends and Random Walks in Macroeconomic Time Series. *Journal of Monetary Economics* 10, 139–162.
- Scheide, Joachim (1984): Geldpolitik, Konjunktur und rationale Erwartungen. *Kieler Studien* 188, Tübingen.
- Scheide, Joachim (1987): Zur aktuellen konjunkturpolitischen Debatte in der Bundesrepublik Deutschland. *Die Weltwirtschaft*, Heft 1, 33–45.
- Scheide, Joachim (1989): A K-Percent Rule for Monetary Policy in West Germany. *Weltwirtschaftliches Archiv* 125, 326–336.
- Scheide, Joachim (1989): On Real and Monetary Explanations of Business Cycles in West Germany. *Kiel Working Papers* 356, February 1989.
- Sims, Christopher H. (1980): Comparison of Interwar and Postwar Business Cycles: Monetarism Reconsidered. *The American Economic Review* 70, 250–257.
- Trapp, Peter (1976): Geldmenge, Ausgaben und Preisanstieg in der Bundesrepublik Deutschland. *Kieler Studien* 138, Tübingen.

³⁰ For a simple example of a rule for West Germany, see Scheide (1989). A general discussion of the advantages of money supply rules can be found in Langfeldt/Scheide/Trapp (1989).

Summary

On Real and Monetary Causes for Business Cycles in West Germany

The causal role of real and monetary factors for output fluctuations in West Germany is analyzed. Using quarterly data (1964–1987) in tests for Granger-causality, we find that in the bivariate case, output is caused by the real money supply, real interest rates and the terms of trade, respectively. In systems with three variables, neither interest rates nor terms of trade improve forecasts of output based on the money supply. Apparently, the propositions of the real business cycle theory do not hold. The non-neutrality of money implies that a steady monetary policy would help to stabilize output.

Zusammenfassung

Reale und monetäre Ursachen für Konjunkturschwankungen in der Bundesrepublik Deutschland

Der Einfluss von realen und geldpolitischen Variablen auf die Konjunktur in der Bundesrepublik Deutschland wird untersucht. Tests auf Granger-Kausalität mit Quartalsdaten (1964–1987) ergeben, dass im System mit zwei Variablen die Produktion jeweils beeinflusst wird von der realen Geldmenge, den Realzinsen und den Terms of Trade. Werden die Beziehungen zwischen jeweils drei Variablen analysiert, verbessern weder die Zinsen noch die Terms of Trade die Prognose der Produktion, die auf der Geldmenge basiert. Die Behauptung der Theorie realwirtschaftlich bedingter Konjunkturzyklen, die Geldpolitik sei irrelevant, wird nicht bestätigt. Die Nichtneutralität des Geldes impliziert, dass eine stetige Geldpolitik die Konjunkturschwankungen mildern würde.

Résumé

Sur les causes réelles et monétaires des fluctuations conjoncturelles en Allemagne de l'Ouest

L'influence des facteurs réels et monétaires pour les fluctuations conjoncturelles en RFA est examinée. Utilisant des données trimestrielles (1964–1987), les tests à la Granger montrent que dans le système à deux variables la production est causée par les disponibilités monétaires réelles, les taux d'intérêts réels ou les termes de l'échange. Dans des systèmes à trois variables l'influence de la masse monétaire est dominante. Les hypothèses de la théorie des cycles conjoncturels réels ne sont pas affirmées. La non-neutralité de la monnaie implique qu'une stabilité en politique monétaire aiderait à modérer les fluctuations conjoncturelles.