On the Non-neutrality of Money: Evidence from the 1990s

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Abstract

The paper examines the cross-country association between nominal money and real output between 1990 and 2000. Both high money growth rates and declines in money are connected with below-average output growth rates. The association between the monetary base and real output is weaker than the association between M1 (or M2) and real output. We observe no tendency of money changes to precede output changes.

JEL classification: E32, E51

Keywords: Consumer prices; M1; M2; Monetary base; Real output

1. Introduction

One of the most important and interesting problems in macroeconomics is whether nominal money has real effects. Most economists believe that money is neutral in the long run but nonneutral in the short run. Friedman and Schwartz (1963) and Romer and Romer (1989) show that money mattered in the United States. Other studies of the nonneutrality of money include Barro (1978), Wogin (1980), Attfield, Demery, and Duck (1981), Attfield and Duck (1983), and Kormendi and Meguire (1984).

The present paper's goal is to complement the existing literature by providing evidence from all countries for which we have data in the 1990-2000 period. The data are taken from

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the *International Financial Statistics Yearbook* (2002) of the International Monetary Fund. We exclude observations for which there was a methodological change. The paper focuses on the average behavior of the real output growth in extreme situations – falls in monetary aggregates and high growth rates of money (above 50% per year). The output growth is found to be low in both of these extreme situations.

One of the research questions addressed in this paper is whether the behavior of output is more adverse for falls in the monetary base, M1, or M2. It is found that the behavior of output is more adverse for falls in M1 than for falls in the monetary base, and slightly more adverse for falls in M2 than for falls in M1. Hence broader monetary aggregates are more strongly associated with real output than narrower monetary aggregates. This observation is consistent with my findings in Duczynski (2001a, 2001b), where I examine earlier data.

Another research question is whether there exists a tendency of money changes to precede output changes. Unlike GDP, the monetary aggregates are measured from end-of-year data. If T is the year in which the monetary variable falls, the output growth in T (between T-1 and T) in some sense precedes the monetary change in T (the growth rate of output is derived from the output behavior both in T-1 and T). Similarly, the output growth in T+1 follows the monetary change in T. If the output performance between T and T+1 were on average more adverse than the output performance between T-1 and T, it would be an indication that money changes precede output changes. However, this is not observed in the data. In contrast, in Duczynski (2001a, 2001b) I observe some tendency of money changes to precede per capita output changes (I use the Summers-Heston data set for output per capita). Since it is more natural to observe monetary changes to precede output changes (the monetary policy is plausibly effective with a lag), I can speculate that the quality of the Summers-Heston data might be better than the quality of the GDP data of the International Monetary Fund.

In addition, the paper examines the average output performance in the years in which consumer prices declined. The output growth rate is below the long-run cross-country average in these situations. Thus the price level is procyclical. This observation underscores the importance of demand shocks in business fluctuations.

2. Channels of monetary policy

Money affects real output through the interest rate channel, the exchange rate channel, the equity channel, the bank lending channel, and the balance sheet channel. A monetary expansion leads to lower interest rates. Lower interest rates stimulate demand for investment

goods and consumer durable goods (the interest rate channel). In an open economy with flexible exchange rates, lower interest rates induce capital outflow and the exchange rate depreciation. This leads to higher net exports and higher output (the exchange rate channel). Lower interest rates increase prices of securities. The wealth of households increases, which stimulates consumption (the equity channel). A monetary contraction decreases the supply of credit in an economy. This affects the real economy since many firms do not have easy substitutes for bank loans (the bank lending channel). A monetary contraction also decreases the net worth and cash flows of firms, which exacerbates problems with asymmetric information in credit markets (the balance sheet channel).

3. Monetary nonneutrality in selected previous studies

Friedman and Schwartz (1963) describe the monetary development in the United States in 1867-1960. The book starts with the greenback period and ends with the postwar rise in the velocity of money. It presents the evolution of money, income, prices, and velocity. Attention is paid to the Great Contraction in 1929-1933. Apart from banking panics, Friedman and Schwartz identify four periods of monetary shocks (January-June 1920, October 1931, June 1936-January 1937, and, in general, the passivity of the Fed in the Depression years 1929-1931) in which the monetary movement was unusual given economic conditions. They document that these monetary shocks were associated with declines in the real economic activity.

Romer and Romer (1989) follow the narrative approach of Friedman and Schwartz. Unlike Friedman and Schwartz, they count as a monetary shock only situations in which the Fed attempted to exert a contractionary influence on the real economy in order to reduce inflation. They add shocks in 1933 and 1941 and do not consider the shock in the early stages of the Great Depression. They carry out an analysis for the postwar period with shocks in October 1947, September 1955, December 1968, April 1974, August 1978, and October 1979. They show that these contractionary measures really had significant real effects. The effects of monetary policy were found to be more persistent in the postwar era than in the interwar period. Demand disturbances were observed to be a primary source of postwar economic fluctuations. Romer and Romer acknowledge the difficulty of the implementation of the narrative approach in the interwar period.

A complementary approach is the statistical approach (applied in the present paper). Attfield and Duck (1983) and Kormendi and Meguire (1984) are examples of studies which

use the statistical approach. These studies focus on the effects of unanticipated monetary changes. Attfield and Duck examine data from 11 countries. They show that monetary growth affects real output only if it is unpredictable and that the effectiveness of monetary policy decreases with the variance of the money growth. Kormendi and Meguire examine 47 countries, observing a short-run nonneutrality of money and a long-run monetary neutrality. The maximum effect of a monetary shock on real output occurs within a year of the shock. Consistently with the rational expectations hypothesis, Kormendi and Meguire observe that effectiveness of monetary policy decreases with the variance of monetary shocks.

4. The results

Declines in M1

Table 1 presents the observations in which M1 declined. Table 1 also presents the growth rate of real output in the given year (g) and in the subsequent year (g(+1)). The growth rates of M1 are under the code 34 x (money) in the *International Financial Statistics*. The growth rates of real output are under the code 99 bp x. The average growth rate of M1 in Table 1 is –7.17% (standard deviation 8.86%). The average g is 1.57% (118 observations, standard deviation 6.37%). The average g(+1) is 1.86% (112 observations, standard deviation 5.21%). In comparison, the arithmetic average of the growth rates of output in the world between 1990 and 2000 is 3.62%. Both the average g and the average g(+1) differ significantly from 3.62% (the t-statistic is 3.50 for g and 3.58 for g(+1)). Thus there exists a statistically significant association between M1 and real output. Since the average for g(+1) exceeds the average for g, there is in some sense no tendency of money changes to precede output changes (although money declines are followed by slow growth of output, they are also preceded by slow output growth).

Declines in the monetary base

The growth of the monetary base is under the code 14 x (reserve money) in the *International Financial Statistics*. There are 242 observations in which the monetary base declined between 1990 and 2000 and for which output data are available. The average growth rate of the monetary base in these situations is –9.56% (standard deviation 9.67%). The average g is 2.54% (238 observations, standard deviation 5.47%). The average g(+1) is 2.48%

(231 observations, standard deviation 4.27%). Both of these averages are significantly below the long-run world average, 3.62% (the t-statistic is 3.05 for g and 4.06 for g(+1)). It is of some interest to compare the declines in the monetary base to the declines in M1. Although the average decline in the monetary base (9.56%) is larger than the average decline in M1 (7.17%), the behavior of output is not so adverse for the monetary base. Thus M1 is more strongly associated with real output than the monetary base.

Declines in M2

The growth rate of M2 is under the code 35l x (money plus quasi money) in the *International Financial Statistics*. There are 74 observations in which M2 declined and for which output data are available (see Table 2). The average growth rate of M2 is –7.44% in these situations. The average output growth rate g is 0.63% (74 observations, standard deviation 8.34%). The average g(+1) is 2.16% (70 observations, standard deviation 6.12%). The average g is significantly below the world long-run average, 3.62% (the t-statistic is 3.08). The average g(+1) is also significantly below the world average (the t-statistic is 2.00). If the declines in M2 are compared to the declines in the monetary base, it follows that the behavior of real output is more adverse for the declines in M2 (both for g and g(+1)) despite the fact that the average decline in the monetary base (9.56%) exceeds the average decline in M2 (7.44%). Thus M2 is more strongly associated with real output than the monetary base. We observe only a small difference if the declines in M2 are compared to the declines in M1. The average decline in M2 (7.44%) only slightly exceeds the average decline in M1 (7.17%). The average decline in M2 would be smaller if we excluded the decline of 63.3% in Bulgaria in 1993. The average of g for the declines in M2 (0.63%) is below the average of g for the declines in M1 (1.57%). On the other hand, the average of g(+1) for the declines in M2 (2.16%) is above the average of g(+1) for the declines in M1 (1.86%). For the declines in M2, the arithmetic average of the averages of g and g(+1) is 1.40%. For the declines in M1, the arithmetic average of the averages of g and g(+1) is 1.72%. Thus, the behavior of output is somewhat more adverse for the declines in M2 than for the declines in M1. This is (limited) evidence that M2 is more strongly associated with real output than M1.

High growth of M1

This section considers situations in which M1 grew at a higher rate than 50% per year (see Table 3). The average g is 1.69% (standard deviation 6.08%, 95 observations). This is significantly below the world average of 3.62% (the t-statistic is 3.09). The average of g(+1) is 2.59% (standard deviation 5.44%, 90 observations). This is marginally significantly below 3.62% (the t-statistic is 1.80). Thus the rapid growth of money is connected with slow growth of output.

Declines in consumer prices

The growth of consumer prices is under the code 64 x in the *International Financial Statistics*. For declines in consumer prices, the average growth rate of output is 2.65% (standard deviation 5.34%, 57 observations). This average is lower than the world long-run average 3.62%. However, the given difference is statistically insignificant (the t-statistic is 1.37). This is limited evidence that the price level is procyclical.

5. Conclusion

This paper studies the association between nominal monetary aggregates and real output in extreme situations between 1990 and 2000 in a large number of countries. The output growth performance is below average both for high money growth rates and for declines in money. The association between the monetary base and real output is weaker than the association between M1 (or M2) and real output. For declines in money in T, the growth rate of output between T and T+1 (following the decline in money) is not lower than the growth rate of output between T-1 and T (preceding the decline in money). In this sense there is no tendency of money changes to precede output changes. In addition, the paper provides (limited) evidence that the price level is procyclical (declines in consumer prices are connected with a below-average output growth performance). This observation stresses the importance of demand shocks in business fluctuations.

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Table 1: Growth rates of M1 and real output in the years in which M1 declined.

Country	Year	ΔM1/M1 (%)	g (%)	g(+1) (%)
INDUSTRIAL COUNTRIES				
Denmark	1992	-0.9	0.6	0.0
	1994	-1.4	5.5	2.8
Greece	2000	-4.0	4.1	4.1
Ireland	1991	-1.7	1.9	3.3
	1997	-17.4	10.8	8.6
New Zealand	1996	-4.5	3.1	2.6
Spain	1992	-2.0	0.7	-1.2
Switzerland	1990	-1.6	3.7	-0.8
	1991	-1.7	-0.8	-0.1
	2000	-2.1	3.0	1.3
United States	1995	-0.9	2.7	3.6
	2000	-1.7	4.1	1.2
DEVELOPING COUNTRIES				
Africa				
Benin	1993	-13.2	3.5	4.4
	1995	-13.2	4.6	5.5
	1998	-4.7	4.5	5.0
Botswana	1992	-1.1	6.2	-0.2
Burkina Faso	1990	-1.7	-1.0	9.5
	1998	-2.6	5.5	6.4
	1999	-1.9	6.4	2.4
Burundi	1995	-3.3	-7.0	-8.6
Cameroon	1990	-7.5	-6.7	-3.9
	1992	-27.6	-3.0	-3.2
	1993	-14.1	-3.2	-2.6
	1995	-11.6	3.3	5.0
	1996	-1.6	5.0	5.0
Congo	1991	-7.3	2.4	1.7

	1993	-19.7	-1.0	-5.5
	1998	-13.6	3.7	-3.2
Côte d'Ivoire	1991	-3.1		-0.1
	1992	-4.0	-0.1	-0.4
Gambia	1994	-11.7	3.6	-4.1
Guinea-Bissau	1991	-74.8	3.8	1.8
Lesotho	1999	-2.6	2.0	2.5
Madagascar	1990	-4.0	3.1	-6.3
Niger	1990	-11.7	-0.8	1.4
	1992	-10.5	0.7	1.0
	1996	-9.5	3.9	2.4
	1997	-19.4	2.4	8.6
	1998	-18.5	8.6	
Rwanda	1998	-0.8	9.2	6.1
Senegal	1990	-11.5	3.9	-0.4
	1993	-9.0	-2.2	2.9
	1997	-0.1	5.0	5.7
Seychelles	1990	-1.3	7.5	2.7
	1994	-2.7	-0.8	-0.6
Togo	1992	-27.2	-3.8	-16.6
	1993	-18.5	-16.6	16.8
	1996	-7.8	9.7	4.3
Asia				
China, Hong Kong	1997	-3.8	5.0	-5.3
	1998	-4.6	-5.3	3.0
Korea	1997	-11.4	5.0	-6.7
Lao	1990	-0.2	6.7	4.0
Malaysia	1998	-29.4	-7.4	5.8
Papua N.G.	1990	-0.2	-3.0	9.5
	1997	-5.5	-3.9	-1.1
Philippines	2000	-1.3	4.0	3.4
Samoa	1991	-9.2	-27.9	-2.3

	1992	-11.4	-2.3	2.4
	1996	-0.2	6.1	1.6
Singapore	1998	-1.0	-0.1	6.9
Thailand	2000	-7.5	4.6	1.8
Tonga	1992	-12.7	-3.8	-0.1
	1994	-5.5	4.8	
Vanuatu	1990	-10.9	5.2	10.4
Europe				
Armenia	1999	-0.9	3.3	
Croatia	1998	-1.4	2.5	-0.8
Czech Republic	1998	-3.4	-1.0	0.5
Estonia	1998	-6.3	5.0	-0.7
Lithuania	1999	-5.3	-3.9	3.9
Malta	1996	-1.9	4.0	4.9
Poland	2000	-6.4	4.0	1.0
Slovak Republic	1997	-4.4	6.2	4.1
	1998	-11.4	4.1	1.9
Middle East				
Bahrain	1994	-5.5	-0.3	3.9
	1995	-3.6	3.9	4.1
Jordan	1995	-0.2	6.4	2.1
	1996	-11.8	2.1	3.1
	1998	-0.8	2.9	
Kuwait	1992	-7.7	-7.3	33.8
	1998	-8.3	3.2	-1.6
Oman	1995	-0.3	4.8	2.9
	1998	-8.0	2.7	-0.2
Saudi Arabia	1993	-1.6	-0.6	0.5
	1995	-0.2	0.5	1.4
	1998	-0.6	2.8	-0.8
United Arab Emirates	1990	-2.7	17.5	0.8
Yemen	1996	-4.5	2.9	8.1

Western Hemisphere				
Antigua and Barbuda	1996	-8.7	6.6	5.2
	1999	-1.3	3.7	
Argentina	2000	-9.1	-0.8	-4.5
Barbados	1991	-5.9	-3.9	-7.2
	1993	-5.1	0.8	4.3
	1995	-17.0	2.3	2.5
	1997	-1.1	2.9	4.4
Bolivia	1999	-5.8	0.4	2.4
Chile	1998	-13.3	3.2	-1.0
Colombia	1998	-7.8	0.6	-4.2
Costa Rica	1995	-6.0	3.9	0.9
Dominica	1993	-12.1	1.7	1.4
	1994	-1.8	1.4	1.7
	1997	-0.3	1.9	
Dominican Republic	2000	-1.1	7.7	
Ecuador	1995	-20.3	2.3	2.0
El Salvador	1997	-2.1	4.2	3.8
	2000	-11.7	-40.4	1.8
Grenada	1991	-1.7	2.9	0.6
Haiti	1990	-12.6	0.2	4.7
	1996	-13.1	2.7	2.7
Nicaragua	1993	-4.6	-0.4	3.3
Peru	2000	-5.4	3.1	0.2
St. Kitts and Nevis	1990	-2.0	2.3	0.4
	1994	-4.1	5.1	3.7
	1997	-1.0	6.8	1.1
St. Lucia	1996	-6.9	0.8	0.5
St. Vincent &	1991	-17.5	1.5	5.9

Grenadines				
	1993	-0.3	2.4	-2.0
	1995	-0.1	7.6	1.4
Trinidad and Tobago	1992	-7.7	-1.6	-1.5
Uruguay	2000	-3.5	-1.4	-3.1

Notes: g denotes the growth rate of real output in the year of the monetary decline, while g(+1) denotes the growth rate of real output in the subsequent year.

Table 2: Growth rates of M2 and real output in the years in which M2 declined.

Country	Year	ΔM2/M2 (%)	g (%)	g(+1) (%)
INDUSTRIAL COUNTRIES				
Denmark	1992	-0.7	0.6	0.0
	1994	-10.0	5.5	2.8
	1999	-0.9	2.3	3.0
Finland	1992	-1.0	-3.3	-1.1
	1996	-2.9	4.0	6.3
France	1991	-4.7	1.1	1.2
	1992	-0.1	1.2	-0.9
Italy	1997	-5.8	2.0	1.8
Japan	1992	-0.1	0.9	0.5
Luxembourg	1997	-4.5	9.1	5.9
Norway	1993	-0.7	2.7	5.5
Sweden	1998	-0.4	3.6	4.5
Switzerland	2000	-16.9	3.0	1.3
DEVELOPING COUNTRIES				
Africa				
Benin	1993	-3.1	3.5	4.4
	1995	-1.8	4.6	5.5
	1998	-3.6	4.5	5.0

Botswana	1990	-14.0	6.4	8.8
	1993	-14.4	-0.2	4.0
Burkina Faso	1990	-0.5	-1.0	9.5
Burundi	1995	-11.2	-7.0	-8.6
	1998	-3.7	4.5	
Cameroon	1990	-1.7	-6.7	-3.9
	1992	-21.9	-3.0	-3.2
	1993	-9.2	-3.2	-2.6
	1995	-6.2	3.3	5.0
	1996	-10.1	5.0	5.0
Congo	1991	-4.2	2.4	1.7
	1993	-26.6	-1.0	-5.5
	1995	-0.1	2.2	4.3
	1998	-12.8	3.7	-3.2
Côte d‘Ivoire	1990	-2.6	-1.1	
	1992	-1.2	-0.1	-0.4
	1993	-1.4	-0.4	2.0
Gambia	1994	-3.8	3.6	-4.1
Guinea-Bissau	1991	-67.3	3.8	1.8
Lesotho	1999	-5.1	2.0	2.5
Niger	1990	-4.1	-0.8	1.4
	1991	-8.9	1.4	0.7
	1992	-1.0	0.7	1.0
	1996	-6.6	3.9	2.4
	1997	-21.3	2.4	8.6
	1998	-18.5	8.6	
Rwanda	1994	-3.7	-49.7	34.2
Senegal	1990	-4.8	3.9	-0.4
	1993	-12.6	-2.2	2.9
Seychelles	1994	-0.8	-0.8	-0.6
Togo	1992	-18.0	-3.8	-16.6
	1993	-16.2	-16.6	16.8
	1996	-6.3	9.7	4.3

Asia				
Malaysia	1998	-1.4	-7.4	5.8
Mongolia	1998	-1.7	3.5	
Papua N.G.	1994	-1.3	5.9	-3.3
Samoa	1991	-1.9	-27.9	-2.3
Singapore	2000	-2.0	10.3	-2.0
Tonga	1992	-4.8	-3.8	-0.1
Vanuatu	1991	-0.7	10.4	-0.7
	1992	-2.6	-0.7	4.5
Europe				
Bulgaria	1993	-63.3	-1.5	1.8
Croatia	1999	-1.8	-0.8	3.7
Latvia	1995	-21.4	-0.8	3.3
Lithuania	1996	-3.5	4.7	7.3
Middle East				
Bahrain	1990	-11.6	4.4	11.2
Jordan	1996	-0.9	2.1	3.1
Kuwait	1996	-0.6	-2.7	1.2
	1998	-0.8	3.2	-1.6
United Arab Emirates	1990	-8.2	17.5	0.8
Western Hemisphere				
Antigua and Barbuda	1996	-4.0	6.6	5.2
Argentina	1995	-2.8	-2.8	5.5
Barbados	1991	-1.1	-3.9	-7.2
Dominica	1993	-2.2	1.7	1.4
Mexico	2000	-5.7	6.6	-0.3
Peru	2000	-0.4	3.1	0.2
St. Vincent & Grenadines	1991	-1.2	5.1	1.5
Trinidad and	1992	-6.9	-1.6	-1.5

Tobago				

Table 3: Growth rates of M1 and real output in the years in which the growth of M1 exceeded 50 %.

Country	Year	ΔM1/M1 (%)	g (%)	g(+1) (%)
DEVELOPING COUNTRIES				
Africa				
Benin	1994	67.3	4.4	4.6
Congo, Democratic Republic of	1990	176.0	-6.6	-8.4
	1991	2387.0	-8.4	-10.5
	1992	4114.0	-10.5	-13.5
	1993	2461.0	-13.5	-3.9
	1994	5635.0	-3.9	0.7
	1995	407.0	0.7	-0.9
Congo, Republic of	2000	68.2	8.0	
Côte d'Ivoire	1994	61.7	2.0	7.1
Ghana	1992	53.0	3.9	4.9
	1994	50.3	3.3	4.0
Guinea-Bissau	1990	729.2	6.1	3.8
	1992	83.1	1.8	2.5
	1994	58.1	5.0	3.7
	1996	51.0	4.8	4.8
	1997	236.3	4.8	
Madagascar	1994	56.5	-0.1	1.7
Malawi	1994	50.5	-11.6	13.8
	1998	56.2	2.2	3.6
Mozambique	1993	52.0	6.8	7.0
	1994	50.5	7.0	3.3

Namibia	1996	53.6	3.2	4.2
Nigeria	1993	57.0	2.2	-0.6
Senegal	1994	54.4	2.9	5.2
Sierra Leone	1990	64.3	3.4	2.4
	1991	76.1	2.4	-19.0
	1997	57.1	-17.6	-0.9
Togo	1994	104.6	16.8	6.9
Zambia	1990	60.6	-0.5	
	1991	77.5		-1.7
	1995	61.1	-2.3	6.5
Zimbabwe	1993	94.9	1.3	6.8
	1995	52.4	-0.7	7.6
	1997	53.7	4.3	
Asia				
Lao	1998	111.4	4.0	7.3
	2000	57.3	5.7	
Mongolia	1993	142.8	-3.0	2.3
	1994	78.2	2.3	6.3
Papua N.G.	1996	52.0	7.7	-3.9
Thailand	1999	64.0	4.4	4.6
Europe				
Armenia	1994	907.3		6.9
	1995	124.3	6.9	5.9
Belarus	1995	273.2	-10.4	2.8
	1997	115.5	11.4	8.4
	1998	139.1	8.4	3.4
	1999	188.4	3.4	5.8
	2000	117.8	5.8	4.1
Bulgaria	1996	115.7	-10.1	-6.9
Croatia	1994	112.2	5.8	6.8
Czech Republic	1994	50.2	2.2	5.9
Poland	1990	401.1	-11.4	-7.0
Romania	1991	214.3	-13.1	-8.7

	1993	95.0	1.5	3.9
	1994	107.8	3.9	7.1
	1995	57.7	7.1	3.9
	1996	58.7	3.9	-6.1
	1997	66.9	-6.1	-4.8
	2000	55.9	1.8	5.3
Slovenia	1992	133.7	-5.5	2.8
Turkey	1990	58.4	9.3	0.9
	1992	72.5	6.0	8.0
	1993	64.8	8.0	-5.5
	1994	81.5	-5.5	7.2
	1995	68.3	7.2	7.0
	1996	129.5	7.0	7.5
	1997	69.1	7.5	3.1
	1998	63.1	3.1	-4.7
	1999	77.0	-4.7	7.2
	2000	53.5	7.2	
Western Hemisphere				
Argentina	1991	148.6	10.6	9.6
Brazil	1990	2333.6	0.4	1.0
	1991	429.4	1.0	-0.5
	1992	981.8	-0.5	4.9
	1993	2017.8	4.9	5.8
	1994	2195.4	5.8	4.2
Guyana	1990	54.5	-4.7	6.0
	1991	65.5	6.0	7.8
Jamaica	1991	94.7	0.8	1.7
	1992	71.3	1.7	2.0
Mexico	1990	63.1	5.1	4.2
	1991	123.9	4.2	3.6
Nicaragua	1990	6286.7	-0.1	-0.2
	1991	1336.9	-0.2	0.4

Peru	1990	6724.8	-3.7	2.2
	1991	127.2	2.2	-0.4
	1992	76.9	-0.4	4.8
	1993	52.6	4.8	12.8
	1997	69.1	6.7	-0.5
Suriname	1993	87.6	-4.5	-0.8
	1994	245.6	-0.8	
Uruguay	1990	96.2	0.3	3.5
	1991	96.5	3.5	7.9
	1992	71.2	7.9	2.7
	1993	57.9	2.7	7.3
Venezuela	1991	52.5	9.7	6.1
	1994	139.2	-2.3	4.0
	1997	77.0	6.4	0.2