Higher inflation rates and international imbalances

by

H. GLEJSER
Professor V.U.B.

I. HALBERTHAL
Researcher V.U.B.

1. Introduction

In this note, we have tried to answer the following questions :

1. — Is there an acceleration of inflation in every developed country ?

2. — Is there a stability in the ranking of these countries with regard to their respective inflation rates ?

3. — If the answer to question 1 is positive, do the higher inflation rates contribute to increase international imbalances ?

2. The tests

All tests were made on both retail and wholesale prices.

The wholesale price index eliminates, to a major extent, the influence of the relative rise of service prices which do not have much influence upon the balance of payments, services being rarely exported [1].

The sample consists of 19 industrialised nations : Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, South Africa, Sweden, Switzerland, the United Kingdom and the United States.

We considered 2 periods, the first from 1953 to 1963 and the second from 1963 to April 1970. We calculated an average annual rate of price increase for each country and period (see the table).

To test for increases in international imbalances, we calculated a relative rate of inflation i.e. the ratio of the country's rate and the

---

[1] Japan provides a good case in point : as labor productivity has been rising very fast in industry there, service prices and thus retail prices have tended to increase more than the international average; however her wholesale prices rose less than the average.

average rate for the 19 countries. We then computed the standard deviation of those relative rates.

The same calculations were made with only the seven most important countries in world trade : Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

3. Results

3.1. *The means of the rates of inflation are* :

a) retail price : — first period : 2.63 %
                   — second period : 4.20 %

b) wholesale price : — first period : 1.27 %
                      — second period : 2.86 %

Acceleration of inflation from the first to the second period is present for each of the 19 countries in both retail and wholesale price series except for France.

The probability that, if the two samples (first and second period), in both series, come from an universe where the rate is the same, is then 20×2^{-18} i.e. of the order of magnitude of one tenthousandth.

We can thus conclude that a generalized acceleration of inflation has taken place.

3.2. *Stability in the ranking*

Spearman's coefficient of rank correlation between the two periods is :

— retail price : $r = 0.69$, thus significant at the 1 % confidence level (0.23).

— wholesale price : $r = 0.74$, thus significant at the 1 % confidence level (0.23).

3.3. *International Imbalances*

The standard deviations of the *relative* rates are :

a) for the 19 countries :

— retail price : — first period : $sr_1 = 0.82$ %
                  — second period : $sr_2 = 0.93$ %

An F test does not reject the zero hypothesis of same variance at a significance level of 5 %.

TABLE :

Inflation rates in 19 countries

1953-1963

	retail prices		wholesale prices	
	average annual rate	rank	average annual rate	rank
1. Australia	2.13	7	0.61	4
2. Austria	2.70	9	1.76	15
3. Belgium	1.40	2	0.52	3
4. Canada	1.40	2	1.06	10
5. Denmark	3.71	17	1.40	12
6. Finland	4.09	18	2.90	18
7. France	4.24	19	3.48	19
8. Germany	2.01	5.5	0.62	5
9. Ireland	2.52	8	1.76	15
10. Italy	2.92	13	0.73	6
11. Japan	3.20	15.5	0.10	1.5
12. Netherlands	2.74	10	0.10	1.5
13. New Zealand	2.78	11	1.28	11
14. Norway	2.92	13	1.52	13
15. South Africa	2.01	5.5	0.94	9
16. Sweden	3.20	15.5	1.76	15
17. Switzerland	1.76	4	0.84	7.5
18. United Kingdom	2.92	13	1.89	17
19. United States	1.40	2	0.84	7.5
Mean	2.63		1.27	

1963 — April 1970

	retail prices		wholesale prices	
1. Australia	2.98	2	2.05	4
2. Austria	3.51	7	2.93	10
3. Belgium	3.77	9	2.47	6
4. Canada	3.47	6	2.54	9
5. Denmark	6.00	19	3.47	17
6. Finland	5.66	18	5.22	19
7. France	3.79	10	3.42	16
8. Germany	2.84	1	0.87	1
9. Ireland	5.59	17	4.89	18
10. Italy	3.63	8	2.52	7
11. Japan	5.51	16	1.75	3
12. Netherlands	5.10	15	3.21	13
13. New Zealand	4.18	11	3.07	12
14. Norway	4.88	14	3.04	11
15. South Africa	3.37	4	2.53	8
16. Sweden	4.36	12	3.24	14
17. Switzerland	3.25	3	1.61	2
18. United Kingdom	4.47	13	3.26	15
19. United States	3.44	5	2.24	5
Mean	4.20		2.86	

— wholesale price :   — first period   : sw_1 = 0.84 %

      — second period : sw_2 = 0.98 %

An F test again does not reject the zero hypothesis at a level of 5 %.

b) for the 7 biggest countries a decrease takes place in the variances.

— retail price : — first period   : $s'r_1$ = 0.95 %

      — second period : $s'r_2$ = 0.78 %

An F test, of course, does not reject the zero hypothesis at a level of 5 %.

— wholesale price : — first period   : $s'w_1$ = 1.02 %

      — second period : $s'w_2$ = 0.80 %

An F test again does not reject the zero hypothesis at a level of 5 %.

4. Conclusions

4.1. *Acceleration of inflation*

An acceleration took place for each country.

4.2. *Stability of the ranking*

There is a high and significant degree of stability in the ranking.

4.3. *International Imbalances*

Acceleration of inflation did not increase significantly the risks of international imbalances. On the contrary, as far as large countries are concerned, it seems that, due to the conversion of the last reluctant countries (the U.S. and Canada) to « Keynesianism », there is now more homogeneity in the inflation rates than 10 years ago.