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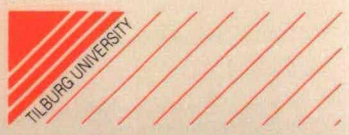
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**CENTRAL BANK INDEPENDENCE IN
ANOTHER ELEVEN COUNTRIES**

By Sylvester Eijffinger and
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Central Bank Independence in Another Eleven Countries

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by *Sylvester Eijffinger and Martijn van Keulen**

1. Introduction

In recent years, there has been a growing interest in the independence of central banks. This can be explained by the shapening of the European Central Bank in context of the European Economic and Monetary Union, especially after the Treaty of Maastricht in December 1991.

The theoretical rationale for the independence of central banks is the so-called Rules versus Discretion debate. This discussion pleads in favour of monetary policy rules as governments are thought to manipulate in a discretionary way policy instruments to stimulate economic growth and employment in the short run. To prevent governments from doing this, this view argues for explicit monetary legislation in order to make central banks independent of governments and/or for fixed monetary policy rules. A central bank can only fight inflation in the long run if it cannot be influenced by directives of the government. A credible and steady preannounced monetary policy generates a better pay-off in terms of inflation and unemployment than a discretionary policy, when macroeconomic outcomes are dependent on the expectations with regard to the future monetary policy.

On the ground of this debate one would expect that countries with independent central banks should also have lower levels of inflation.

In the literature several authors have written about the presumption of an independent central bank. Bade and Parkin (1988), Alesina (1988, 1989), Grilli, Masciandaro and Tabellini (1991), Cukierman (1992) and Eijffinger and Schaling (1992, 1993) constructed indices to compare the degree of independence of central banks in several countries. Of course, the limits of the index approach are quite evident. E.g. the Czech central bank is found to be legally very independent which does not mean that this central bank is also independent in practice. Actual independence implies not only legal independence but also a tradition and culture of monetary stability with the monetary authorities.

Alesina and Summers (1990), De Haan and Sturm (1992), Cukierman (1992) and Eijffinger and Schaling (1993) also examined the empirical relationship between the degree of central bank independence and (the variability of) inflation and economic growth.

In this study the different indices for central bank independence of Bade and Parkin, Alesina, Grilli, Masciandaro and Tabellini and Eijffinger and Schaling are put together and applied to a new group of eleven countries. (Austria, Denmark, Finland, Hungary, Luxembourg, New Zealand, Norway, Poland, Portugal, Spain and the Czech Republic). However, the legal indices for central bank independence of Cukierman are not incorporated in our study because of a lack of sufficiently detailed information on most countries, especially regarding the limitations on lending. Then, we investigate the empirical relation between independence and inflation.

This study is built up as follows. In Section 2 the different indices of central bank independence are described and applied to the group of eleven countries. The results for every index are compared with the inflation rates and differences between the indices are explained. Section 3 contains an empirical study: We try to find significant relationships, first, between average inflation and central bank independence and, second, between inflation variability and

*) The authors thank David Archer, Forrest Capie, Alex Cukierman, Lex Hoogduin, Eric Schaling, Jerzy Stopyra and two anonymous referees for valuable comments on an earlier version. Of course, the usual disclaimer applies. Sylvester Eijffinger and Martijn van Keulen are at the CentER for Economic Research, Tilburg University and College of Europe respectively University of South-Carolina.

central bank independence.

2. Four Indices of Central Bank Independence

2.1 The Index of Bade and Parkin (1988)²⁾

In their study Bade and Parkin (BP) investigate the cross-country relationships between monetary policy and central bank legislation. They describe the central bank law on the basis of three characteristics:

- (i) the relationship between central banks and governments with respect to the formulation of monetary policy,
- (ii) the procedures for appointment and dismissal from office of the directors of central banks,
- (iii) the financial and budgetary relation between central banks and governments.

Features (i) and (ii) are used by BP to classify the central banks according to their degree of policy independence, feature (iii) is used for the classification as to their degree of financial independence. In this study we do not include (iii) as this feature is less comparable with the features used in the other indices. On the basis of (i) and (ii) BP construct their index of policy independence. The degree of policy independence is defined by three criteria:

- (1) Is the central bank the final monetary policy authority?
- (2) Is a government official on the bank board?
- (3) Are some board appointments outside government control?

After having studied the central bank laws of the eleven countries it can be concluded that the central banks of Luxembourg (-1994), New Zealand, Norway, Poland, Portugal and Spain (1994) are dependent on their respective governments with respect to monetary policy. The central banks of Austria, Denmark, Finland, Hungary, Luxembourg (+1994), Spain (+1994) and the Czech Republic are independent. However, legal independence does not necessarily implies actual independence. These results are summarized in table 1. This table shows whether a central bank is independent on the ground of the articles of the respective central bank laws.

Table 1
Central Bank Laws: Monetary Policy

Country	Central bank law	Article(s)	Final authority
see note below			
Austria	National Bank Act 1984	4	b
Denmark	National Bank of Denmark Act 1936	1, 25 (By-Laws)	b
Finland	Regulations for the Bank of Finland 1925	2, 16, 17	b
Hungary	Act LX of 1991 on the National Bank of Hungary	6	b
Luxembourg	Loi du 20 Mai 1983 portant création d'un Institut Monétaire Luxembourgeois Loi relative à l'Institut Monétaire Luxembourgeois du 22 Octobre 1993	12(3), 28 2	g b
New Zealand	Reserve Bank of New Zealand Act 1989	8	g

2) R. Bade and M. Parkin: 'Central Bank Laws and Monetary Policy', Department of Economics, University of Western Ontario, Canada, October 1988.

Norway	Act of 24 May 1985 relating to Norges Bank and the Monetary System	2	g
Poland	Act on Narodowy Bank Polski 1989	6.2.2	g ³⁾
Portugal	Organic Law 1990	3	g
Spain	Law 30, 'Regulan los órganos rectores del Banco de España', 21.06.1980 Law 01.02.1993, 'Proyecto de Ley Autonomia del Banco de España'	3	g
		2	b
Czech Republic	Act on the Czech National Bank of 17.12.1992	5.1	b

Notes: b = bank
g = government

Table 2 gives information about the number of government officials on the bank board and the proportion of board members appointed by the government.

Table 2
Central Bank Laws: Appointments of Bank Board

Country	Central bank law	Articles	Government officials on policy board	Proportion of policy board appointed by government
see note below			(b)	(c)
Austria	National Bank Act 1984	22-25, 45	1	8/14
Denmark	National Bank Act 1936	8 (by-Law)	0	1/3
Finland	Parliament Act 1919	83	0	1
Hungary	Act LX of 1991 on the NBH	57	1	1
Luxembourg	Loi du 20 Mai 1983 Loi du 22 Octobre 1993	12	0	1
		12	0	1
New Zealand	Reserve Bank Act 1989	40	0	1
Norway	Act of 24 May 1985	5, 6	0	1
Poland	Act on NBP 1989	49, 51	0	< 1/2
Portugal	Organic Law 1990	38	0	1
Spain	Law 30, 21.06.1980 Law 01.02.1993,	5, 8, 10	2	8/15
		13, 14, 15	1	6/8
Czech Republic	Act of 17.12.1992	6	0	0

Notes: (b) Number of Ministers (or their representatives) who have a place in the policy board.
(c) Proportion of members appointed direct or indirect by government or parliament.

The results of table 1 and table 2 can now be used to construct the BP index of policy independence. Each of the criteria in tables 1 and 2 can or can not appear, so eight possible policy types can be distinguished. This is summarized in table 3.

³⁾ The Polish Parliament has monetary policy authority.

Table 3
Central Bank Laws: Policy Types

Bank is final policy authority	No government official on bank board	Some board appointments independent of government	Potential central bank type	Central bank type does exist	Policy type
1	2	3			
-	-	*	(a)	no	-
*	-	*	(b)	no	-
-	-	-	(c)	yes	1
-	*	-	(d)	yes	2
*	*	*	(e)	yes	3
*	-	-	(f)	yes	4
*	*	*	(g)	yes	5
*	*	*	(h)	yes	6

Note: In column 3 appointments are independent of the government if less than half of the policy board members is appointed by government or parliament.

By applying the three criteria for policy independence to every country in the group of eleven countries, it can be shown that policy types (a) and (b) do not exist. Only the policy types (c)-(h) in table 3 matter for the BP index of policy independence. BP find the overall degree of policy independence by a simple equally weighted average of the criteria. In other words, the six remaining central bank types are ranked from 1 (least independent) to 4 (most independent) on the basis of the number of asterisks in table 3. The BP ranking for the eleven central banks is shown in the column of table 4, labeled 'policy type'.

Next, Bade and Parkin focus on the relation between central bank laws and monetary policy, looking at two features of monetary policy: the level of inflation as measured by the change in consumer prices (CPI) and the variability of policy as measured by the dispersion (standard deviation) of the inflation level. The results for the group of eleven countries are given in table 4.

Table 4
Bade-Parkin: Average inflation and its variability grouped according to central bank policy type. Period 1963 - 1992⁴⁾

Country	Policy type	Inflation rate			Policy	Variability
		Percent	Rank	Standard deviation	Rank	
Spain (-1994)	a]	1	8.8	(7)	3.5	(7)
Austria*	b]	2	3.0	(1)	1.3	(1)
Hungary*	c]		18.5	(9)	-	-
Luxembourg (-1994)	d]		3.4	(3)	2.6	(4)
New Zealand	e]		3.2	(2)	2.6	(5)
Norway	f]		5.3	(4)	2.3	(3)
Portugal	g]		10.2	(8)	1.8	(2)
Spain (+ 1994)*			-	-	-	-
Finland*		3	7.7	(6)	4.1	(8)
Luxembourg (+ 1994)*			-	-	-	-
Poland	h]		237.6	(11)	249.9	(10)
Denmark		4	7.0	(5)	3.3	(6)
Czech Republic	i]		26.2	(10)	27.3	(9)

⁴⁾ Consumer Prices, on an annual base, IMF International Financial Statistics Yearbook, 1993, pp. 104-107.

- Notes:** Countries with an ° have policy independent central banks.
- a) 1981 - 1992
 - b) 1984 - 1992
 - c) only data available over 1992
 - d) 1983 - 1992
 - e) 1989 - 1992
 - f) 1986 - 1992
 - g) 1991 - 1992
 - h) 1989 - 1992
 - i) 1990 - 1992

In table 4 only for Denmark and Finland sample periods of longer than 30 years are used. The rest of the countries have had new central bank laws in the period 1963-1992 so for those countries adjusted sample periods have been used.

On the basis of table 4 no association can be discerned between policy independence and the two features of monetary policy, inflation level and variability, regarding the BP-index.

It should be noted that most of the central bank laws in this study are relatively young and, therefore, cannot be examined empirically. If only the central bank laws which are more than five years in force are examined the results do not change. Also for this group of countries (Spain (-1994), Austria, Luxembourg (-1994), Norway, Finland and Denmark) no relationship can be found between policy independence and inflation level or variability.

2.2 The Index of Alesina (1988, 1989)⁵⁾

Alesina includes macroeconomic relationships such as, for example, monetary financing rules. Therefore, he enlarges the BP index of policy independence with a fourth criterion:

- (4) Is the central bank obliged to buy short-term Treasury paper?

Alesina uses (4) because he sees this criterion as an additional measure for the independence of central banks, as a monetary financing obligation can seriously harm the independent position of a central bank with respect to monetary policy making.

Table 5 shows that according to the fourth (Alesina) criterion, only the central banks of Denmark, Portugal, Poland, Hungary, Spain (+1994) and Luxembourg (+1994) have no obligation to finance their respective governments.

Table 5
Alesina: Is the central bank required to absorb excess supply of short-term Treasury bills?

BP policy type	No	Yes
	(a)	
1		Spain (-1994)
2	Portugal ⁶⁾ , Spain (+1994), Hungary	Austria, Luxembourg (-1994), New Zealand, Norway
3	Poland, Luxembourg (+1994)	Finland
4	Denmark ⁷⁾	Czech Republic

⁵⁾ A. Alesina: 'Macroeconomics and Politics', *NBER Macroeconomic Annual 1988*, Cambridge, 1988, pp. 13-52.

⁶⁾ A. Alesina: 'Politics and Business Cycles in Industrial Democracies', *Economic Policy*, No. 8, April 1989, pp. 55-98.

After the coming into force of the second stage of the EMU per January 1, 1994, in EU member states monetary financing is no longer allowed.

⁷⁾ Denmark will not participate in the third stage of the EMU and with respect to the second stage for Denmark holds that 'All of these prohibitions [against monetary financing] are already in accordance with existing practice in Denmark.' See:

Note: (a) 'No' means that a central bank can not be forced by government nor parliament to buy short-term Treasury paper.

According to the Alesina index for policy independence, there are seven different types of central banks among the group of eleven countries. The independence classification of these seven types in comparison with Bade Parkin is expressed in table 6.

Table 6
Alesina types and central bank independence

BP policy type	Criterion 4 met?	Potential central bank type	Does central bank type exist?	Alesina type
(a)	(b)			
1	*	(a)	no	-
1	-	(b)	yes	0/1
2	-	(c)	yes	1/2
2	*	(d)	yes	2
3	-	(e)	yes	2/3
3	*	(f)	yes	3
4	-	(g)	yes	3/4
4	*	(h)	yes	4

Notes: (a) see table 4
(b) see table 5

Taking a central bank that is not obliged to finance its respective government as being more independent than a central bank that does have that obligation, we can determine the independence classification of central banks according to the Alesina-index of policy independence. Table 7 demonstrates every Alesina type country with its corresponding level and variability of inflation.

Table 7
Average inflation and its variance,
according to Alesina central bank policy type.
Period 1963 - 1992

Country	Policy type	Inflation rate		Policy	Variability
		Percent	Rank	Standard deviation	Rank
Spain (-1994)	0.5	8.8	(7)	3.5	(7)
Austria	1.5	3.0	(1)	1.3	(1)
Luxembourg (-1994)		3.4	(3)	2.6	(4)
New Zealand		3.2	(2)	2.6	(5)
Norway		5.3	(4)	2.3	(3)
Hungary	2	18.5	(9)	-	-
Portugal		10.2	(8)	1.8	(2)
Spain (+1994)		-	-	-	-
Finland	2.5	7.7	(6)	4.1	(8)
Luxembourg (+1994)	3	-	-	-	-
Poland		237.6	(11)	249.9	(10)

Czech Republic	3.5	26.2	(10)	27.3	(9)
Denmark	4	7.0	(5)	3.3	(6)

On the basis of the Alesina-index, no association can be discerned between average inflation and the degree of central bank independence for the countries in table 7. This result also applies to the relationship between central bank independence and inflation variability. If we only look at the countries with a central bank law more than five years old (Spain (-1994), Luxembourg (-1994), Austria, Norway, Finland and Denmark), the same conclusions can be drawn.

2.3 The Grilli, Masciandaro and Tabellini-index (1991)⁸⁾

Grilli, Masciandaro and Tabellini (GMT) published a study in 1991 on the independence of central banks and the indices used to measure this independence. In their analysis they distinguish two forms of independence: political independence and economic independence⁹⁾. Because the index of political independence corresponds best with the three other indices used in this study, only this index will be treated in this subsection.

GMT define political independence as the capacity (of a central bank) to choose the final goal of monetary policy, such as inflation level or the level of economic activity. According to GMT, this capacity depends on three features:

- (i) Appointment procedures for the members of the policy body of a central bank;
- (ii) The relationship between this body and the government¹⁰⁾;
- (iii) The formal responsibilities of a central bank.

These three features are then used to construct their index of policy independence. To measure the level of independence GMT use 8 criteria:

- (1) Is the governor appointed by parliament?
- (2) Is the governor appointed for more than five years?
- (3) Is the whole policy board appointed by the government?
(Compare with BP (3): Are some board appointments made independent of the government?)
- (4) Is the term for the policy board members longer than five years?
- (5) Is there no mandatory participation of a government representative in the board?
(Compare with BP (2): Is there no government official on the bank board?)
- (6) Is no government approval of monetary policy required?
(Compare with BP (1): Is a central bank final monetary policy authority?)
- (7) Are there legal obligations that a central bank pursues monetary stability among other objectives?
- (8) Are there legal provisions that strengthen the bank's position in case of conflict with the government?

GMT measure the degree of independence of a central bank by simply adding up the eight

⁸⁾ V. Grilli, D. Masciandaro and G. Tabellini: 'Political and Monetary Institutions and Public Financial Policies in Industrial Countries', *Economic Policy*, Fall 1991, pp. 366-375.

⁹⁾ GMT define economic independence as the capacity of a central bank to choose instruments with which to pursue goals of monetary policy.

¹⁰⁾ In the study of GMT under government is meant the government alone not also parliament as is the case in the paper of Bade and Parkin.

(equally weighted) criteria. This is shown in table 8 where in column 9 the total number of asterisks determines the level of independence of any of the eleven countries.

On the basis of table 8 we conclude that the Czech Republic has the most independent central bank of the eleven countries, according to the GMT index for policy independence. However, it is questionable to which degree this legal independence of the Czech central bank also implies actual independence in practice.

In table 9 the GMT policy types are compared with inflation levels and inflation variability. The same inflation data and sample periods are used as for BP and Alesina. Again no clear association can be discerned between central bank independence and inflation performance. The results also hold for the countries with a central bank statute that is longer than five years in force.

Table 8
Grilli-Masciandaro-Tabellini: Monetary policy independence of central banks

Countries	Appointments				Relationship with government		Statute		Index of political independence
	1	2	3	4	5	6	7	8	
Austria	-	-	-	-	-	*	*	*	3
Denmark	-	*	-	*	*	*	*	-	5
Finland	-	-	*	-	*	*	*	-	4
Hungary	-	*	-	-	-	*	*	-	3
Luxembourg (-1994)	-	*	-	*	*	-	*	-	4
Luxembourg (+1994)	-	*	-	*	*	*	*	-	5
New Zealand	-	-	-	-	*	-	*	-	2
Norway	-	*	-	-	*	-	-	-	2
Poland	-	*	-	11)	*	-	*	-	3
Portugal	-	-	-	-	*	-	*	-	2
Spain (-1994)	-	-	-	-	-	-	-	-	0
Spain (+1994)	-	*	-	*	-	*	*	*	5
Czech Republic	*	*	*	*	*	*	*	-	7

Table 9
Grilli-Masciandaro-Tabellini: average inflation and its variability grouped according to central bank policy type. Period 1963 -1992

Country	Policy type	Inflation rate		Policy	Variability
		Percent	Rank	Standard Deviation	Rank
Spain (-1994)	1	8.8	(7)	3.5	(7)
New Zealand	2	3.2	(2)	2.6	(5)
Norway		5.3	(4)	2.3	(3)
Portugal		10.2	(8)	1.8	(2)
Hungary	3	18.5	(9)	-	-
Austria		3.0	(1)	1.3	(1)
Poland		237.6	(11)	249.9	(10)

11) Not to be deduced from the Polish central bank law.

Finland Luxembourg (-1994)	4	7.7 3.4	(6) (3)	4.1 2.6	(8) (4)
Denmark Luxembourg (+1994) Spain (+1994)	5	7.0 - -	(5) - -	3.3 - -	(6) - -
Czech Republic	6	26.2	(10)	27.3	(9)

2.4 The Eijffinger and Schaling index (1992, 1993)¹²⁾

Eijffinger and Schaling (ES) describe policy independence, analogous to GMT, as the capacity of central banks to choose the final goals of monetary policy. This capacity is determined by :

- (i) Formal responsibility of central banks with regard to monetary policy;
- (ii) The relationship between central bank and government/parliament in the formulation of monetary policy;
- (iii) The procedures for the appointment of the board of a central bank.

On the grounds of these features, Eijffinger and Schaling construct their (asymmetrical) index for policy independence. The level of this policy independence depends on three criteria:

- (1) Is a central bank alone responsible for monetary policy (b), does the central bank share this responsibility (b/g) or does the central bank have no influence on monetary policy (g)?;
- (2) Is no government representative appointed (with or without voting power) on the bank board?;
- (3) Are more than 50 % of the board members independently appointed of the government?¹³⁾

Because criterion (1) has three solutions, there are 3x2x2 possible ES policy types.

Table 10 shows us that there are five different ES policy types among the group of eleven countries. ES policy type classification is determined by summing up the number of asterisks plus one in table 10.

Table 10
Eijffinger-Schaling: Policy types.

Bank is final policy authority	No government official on bank board	Some board appointments independent of government	Potential central bank type	Central bank type does exist	Policy Type
1	2	3			
-(g)	-	*	(a)	no	-
*(b/g)	-	*	(b)	no	-
** (b/g)	-	*	(c)	no	-
***(b)	-	*	(d)	no	-

12) S. Eijffinger and E. Schaling: 'Central Bank Independence: Criteria and Indices', Department of Economics Research Memorandum Tilburg University, March 1992, pp. 34-37.

13) S. Eijffinger and E. Schaling: 'Central Bank Independence in Twelve Industrial Countries', Banca Nazionale del Lavoro Quarterly Review, No. 184, March 1993, pp. 64-68.

In this subsection parliament has also to be included under government.

-(g)	-	-	(e)	yes	1
-(g)	*	-	(f)	yes	2
-(g)	*	*	(g)	yes	3
*(b/g)	*	-	(h)	yes	3
*(b/g)	*	*	(i)	yes	4
** (b)	-	-	(j)	yes	3
** (b)	*	-	(k)	yes	4
** (b)	*	*	(l)	yes	5

When inflation performance is set out against the ES policy types, again no association can be found between inflation level and central bank independence or between inflation variability and central bank independence. If we look at the group of countries with relatively longer tenable central bank laws (Spain (-1994), Luxembourg (-1994), Norway, Austria, Finland and Denmark), the same conclusions can be drawn. This can be concluded from table 11.

Table 11
Eijffinger-Schaling: Average inflation and its variability grouped
according to central bank policy type. Period 1963 - 1992

Country	Inflation rate			Policy	Variability
	Policy type	Percent	Rank	Standard Deviation	Rank
Spain (-1994)	1	8.8	(7)	3.5	(7)
Luxembourg (-1994)	2	3.4	(3)	2.6	(4)
Norway		5.3	(4)	2.3	(3)
Portugal		10.2	(8)	1.8	(2)
Hungary	3	18.5	(9)	-	-
Austria		3.0	(1)	1.3	(1)
Poland		237.6	(11)	249.9	(10)
New Zealand		3.2	(2)	2.6	(5)
Finland		7.7	(6)	4.1	(8)
Spain (+ 1994)		-	-	-	-
Denmark	4	7.0	(5)	3.3	(6)
Luxembourg (+ 1994)		-	-	-	-
Czech Republic	5	26.2	(10)	27.3	(9)

2.5 The four indices compared

2.5.1 Bade-Parkin versus Alesina

Differences between both indices can be explained by the simple fact that the Alesina-index has one more criterion than the BP-index.

In this subsection the other two indices will only be compared to the BP-index, as those three indices match best. The Alesina-index is because of the fourth criterion regarding monetary financing harder to compare with GMT and ES and, therefore, omitted.

2.5.2 Bade-Parkin versus Grilli-Masciandaro-Tabellini

To be able to compare GMT with BP we have to focus on GMT criteria (3), (5) and (6). If we aggregate those three criteria the outcome will not be the same as in table 9. However only those three criteria are really comparable with BP.

Differences between both indices are caused by interpretation effects and criterion effects. Interpretation effects arise because of differences in interpretation of central bank laws (GMT (5) and (6) versus BP (1) and (2)). Criterion effects arise because differences between criteria (GMT (3) versus BP (3)). See table 12 for a decomposition of the differences between both indices into interpretation and criterion effects.

Table 12
Bade-Parkin versus Grilli-Masciandaro-Tabellini

Country	GMT Policy type	BP Policy type	Interpretation effect	Criterion effect	Difference GMT - BP
	(a)	(b)	(c)	(d)	(e)
Austria	2	2	0	0	0
Denmark	3	4	0	-1	-1
Finland	4	3	0	1	1
Hungary	2	2	0	0	0
Luxembourg (-1994)	2	2	0	0	0
Luxembourg (+1994)	3	3	0	0	0
New Zealand	2	2	0	0	0
Norway	2	2	0	0	0
Poland	2	3	0	-1	-1
Portugal	2	2	0	0	0
Spain (-1994)	1	1	0	0	0
Spain (+1994)	2	2	0	0	0
Czech Republic	4	4	0	0	0

- Notes:**
- (a) (Number of asterisks in columns 3, 5 and 6 of table 8) + 1.
 - (b) See table 4.
 - (c) (Number of asterisks in columns 5 and 6 of table 8 + number of asterisks in column 3 of table 3) + 1 - BP policy type.
 - (d) (Number of asterisks in columns 1 and 2 of table 3 + number of asterisks in column 3 of table 8) + 1 - BP policy type.
 - (e) difference = total difference between GMT and BP; column (c) and (d).

Table 12 shows that there are no interpretation effects between BP and GMT. This can be explained by the fact that the BP criteria (1), (2) and (3) are almost the same as the GMT criteria (3), (5) and (6) and all those criteria are judged in this study on the basis of the same information. Criterion effects exist for Denmark, Finland and Poland. BP classify Denmark and Poland one policy type higher as their criterion 3 is less strict than GMT criterion 3. GMT ask themselves if the entire policy board is appointed by the government, while BP look which proportion of the policy board of a central bank is appointed by the government. When less than half of the members of the policy board are appointed by the government this is sufficient for BP, but not sufficient for GMT. The difference for Finland can be explained by the fact that for GMT the political authority is the government alone, while for BP this comprises both government and parliament.

2.5.3 Bade-Parkin versus Eijffinger-Schaling

In comparing BP with ES we have to take care of the fact that ES criterion (1) has twice the weight of BP criteria (2) and (3). Thus, we have to adjust the BP index for this asymmetry in order to be able to compare the two indices. After adjustment of the BP-index to the ES-index, differences between the two indices consist also of interpretation and criterion effects. See table 13 for a decomposition of these differences in both effects.

Table 13
Bade-Parkin versus Eijffinger-Schaling

Country	ES policy type	BP policy type	BP adjusted policy type	Interpretation effect	Criterion effect	Difference ES-BP
	(a)	(b)	(c)	(d)	(e)	(f)
Austria	3	2	3	0	1	1
Denmark	4	4	5	-1	1	0
Finland	3	3	4	-1	1	0
Hungary	3	2	3	0	1	1
Luxembourg (-1994)	2	2	2	0	0	0
Luxembourg (+1994)	4	3	4	0	1	1
New Zealand	3	2	2	1	0	1
Norway	2	2	2	0	0	0
Poland	3	3	3	0	0	0
Portugal	2	2	2	0	0	0
Spain (-1994)	1	1	1	0	0	0
Spain (+1994)	3	2	3	0	1	1
Czech Republic	5	4	5	0	1	1

- Notes:**
- (a) See table 10.
 - (b) See table 4.
 - (c) BP asymmetrical policy types: BP types if BP 1 has two times the weight of BP 2 and 3 (b=**).
 - (d) ES - BPA (BP adjusted).
 - (e) BPA - BP
 - (f) (d) + (e)

Interpretation effects occur for Denmark, Finland and New Zealand. Denmark and Finland have a lower ES classification because, in practice, monetary policy in those two countries is determined by central bank and government together. New Zealand goes from BP (g) to ES (b/g) as the New Zealand government has final say over monetary policy although it has to start a rather difficult procedure to override the central bank.

Austria, Denmark, Finland, Hungary, Luxembourg (+1994), Spain (+1994) and the Czech Republic all have a positive criterion effect because BP adjusted-policy types have two asterisks instead of one for the 'unadjusted' BP policy type.

2.5.4 Eijffinger-Schaling versus Grilli-Masciandaro-Tabellini

For the comparison of the GMT-index with the ES-index we have to remember that with GMT we can only look at criteria (3), (5) and (6) and that the ES-index is asymmetrical. Keeping this in mind, we can compare ES with GMT. In doing so, interpretation and criterion effects will appear. See table 14 for a decomposition into both effects.

Austria, Hungary, Luxembourg (+1994), New Zealand, Spain (+1994) and the Czech Republic have positive interpretation effects, which were already explained with table 13. The positive criterion effects for Denmark and Poland and the negative criterion effect for Finland were explained with table 12.

Table 14
Eijffinger-Schaling versus Grilli-Masciandaro-Tabellini.

Country	ES policy type	GMT policy type	Interpretation effect	Criterion effect	Difference ES - GMT
see note below	(a)	(b)	(c)	(d)	(e)
Austria	3	2	1	0	1
Denmark	4	3	0	1	1
Finland	3	4	0	-1	-1
Hungary	3	2	1	0	1
Luxembourg (-1994)	2	2	0	0	0
Luxembourg (+1994)	4	3	1	0	1
New Zealand	3	2	1	0	1
Norway	2	2	0	0	0
Poland	3	2	0	1	1
Portugal	2	2	0	0	0
Spain (-1994)	1	1	0	0	0
Spain (+1994)	3	2	1	0	1
Czech Republic	5	4	1	0	1

- Notes:
- (a) See table 11.
 - (b) See table 12.
 - (c) ES - BP: see column (f) of table 13.
 - (d) BP - GMT: see column (e) of table 12 (signs must to reversed).
 - (e) (c) + (d).

3. Empirical Analysis

In this section we check whether a negative empirical relationship can be found between central bank independence and inflation performance. We have used regression analysis (OLS-method) with the different indices of central bank independence as explanatory variables of average monthly inflation (CPI) and the variance of monthly inflation. The sample period of the regression analysis is the period from January 1982 till December 1993. This period is chosen because, first, the start of the stage of consolidation within the EMS was in 1982¹⁴⁾, and, second, because of the fact that most of the countries in this study have had new central bank laws at the beginning of the 1980s.

To investigate the relationship between central bank independence and the average monthly inflation we regressed (OLS-method) the following equation:

$$(4.1) \text{ average monthly inflation} = \alpha_0 + \alpha_1 * \text{central bank independence} + \epsilon_t$$

In table 15 the estimations are given for the BP, Alesina, GMT and ES-index for central bank independence. T-values of constant and the coefficient for the different indices are in parentheses. Moreover, we considered the group of countries where the central bank laws are older than five years (Austria, Denmark, Finland, Luxembourg (-1994), Norway and Spain (-1994)). One should note, however, that all results in this table must be carefully interpreted as the number of degrees of freedom is limited (9 respective 4).

¹⁴⁾

H. Ungerer: 'The EMS, 1979-1990, Policies-Evolution-Outlook', *Konjunkturpolitik*, Vol. 36, Heft 6, 1990, pp. 329-362.

Table 15
Inflation level and the
indices of central bank independence¹⁵⁾

Explanatory variables	1982 -1993	1982 -1993 Central bank law > 5 years in force
Constant	-0.00053 (-0.023)	0.005226 (3.900)
Bade and Parkin (BP)	0.006339 (0.677)	-0.00058 (-1.091)
R ²	0.054232	0.229335
Constant	-0.0005 (-0.029)	0.004768 (4.630)
Alesina	0.007275 (0.940)	-0.00047 (-1.004)
R ²	0.099511	0.201235
Constant	0.018072 (0.879)	0.005834 (5.820)
Grilli-Masciandaro-Tabellini (GMT)	-0.00139 (-0.210)	-0.00062 (-2.128)*
R ²	0.00548	0.531005
Constant	0.002195 (0.087)	0.005879 (4.978)
Eijffinger and Schaling (ES)	0.004561 (0.493)	-0.0008 (-1.817)*
R ²	0.029452	0.452329

Note: t-values are in parentheses. One asterisk indicates that the coefficient is significantly different from zero at a 90% confidence level and two asterisks indicate that the coefficient is significant at a 95% confidence level.

From the second column of table 15 can be concluded that there is no significant negative relation between central bank independence and average inflation. For BP, Alesina and ES there is even a positive α_1 -coefficient, although this coefficient is not significant.

This does not correspond with the empirical results found in studies for other countries. De Haan and Sturm (1992), Cukierman (1992), Alesina and Summers (1993) and Eijffinger and Schaling (1994)¹⁶⁾ all discover a significant negative relationship between average inflation and central bank independence.

The results in the second column correspond with the results in section 2, where also no clear association could be discerned between average inflation and central bank independence.

The third column of table 15 gives the empirical results for the countries with relatively older central bank laws. For this group of countries the t-values of the α_1 coefficient for GMT and ES are significantly different from zero at a 90% confidence level. So the inverse relationship between central bank independence and level of inflation is not strongly confirmed. The difference between on the one hand BP and Alesina and on the other hand GMT and ES can perhaps be explained by the fact that the latter indices are broader, i. e. GMT and ES are more precise in the determination of central bank independence.

¹⁵⁾ Source: Datastream, monthly consumer prices 1/1982 - 12/1993.

For New Zealand only quarterly data were available, for Poland inflation data started in 1/1988.

¹⁶⁾ J. de Haan and J. E. Sturm: 'The Case for Central Bank Independence', *Banca Nazionale del Lavoro Quarterly Review*, No. 182, September 1992, pp. 305-327.

A. Alesina and L. Summers: 'Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence', *Journal of Money, Credit and Banking*, Vol. 25, 1993, pp. 151-162.

S. Eijffinger and E. Schaling: 'Central Bank Independence: Theory and Evidence', forthcoming in: *European Journal of Political Economy*, 1994.

FIGURES 1-4

The figures 1-4 show a negative relationship between inflation level and central bank independence for the countries with a central bank law longer than five years in force, despite some positive outliers (Spain for BP, Alesina, GMT and ES, Finland for GMT) and some negative outliers for BP, Alesina and ES (Austria and Luxembourg) and Austria for GMT.

This can not be used to explain the difference in significance for this group of six countries and does not correspond to the results in section 2. However this can be explained by the fact that in section 2 different sample periods are used. For Denmark, Finland and Spain (-1994) the period is longer than the 1982 - 1993 period in this section, while for Austria, Luxembourg (-1994) and Norway the opposite holds.

For the relationship between central bank independence and inflation variability we have estimated the following equation (OLS-method):

$$(4.2) \quad \text{monthly inflation variance} = \beta_0 + \beta_1 * \text{central bank independence} + \delta_t \quad (-)$$

In table 16 the estimations for β_0 and β_1 are given in the second column for the indices of BP, Alesina, GMT and ES. The third column gives the empirical results if we only take account of the countries with central bank laws longer than five years in force. Again, we must note that the results of this table have to be interpreted carefully, as the degrees of liberty are limited (respectively 9 and 4).

Table 16
Inflation variability and the
indices of central bank independence¹⁷⁾

Explanatory variables	1982 - 1993	1982 - 1993 Central bank law > 5 years in force
Constant	-0.00222 (-0.482)	0.0000228 (4.330)
Bade-Parkin (BP)	0.001649 (0.868)	-0.0000013 (-0.644)
R ²	0.086051	0.09293
Constant	-0.00186 (-0.538)	0.0000214 (5.285)
Alesina	0.001715 (1.092)	-0.0000009 (-0.498)
R ²	0.129661	0.057382
Constant	0.001298 (0.305)	0.0000258 (6.292)
Grilli-Masciandaro-Tabellini (GMT)	0.0000933 (0.068)	-0.0000019 (-1.636)*
R ²	0.000582	0.397472
Constant	-0.00092 (-0.177)	0.0000226 (4.055)
Eijffinger-Schaling (ES)	0.000957 (0.501)	-0.0000012 (-0.566)
R ²	0.030434	0.073168

17)

Source: Datastream, monthly consumer prices 1/1982 - 12/1993.

For New Zealand only quarterly data were available, for Poland inflation data started from 1/1988.

From the second column of table 16 no clear association can be seen between central bank independence and inflation variability. On the contrary, all the four indices have a positive β_1 -coefficient. However, this coefficient is never significant.

This result does not support De Haan and Sturm (1992) and Alesina and Summers (1993), but is compatible with Eijffinger and Schaling (1994), who also do not find an empirical relationship between central bank independence and inflation variability.

The results in the second column match the results in section 2, where no clear association could be discerned between inflation variance and central bank independence.

The third column of table 16 gives the OLS-regressions for the six countries with central bank laws longer than five years in force. It can be clearly seen that for those six countries β_1 t-values are negative. However, the GMT t-value alone is significantly different from zero. In other words, the negative relationship between central bank independence and the variability of inflation is only clear for the GMT index.

FIGURES 5 - 8

Figures 5 - 8 show negative associations between inflation variability and central bank independence with positive outliers for Denmark and Spain and a negative outlier for Luxembourg. The fact that Luxembourg has a high ranking in the GMT index can be the reason that the GMT index differs from the three other indices.

The results of the figures do however not correspond with the results in section 2 and can be explained by the fact that in section 2 data on an annual base are used with different periods than in this analysis. The results of the empirical studies of De Haan and Sturm (1992), Alesina and Summers (1993) and Eijffinger and Schaling (1994) do not always agree with the results in this section. In their respective studies these authors find a significant negative relationship between central bank independence and inflation level, while in this section no relationship can be discerned. On the ground of the results in this section there seems to be a positive relationship between central bank independence and inflation level for BP, Alesina and ES in all the eleven countries. However in the six countries with 'older' central bank laws there seems to be a negative relationship.

Differences in the empirical results between this study and the three mentioned above can be explained by the fact that within the group of eleven countries there are nine countries who have introduced new central bank legislation in the past ten years. We think that for those countries the transformation process from a dependent central bank regime to a less dependent regime is still going on. In other words, inflation performances of the old regimes are still rather persistent and working through in the new regimes, which makes the inflation performances more diffuse.

Another explanation could be the fact that in this section inflation rates over a sample period of twelve years are used, while in the other empirical studies longer sample periods are used.

De Haan and Sturm (1992) and Alesina and Summers (1993) find a negative association between central bank independence and inflation variability, while Eijffinger and Schaling (1994) find no association at all. They come to the same conclusion as in this section: there is apparently no significant negative association between central bank independence and inflation variability. For the whole group of eleven countries there seems to be a positive association while for the group of six countries there seems to be, according to our study, a negative association.

Differences between De Haan and Sturm (1992) and Alesina and Summers (1993) on one side and Eijffinger and Schaling (1994) and this study on the other side can be explained by the fact that the first two studies use inflation data on an annual base and the last two studies inflation data on a monthly base. Moreover, the sample periods of the first two studies are longer than the latter.

4. Conclusion

In this study the independence of central banks in eleven countries is examined with four indices. Furthermore, we have tried to find an empirical relationship between the degree of central bank independence and respectively level and variability of inflation. In section 2 no association could be discerned between independence and level or variability of inflation. Those results are confirmed by the regression analysis in section 3. The fact that we also consider the group of countries with central bank laws more than five years old, does not alter the results in section 2. In section 3 for this group of six countries the negative relationship between central bank independence and respectively level and variability of inflation cannot strongly be confirmed. Thus, the well-known negative relation between central bank independence and inflation performance cannot be confirmed for our group of countries. However the results in section 3 for the group of six countries show that an empirical relationship does exist.

Bade and Parkin (1988), Alesina (1988, 1989), Grilli, Masciandaro and Tabellini (1991), Cukierman (1992) and Eijffinger and Schaling (1993) find in their respective studies a negative association between central bank independence and level of inflation. However, they find no relationship between central bank independence and variability of inflation.

Empirical studies of De Haan and Sturm (1992) and Alesina and Summers (1993) find a negative relationship between central bank independence and respectively the level of inflation and variability of inflation. Eijffinger and Schaling (1994) also find a negative relation between independence and level of inflation, but no relation for independence and inflation variability.

Differences between the (empirical) literature and this study can be explained by several facts: (i) in this study a new group of countries is examined; (ii) nine of the eleven countries in this study have had new central bank laws in the past ten years ; and (iii) the time periods which have been examined in our study are shorter than in the other studies. As stressed in the introduction of our study, the limits of the index approach are quite evident. Legal independence of the central bank is a necessary but no sufficient condition for actual independence. Actual independence also implies a tradition and culture of monetary stability with the policy makers.

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Appendix

Central Bank Laws in Eleven Countries

A. 1 Austria

The first Austrian central bank, the 'Privilegirte oesterreichische National-Bank', dates from 1816. In 1878 this Bank became the Austro-Hungarian Bank. After the First World War the Austro-Hungarian Bank ceased to exist and was followed up by the 'Oesterreichische Nationalbank'. Austria was annexed by Nazi-Germany in 1939 and from that time on the Bank was dismantled but this process wasn't completed before the end of the Second World War. To support Austrian independence, the Austrian National Bank resumed its activities in 1945. New statutes were adopted for the central bank in 1955. The current central bank law of Austria came into force in 1984 and was based on the 1955 law.

The Austrian National Bank is a joint stock company. Tasks and organisation are widely described in the statute of 1984. The primary objective of the Bank is price stability, what can be concluded from article 2(3); 'It (the Austrian National Bank) shall ensure with all means at its disposal that the value of the Austrian currency is maintained with regard both to its domestic purchasing power and to its relationship

with stable foreign currencies.'

'In determining the general lines of monetary and credit policy to be followed by the Austrian National Bank in this field for the purpose of performing the functions incumbent upon it, due regard shall be paid to the economic policy of the Federal Government'¹⁸⁾ i.e. the Austrian Government has no right to give instructions to the Bank. This is confirmed in article 41(2) that says that the Federal Republic isn't allowed to take measures that could in one way or another hinder the central bank in the execution of its legal objectives.

The Austrian central bank is, as stated above, independent of the Federal government but in practice the Bank takes an active part in the development of economic policy and co-operates closely with the Austrian government. Other tasks of the central bank are regulating the circulation of money, attending to the settlement of payments with foreign countries and according to the Foreign Exchange Act the Bank is the Austrian foreign exchange authority.

The governing bodies of the Austrian National Bank are the General Meeting, the Governing Board and the Board of Executive Directors.

The General Meeting elects six members of the Governing Board. 'For the purpose of the election of six members of the Governing Board by the General Meeting, shareholders other than the Federal Republic may propose one person for each 12.5 million schillings of capital represented by the shareholders. If not such proposals are made, the right of proposal shall rest with the Federal Republic.'¹⁹⁾

The Governing Board is in charge of the supreme direction and supervision of all the Bank's actions. The Board has many tasks, like 'laying down the general directives of monetary and credit policy and giving opinion on draft legislation in so far as the latter concerns important questions of monetary and credit policy'²⁰⁾, fixing the discount and lombard rates and determining the open market policy. So the Board can independently make its own monetary policy and has a free choice of monetary instruments. The Governing Board consists of the Governor of the Bank, two Deputy Governors and eleven ordinary members. The Governor is appointed by the President for a five year term. He acts as chairman during all meetings of the Board and sees to it that decisions of the Board are properly executed.

The First and Second Deputy Governor are both appointed by the Federal Government for five years like the five of the other members of the Governing Board.

The Board of Executive Directors is in charge of the daily management of the Austrian National Bank. Because Austria has linked its currency, the Schilling, to the German Mark, the Executive Directors main occupation is stabilisation of the Schilling versus the Dmark. The Board of Executive Directors is mainly an executive body but 'shall take decisions independently on all matters concerning the running of the Bank and the conduct of the business that are not reserved for decision by the Governing Board'.²¹⁾

The Federal Minister of Finance takes care that the Austrian National Bank acts legally and herefore the Minister appoints a State Commissioner. The Commissioner may attend the meetings of the Governing Board in an advisory capacity and is entitled to all co-operation and information from the Bank. Through the State Commissioner the Federal Government can have influence on policy of the Austrian National Bank since the Commissioner can 'raise objections to decisions of the Governing Board if he considers any such decision to be in conflict with existing legislation'.²²⁾

The central bank cannot finance the government, but the Federal Minister of Finance can ask the Bank to buy short-term Federal Treasury certificates. The total amount however may not exceed 5 percent of the yearly federal tax revenues.

A. 2 Denmark

The 'Nationalbanken i Kjøbenhavn' was created in 1818 to assure monetary stability and had the right to issue notes. The bank became the sole banker of the Danish State in 1914 and in 1936, with the 'National Bank of Denmark Act', the National Bank in Copenhagen transformed into 'Danmarks Nationalbank', the current central bank of Denmark.²³⁾

18) National Bank Act 1984, art. 4.

19) National Bank Act 1984, art. 18(1).

20) National Bank Act 1984, art. 20.

21) National Bank Act 1984, art. 21.

22) National Bank Act 1984, art. 45-46.

23) 'Danmarks Nationalbank, Central-Bank Responsibilities and Tasks', Danmarks Nationalbank, Copenhagen, 1991, p. 7, 8.

The objective of the Danish central bank is described in article 1 of the central bank law: 'Danmarks Nationalbank... shall as the central bank of this country... maintain a safe and secure currency system in this country, and facilitate and regulate the traffic of money and the extension of credit.' In other words the Nationalbank has to stabilize purchasing power and has at the same time to keep up with economic developments, so price stability is the main objective of the Bank. In order to do so, the Nationalbank makes it's own monetary policy and is responsible for the management of foreign currencies. Exchange rate policy itself is in the hands of the Government but is executed by the Bank. Banking supervision in Denmark isn't carried out by the Nationalbank, it is carried out by the Danish Financial Supervisory Authority.

The central bank of Denmark is ruled by the Committee of Directors, the Board of Directors, the Board of Governors and the Royal Bank Commissioner. The Board of Governors of the Danish central bank has three members. One of them, the chairman, is appointed by the King, i. c. the Government. The other two members are appointed by the Board of Directors, but the Danish Parliament has a major influence on those two appointments. The boardmembers are appointed for life but can be relieved from their office by the King or the Board of Directors.²⁴⁾ Until now this has never occurred and dismissal of a boardmember can be seen as an ultimate mean in case of a serious conflict between the Board of Governors and the Danish Government.

The Board of Directors consists of 25 members of whom 8 are elected by Parliament, 15 by the Board itself and the last two members are appointed by the Minister of Economic Affairs. The Board of Directors has administrative and advisory capacities.

The Committee of Directors has seven members; two who are appointed by the Minister of Economic Affairs and five elected out of the Board of Directors by the Board of Directors. The Committee has an intermediate position between the Board of Governors and the Board of Directors.

The Minister of Trade, Industry and Shipping in his capacity of Royal Bank Commissioner sees to it that the Nationalbank carries out its duties. He presides the meetings of the Board of Directors and attends the meetings of the Board of Governors. The Commissioner is the formal contact between the Danish Government and the Danish central bank.

The Board of Governors is responsible for monetary policy making, which is clearly stated in the central bank law; 'The Board of Governors shall fix the rate of discount and the rate of interest for advances'.²⁵⁾ In changing those rates the Governors have to inform the Royal Bank Commissioner and the Minister of Finance, but the final decision rests with them.

In practice monetary policy in Denmark is formulated on the basis of co-operation between the Government and the Board of Governors. The Danish Government cannot give instructions to the Board. Exchange rate policy is also determined on mutual co-operation though it is formally a Government issue.

The Nationalbank can give the Government credit against 'satisfactory security and normally for 1-3 months not exceeding 6 months'.²⁶⁾ However the Danish Government doesn't use this credit facility because of the co-operation in the field of monetary and exchange rate policy making. Instead, the Danish Government finances its deficits by selling government paper on the capital market.

A. 3 Finland

The Central Bank of Finland, the 'Suomen Pankki', was created in 1811 and is one of the oldest central banks in the world. Until 1868 the Finnish central bank was under the control of the Finnish Senate, after this date the bank had to justify its actions to the 'Staten', the later Finnish Parliament. In 1875 the main objective of the Finnish central bank was to maintain a stable and balanced monetary system and to stimulate money circulation. Eleven years later the bank also got the sole right to issue money.

Finland became an independent state in 1917 and according to the constitution of 1919, article 73, the Bank of Finland was 'under the guarantee and care of Parliament and under the surveillance of the Parliamentary Supervisory Board appointed by Parliament.'

At the end of 1925 the Regulations for the Bank of Finland came in force. In spite of several adjustments, those Regulations still form the central bank law of Finland.²⁷⁾

²⁴⁾ National Bank of Denmark Act, 1937, and By-Laws on the National Bank of Denmark, 1936.

²⁵⁾ By-Laws on the National Bank of Denmark, 1936, art. 25.

²⁶⁾ National bank of Denmark Act, 1937, art. 15.

²⁷⁾ 'The Bank of Finland', Suomen Pankki/Finlands Bank, Helsinki, 1993, p. 4.

The main objective of the Finnish central bank is clearly stated in article 1 of the Finnish central bank law: 'The object of the Bank of Finland is to maintain a stable and secure monetary system and to assist and facilitate the circulation of money in Finland.'

This means that the Finnish central bank does not have price stability as main objective.

According to article 2 of the Currency Act of 1962 the central bank is responsible for maintaining the external value of the 'markka', the Finnish currency. In case of shocks in the foreign exchange market, the Bank of Finland can deviate from the fluctuation margins of the markka. However, the Finnish Government can revoke this right, after consultation with the central bank. The Finnish Government has right of say on the external value of the markka, but co-operation in this area is stimulated by law.

There are no formal provisions which prevent the Government from borrowing from the Bank of Finland but normally only in exceptional circumstances the Bank gives credit to the Government. Also, the Government has no power to give the Finnish central bank instructions because the bank is under control of the Finnish Parliament. This can be concluded from article 2 of the Regulations for the Bank of Finland: 'The Bank carries its business under the guarantee and supervision of the Diet (Parliament).' In practice the Bank of Finland is monetary independent of the Finnish Government but works together with the Government - in particular the Minister of Finance - to be more able to co-ordinate economic policy.

The policy board of the Bank of Finland, the Parliamentary Supervisory Board, consists of nine members, all appointed by Parliament for the whole parliamentary term (4 years). A Supervisor can be a member of Parliament.

The most important task of the Supervisors is to 'fix the base rate of the Bank and other rates of interest applied by the Bank and limits thereon';²⁸⁾ i.e. the Bank of Finland is independent in monetary policy making.

Three Supervisors are appointed by Parliament as members of the Executive Committee of the Parliamentary Supervisory Board. The Executive Committee has to take care of matters that aren't reserved for the Parliamentary Supervisory Board and to prepare decisions for the Board. 'The administration of the Bank of Finland and management of the affairs are entrusted to the Board of Management, except in the case of those duties that are reserved in these regulations for the Bank Supervisors.'²⁹⁾ The Board of Management must in all its actions take care that the Finnish currency keeps its legally established value, as fixed by the Government. Furthermore the Board of Managers gives support to the Supervisors. The boardmembers are appointed by the President of the Finnish Republic on proposal of the Supervisory Board.

A. 4 Hungary

The Institute of Budapest of the Austro-Hungarian Bank had the function of central bank in Hungary till the end of the First World War. In 1924 the Hungarian Parliament established the National Bank of Hungary. After the Second World War all Hungarian Banks were nationalised and from that time on, the National Bank of Hungary was the sole bank in the Hungarian financial system, besides some specialized financial institutions. On January first, 1987, the separation between central bank and commercial bank was re-established. At the moment all commercial activities of the Hungarian Central Bank have been transferred to the commercial banking system.³⁰⁾

These changes in the Hungarian financial system asked for a new central bank law, adjusted for the principles of a market economy and with an obvious place for monetary policy within economic policy. On November 16th 1991 the new central bank law of Hungary came in force. The main objective of the new law is to strengthen the stability of the Hungarian currency, the 'forint'. Thus the National Bank of Hungary has to pursue price stability as primary objective. In doing so, 'the National Bank of Hungary (NBH) develops its monetary policy as well as the instruments serving its implementation in an autonomous way in the framework of this act.'³¹⁾ The Hungarian Government cannot influence the monetary policy of the central bank and 'The Government shall not give instructions to NBH in the scope of its tasks defined in

Rolf Kulberg: 'A brief history of the Bank of Finland', Bank of Finland, Working Paper, 18.02.1992.

28) Regulations for the Bank of Finland, Helsinki, 21 december 1925, art. 17(1).

29) Regulations for the Bank of Finland, Helsinki, 21 december 1925, art. 16.

30) National Bank of Hungary: 'The Law on the Central Bank, Market Letter NBH, 10-11/1991, p. 1.

31) Act LX on the National Bank of Hungary, art. 6.

this Act.³²⁾ In other words, the central bank of Hungary is independent of the Hungarian Government in monetary policy making although the monetary policy has to stay within the limits of the central bank law. With regard to the exchange rate, the central bank law states that 'the order of determining and/or influencing the exchange rates is approved by the Government in agreement with the NBH.'³³⁾ The central bank has to support the implementation of the economic policy program of the Hungarian Government with all monetary policy means available and has to make its opinion clear about the governments' plans and actions. So, on one hand the National Bank of Hungary is independent of the Government and thus can fulfil its tasks in a balanced way in the long run and, on the other hand, the central bank is obligated by law to co-operate with the Government.

The important bodies of the Hungarian central bank are the General Meeting, the Central Banking Council, the Board of Directors and the Supervisory Commission. The Central Banking Council, the policy board of the Bank, makes decisions about the annual policy guidelines and the modifications of the policy instruments of the central bank, inclusive of measures of exchange policy. The Council consists of the President of the National Bank of Hungary, no more than 5 vice-Presidents of the central bank and the same number of other members as vice-Presidents. A Government representative is invited to all the meetings of the Central Banking Council, in an advisory capacity.

The whole Council is appointed by the President of the Hungarian Republic on proposal of the Prime Minister. The term of the President of the Bank is six years (renewable), for the other councilmembers the length of their term is three years (renewable).

The President of the Bank is responsible for the execution of the decisions of the Council.

The Board of Directors supports the central bank President in the execution of his tasks. The Board has a mere advisory function. The Supervisory Commission is the supervising organ of the Bank. The Commission is obliged to inform Parliament electing and the Minister of Finance appointing them. The law does not say exactly about what the Commission has to inform the Minister and Parliament.

The General Meeting has numerous tasks, like establishment and modification of the statutes and election and recall of the elected members of the Board of Directors. The shares of the National Bank of Hungary are possessed by the Hungarian State. The Hungarian State is represented by the Minister of Finance but the latter cannot exert much influence on the monetary policy of the central bank through the General Meeting since the General Meeting has no decisive voice in the monetary policy of the bank.

The National Bank of Hungary can finance the Hungarian Government through the central budget with a maximum of 3 percent of expected income of the central budget in that year. Other governmental bodies have to solve their deficit in the capital market or via the central budget.

The central bank has to justify the credit relations with public finances to Parliament.

A. 5 Luxembourg

Luxembourg has known several monetary regimes since the French Revolution. First the Dutch monetary system and during the Belgian Revolution the Belgian regime. Then the German 'Zollverein' was in force until the end of the First World War. In 1922 the monetary union with Belgium (the Belgian-Luxembourg Monetary Union) was instituted.

The central bank of Luxembourg, the Luxembourg Monetary Institute, was established in 1983. In 1994 a law was adopted to give the institute a greater degree of independence, as required in the Treaty of Maastricht (1992).

According to article 2 of law of 22 October 1993 'relative à l'Institut Monétaire Luxembourgeois', the Luxembourg Monetary Institute has as main task price stability and the Government has no right of instruction. Article 5(2) of the central bank law of 1993 says very explicitly that the Luxembourg Monetary Institute cannot receive monetary policy instructions; 'Dans l'exercice des pouvoirs et dans l'accomplissement des missions et des devoirs qui leur ont été conférés dans le domaine monétaire, ni l'Institut, ni un membre quelconque de ses organes de décision ne peuvent solliciter ni accepter des instructions ou organes de la Communauté européenne, des gouvernements des Etats membres ou de tout autre organisme.'

The Luxembourg central bank is in charge of exchange rate management, the Government however has final authority over exchange rate policy. Luxembourg is still a member of the Belgian-Luxembourg Economic

³²⁾ Act LX on the National Bank of Hungary, art. 45.

³³⁾ Act LX on the National Bank of Hungary, art. 12(2).

Union which means that exchange rate parity with Belgium is important, i.e. Belgium can exert indirect influence through its monetary policy on the monetary policy in Luxembourg. However, because of the Union, both countries have to have compatible monetary policies.

Other tasks in the monetary field of the institute are management of the official reserves and stimulation of a good functioning payments system.

To achieve price stability, the Bank can operate on financial markets or give advances against collateral. Article 24(1) states that the Luxembourg Monetary Institute can no longer give credit to the Luxembourg Government.

The Luxembourg Monetary Institute also exerts supervision in the financial sector

The main bodies of the Luxembourg Monetary Institute are the Board and the Council. The Board is the policy board of the Institute and prepares measures and takes decisions in the context of the price stability objective. The members of the Board are the General-Director and two to four Directors. They are all appointed by the Grand-Duke on proposal of the Government. The term for the boardmembers is six years and renewable.

Dismissal from office is only possible in case of shown incompetence and no longer being able to fulfil the condition of 'personal honour'.

The Council has no policy making powers but can give advice on monetary policy matters. Its 3 to 5 are members appointed by the Government for 4 years, renewable. The Council is presided by the General-Director of the Luxembourg Monetary Institute.

Because of the Belgian-Luxembourg Economic Union, the Institute can only issue a limited amount of money per year. For historical reasons 'La Banque Internationale à Luxembourg' can also issue money, since 1967 however with a limit of 50 million Luxembourg-francs a year.

A. 6 New Zealand

At the beginning of this century the New Zealand economy was based on the sterling standard; Australian and New Zealand pounds were linked to the British pound sterling. Abolition of this parity caused problems for New Zealand, as the Australian pound devaluated more than the New Zealand pound. This resulted in the New Zealand demand for its own currency, what ended in the creation of the central bank of New Zealand, the Reserve Bank.

The current central bank law of New Zealand, the Reserve Bank of New Zealand Act 1989 replaced the Reserve Bank Act of 1964. The act of 1989 came forth as a reaction on the weak economic performances in New Zealand during the period 1970-1980. The country suffered from an expanding government debt, yearly inflation of more than 10 percent and an average annual economic growth of 1.4 percent. This strengthened the belief that economic policy had to change. As a consequence, long term price stability was given more emphasis in monetary policy.

'The primary function of the Bank is to formulate and implement monetary policy directed to the economic objective of achieving and maintaining stability in the general level of prices.'³⁴⁾ In the formulation and the execution of monetary policy the Reserve Bank has to take account of the efficiency and soundness of the financial system. The Bank has also to 'consult with, and give advice to, the Government and such persons or organisations as the Bank considers can assist to achieve and maintain the economic objective of monetary policy.'³⁵⁾ The rationale for this is that only efficient monetary instruments should be used and that monetary and financial stability are closely linked, because radical changes in monetary policy can seriously damage the stability of the financial system. The obligation to co-operate with other parties prevents the central bank of New Zealand from operating in a vacuum.

The Bank is free to make monetary policy in order to achieve price stability. By choosing price stability and an independent central bank the New Zealand Government showed that priority was given to reducing inflation and stimulating economic growth.

However, monetary policy has to be clearly adjusted to price stability and 'The Minister (of Finance) shall, before appointing, or reappointing, any person as Governor, fix, in agreement with that person, policy targets for the carrying out by the Bank of its primary function during that person's term of office, or next

³⁴⁾ Reserve Bank of New Zealand Act 1989, art. 8.

³⁵⁾ Reserve Bank of New Zealand Act 1989, art. 10.

term of office, as Governor.³⁶⁾ Those policy targets formulate limits for inflation for part of or for the entire term of the Governor.³⁷⁾

Also, the Government has the right 'from time to time, by order in Council, on the advice of the Minister, to direct the Bank to formulate and implement monetary policy for any economic objective, other than the economic objective specified in section 8 of this Act, for such a period not exceeding 12 months as shall be specified in the order.'³⁸⁾ This is a right of instruction of the New Zealand Government; the Government can demand the Reserve Bank to adjust monetary policy to the economic policy preferred by the Government. It should be noted that this procedure is rather difficult, as it requires an order in Council, must be made publicly known and has to be laid before the House of Representatives.

The Reserve Bank can act independently on the foreign exchange rate market, but the government has the final right of say in the exchange rate policy.

The management of the bank consists of the Governor and the Board of Directors.

The Governor is appointed by the Minister of Finance on proposal of the Board of Directors for a period of five years, and his term is renewable. He is the Chief Executive of the Bank and must see to it that the Bank fulfils its statutory tasks. Besides the Governor of the Reserve Bank of New Zealand there are one or two Deputy Governors. One of them is the Deputy Chief Executive of the Reserve Bank and both are nominated by the Board for five years on proposal of the Governor. The Governors decide the functions of the Deputy Governors. The Board of Directors has 7 to 10 members. They are the Governor and the Deputy Governor(-s) of the Reserve Bank and 4 to 7 non-executive directors, appointed by the Minister of Finance for five years.

The Board supervises the Reserve Bank and the Governor and takes care that price stability objectives are respected. 'The Board may give advice to the Governor on any matter relating to the performance of the Banks' functions and the exercise of its powers'³⁹⁾ i. e. the Governor alone is responsible for the monetary policy and achieving the Policy Targets Agreement. He himself is the policy board of the Reserve Bank of New Zealand.

The Reserve Bank does not give credit to the government because monetary financing is contrary to the price stability objective, though it is not legally forbidden.

A. 7 Norway

'Norges Bank', the central bank of Norway was created in 1816. The Bank functioned under the central bank law of 1892 until 1985, when a new central bank law was adopted; the Act of 24 May 1985 relating to Norges Bank and the Monetary System.

'Norges Bank is the country's central bank. The Bank shall be an executive and advisory body for monetary, credit and foreign exchange policy. It shall issue banknotes and coins, promote an efficient payments system domestically as well as vis-à-vis other countries, and monitor developments in the monetary, credit and foreign exchange markets.

The Bank may implement any measures customarily or ordinarily taken by a central bank. To further its objectives the Bank may engage in all types of banking business and banking services.'⁴⁰⁾ I. e. price stability is obviously not the main objective of Norges Bank.

'Norges Bank shall conduct its operations in accordance with the political and economic guidelines drawn up by the government authorities and with the country's international commitments.'⁴¹⁾

In other words, the Norwegian Government determines monetary policy and Norges Bank has to follow that policy; the Bank is not independent of the Government. The Government of Norway has also an explicit right to give the Bank instructions: 'The King in council may pass resolutions regarding the activities of the Bank. Such resolutions may take the form of general rules or instructions in individual cases'.⁴²⁾ This right of instruction however has to be seen as an ultimate means in case of a conflict between the

³⁶⁾ Reserve Bank of New Zealand Act 1989, art. 9(1).

³⁷⁾ The Governor of the Reserve Bank of New Zealand and the minister of Finance agreed to a Policy Targets Agreement for 1993 of an inflation rate between 0 and 2 percent.

³⁸⁾ Reserve Bank of New Zealand Act 1989, art. 12(1).

³⁹⁾ Reserve Bank of New Zealand Act 1989, art. 52-63.

⁴⁰⁾ Act of 24 May 1985 relating to Norges Bank and the Monetary System, art. 1.

⁴¹⁾ Act of 24 May 1985 relating to Norges Bank and the Monetary System, art. 2.

⁴²⁾ Act of 24 May 1985 relating to Norges Bank and the Monetary System, art. 2-3.

Government and the Bank.

Norges Bank has to lay before the Minister of Finance every important decision. The Bank also has to inform the public about the monetary, credit and foreign exchange situation. The external value of the Norwegian currency, the Crown, and modifications thereof, are determined by the Norwegian Government. The central bank of Norway is responsible for exchange rate management itself.

The principal bodies of the Bank are the Executive Board and the Supervisory Council. The Governor and the Deputy-Governor of Norges Bank are chairman and deputy-chairman of the Board. They are appointed full-time for six years (renewable). The other five members are nominated part-time for 4 years with a maximum term of 12 years.

The Board is the executive and advisory authority of the Bank and is in charge of the Bank's activities and administers its funds.

The Supervisory Council has 15 members, elected by Parliament for a term of 4 years. All members have a maximum term of 12 years. The chairman and the deputy-chairman are elected among the Supervisors, also by Parliament, for two years.

The Council sees to it that the Bank's activities are properly executed.

The Bank can give the Government seasonal and other short term credit, with specific limits to be stipulated by Parliament. Under special circumstances there is also the possibility for long term credit, limits again to be stipulated by Parliament.

A. 8 Poland

The National Bank of Poland was created in 1948 after the Second World War when the Polish financial system was disrupted.⁴³⁾ After 1950, when the last commercial banks were closed, the Polish financial system showed many resemblances with the Soviet system. The 'Narodowy Bank Polski' was, until 1989, the only bank in Poland. At the beginning of that year however the Bank became again a real central bank as the division between central bank and commercial bank was re-established. The Narodowy Bank Polski was divided and retained only the traditional central bank objectives.

Together with the re-establishment of the central-commercial bank division, the new statute for the Polish central bank came in force.

Despite several adjustments in this statute, the Act on Narodowy Bank Polski is still the central bank law of Poland.

Article 1 starts with proclaiming the National Bank of Poland as the central bank of the country with tasks like issue of money, central clearing and credit institution as well as central banking institution for foreign exchange control.

The main objectives of the Bank are 'issuing legal tender of the Republic of Poland, granting refinancing credits to other banks, accepting deposits, carrying out monetary settlements, organizing operations in foreign currencies in accordance with provisions of the Foreign Exchange Control Law, performing banking services for the state budget and other activities as provided in the present act.'⁴⁴⁾ By this last task can be understood the supervision on the financial sector.

The primary objective of the Polish central bank is aimed especially at strengthening the Polish currency. External stability rather than price stability has priority within the central bank.⁴⁵⁾

The Bank co-operates in the forming and execution of the economic policy of the Government, within its range of possibilities and according to acts and resolutions of the Sejm (Parliament). This means that the Polish Parliament has influence through economic policy on the central bank. 'Within the range of its activities the National Bank of Poland initiates and forms monetary policy including also foreign exchange policy, according to the recommendations of the Sejm'.⁴⁶⁾ I. e. the Polish Parliament has also direct influence on the Bank's monetary policy.

The Narodowy Bank Polski (NBP) is governed by the President of the NBP, Deputy Presidents of

43) The history of the central bank in Poland is actually longer than 1948. The first bank fulfilling this function in Poland - the Bank of Poland - was established in 1924.

44) Act on Narodowy Bank Polski, 1989, art. 6.1.

45) It should, however, be mentioned that the real strength of domestic currency vis-à-vis other currencies depends mainly on controlling the level of inflation. So, price stability plays an important role in NBP policy, although it is not an explicit policy goal.

46) Act on Narodowy Bank Polski, 1989, art. 6.2.1 and 6.2.2.

NBP and the Board of Management.

The President is appointed by the Sejm on proposal of the President of the Polish Republic for a term of 6 years and he is in charge of the management of the Bank.

Co-operation between the Bank, Parliament and Government is stimulated by law as the President of NBP takes part in meetings of Parliament and the Council of Ministers.

The Deputy Presidents are appointed by the President of the Republic at a motion of the President of NBP.

Members of the Board of Management are the President and Deputy Presidents of NBP and other members, directly nominated by the president of the Polish central bank. Nor the Polish government nor the Sejm (Parliament of Poland) have a representative on the Board of Management. The exact number of Deputy Presidents is not given in the Polish central bank law, the same goes for the number of other members of the Board of Management.

The Board is the highest policy authority within Narodowy Bank Polski and 'considers main issues within the scope of activities of the NBP and adopts resolutions necessary to perform tasks of the NBP, regarding in particular:

- 1]
- 2] functioning of credit and monetary systems,
- 3] monetary policy
-
- 7] interest rate policy,
- ...⁴⁷⁾.

The central bank of Poland can finance the government by the buying of bills of exchange who are issued by State Treasury. On a yearly basis this amount cannot exceed 2 percent of the expected government expenses.

A. 9 Portugal

The 'Banco de Portugal is the central bank of the Portuguese Republic and in such capacity it shall ensure the internal monetary equilibrium and the external solvency of the currency'.⁴⁸⁾

Thus the central bank of Portugal has to pursue price and exchange rate stability.

'As central bank, it shall be particularly incumbent on the Bank, taking into account the Government's guidelines, to

- a) Cooperate in the formulation of and execute the monetary and exchange rate policy;
- b) Manage the foreign assets of the country or any other assets entrusted to it;
- c) Act as intermediary in the international monetary relations of the State;
- d) Provide for stability of the domestic financial system, performing for the purpose the function of lender of last resort.⁴⁹⁾

The Portuguese central bank also advises the Portuguese Government on monetary, financial and exchange rate matters, the Bank supervises the financial sector and issues banknotes.

As noted above has the central bank of Portugal has no independent monetary policy authority but the Bank is alone responsible for the execution of monetary and exchange rate policy. Also, in execution of these policies the Bank 'may carry out any operations justified by virtue of its capacity as central bank, namely the following:

- a) To rediscount and discount for a period not exceeding one year, drafts, certificates of indebtedness, invoice statements, warrants and other similar credit instruments, under the condition laid down by the Board of Directors;
- b) To buy and sell securities issued by the Portuguese State;
- c) To grant loans to credit and quasi-banking institutions for a period not exceeding one year...'.⁵⁰⁾

The important bodies of the Banco de Portugal are the Governor, the Board of Directors, the Board of Auditors and the Advisory Board.

⁴⁷⁾ Act on Narodowy Bank Polski, 1989, art. 49.

⁴⁸⁾ Organic Law of the Banco de Portugal, Approved by Decree-Law No. 337/90 of October 1990, art. 3.

⁴⁹⁾ Organic Law of the Banco de Portugal, Approved by Decree-Law No. 337/90 of October 1990, art. 18.

⁵⁰⁾ Organic Law of the Banco de Portugal, Approved by Decree-Law No. 337/90 of October 1990, art. 35.

The Governor has to represent the Bank, act on behalf of the central bank with foreign or international institutions and to supervise the Board of Directors. Like the members of the Board of Directors, the Governor is appointed by the council of ministers on proposal of the Minister of Finance for a renewable term of five years. He has the power to suspend those decisions of the Board of Directors or by executive committees he judges contrary to the law, the country or the central bank. However, such a suspension has to be supported by the council of ministers within 15 days, otherwise the suspension ceases to exist.

The Board of Directors consists of the Governor of the Portuguese central bank, one or two Deputy Governors of the Bank and three to five Directors. The Board of Directors is responsible for all actions needed to achieve the objectives of the Bank that are not within the competence of other bodies of the Bank. From this follows that the Board is responsible for the price stability objective. The Board of Directors can delegate powers to executive committees. In practice, there are regular meetings between the Board and the Minister of Finance, the members of the Board can however not receive monetary policy instructions.

The Board of Auditors has four members. Three are appointed by the Minister of Finance and one by the employees of the Bank. The main task of the Board of Auditors is financial supervision on the central bank of Portugal.

The Advisory Board gives its opinion on the year statement of the Bank and on matters laid before the advisors by the Board of Directors.

'The State may resort to an account, free of charge, opened with the Bank whose debit balance shall not exceed 10 percent of the current revenue collected in the previous year.'⁵¹⁾ Monetary financing is possible because 'the Bank shall not grant credit to the State nor any other public-law juridical person except through the underwriting of treasury bills under terms agreed between the Finance Ministry and the Bank with due observance of legal ceilings.'⁵²⁾

Because of the Treaty of Maastricht it should be noted that the central bank law of Portugal has to be modified to fulfil the conditions for an economic and monetary union in Europe as laid down in the Treaty. In order to meet the requirements of the treaty of Maastricht, the Banco de Portugal has to become independent of the Portuguese Government.

A. 10 Spain

The predecessor of the current Spanish central bank, the 'Banco de España', was the Bank of San Carlos, erected in 1782. This bank merged with the Bank of Isabel II in 1847 and became the New Spanish Bank of San Fernando. With the first bank law in Spain, 1856, the name of this bank changed into 'Banco de España'. The Bank of Spain was nationalised in 1962 and then this bank became the central bank of Spain.

In 1980 a new statute for the Spanish central bank was adopted; tasks of the Bank were redefined and the Bank's independence was strengthened. The present day statute for the Bank of Spain was passed by the Spanish Parliament in October 1993. This new statute adjusted the former Spanish central bank law to the Treaty of Maastricht.

The law of February 1st 1993, which enlarges the independence of the Bank of Spain, is deduced from the Statute for the European Central Bank and the Treaty of Maastricht. Parts of the law of 1980 are used, especially about the governing bodies of the Bank. The major changes have occurred in the field of monetary policy and financing government debt.

Article 2 of the law gives the Spanish central bank control over monetary policy; the Bank is responsible for formulating and executing monetary policy with price stability as main objective. Monetary policy however has to support government economic policy if that policy is focused on stable prices and has no inflationary character.

According to article 6, exchange rate policy remains the government's concern, but the government has to consult with the Bank of Spain on exchange rate matters, with a view to avoiding any potential conflict between exchange rate policy and the objective of price stability.

Other tasks of the Bank of Spain are supervision on financial institutions, promoting stability of the Spanish financial system and issuing currency.

The important bodies of the Spanish central bank are the Governing Council, the Executive

⁵¹⁾ Organic Law of the Banco de Portugal, Approved by Decree-Law No. 337/90 of October 1990, art. 26.1.

⁵²⁾ Organic Law of the Banco de Portugal, Approved by Decree-Law No. 337/90 of October 1990, art. 27.1.

Commission, the Governor and the Deputy Governor.

The Governor of the Bank is appointed by the King on proposal of the Prime Minister for one six year term. The Deputy is appointed for the same single term, but by the Government on proposal of the Governor of the Bank.

The Governing Council consists of the Governor, the Deputy Governor, six members, the General Director of Treasury and Finance, the Deputy Chairman of the National Stockmarket Commission, all the General Directors of the Bank and the General Secretary of the Bank.

The six members are appointed by the Government on proposal of the Minister of Finance who discusses this with the Governor of the Spanish Central Bank. Their term is 8 years. The General Director of Treasury and Finance and the Deputy Chairman of the National Stockmarket Commission have no voting right concerning monetary policy making. The General Directors and the General Secretary of the Bank have no voting right at all.

Guidelines and execution of monetary policy are fixed by the Governing Council. The Minister of Finance may by exception attend the meetings of the Council, in an advisory capacity.

Daily management is in the hands of the Executive Commission. Members are the Governor of the bank, the Deputy Governor of the Bank and two other members. Those two come forth out of the six members of the Governing Council and are appointed by the Governing Council on proposal of the Governor. The General Secretary is member with no voting right. The General Directors of the Spanish central bank may attend the meetings of the Commission in advisory capacity.

The Spanish Government has no right of instruction which is in accordance with the main motive of the new statute, enlarging the independence of the Bank of Spain.

Also, the Bank can no longer give the Spanish Government credit. Monetary financing is forbidden in the new law of 1993, in accordance with the Treaty of Maastricht.

A. 11 Czech Republic

The history of the Czech financial system is identical with Slovak financial history, as these two Republics formed one single State until 1993.

The banking system in Czechoslovakia originated when in 1918 the Austro-Hungarian banks in Czech territory came under the control of the new Czechoslovakian State. At that time the central bank was part of the Ministry of Finance. In 1926 those tasks were carried on to the National Bank of Czechoslovakia. After the Second World War the Czechoslovakian financial system was replaced by the communist system and the State Bank of Czechoslovakia was created in 1950. This central bank was also the only commercial bank in the country, besides two pre war banks.

With the fall of the Berlin wall in 1989 democracy was restored in Czechoslovakia and economic changes made. Therefore the division between central and commercial bank embodied in law 130/1989 on the State Bank of Czechoslovakia was replaced by the 'Act No. 22/1992 Collection of Laws on the State Bank of Czechoslovakia' because the former could not adjust to the fast changing economic environment.

On November 25, 1992, the Federal Parliament of Czechoslovakia decided to dissolve the Czechoslovakian Republic. On January 1, 1993, the Czech National Bank was created as the first and new central bank of the Czech Republic. The new central bank law, the 'Act on the Czech National Bank of December 17th, 1992' is very similar to its predecessor, Act 22/1992.

The Czech National Bank has a primary objective 'to ensure the stability of the Czech national currency (the Crown). For this purpose the Czech National Bank shall:

a) set monetary policy; ...⁵³⁾

'In providing for its primary objective the Czech National Bank shall be independent of any instructions given by the Government.'⁵⁴⁾ I. e. the Czech central bank has a strong independent position. Concerning exchange rate policy, 'The Czech National Bank shall:

a) proclaim the exchange rate of the Czech currency vis-à-vis foreign currencies;⁵⁵⁾ Thus the Bank is also responsible for exchange rate management.

In other words the Czech National Bank is responsible for the internal and external value of the Czech

⁵³⁾ Act on the Czech National Bank, 17 December 1992, art. 5.

⁵⁴⁾ Act on the Czech National Bank, 17 December 1992, art. 9(1).

⁵⁵⁾ Act on the Czech National Bank, 17 December 1992, art. 35.

currency.

Co-operation between Bank and Government is stimulated by law as a Government representative is allowed to attend the meetings of the Bank Board of the Czech National Bank, in advisory capacity and the Bank gives the Government advice in the monetary and banking field.

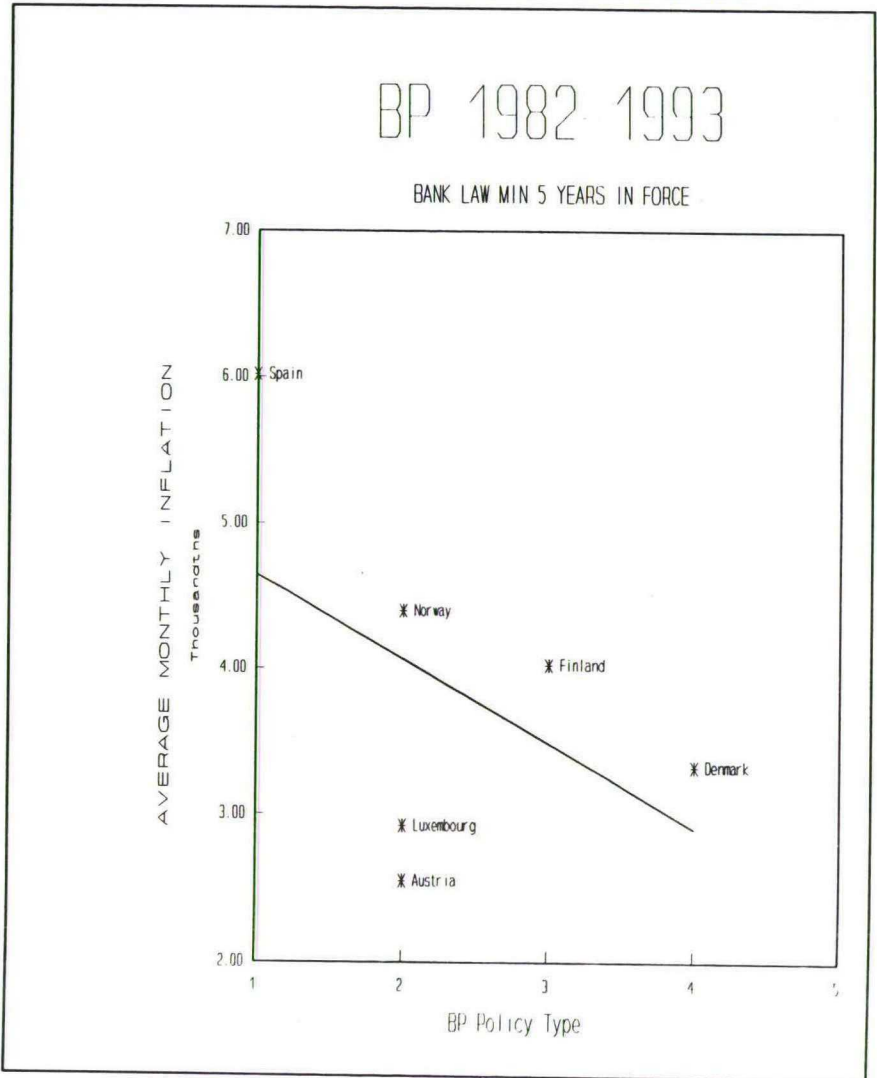
The Czech National Bank is governed by the Bank Board. 'The Bank Board shall set monetary policy and the instruments for the implementation of these policies, and shall decide on the measures to be taken in the sphere of monetary policy.'⁵⁶⁾

The Board consists of the Governor of the Bank, two Deputy Governors of the Bank and four other senior officers of the Bank. All members of the Board are appointed by the President of the Czech Republic for a period of six years. The central bank law stipulates quite clearly the motives for dismissal of one of the Boardmembers, in order to protect the independent position of the Bank.

The Czech National Bank can give credit to the Government to help to bridge temporal budget deficits. The total amount of credit may not exceed 5% of the previous year's State revenues.

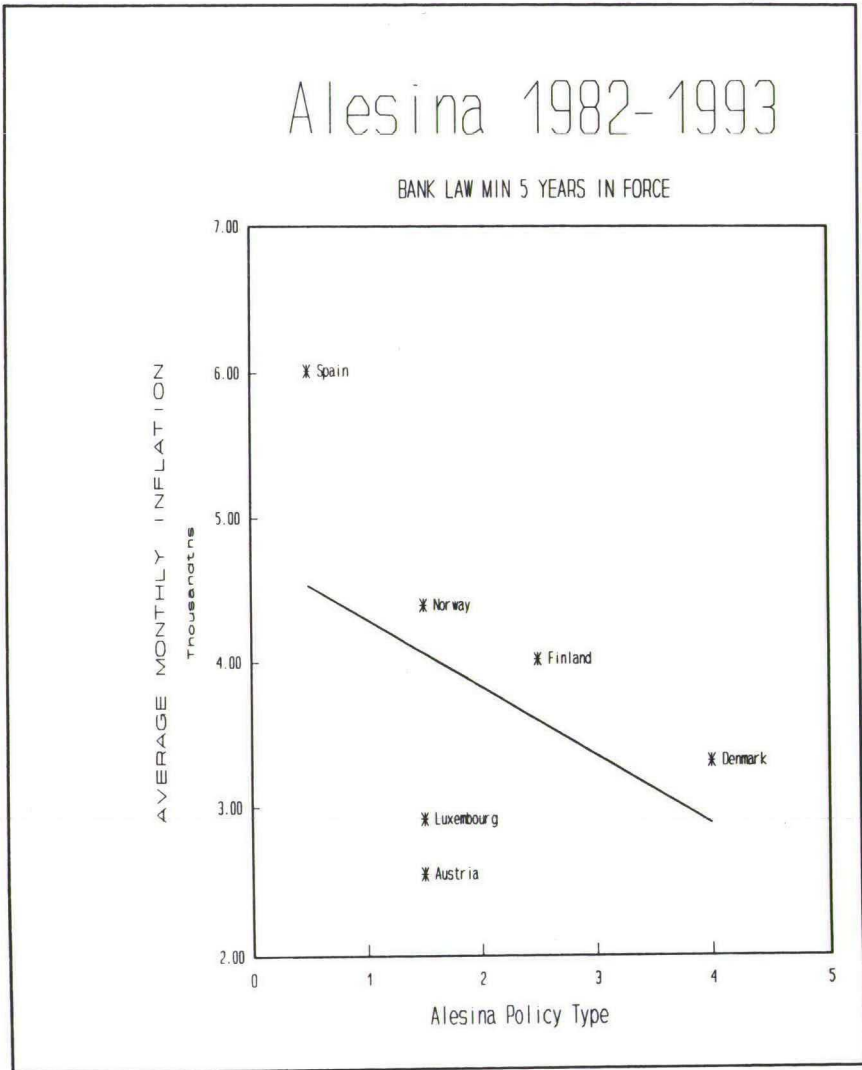
⁵⁶⁾ Act on the Czech National Bank, 17 December 1992, art. 2.

FIGURE 1: The Bade-Parkin index and the level of inflation



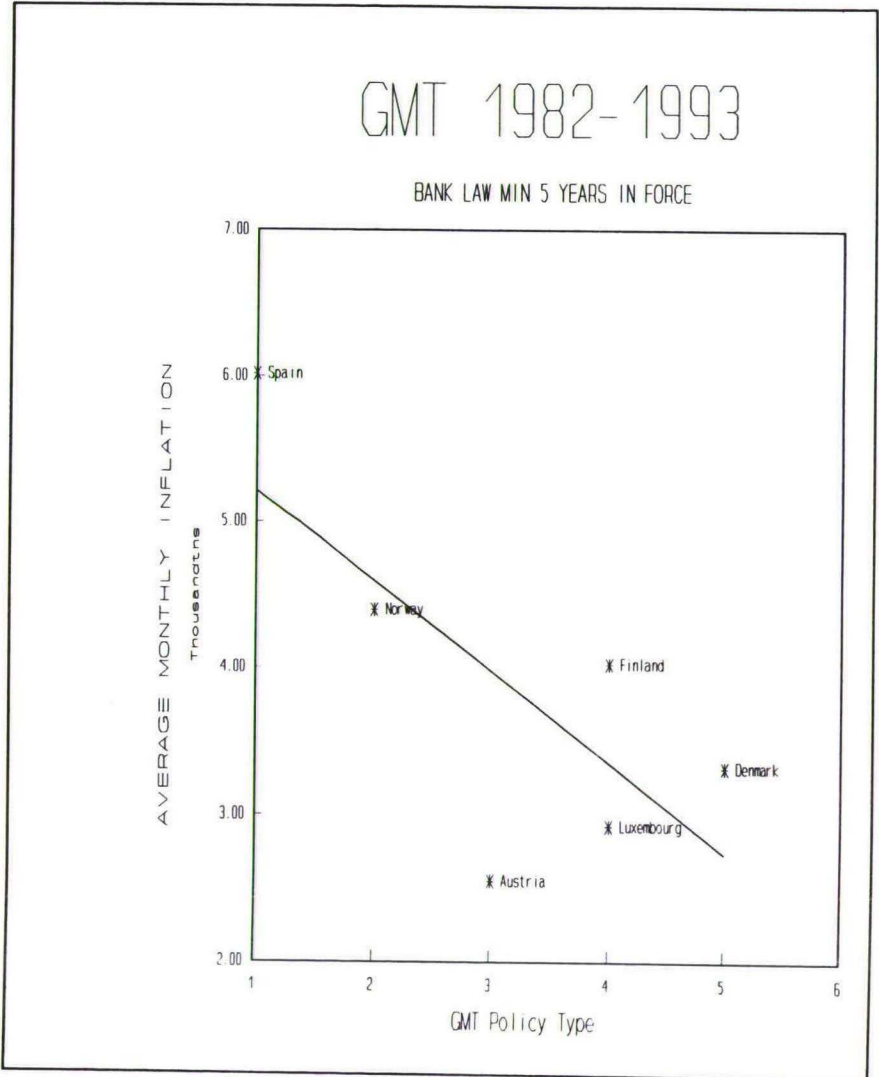
$$\text{Average monthly inflation} = 0.005226 - 0.00058 * \text{BP} \\ (3.900) \quad (-1.191)$$

FIGURE 2: The Alesina index and the level of inflation



$$\text{Average monthly inflation} = 0.004768 \quad - \quad 0.00047 * \text{Alesina} \\ (4.630) \quad (-1.004)$$

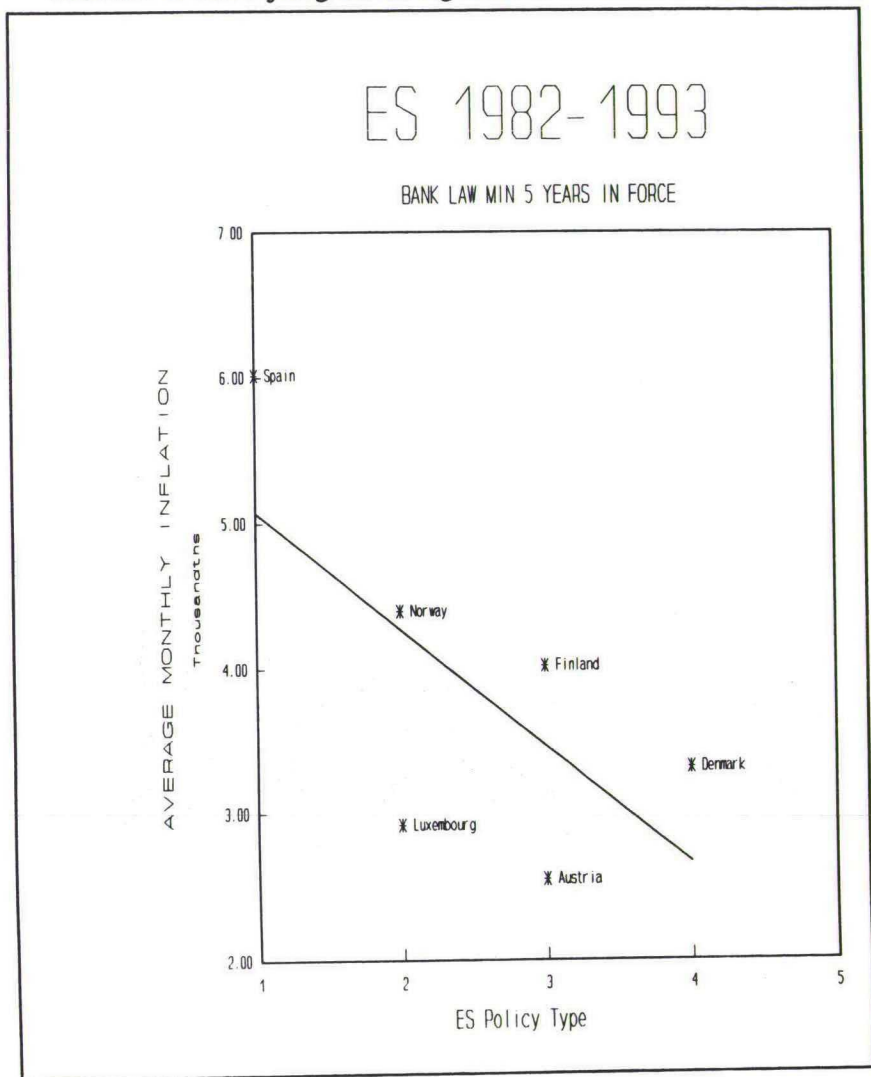
FIGURE 3: The Grilli-Masciandaro-Tabellini index and the level of inflation



$$\text{Average monthly inflation} = 0.005834 \quad - \quad 0.00062 * \text{GMT}$$

(5.820) (-2.128)

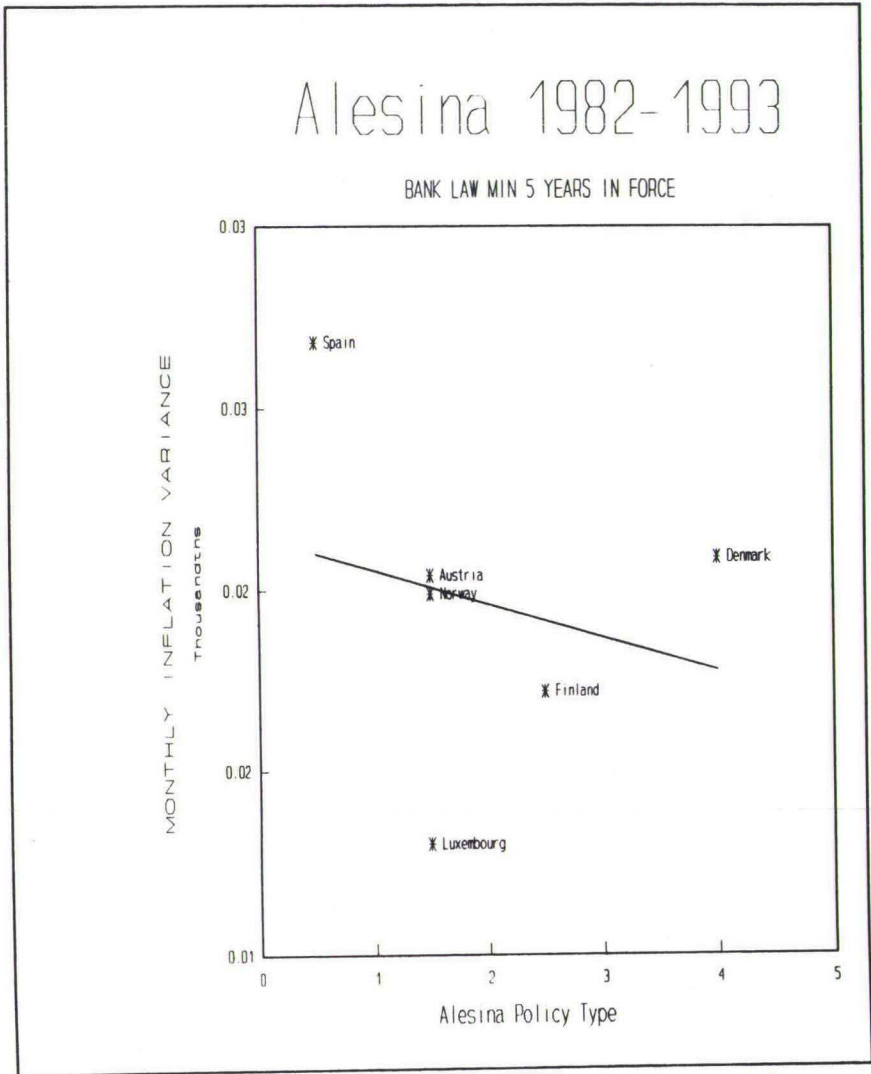
FIGURE 4: The Eijffinger-Schaling index and the level of inflation



$$\text{Average monthly inflation} = 0.005879 - 0.0008 * \text{ES}$$

(4.978) (-1.817)

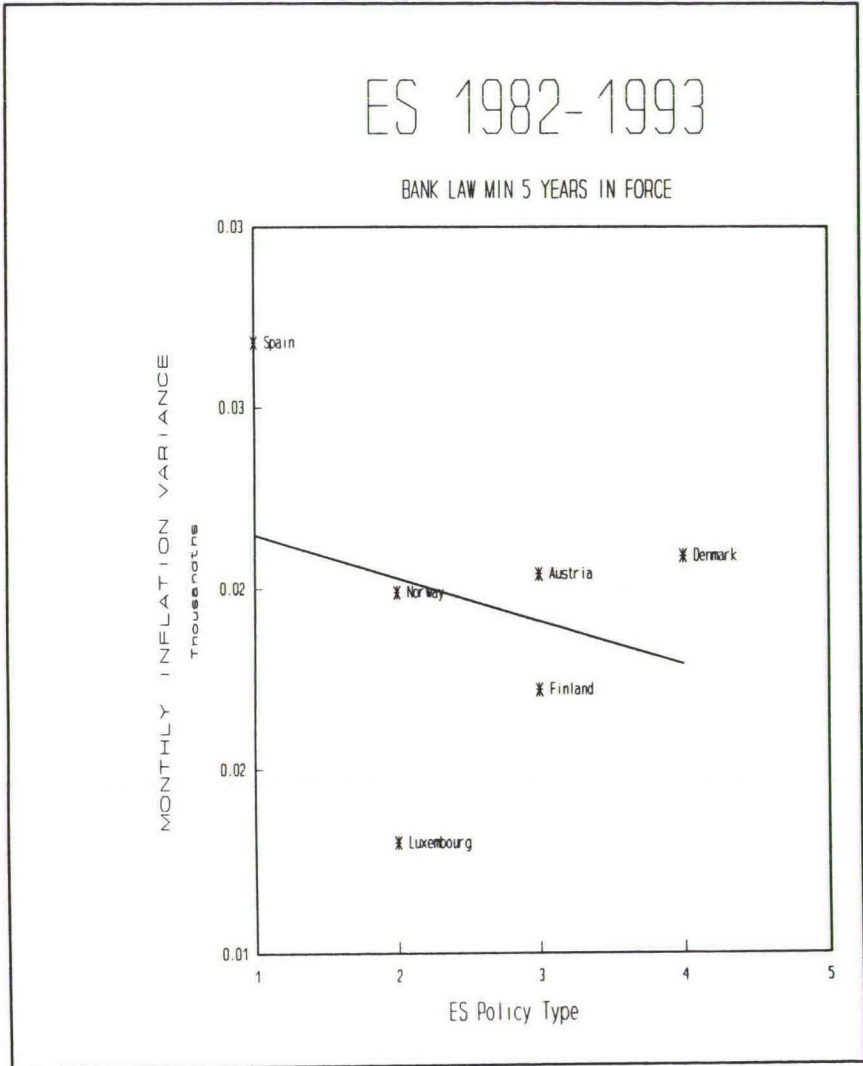
FIGURE 6: The Alesina index and the variability of inflation



$$\text{Monthly inflation variance} = 0.0000214 - 0.0000009 * \text{Alesina}$$

(5.285) (-0.498)

FIGURE 8: The Eijffinger-Schaling index and the variability of inflation



$$\text{Monthly inflation variance} = 0.0000226 - 0.0000012 * \text{ES}$$

(4.055) (-0.566)

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