Political Pressure on Central Banks: The Case of the Czech National Bank

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1. Introduction

Both theoretical discussion and empirical evidence have shown that monetary constitution where the central bank's decision body is isolated from government when deciding about monetary policy is an effective arrangement for maintaining macroeconomic stability, one of the necessary conditions for sustainable economic development. As a result, central banks are nowadays granted a large degree of independence from the political system, at least from the short-term preferences of the incumbent government.[1]

Nevertheless, although formally independent from politics, central banks will always remain at the center of politicians' attention. The reason is that central banks, when aiming at maintenance of price stability, influence via monetary-policy instruments the entire macroeconomic development, including GDP and wage growth, which in turn may have an impact on the success of different interest groups in political competition. Thus, if there is a possibility for politicians to influence current monetary policy in favor of their interests, i.e. maximization of political support and re-election chances, they will definitely try to use it.[2]

Moreover, no central bank can be fully independent from the political system, as a central bank – as a public institution serving for maintaining price stability, the collective good – is a part of the political system in a wider sense. Members of the central bank's decision body are usually selected via political mechanisms, appointed by one or more political, or, more precisely, collective bodies such as parliament, the government or the president. The central-bank legislation, which determines the legal environment in which the central bank operates, is a part of the legal system that is formed

[1] For the issues related to the independence of central banks and the effect on macroeconomic stability, see (Cukierman, 1992), (Moser, 2000) or (Berger et al., 2001).

[2] For the discussion of literature related to links between politics and macroeconomic policy, see the extended version of this article (Geršl, 2005).

and amended by the legislature, i.e. also by political bodies. As a result, there are often ways and channels through which politicians may be able to influence the monetary policy of formally independent central banks.

This paper follows the public choice approach to monetary policy and applies a methodology originally developed by Havrilesky (1993) for measuring political pressure on central banks and testing whether such pressure influences monetary policy. The methodology is applied to the Czech National Bank, next to the original Federal Reserve and the Deutsche Bundesbank (Maier, 2002), the third central bank to which this methodology has been applied. We aim to answer the question of whether there has been political pressure exercised on the Czech National Bank, and whether the bank has fallen prey to it, thus accommodating the revealed preferences of those exerting the pressure. Using the same methodology as Havrilesky (1993) and Maier (2002) also allows some basic comparisons of all three central banks in terms of the amount of political pressure they face and their responsiveness to it.

The paper is organized as follows: section 2 introduces and discusses Havrilesky's methodology for measuring political pressure, while section 3 presents the results from its application to the Czech National Bank over the period 1997–2005, including some comparisons with the U.S. Federal Reserve and the Deutsche Bundesbank. Section 4 attempts to explain the pattern of pressure on the Czech National Bank. Section 5 presents the results of several econometric tests of whether political pressure exerted on the Czech National Bank influenced the conduct of monetary policy. Section 6 concludes the paper.

2. Havrilesky's Methodology and Maier's Extension

If the central bank were fully dependent, government could easily adjust monetary policy according to its preferences simply by implementing it by decree. However, with independent central banks, politicians can only try to force the central bank to adopt their preferred policies by indirect means, i.e. by signaling the preferred monetary-policy stance and threatening to use all possible levers and means to coerce the central bank into accommodating their wishes.[3]

In order to be able to analyze systematically whether politicians and other interest groups have exerted pressure on the central bank, and if so, how intensive the pressure was and whether the central bank succumbed to it, we need an indicator for political pressure. Such an indicator must ideally have the three following properties:

– It must be able to measure the political pressure continuously, i.e. also in the period between elections. The traditional political business-cycle literature predicts that political pressure is usually exerted before elections, so that a proxy based on time should be sufficient. However, as governments seek political support from the electorate also during the whole term of office, we thus need an indicator that can capture it.

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[3] The issue of political pressure on central banks – mainly on the Federal Reserve – has been discussed by Havrilesky (1993), Grier (1991), Wooley (1984), Mayer (1990), Posen (1993) and Toma and Toma (1986).

– It must indicate the direction and strength of the pressure and thus the size of the conflict between the central bank's desired policy and that of the politicians.
– It should allow for measuring the pressure from other interest groups as well, not only from the government.

In his influential study on pressure on the Federal Reserve, Havrilesky (1993) developed an indicator that fulfils the above-mentioned properties. The indicator is based on the number of newspaper reports in which politicians express preferences over a more or less restrictive monetary policy. He has counted the number of articles in the Wall Street Journal in which members of the executive branch (i.e. the Administration) demanded a change in monetary policy. If an article showed that a government official called for monetary ease, it was assigned a value of +1, while an article calling for tightening monetary policy was assigned a value of -1. The sum of all pluses and minuses constituted the so-called SAFER index, so that for example a positive value of the SAFER index over some period indicated "net" pressure for monetary ease (because the remaining pluses and minuses canceled each other out).

When analyzing the pressure on the Deutsche Bundesbank, Maier (2002) extended the Havrilesky approach in two ways.[4] First, he took into account also signals from other interest groups, namely from the financial sector, employers, trade unions, and others including academic researchers, international institutions and other non-specified entities demanding change in monetary policy. The motivation for including other interest groups is to enable the disaggregating of the total existing pressure with respect to its origin, and to subsequently test to which interest group's pressure the central bank responded and to which it did not. Second, he also introduced a new variable called public support, as some literature emphasized the role of public support for the Bundesbank as one of the decisive factors historically contributing to the factual independent conduct of monetary policy aimed at price stability (Berger – de Haan, 1999). In the same way as for the pressure indicator, the support indicator was constructed by counting newspaper articles with supportive statements regardless of the actual monetary policy and assigning the value of +1 to them if they expressed support.[5]

It is clear that Havrilesky and Maier's approach to measurement of political pressure that is based on newspaper articles suffers under some drawbacks. First, it assumes that newspaper reports are representative of actual signaling from interest groups, but this is not necessarily the case if there are also other channels through which politicians may signal their preferences over monetary policy (such as more informal ways through bilateral meetings, telephone calls or via other media). Second, it assumes that two articles mean twice as much pressure than one article, which is not necessarily true. Third, the number of articles dealing with monetary

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[4] The part of the book by Maier (2002) to which we are referring is based on (Maier et al., 2002).

[5] Maier (2002) also changed the sign of the value assigned to articles demanding change in monetary policy, so that articles demanding monetary ease were assigned the value of -1 and articles demanding monetary restriction +1. He also – in contrast to Havrilesky (2003) – counted articles from three different German newspapers instead of only one in order to capture the pressure as broadly as possible.

policy may vary, depending also on whether there is enough news from other areas (in which case there will probably be less than the average number of signals) and whether someone deliberately started a discussion about monetary policy (in which case there will be more than the average number of signals). Nevertheless, despite all the possible drawbacks, the pressure indicator based on newspaper signals may still have some value added in capturing the political pressure, given the lack of other indicators.

3. Constructing the Pressure Indicator for the Czech National Bank

In what follows, we construct the pressure indicator for the Czech National Bank (CNB), the central bank of the Czech Republic, using the Maier's extended approach based on Havrilesky (1993). In the first step the newspaper was selected: Maier (2002) lists three criteria for a suitable newspaper from which to count "pressure" articles, namely:
- independence (the newspaper should be politically neutral in order to avoid political bias in published articles),
- availability (the newspaper should cover a reasonably long time period), and
- circulation (the newspaper should be widely read, especially by central bank officials, so that signals published there do in fact reach the intended recipients).

It is not easy to select a newspaper that fulfils all three criteria (so for example for Germany, Maier (2002) decided to use articles from three different German newspapers). Nevertheless, as the Czech Republic is a relatively small country, the only newspaper that systematically follows economic developments, is regularly and widely read by economists (including those of the central bank), is neutral and has been available since the beginning of the Czech Republic (since 1993) is the newspaper Hospodářské noviny. This Czech newspaper is additionally the best candidate to serve as a natural counterpart to economic newspapers such as the U.S. Wall Street Journal (selected by Havrilesky) or the German Handelsblatt (selected – along with two others – by Maier).[6]

The next step was to choose the period. The Czech Republic practiced from the beginning of 1993 until mid-1997 an exchange rate peg (to a basket of DEM and USD, the main trading partners' currencies) and the monetary policy was based on a combination of maintaining exchange-rate stability and monetary targeting, using monetary policy instruments such as the forex window and interventions, minimum reserve requirements and interest rates. The peg was abolished in May 1997 and the Czech koruna began to float, while the central bank moved to inflation-targeting framework as of the beginning of 1998, using official interest rates as the main monetary policy instrument. Given the "dual" nature of the monetary regime between 1993 and mid-1997, the central bank was to some limited extent free to pursue its own monetary policy despite the peg and thus it was in principle possible to come into conflict with the government about the "right"

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[6] Articles in the electronic version of the archive of Hospodářské noviny (http://hn.ihned.cz) were used.

monetary-policy stance.[7] However, given the radical change in the monetary-policy regime and monetary-policy instruments in 1997, only the period after the abolition of the peg and the move to floating in May 1997 is probably suitable for a rigorous analysis of political pressure, thus the time span of June 1997–March 2005 was chosen (i.e. a total of 94 months, almost eight full years).

In line with Maier (2002), we have counted articles either directly published by members of five different interest groups or where members of these interest groups were quoted. The following five pressure groups were identified:

– the government, which includes all ministers of the current government, but also other members of the political parties forming the government (most of them members of parliament, but some of them also outside parliament),
– the financial sector, including representatives and analysts of all domestic banks and other financial institutions (insurance corporations, pension and investment funds, etc.),
– employers, i.e. representatives (managers) of non-financial corporations,
– trade unions, and
– others, including all other articles demanding change in monetary policy by others than members of the four above-mentioned groups (i.e. for example from the general public, journalists, political parties in opposition, international institutions, members of academia, independent researchers, etc.).

All articles that dealt with the Czech National Bank were carefully reviewed and assessed. Following Maier (2002), and in contrast to Havrilesky (1993), articles demanding monetary ease were assigned the value of -1, while articles demanding monetary tightness were assigned the value of +1. This was done in order to facilitate the interpretation of the regression results in the next section. For measuring "net" pressure, the sum of all pluses and minuses for all five interest groups and for the total was constructed at a monthly frequency, so that a negative sum indicates an interest group's net pressure for easing monetary policy, while a positive sum indicates net pressure for restrictive monetary policy.

Additionally, the ratio of the sum to the total number of observations for every group and for total pressure was calculated. In comparison to the sum, the ratio has some advantageous features. First, because it relates net pressure as measured by the sum to the total number of pressure signals, it shows the degree of internal integrity of the group. Hereby it is shown whether pressure from members of a certain interest group is going in one direction (both over time and across different members of the same group), or whether it is rather heterogeneous. Thus, for a given level of net pressure as measured by the sum, the higher the ratio (in absolute terms), the higher homogeneity of the pressure group (both over time and over different members of the group) and the more signals from this group going

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[7] Actually, there were conflicts between the central bank and the government, especially as the central bank moved to a restrictive stance in 1996 by increasing minimum reserve requirements, see (Dědek, 2000).

in one direction. Second, in comparison to the sum, it is independent of the time span over which the ratio is calculated. As a result, it is possible to compare the pressure as measured by the ratio across countries, even if the time coverage is different.

As the Czech economy is, in contrast to the German and the U.S. economies, a small and open economy, it is much more sensitive to exchange rate changes. Export-oriented companies, their employees and finally also the political representatives may, for example, feel affected by strong exchange-rate appreciation and may demand "monetary ease" by forcing the central bank to step in and to try to influence the exchange rate using instruments other than interest rates, such as through foreign exchange interventions. Thus, we extend Havrilesky's and Maier's approach in that we additionally take into account articles from interest groups demanding exchange-rate interventions (such that interventions aimed at weakening the Czech koruna are comparable to an interest rate decline, i.e. monetary ease, and those articles counted as −1).[8]

Finally, it must be emphasized that the Havrilesky approach cannot capture all the pressure that was exerted on the Czech National Bank, as some of the pressure was of a more general nature and was only partly mirrored in the newspapers. This relates especially to the period 2000–2001 as the amendment of the Act on the Czech National Bank was discussed in parliament and a number of politicians (from both the government and opposition parties) tried to use this opportunity to severely limit the central bank's independence.[9] As seen from the published articles, the main reason behind the attempt to limit the independence was disagreement with the then monetary policy of the CNB that was regarded by politicians as too restrictive. Thus, those articles that reasoned the call for less independence by "too-restrictive policy" were counted as pressure signals, while the other articles discussing the independence issue more generally were not counted, even if they could have had some impact.

3.1 Political Pressure from the Government

In order to be able to compare all three countries for which the pressure indicator was constructed, we start with the discussion of pressure from government (the only interest group Havrilesky (1993) took into account in his pioneering work). In any case, the government is the most interesting pressure group, because it has an intrinsic motivation to exert pressure on the central bank in order to maximize political support, as discussed above. Additionally, in contrast to the other interest groups, it may have both direct and indirect possibilities for overriding central bank policy.

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[8] Actually, the proportion of articles calling for monetary ease via FX interventions against the appreciating koruna is very small; only around five articles published in the "appreciation" period of 2001–2002 by exporters called explicitly for interventions against the appreciating currency, whilst other articles published in this period demanded more generally "monetary ease", without specifying whether it should be interest rate cuts or interventions.

[9] The amendment that was finally passed limited the independence much less than the original suggestions seriously discussed in parliament, but even this amendment was later canceled by the constitutional court for not being in line with the constitution and EU law.

TABLE 1   Political Pressure on Central Banks from the Government

	CNB	FED	Bundesbank
no. of signals	41	287	85
(out of all pressure signals)	22.8 %	...	16.1 %
period covered	1997:6–2005:3	1952:1–1991:12	1960:1–1998:12
(no. of months)	94	480	468
no. of signals per year	5.2	7.2	2.2
no. of signals for monetary ease	41	192	78
no. of signals for monetary restrictiveness	0	95	7
sum (net pressure; minus = ease)	–41	–97	–71
ratio (sum / no. of signals, in %)	–100 %	–33.8 %	–83.5 %

Sources: author's calculations based on hn.ihned.cz; (Havrilesky, 1993); (Maier, 2002)

Table 1 shows that there are differences among the three countries with regard to the way the government puts pressure on the central bank. First, the intensity with which the government requests change in monetary policy differs. The number of signals from the government was much higher in the American case (on average around seven signals per year) than in the German case (just around two signals per year), despite the fact that pressure signals were collected from three newspapers in Germany, but just from one in the U.S. In terms of the number of pressure signals, the Czech government lies between these two countries with, on average, five signals per year. With regard to the striking difference between the U.S. and the German cases, Maier (2002, p. 80) offers two possible explanations: first, German newspapers may simply report less on monetary issues, and second, the German government and as well as the public appreciates the Bundesbank's policies, so that there is less conflict between the government and the Bundesbank. For the Czech case, the relatively high frequency of signaling from the government indicates quite a high degree of conflict between the government and the CNB, which may be explained by the economic development over the analyzed time period and the government's belief that the CNB was responsible for possible adverse developments and that it should use its instruments to reverse it.

Second, as the number of signals for monetary ease and contraction shows, the governments of all three countries were, on average, requesting monetary ease (net pressure is negative in all three cases). However, the Czech government has been exclusively demanding monetary ease, the German government has been prevailingly requesting monetary ease (and sometimes for monetary restriction), while the U.S. government has more frequently pushed for monetary contraction in comparison to the other two cases. Again, this can be explained by the underlying developments in economic variables such as inflation and GDP growth: while in Germany inflation was on average rather low, the government might have forced the Bundesbank to use monetary policy instruments to support other macroeconomic objectives (higher GDP growth). This was probably not the case in the U.S., where the fight against high inflation in the 1970s and early 1980s was officially supported by the government. Similarly to the Ger-

FIGURE 1 "Net" Political Pressure on the FED from the Government
("sum" of pressure signals; minus SAFER index, whereas minus refers to demand
for monetary ease)
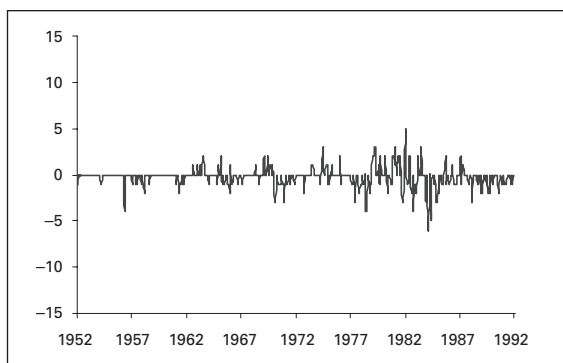
Source: author's calculations based on (Havrilesky, 1993)

man case, the one-way pressure from the Czech government may have been caused by the combination of declining inflation, weak growth and the central bank's still-high interest rates (a detailed analysis is provided in the next section). Nevertheless, on average the government rather pushed for monetary ease instead of the restriction.

Third, the ratio indicates that in contrast to the Czech and German governments, the U.S. administration is far less homogenous. In this regard, we might be interested in whether there was rather heterogeneity across members, across time, or both.

As data are not available for individual members of the "government" group, we can only indirectly derive the degree of homogeneity from the time pattern of the pressure. *Figure 1* shows the development of net pressure on the Fed over time and indicates that signals of the same direction, whether for easing or tightening monetary policy, have come in clusters in the American case.

Thus, as it is rather improbable that always the same member of government signals within one time cluster, the U.S. government is probably homogenous across its members, but not necessarily across time, as it reacts with the pressure signals on economic developments in both directions.

The combined *Figure 2* shows for comparison the time pattern of the pressure from the government on the Bundesbank and on the CNB. In line with conclusions derived from Table 1, we can now see very well that the "density" and frequency of signaling is indeed much lower in the German case than in the U.S. case, and that the signaling is in most cases towards monetary ease.

Figure 2 also indicates that in spite of the short time span of available data, the relative frequency of signaling from the Czech government was relatively high. At the same time, however, the "peaks" in net pressure are lower than in the German and the U.S. cases, indicating that the debate in newspapers on monetary issues might be frequent, but is probably less intensive in the Czech Republic. The reason for this might be that the Czech

FIGURE 2   "Net" Political Pressure on the Bundesbank and CNB from the Government
("sum" of pressure signals; minus refers to demand for monetary ease)
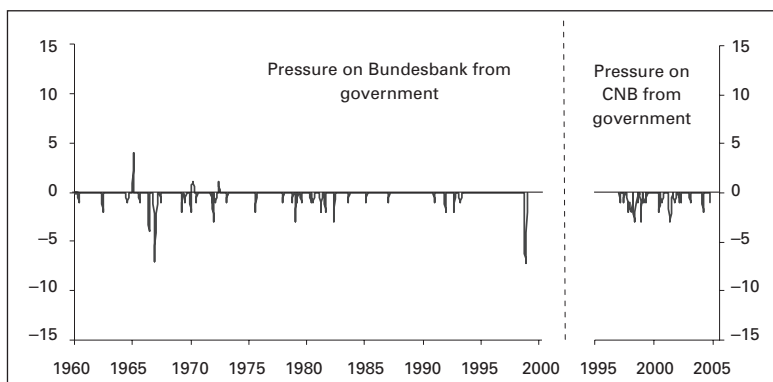
Sources: author's calculations based on hn.ihned.cz; (Maier, 2002); www.philipp-maier.de

government considers a lower degree of signaling within a month as sufficient for effective pressure.

Finally, Table 1 shows that the government does not represent the most active player in signaling. In both the Czech and German cases, the number of signals from the government amounted to less than 25 % of all pressure signals sent to the central bank.

3.2 Total Political Pressure on the CNB and its Decomposition

Table 2 shows the total pressure on the Czech National Bank and its decomposition by interest groups, and compares it with the pressure on the Bundesbank.

Table 2 reveals several interesting features about the pattern of the pressure. First, the frequency of total pressure signals was on average higher in the Czech case (23 signals per year) than in the German case (13 signals per year). This also confirms the combined *Figure 3*.

The "density" of pressure signals to the CNB is comparable only to periods with frequent pressure signals in the German case, as for example with the late 1960s or with the early 1990s. Similarly, as in the case of pressure from the government, the pressure peaks are lower on the CNB than on the Bundesbank, but since the early 1980s, the peaks in pressure on both central banks have been comparable.

Second, in both countries, the total pressure was rather towards monetary ease than towards restriction, but as the ratio shows, the inclination to push for easing monetary policy was much more prevalent in the Czech case. Looking at Figure 3, this may be explained by a too-short time span, which is additionally characterized by declining inflation, so that there was simply no occasion to force the central bank to struggle with rising inflation.

With regard to individual interest groups, the position of the financial sec-

FIGURE 3   Total "Net" Political Pressure on the Bundesbank and CNB
("sum" of pressure signals; minus refers to demand for monetary ease)
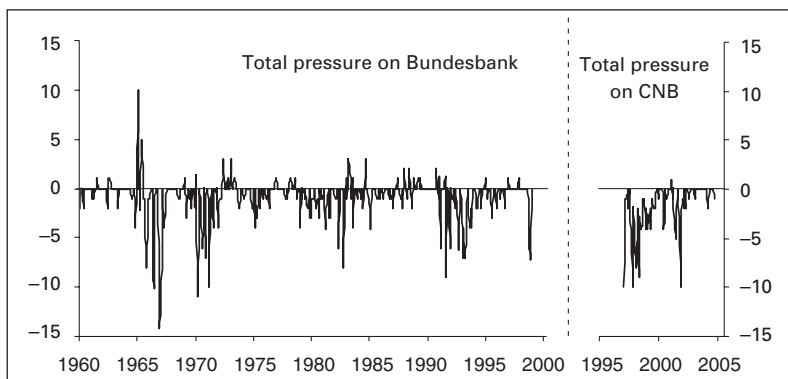
Sources: author's calculations based on hn.ihned.cz; (Maier, 2002), www.philipp-maier.de

TABLE 2   Political Pressure on Central Banks

period covered (no. of months)		CNB	Bundesbank
		1997:6–2005:3 94	1960:1–1998:12 468
total	no. of signals	**180**	**527**
	(out of all pressure signals)	**100.0 %**	**100.0 %**
	no. of signals per year	**23.0**	**13.5**
	sum (net pressure; minus = ease)	**−166**	**−339**
	ratio (sum / no. of signals, in %)	**−92.2 %**	**−64.3 %**
government	no. of signals	41	85
	(out of all pressure signals)	22.8 %	16.1 %
	no. of signals per year	5.2	2.2
	sum (net pressure; minus = ease)	−41	−71
	ratio (sum / no. of signals, in %)	−100.0 %	−83.5 %
financial sector	no. of signals	40	140
	(out of all pressure signals)	22.2 %	26.6 %
	no. of signals per year	5.1	3.6
	sum (net pressure; minus = ease)	−28	−78
	ratio (sum / no. of signals, in %)	−70.0 %	−55.7 %
employers	no. of signals	36	55
	(out of all pressure signals)	20.0 %	10.4 %
	no. of signals per year	4.6	1.4
	sum (net pressure; minus = ease)	−36	−29
	ratio (sum / no. of signals, in %)	−100.0 %	−52.7 %
trade unions	no. of signals	6	69
	(out of all pressure signals)	3.3 %	13.1 %
	no. of signals per year	0.8	1.8
	sum (net pressure; minus = ease)	−6	−69
	ratio (sum / no. of signals, in %)	−100.0 %	−100.0 %
other	no. of signals	57	178
	(out of all pressure signals)	31.7 %	33.8 %
	no. of signals per year	7.3	4.6
	sum (net pressure; minus = ease)	−55	−92
	ratio (sum / no. of signals, in %)	−96.5 %	−51.7 %

Sources: author's calculations based on hn.ihned.cz; (Maier, 2002)

tor in both countries is comparable: the frequency of signaling was rather high; in both countries the financial sector demanded, on average, rather monetary ease – slightly more in the Czech case than in the German case, given the higher ratio of pressure on the CNB.[10] Nevertheless, from a theoretical point of view, it is surprising that the financial sector pushed, on average, more for monetary ease, as some authors (Posen, 1993) argue that the financial sector represents the natural opposition against inflation and against government's attempts to force the central bank to loosen monetary policy.[11] For the Czech case, this may be explained mainly by two factors. First, bank analysts, actually along with members of academia, the only ones with professional knowledge of monetary issues, when regularly assessing the CNB policy, frequently added their own opinions about how the "optimal" disinflation strategy should look. Usually, they were expressing dislike for the too-restrictive monetary policy. Second, bank officials often expressed concerns about the adverse impact of the too-restrictive policy on the financial conditions of their debtors, and thus on their ability to repay existing debt. However, the financial sector remains the sector with the highest number of signals towards tightening monetary policy, at least in the Czech Republic.

The frequency of signaling from employers is much higher in the Czech Republic (on average around five signals per year, as compared to between one and two in Germany). Moreover, they exclusively demanded easing of monetary policy in the Czech Republic when compared to Germany. The reason for both the higher frequency of signaling and the direction of pressure is probably the orientation of most Czech companies towards export, and related sensitivity to exchange rate movements. Representatives of export--oriented companies frequently asked the central bank to "do" something about the too-highly appreciated domestic currency, effectively asking the central bank to ease monetary conditions (i.e. the combination of interest rates and the exchange rate) they faced. This contrasts with the German case. Maier (2002) disaggregated the employers in Germany into two subgroups, export-oriented producers, and firms producing mainly for the domestic market, and showed that the export-oriented firms prevailingly requested monetary ease, while the domestic-oriented firms requested monetary restriction, fearing the consequences of higher inflation more than the export-oriented firms did.[12]

Trade unions in both countries always asked for monetary ease. Nevertheless, the frequency of signals is quite low in the Czech case (just about one signal per year, compared to around 2 per year in Germany), and also the share of signals from trade unions in the total number of signals is much lower in the Czech case, pointing to low-level activity of labor union mem-

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[10] For the time pattern of pressure from individual pressure groups, see the extended version of this article (Geršl, 2005).

[11] An alternative view, however, argues that ongoing monetary ease, i.e. a decline in short-term interest rates, is at least from the short-term perspective profitable for the financial sector, as banks transform short-term deposits into long-term loans, and portfolios that include bonds rise in value.

[12] Out of 55 signals from German employers, 32 (i.e. around 60 %) were export-oriented firms. The domestic-oriented producers were additionally the only group with small but positive ratio (4.3 %), demanding on average rather monetary tightness than ease – see (Maier, 2002, p. 84).

bers in signaling. The main reason for this might be the political constellation in the Czech Republic where between 1998 and 2005 the government was formed by social democrats (in 1998–2002 alone, 2002–2005 in a coalition), a natural ally of labor unions. Thus, the union members probably did not have to express their preferences for a change in monetary policy so frequently, as they were in line with the government's pressure direction and probably considered it as sufficient.

Finally, other groups, including journalists, members of academia, politicians from non-government parties, international institution representatives, and the general public, were very active in the Czech case. The high share of signals from these groups among the total signals (more than 30 %) and high frequency of signaling (about seven signals per year) make this "residual" group the most active group of all. The reason may be the heterogeneous composition of the group, and the much easier access of journalists to newspapers (the journalists of Hospodářské noviny naturally have their regular columns in which they frequently commented, assessed and thereby also put pressure on the central bank). Interestingly, the direction of pressure was much more homogeneous in the Czech case (ratio of -96.5 %), indicating that even the general perception of the then monetary policy was probably similar across the whole spectrum of pressure groups.

3.3 The Role of Support for Monetary Policy

Following Maier (2002), an indicator for measuring political support for the Czech National Bank was constructed. As he argues, political support may contribute to the factual independence of central banks: if the central bank faces political pressure for a change of monetary policy, but at the same time enjoys support for its current monetary policy, the pressure may be partly eliminated and the central bank may continue in pursuing its "optimal" policy based on economic fundamentals.

The support indicator was constructed similarly to the pressure indicator, by counting articles expressing support for current monetary policy regardless of the actual monetary policy stance. Those articles were counted as +1. The same pressure groups were identified.

Table 3 shows the results in comparison with the support for the Deutsche Bundesbank. If not differentiating between pressure groups, the frequency of support signals is slightly higher in the Czech case (around 11 support signals per year, as compared to 8 signals for Bundesbank). This may be explained by the higher frequency of expressions of support from the financial sector and from others, including the general public. Thus, the CNB enjoyed relatively high public support, even slightly higher than in Germany where this factor is usually counted as one of the main factors contributing to successful monetary policy. On the other hand, the CNB enjoyed quite low and infrequent support from the government when compared to the Bundesbank, and relatively low support from employers, and even no support from trade unions.

The ratio of the number of support signals to the number of pressure signals shows the degree of homogeneity within groups. The ratio is comparable between both countries when computed from the total figures (be-

TABLE 3   Political Support for Central Banks

period covered (no. of months)		CNB	Bundesbank
		1997:6–2005:3 94	1960:1–1998:12 468
total	no. of support signals (out of all support signals) no. of support signals per year ratio no. of support / no. of pressure	**90** **100.0 %** **11.5** **50.0 %**	**311** **100.0 %** **8.0** **59.0 %**
govern-ment	no. of support signals (out of all support signals) no. of support signals per year ratio no. of support / no. of pressure	8 8.9 % 1.0 19.5 %	90 28.9 % 2.3 105.9 %
financial sector	no. of support signals (out of all support signals) no. of support signals per year ratio no. of support / no. of pressure	36 40.0 % 4.6 90.0 %	111 35.7 % 2.8 79.3 %
employ-ers	no. of support signals (out of all support signals) no. of support signals per year ratio no. of support / no. of pressure	4 4.4 % 0.5 11.1 %	59 19.0 % 1.5 107.3 %
trade unions	no. of support signals (out of all support signals) no. of support signals per year ratio no. of support / no. of pressure	0 0.0 % 0.0 0.0 %	6 1.9 % 0.2 8.7 %
other	no. of support signals (out of all support signals) no. of support signals per year ratio no. of support / no. of pressure	42 46.7 % 5.4 73.7 %	45 14.5 % 1.2 25.3 %

Sources: author's calculations based on hn.ihned.cz; (Maier, 2002); www.philipp-maier.de

tween 50 % and 60 %), but it reveals several interesting features for the individual pressure groups. First, we would expect that if members of a pressure group share common interests, they would probably signal towards the central bank in a homogenous way. This appears not to be confirmed by the data, since for most pressure groups the ratio is relatively high. The ratio of around 100 % indicates that there is an intensive debate within the group, as approximately the same number of signals is sent demanding change in monetary policy as the number supporting the current monetary policy. A much higher ratio would indicate that the group is rather supporting the central bank, while a very low ratio indicates that the group is rather exerting pressure for a change in monetary policy.

Table 3 indicates that the ratio of support to pressure is higher than 100 % in the case of the German government, so the German government supported the Bundesbank rather than demanded change in policy. This is a bit surprising, as it does not correspond to the traditional models of conflict between the government and the central bank, as described in the theoretical literature. However, the low support of the CNB from the Czech government, indicated by the low ratio, again supports the theoretical literature. The highest support relative to pressure received by the CNB from the financial sector (ratio of 90 %) and from other, unspecified groups (74 %).

FIGURE 4   Total Political Support for the Bundesbank and the CNB
             (number of support signals)
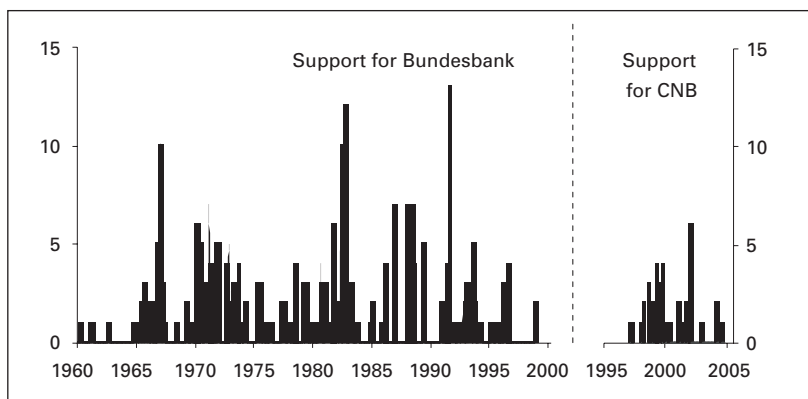
Sources: author's calculations based on hn.ihned.cz; (Maier, 2002); www.philipp-maier.de

For further illustration, *Figure 4* shows the time pattern of the support for both the Bundesbank and the CNB. The chart confirms the conclusions of Table 3, especially those of the relatively high density of support signals. In addition, Figure 4 also indicates that the peaks in support were in general higher in the case of Bundesbank, which may stem from the higher number of newspapers from which the signals were counted in the German case. All in all, however, the support for the Czech National Bank seems to be quite significant and at least comparable to the support for the Bundesbank.

A detailed inspection of Figure 4 and its comparison with Figure 3 suggests that there might be a relationship between pressure and support, as the periods with high pressure appear to correspond to periods with high support. More in general, discussions of monetary policy issues in the newspapers seem to come in clusters, probably starting with an introductory contribution that triggers further articles, both pressure and supportive ones.

In order to test the above hypothesis formally in the case of the CNB, we first construct a variable *abs_pressure* that equals the absolute value of the total net pressure. The correlation of monthly values between *abs_pressure* and *support_total* is quite high (0.55). Subsequently, we apply the Granger causality test to the monthly series of both variables.[13]

TABLE 4   Pairwise Granger Causality Tests
            Sample: 1997:06–2005:03; monthly data; Lags: 4

Null Hypothesis:	Obs	*F*-Stat.	Prob.
SUPPORT_TOTAL does not Granger Cause ABS_PRESSURE	90	0.82	0.52
ABS_PRESSURE does not Granger Cause SUPPORT_TOTAL		3.60	0.01

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[13] We also tried to perform the analysis using the daily data. The problem is, however, that daily data contain too many zeros, as on many days there was no pressure or support. This causes the Granger causality to run both ways if applied at the daily frequency of data.
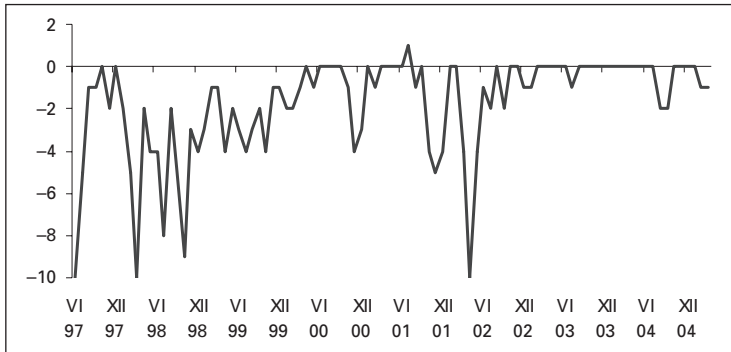
Table 4 shows that the correlation runs from pressure to support, i.e. articles demanding change in monetary policy triggered public support for existing monetary policy, a result that is in line with the findings on the Bundesbank (Maier, 2002, p. 105).[14]

4. Explaining the Political Pressure on the Czech National Bank

We have already mentioned several times the reasons for a specific pattern or direction of pressure on monetary policy from different interest groups. As was shown in the preceding section, support always emerged after pressure signals had emerged. But what caused the pressure to arise?

As we have seen, the pressure from all pressure groups on the CNB was rather towards monetary ease. Thus, the pressure groups regarded on average the monetary policy stance as too restrictive and harmful for their interests. In this section we explain – first in a rather anecdotic way, then also formally – when and why the monetary policy stance was considered as too restrictive by individual interest groups and how it triggered the pressure.

Figure 5 shows the time pattern of the total net pressure on the CNB. Three periods can be identified in which the pressure was significant: mid--1997, then all of 1998 (and partly also 1999), and finally the period between mid-2001 and mid-2002. In order to explain the pressure in these three periods, we have to mention three structural factors that may have contributed to the monetary policy that has been labeled as "too restrictive" by many pressure groups.

First, the move from the exchange-rate peg to floating in May 1997 was actually forced by a small exchange-rate crisis. In early 1997, markets started to doubt the sustainability of the peg and speculated against the CZK, expecting an official devaluation, given several macroeconomic

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[14] Applying different lags does not change the result of the one-way direction of influence.

problems including rising inflation and the high current account deficit of the Czech economy.[15] Besides the move to floating, the CNB fought against the speculation by raising official interest rates to very high levels, triggering pressure from producers, as their financing costs (interest rates applied to loans) increased substantially. The burden that domestic producers had to bear also triggered pressure from the government, as it feared the adverse effect of such a monetary restriction on the economy.

The CNB eventually started in the second half of 1997 and during 1998 to decrease the interest rates again as the exchange rate stabilized (at a slightly depreciated level). Nevertheless, the speed with which the CNB had been decreasing the interest rates was a subject of conflict between the CNB and the government: the CNB feared the negative effects of a depreciated exchange rate on inflation and additionally it was not sure whether the market confidence in the reached level of the exchange rate had been re-established. Thus, it had been decreasing the interest rates rather slowly and in many small steps, effectively smoothing the movements in money-market interest rates. On the other hand, the government regarded the speed as too slow, and pointed out that the high level of interest rates had devastating effects on GDP growth, being ready to tolerate a slightly higher rate of inflation.

Together with employers and the government, the financial sector expressed its concerns about the impact of the restriction on the health of the corporate sector, the main source of earnings for banks given the low indebtedness of households. Labor unions, in line with other groups, pushed for easing monetary policy, fearing the increase in unemployment given the effect of monetary restriction on the real economy. GDP growth indeed declined after the crisis and became negative in 1998 and early 1999, while inflation increased at the end of 1998 and in early 1999.

Second, by loosening the fixed exchange rate as a nominal anchor of monetary policy, the CNB was in search of a new monetary regime, which was found in the inflation targeting. However, given the relatively high inflation (slightly above 10 %) in the period of introduction of the inflation targeting in the Czech Republic (end-1997 and early 1998), the CNB used the inflation targeting as a disinflation strategy. The aim was to bring inflation levels closer to the European levels of inflation, contributing to the nominal convergence, one of the prerequisites for the future adoption of the euro after EU accession. Again, the speed of disinflation became a conflict issue between the government and the CNB, given the negative GDP growth between the end of 1997 and early 1999 and very low inflation in 1999 (around 2 %), leading even to political discussions in parliament in 1999 and 2000 about limiting the central bank's independence.

Third, and finally, the very open Czech economy is sensitive to exchange-rate movements. The development in the exchange rate became an issue in 2001–2002, as the strong appreciation caused predominantly by expected privatization revenues in euros and the need of the government to change

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[15] See (Dědek, 2000) for the discussion of the currency crisis of 1997. For the time pattern of the fundamentals, see the extended version of the article (Geršl, 2005).

TABLE 5   Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	−0.77	0.19	−3.97	0.00
GDP_GAP(-1)	0.58	0.08	7.25	0.00
D_ER_CZKEUR	2.15	0.37	5.78	0.00
D_ER_CZKEUR(−1)	0.69	0.35	1.95	0.05
D_CPI(−1)	0.60	0.24	2.44	0.02
Adjusted R-squared	0.49		Durbin-Watson stat.	1.44

Notes: dependent variable: PRESSURE_TOTAL; sample (adjusted): 1997:08–2005:03; monthly data; included obser-
vations: 92 after adjusting endpoints; method: Least Squares

the euros in the FX market to CZK started to decrease the price competi-
tiveness of Czech export-oriented companies. This triggered pressure from
employers "to do something about the exchange rate", either by FX inter-
ventions or by cutting the official interest rates. This has of course also in-
directly triggered the government's reaction, as the government feared
the adverse effects of problems in export-oriented industries on unemploy-
ment and political popularity and support.

For a more formal analysis of the pressure on the CNB, we estimate
a "pressure" reaction function of the pressure groups as a whole (total), link-
ing the emergence and intensity of political pressure to developments in
economic variables, as we have seen that the developments in the exchange
rate, inflation and GDP were probably the main triggers of pressure.[16]

The following reaction function was estimated:

$$pressure\_total_t = c + a_1 gdp\_gap_{t-1} + a_2 \Delta er\_czkeur_t +$$
$$+ a_3 \Delta er\_czkeur_{t-1} + a_4 \Delta cpi_{t-1} + \varepsilon_t \qquad (1)$$

The main hypothesis behind the equation (1) is that the pressure for mone-
tary ease emerges if the GDP gap is negative (a_1 positive), if the exchange
rate appreciates (a_2 and a_3 positive) and also if inflation has a declining
trend (a_4 positive).[17] *Table 5* shows the results.

All coefficients were positive and significant, as we had assumed. Thus,
we can conclude that pressure groups are sensitive to developments in
macroeconomic variables and that they generate pressure if they feel to be
severely hit by macroeconomic developments that have effect on their in-
come or survival prospects, both on economic and political markets.

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[16] Of course, individual pressure groups probably react differently or at least with different sen-
sitivity to changes in macroeconomic variables.

[17] All the variables were checked to be stationary. The lag structure of the individual economic
variables was set according to the significance and Akaike information criterion. For the GDP
gap we use a proxy variable, namely the "GDP growth gap" that is set to the difference between
interpolated monthly values of the original quarterly GDP growth series and the growth of
the potential output that was set at 3 % (i.e. it is not the traditional GDP gap computed from
levels, as this would require some estimation of the initial GDP gap). All estimations were done
in EViews 4.1.

TABLE 6   Pairwise Granger Causality Tests
            Sample: 1997:06–2005:03; monthly data; Lags: 4

Null Hypothesis	Obs	*F*-Statistic	Probability
PRESSURE_TOTAL does not Granger Cause D_CNB_REPO_EOP	89	3.93454	0.00575
D_CNB_REPO_EOP does not Granger Cause PRESSURE_TOTAL		0.52157	0.72012

5. Estimating the Effect of Political Pressure on Monetary Policy

The preceding sections introduced an indicator for political pressure on the CNB and discussed the pattern of pressure across pressure groups and time. However, we are mainly interested in whether political pressure had a significant impact on the CNB's monetary policy. We attempt to answer this question in two dimensions: first, we ask whether political pressure had impact on the direction of the monetary policy (restrictiveness versus easing), second, we ask whether pressure had impact on the uncertainty the central bank faces when deciding on interest rate changes.

First, we conduct a simple Granger causality test in order to see whether pressure Granger caused changes in monetary policy. *Table 6* shows that total net pressure indeed had significant impact on changes in the official interest rate of the CNB, the 2W repo rate.

Nevertheless, to conclude that the CNB succumbed to political pressure and accommodated the wishes of the pressure groups would disregard the possibility that the CNB conducted an independent monetary policy based on economic fundamentals that, by accident or deliberately, was in line with the pressure. In other words, the estimation results in Table 6 could be spurious due to the existence of additional factors that have impact on both pressure and official interest rates.

Thus, we estimate a full-fledged reaction function of the CNB, including both economic variables and the pressure variable.

Within the inflation-targeting framework, a central bank adjusts official interest rates according to the forecasts of inflation and output gap, respectively. In an open economy, the exchange rate plays an additional key role. We also add the lagged change in the interest rates in order to take into account the "smoothing" strategy. We assume that the current values of inflation and output gap are strongly correlated with the expected values, given the frictions in the economy, so we use the current values.[18] As the exchange rate is difficult to forecast, we use the current value. Thus, we estimate a reaction function in the following form:[19]

$$\Delta pribor\_3m\_eop_t = a_1 \Delta pribor\_3m\_eop_{t-1} + a_2 \Delta cpi_t + a_3 gdp\_gap_t + \\ + a_4 \Delta er\_czkeur\_eop_t + pressure_t + \varepsilon_t \tag{3}$$

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[18] Again, for the GDP gap we use the GDP growth gap proxy. Alternatively, current values may be used as proxies for forecasted values, as the current values of GDP and also inflation are usually not know in the current month of the decision about interest rates.

[19] We use 3M money-market rates, as these better reflect also the expected near-term development in the official interest rates in order to compensate for the bias given the use of current variables.

TABLE 7 Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D_PRIBOR_3M_EOP(-1)	0.19	0.07	2.61	0.01
D_CPI	0.16	0.07	2.15	0.03
GDP_GAP	0.04	0.02	1.98	0.05
D_ER_CZKEUR_EOP	0.17	0.07	2.26	0.03
ADJUST_PRESSURE	0.05	0.03	1.55	0.13
Adjusted R-squared	0.18		Durbin-Watson stat.	2.07

Notes: dependent variable: D_PRIBOR_3M_EOP; sample (adjusted): 1997:08–2005:03; monthly data; included observations: 92 after adjusting endpoints; method: Least Squares

For the pressure variable, however, we cannot use the current values of the net total pressure, as we may suspect co-linearity between the pressure variable and macroeconomic fundamentals such as the GDP gap or exchange-rate changes.[20] Thus, we apply a slightly modified approach: in order to get rid of the co-linearity, we decompose the pressure variable into a part that is explained by economic fundamentals and a part that remains unexplained, and use only the unexplained part of the pressure ("adjusted pressure") in estimation of equation (3). For such decomposition, we make use of the regression results in Table 5 and use residuals from the estimation of equation (1). *Table 7* shows the results.

The adjusted pressure variable appears insignificant, while the fundamentals are highly significant in explaining the changes in interest rates. Thus, as a result, the pressure is correlated with the changes in official interest rates, but after controlling for economic variables on basis of which the central bank usually decides about interest rates, the pressure becomes insignificant. This indicates that the Czech National Bank, with regard to the impact of pressure groups on the direction of monetary policy, did not blindly accommodate the preferences of the pressure groups, but preserved its factual independence and continued to conduct monetary policy based on economic fundamentals.

However, as to the second issue we are interested in, namely that of the impact of political pressure on uncertainty that is obviously inherent in policymaking, we have to check whether there was a significant link between pressure and a proxy that would stand for uncertainty. The logic of the channel is as follows: if political pressure is not strong enough to induce a change in the monetary policy stance, it may be sufficient to make policymakers uncertain as to whether a selected change in monetary policy based on economic fundamentals is appropriate. Clearly, decision making in monetary policy is always marked by inherent uncertainty, as most of the actions taken by the central bank rely on forecasts and estimates of the relevant fundamental variables. Pressure groups may take advantage of this and attempt to make the policymakers more uncertain, thus preventing the change from occurring (or lowering the probability that it will occur), if they cannot reverse the direction.

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[20] The co-linearity problem is illustrated and discussed in the extended version of this article (Geršl, 2005) where additional regression results can be found.

FIGURE 6   The "Uncertainty-in-Decision Index" versus Total Political Pressure on the CNB
(pressure as measured by the "sum" of pressure signals, minus refers to demand
for monetary ease; uncertainty-in-decision index zero if unanimous decision,
otherwise one)
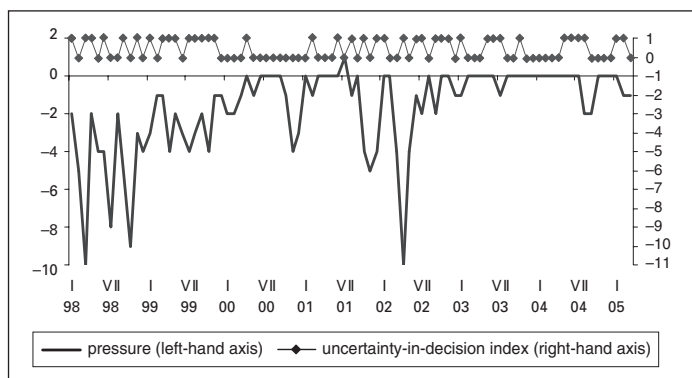
Sources: author's calculations based on hn.ihned.cz and www.cnb.cz

We measure the uncertainty with which the Czech National Bank decided about changes in official interest rates via the degree of consensus among Bank Board members when taking decisions about changes in monetary policy. Since the beginning of 1998, the Czech National Bank, when publishing the minutes from the Bank Board meetings in which changes in official interest rates were decided upon, reveals also how many members voted for or against the proposal that was eventually accepted (the individual names are not mentioned). We define a proxy for uncertainty as a binary variable that takes zero if the decision was unanimous (i.e. certain decision) and one if the decision was taken only with a majority (i.e. uncertain decision), and we call it the "uncertainty-in-decision index". The logic is that if there is uncertainty as to the appropriate monetary policy change, the probability that individual Bank Board members will have different opinions about appropriate reaction rises.

We construct a series of the index on a monthly basis. The decisions in the sample include all possible decisions, i.e. increasing rates, decreasing them, or not changing them. In those months in which there were more Bank Board meetings with monetary policy decisions we apply a pro-uncertainty approach: if in at least one of the meetings the decision was not taken unanimously, we assign the value of one (i.e. uncertain decision). *Figure 6* shows the index in comparison with the total political pressure on the CNB.

Figure 6 does not reveal any simple pattern in the relationship between the uncertainty index and political pressure. From visual inspection we could conclude that in several periods the pressure might have induced some uncertainty (the "critical" years 1998 and 2002), but in other periods the pressure does not seem to have been linked with uncertainty in decision making (the year 2003).

In order to formally test whether pressure had significant impact on uncertainty we apply a probit model, asking whether the existence of pressure

TABLE 8   Regression Results

Variable	Coefficient	Std. Error	z-Statistic	Prob.
ABS_PRESSURE	0.02	0.05	0.42	0.68

Notes: dependent variable: DECISION_INDEX; sample: 1998:01–2005:03; monthly data; included observations: 87; method: ML – Binary Probit

(as measured by the absolute value of pressure *abs_pressure*) can explain the probability that the decision (as measured by the *decision_index*) will be uncertain (i.e. not unanimous). *Table 8* presents the results.

Table 8 indicates that no systematic impact of political pressure on the probability that the decision about monetary policy will not be unanimous can be detected. Thus, we may conclude that the Czech National Bank, besides being resilient to pressure signals requesting the easing of monetary policy, also proved to cope with uncertainty inherent in monetary policy without systematic influence from pressure groups.

6. Conclusion

Independent central banks usually face political pressure from different pressure groups, starting with the government and continuing through the financial sector, employers, and labor unions up to the general public as a whole. In this paper, we have attempted to measure and explain political pressure on the Czech National Bank, the central bank of the Czech Republic, using the methodology introduced by Havrilesky (1993) for measuring pressure on the U.S. Federal Reserve and further extended by Maier (2002) when applied to the Deutsche Bundesbank. The direction, intensity and the time pattern of the pressure was discussed, compared with the pattern of pressure on both the Fed and Bundesbank, and explained. Additionally, the role of public support for monetary policy was discussed, and the effect of political pressure on the monetary policy of the CNB estimated.

The main conclusion is that the Czech National Bank faced considerable political pressure to ease monetary policy in the period 1997–2005, comparable to the pressure on the Fed and even slightly higher than the pressure on the Bundesbank, but did not succumb to the pressure, sticking to monetary policy based on economic fundamentals. Political pressure did not have any systematic impact on either the direction of monetary policy or the uncertainty under which policymakers decided. Thus, the formal independence of the CNB proved to be factual as well.

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SUMMARY

Political Pressure on Central Banks:
The Case of the Czech National Bank

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   As the independence of national central banks in the European Union is one of the main institutional features of the EU's monetary constitution, this paper considers whether central-bank monetary policy is conducted independently or if it is affected by political pressure. Specifically, the author applies Thomas Havrilesky's methodology to measure political pressure on the Czech National Bank in testing whether taken monetary policy was influenced by outside pressure.