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# **Monetary Policy Transparency in Pakistan: An Independent Analysis**

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ISLAMABAD**

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## **ABSTRACT**

This paper analyses monetary policy transparency of the central bank (SBP) using the Eijffinger and Geraats (2006) index. The results show that the SBP scores 4.5 out of 15, which is lower than any of the central banks' score in Eijffinger and Geraats (2006). The SBP is completely opaque on the procedural issues, whereas it is the least transparent in the policy transparency. On the political and the economic matters, the SBP is partially transparent. An area where the SBP is quite transparent, with moderate score, is operational transparency. In comparison with the other central banks, the SBP is at par with some of the central banks in political and operational transparency but ranks behind in all other respects.

*JEL classification:* E52, E58

*Keywords:* Monetary Policy Transparency, State Bank of Pakistan, Developing Countries



## 1. INTRODUCTION

The insightful contribution of time inconsistency problem, advanced by Kydland and Prescott in 1977, has greatly influenced both the theory and practice of monetary policy. Monetary theorists have proposed four broad solutions to the time inconsistency problem including central bank independence, delegation of powers to conservative central bankers, simple rules and central bankers' contracts.<sup>1</sup> Another strand of literature has focused on monetary policy transparency both as a potential solution to the time inconsistency problem and as a complement to central bank independence.<sup>2</sup> Enhanced monetary policy transparency can yield additional dividends including, for example, less fiscal pressures on monetary authorities, promoting debate on monetary policy issues that may compel central banks to achieve efficiency in terms of policy design for socially optimal targets, improved private sector learning about monetary policy, and better accountability of independent central banks.

Despite the importance of monetary policy transparency in macroeconomic management, no effort has been made to analyse this issue in Pakistan. This paper is a step in that direction. Section 2 discusses the concept of monetary policy transparency in the light of available literature, whereas Section 3 sets out the methodology for the measurement of transparency. Section 4 presents the results pertaining to the level of transparency of the State Bank of Pakistan on different monetary policy issues, and highlights the importance of different types of transparency and practices in Pakistan in the light of the literature. Section 5 compares transparency of the SBP with the central banks studied in Eijffinger and Geraats (2006). Section 6 concludes the discussion.

## 2. MONETARY POLICY TRANSPARENCY

Monetary policy transparency involves the disclosure of information by the central bank relevant to the conduct of monetary policy and requires symmetric information between the central bank and the private economic agents [Geraats

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<sup>1</sup>See, for instance, Cukierman (1992); Rogoff (1985), and Walsh (1995), among others.

<sup>2</sup>See, for instance, Geraats (2002a); Mishkin (2004).

(2002a, 2005a)]. A transparent central bank can not have superior information about the state of the economy, transmission mechanism, economic data, and institutional arrangements etc. It is important to note that transparency does not require perfect knowledge of the economy as both the central bank and the general public may have imperfect information regarding shocks to the economy.<sup>3</sup> Complete transparency requires openness on every aspect of the policy making process from objectives/ultimate goals of monetary policy<sup>4</sup> to quantitative targets, relative weights on each of the objectives and the functional form of the objective function, and from setting policy instrument to achieving ultimate goals.

A transparent monetary policy entails several benefits.<sup>5</sup> To begin with, transparency lies at the heart of central bank independence and accountability. Mishkin (2004) and Nijathaworn (2006) argue that transparency increases public support for central bank policies which is essential for winning central bank independence.<sup>6</sup> The increased independence requires accountability of the central bankers to the society, as it is necessary for the legitimacy of the monetary policy, [Goodhart, Hildebrand, Lipton, and Wyplosz (2001); Mishkin (2004); Briault, Haldane, and King (1997); Buiters (1999); and Geraats (2002b)]. However, accountability of the central bankers cannot be achieved if the public is not fully informed of the monetary policy-making process. In this way, transparency can be thought of as a complement to central bank accountability [Geraats (2002a)]. Second, transparency not only helps improve the efficiency of the central bank but also makes it costly for the central bank to deviate from society's preferences<sup>7</sup> [Buiters (1999); Bernanke, *et al.* (1999); Blinder, *et al.* (2001); and Roll, *et al.* (1993)]. Third, increased transparency can help reduce uncertainty in financial markets thereby improving long-run growth prospects [Nijathaworn (2006); Poole, *et al.* (2002); Svensson (2003)]. Fourth, a high degree of transparency forces the central bank to adhere to the stated objective and targets, thus increasing the credibility of the central bank [Faust and Svensson (2001); Levin, *et al.* (2004)].

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<sup>3</sup>Another view of transparency emphasises common understanding of the monetary policy by all the actors including the public [Winkler (2002)].

<sup>4</sup>While several objectives of monetary policy are highlighted in the literature, the two most important are output and price stability [Mishkin (2001)].

<sup>5</sup>It bears emphasis that any benefit from the point of view of society may be a loss to the central banker and vice versa. So costs and benefits of transparency should be carefully analysed from the point of view of both the society and the central bank. Society includes general public, government officials as agents of the public and financial market players.

<sup>6</sup>Mishkin and Posen (1997) and Bernanke, *et al.* (1999) argue that increased transparency in the form of pre-announced inflation targets helped both Bank of Canada and Bank of England to gain public support and independence.

<sup>7</sup>The transparency could create problem if there is desirability of surprise inflation to enhance output in the short run. However, the advantage of opacity can only be achieved if the central bank has superior information about the shocks and the economy has Lucas-type transmission mechanism, [Gersbach (1998); Cukierman (2001, 2002)].



Monetary policy transparency holds particular significance for developing countries where misperceptions and lack of knowledge about monetary policy issues and outcomes are not uncommon. In this context, an important benefit of transparency is that it can educate the public about what monetary policy can and can not do and thus avoid unnecessary criticism on the central bankers [Svensson (2002)]. Another benefit of transparency for developing countries is the promotion of public dialogue on policy issues that can be instrumental in bringing central bank policies in line with society's preferences.<sup>8</sup> Also, a transparent monetary policy is vital for enforcing fiscal discipline on governments that rely heavily on seignorage revenues to meet budgetary shortfalls.<sup>9</sup> Finally, monetary policy transparency can allow the public to compare central bank performance with international best practices, and thus create public pressure for the adoption of such practices whenever the performance of the central bank falls short of internationally accepted benchmarks.<sup>10</sup>

### 3. METHODOLOGY

We employ the Eijffinger and Geraat (2006) 'independent analysis' approach<sup>11</sup> to measure monetary policy transparency of the State Bank of Pakistan. According to this approach, a questionnaire (see Appendix A) is developed on monetary policy issues and the researcher independently answers the questions based on information gleaned from various central bank documents like reports on the state of the economy, monetary policy statements, and speeches of the central bank officials.<sup>12</sup> The questionnaire elicits information through a set of fifteen questions, with three questions each on political, economic, procedural, policy and operational transparency. Each question has two or three options with a maximum score of 1. In case of two options the central bank is awarded either 0 or 1 score but in case of three options there is a middle score of 0.5 (a case of partial transparency). In aggregating the score, all the questions are given equal weight so on each aspect

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<sup>8</sup>This is especially important because of the fact that policy issues are rarely resolved in public debates in developing countries. So more often policies are not in accord with society's preferences.

<sup>9</sup>For instance in Pakistan, most of the times monetary aggregate target has been missed due to high monetisation of fiscal deficit.

<sup>10</sup>For instance, SBP does not publish medium term forecast for inflation and output. It is most probable that it does not make forecasts for medium term. So transparency requirement by public would induce SBP to make such forecasts that would be helpful both for public (in reducing uncertainty) and for SBP.

<sup>11</sup>Other studies have developed survey-based methods to measuring transparency. See, for example, Fracasso, *et al.* (2003), and Bini-Smaghi and Gros (2001).

<sup>12</sup>An important benefit of independent analysis is that the researcher keeps in mind the objectives of transparency, while analysing the case of a particular central bank.

of transparency a central bank can get a maximum score of 3. Each type of transparency is also given the same weight so there is no preference for one type of transparency over the other<sup>13</sup>. In this way a central bank can get a maximum score of 15.

There are at least three important advantages of using the Eijffinger and Geraats (2006) index. First, unlike survey-based techniques, this index is based on an independent analysis (by the researcher) of monetary policy practices.<sup>14</sup> This is important because in surveys, respondents (central bankers) may have an incentive to falsely portray a favourable scenario of monetary policy transparency. Second, the index covers almost all the aspects of monetary policy and hence presents a broader measure of transparency as compared with other works that have focused on only two or three aspects. Third, the index is not restricted to any particular type of monetary policy framework e.g. inflation targeting, monetary targeting etc.

#### **4. HOW TRANSPARENT IS THE SBP?**

##### **4.1. Political Transparency**

According to Eijffinger and Geraats (2006), political transparency refers to the openness about monetary policy objectives, quantification of these objectives and institutional setting for interaction between government and the central bank.

##### **(a) Formal Objectives**

Pakistan is a developing country having multiple objectives of monetary policy. SBP has the dual mandate of maintaining price stability and promoting output growth along with other objectives like foreign exchange rate stability. There has been no clear prioritisation of the objectives with shifting preferences between price stability and output growth. Monetary policy has been kept expansionary whenever inflation was under control and/or government was unable to provide fiscal stimulus. This was exactly the strategy in 2000-01. But as inflation reached a sufficiently high level, the SBP tried to contain it (like the contractionary actions taken in 2005 and are still in force). This behaviour is clear from the statements given in SBP's "monetary policy statements".<sup>15</sup>

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<sup>13</sup>This is one of the drawbacks of the measure as practically some aspects of transparency might be more important than the others.

<sup>14</sup>The assessment by professionals, who have the knowledge on the issue, is necessary because what matters is information fulfilling the objectives of transparency and not just the release of information without quality and detailed contents of information reports.

<sup>15</sup>See, SBP's Monetary Policy Statement for Jul-Dec 2006 on the topic, "Recent Trends and FY06 Policy Assessment" points 8-10.

Though the SBP clearly states its objectives, it does not provide an explicit statement on their prioritisation. One may argue that prioritisation is mentioned whenever required in monetary policy reports by the SBP and hence it is transparent in this regard. But we should keep in mind the objective of transparency i.e. less uncertainty about central bank's actions. To reduce uncertainty about central bank actions it is necessary to have knowledge on central bank's long-term objectives and their prioritisation in case of multiple objectives. Though SBP's documents often spell out the intentions and preferences of the bank for the near future (mostly for one year), these may change depending on the state of the economy. Also, the ex-post statements by the central bank are merely policy explanations that can not be taken as furthering the objective of transparency. Therefore, one can say that the SBP is transparent on announcing the objectives but not on the issue of prioritising the multiple and conflicting objectives. Consequently, it is awarded a half score on the issue of formal objectives (Figure 1).

**(b) *Quantification of the Targets***

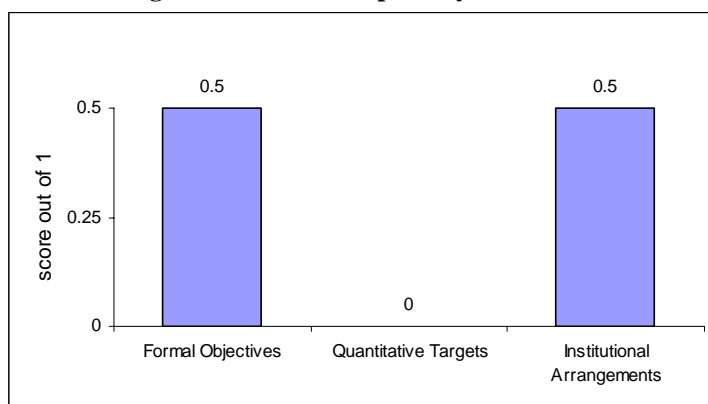
The announcement of targets reduces uncertainty faced by the economic agents in making economic decisions. The SBP announces one-year inflation and output targets but provides no information on medium-term targets.<sup>16</sup> However, the announcement of one-year targets is of little value to economic agents who make decisions on the basis of expectations about medium or the long run. Furthermore, as Geraats (2005a) points out, the short-term targets are just forecasts/projections rather than the targets in the conventional sense, as the lag with which monetary policy actions affect the outcome (inflation) is normally greater than one year.<sup>17</sup> We, therefore, conclude that the objective of transparency (reducing uncertainty) is not achieved by announcing just the short-term targets, and hence the monetary policy in Pakistan is still deficient in this area justifying a zero score on this count<sup>18</sup> (Figure 1).

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<sup>16</sup>It is worth noting that these targets (of inflation and output) are set by the government, and hence the SBP does not have goal independence.

<sup>17</sup>In the case of Pakistan, Malik (2006) shows that the impact of changes in reserve money on inflation appears with a time lag from one to one and half year.

<sup>18</sup>There are only two options in Eijffinger and Geraats (2006) questionnaire. Had there been a third option for giving half score to the central banks providing information on short-term targets, SBP would have been awarded half score.

**Fig. 1. Political Transparency in Pakistan****(c) Institutional Arrangement**

The process of independence of SBP effectively started in July 1993. The SBP Act 1956 was amended by a bill passed in February 1994 making monetary policy the sole responsibility of the SBP. The Act was again amended in May 1997 to further strengthen the autonomy by entrusting the central board to determine and enforce the limits on credit by the SBP to the government.<sup>19</sup> Subsequently, however, SBP autonomy was effectively compromised, first, by an ordinance in December 2000 authorising the federal government to direct the SBP to set up funds for specific purposes as well as to introduce specialised credit schemes and influence the balance sheet of the SBP, and then by delegating the authority to appoint the governor to the president. There are at least two other problems that effectively limit the autonomy of the SBP. First, the SBP governor is appointed for a renewable term of three years, and this makes the central bank vulnerable to political pressures.<sup>20</sup> Second, as is clear from SBP quarterly reports and Monetary Policy Statements, the unexpected borrowing of the government from SBP continues while the degree of monetisation of the fiscal deficit remains uncertain.<sup>21</sup> These problems notwithstanding, it must be acknowledged that the financial sector reforms of the 1990s have provided a modicum of autonomy to the SBP. Therefore, SBP is

<sup>19</sup>According to Geraats (2005a), such financing limits are important to reduce inflation caused by the reliance on seignorage to collect government revenues.

<sup>20</sup>Cukierman (1992) argues that central bank independence can not be achieved if the tenure is renewable and lasts less than politicians' time in office. Fry, *et al.* (2000) report that governors of 79 percent of central banks covered in the survey had tenures of more than 5 years.

<sup>21</sup>According to Geraats (2005a), about 65 percent of the central banks included in the Fry *et al.* (2000) survey have effective limits on monetary financing of the fiscal deficit, whereas this ratio is only 41 percent when only developing countries are considered. Based on similar considerations, Janjua (2004) terms SBP as partially independent.

considered as partially transparent in terms of institutional arrangements, earning half a score (Figure 1).

#### 4.2. Economic Transparency

Economic transparency refers to the release of economic information the central bank uses for monetary policy including the current state of the economy (data on key variables), policy model that is used for policy analysis and central bank's internal forecasts.

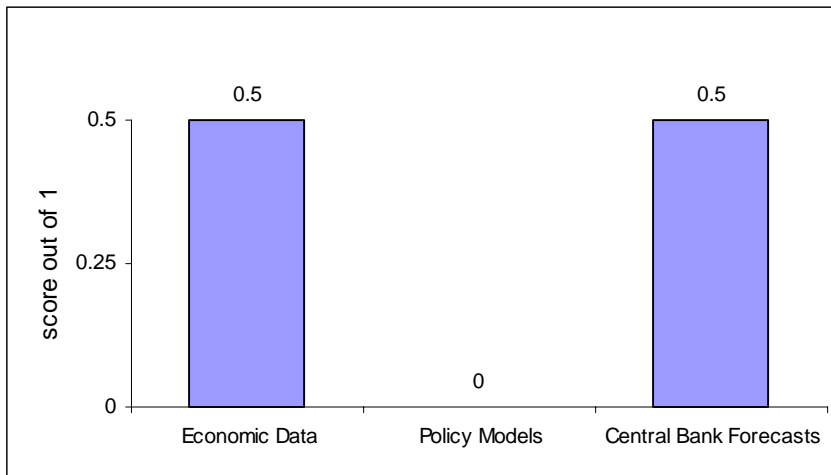
##### (a) *Economic Data*

The data on money supply and inflation are available on a quarterly basis. Though GDP is compiled on an annual basis, as is the unemployment rate, some informal analysis in the form of indicators is provided in SBP quarterly reports. Capacity utilisation is discussed, on quarterly basis, only for large scale manufacturing and not for the whole economy. All in all, SBP is partially transparent on data publication and there is still room for improvement. Thus a half score is assigned to SBP on this account (Figure 2).

##### (b) *Macroeconomic Model*

We could not find any information from formal sources on whether or not the SBP uses a macroeconomic model. However we obtained informal information that SBP now has its own macroeconomic model. The fact remains that SBP has never explained how the SBP's internal forecasts are made and how does it conduct policy analysis. So the monetary policy is completely opaque on this issue in Pakistan and hence a 0 score is assigned (Figure 2).

**Fig. 2. Economic Transparency in Pakistan**



**(b) Central Bank Internal Forecasts**

SBP publishes quarterly forecasts both for inflation and output normally at quarterly frequency but there are some problems with these forecasts.<sup>22</sup> First, these forecasts are available only for the short run (for one year) and not for the medium or the long run. The publication of forecasts reduces uncertainty in the markets and makes the central bank's intentions more transparent only if the forecasts are at least for the medium term. Keeping in view the long lags required before the effect of policy instrument on outcomes materialises, these forecasts do not make any sense. Second, although the SBP explains rough indicators of forecasts, it does not provide information on how the quantitative forecasts are made. So forecast mechanism is absent in its reports as are the assumptions or policy instrument path these forecasts are conditioned on.

Third, SBP's forecasts cannot be called internal forecasts. These are simple and rough projections that any organisation can make. Internal forecasts help central bank analyse how the policy decisions on the instrument path change the inflation and/or output in the long run. From the society's point of view, internal forecasts are important not only because they give some idea about the future but also because they serve as an indication of the central bank's intentions. These objectives cannot be achieved if the policy instrument path is missing from the process of forecasting. Finally, one of the objectives of transparency about forecasts is to raise awareness in the public about the seriousness of the central bank in achieving the announced objectives. If forecasts based on policy rate path are not close to the stated objectives then it is an indication of the deviation of central bank policy from that of announced one. In this case, academia and professionals outside the central bank may point out this. So the central banks would not like to involve in a policy setting that cannot produce forecasted results according to the stated objectives, if the public has information on the forecasts.

The above discussion shows that the forecasts published in SBP reports do not serve as indicators of the central bank's seriousness in achieving the objectives and cannot fulfill the objective of transparency in terms of affecting private sector's information. Thus monetary policy is not fully transparent in this area if we consider the objective of transparency, though it is transparent if we take the short run forecasts without specification of the assumption about policy instrument path. So the SBP is awarded half score as it is partially transparent in terms of forecasts publication. (Figure 2).

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<sup>22</sup>Normally these forecasts are available in the first quarterly report of the fiscal year for which the forecasts are published. It means these forecasts are not available even one year in advance and are publicly available only after one quarter of the year is passed. But this issue notwithstanding, we can take targets for inflation and output growth as more or less projections.

### 4.3. Procedural Transparency

Procedural transparency refers to the information on the way the decisions are made by the central bank. According to Eijffinger and Geraats (2006), this type of transparency involves explicitness on monetary policy strategy and minutes and voting records of monetary policy committee's meetings.

#### (a) *Explicit Strategy*

Regarding explicitness on the monetary policy strategy in Pakistan there is not even a single statement about any type of rule in any of the SBP's documents and it seems that monetary policy strategy is characterised by discretionary framework. For instance, in 2001 when inflation was well contained, SBP took expansionary stance but changed course to tame inflation in 2005 when it was quite high. Thus there is uncertainty about both the degree as well as the timing of the monetary authority's leaning against the wind. It is not clear as to at what level of inflation and/or output gap the SBP will decide to react. Also, there is uncertainty about how much the policy instrument would change when there is deviation of output and/or inflation from the target. This is not surprising as the SBP has never claimed to follow any type of rule.<sup>23</sup> So on the basis of this discussion it is concluded that SBP has no explicit monetary policy framework justifying a zero score.

#### (b) *Minutes and the Voting Records*

There is no tradition of releasing the minutes and the voting records of the policy committee's meetings. Only decisions for changing the policy tools are announced after the policy meetings and nothing more than that. So the SBP is awarded zero score on both these counts. It is worth noting here that Procedural Transparency is the only area of monetary policy transparency where the SBP is completely opaque.

### 4.4. Policy Transparency

Policy transparency relates to the openness of monetary policy decisions. It involves prompt announcement of policy decisions (probably on the day of implementation), an explanation of policy decisions and disclosure of policy inclination or likely future actions.

#### (a) *Prompt Announcement*

Policy changes in instruments/tools (open market operations, discount (repo) rate etc.) are announced on the day of implementation. But we must be a

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<sup>23</sup>Malik and Ahmed (2007), while estimating the Taylor rule for Pakistan, report that SBP had not been following such a rule.

bit careful here. The transparency on this issue involves the information on changes in the operating targets and not just on the policy tools. It is necessary because unless the public knows the operational target it cannot judge whether the action taken by the central bank is appropriate or not. The impact of policy tools on ultimate targets/objectives is transmitted through the formers' effects on the operational and the intermediate targets. So the SBP is transparent on the inputs (policy tools) but not on the (intermediate) output (operational target). It is important to note that central banks cannot be said to have private information on the changes in policy tools, as other market players also have the same. To elaborate, suppose there is an open market operation, a change in the discount rate or in the reserve requirements; then commercial banks are involved in this process and thus have perfect information on these changes. What the commercial banks really do not know is the operational target of the central bank, for which these tools are being used.

Looking at the SBP practice, it is not clear as to what is its operating target. Although the announced operational target of SBP is reserve money, it is argued in some studies that the bank instead targets short interest rate since the financial sector reforms in early 1990s.<sup>24</sup> Besides uncertainty about this issue, the SBP does not announce targets for either reserve money or the short interest rate. However, the policy decisions on targets for monetary aggregate ( $M_2$ ) are announced in the annual credit plan. It is important to note that the SBP does not provide information on the short term changes whereas transparency here is concerned with policy decisions in every monetary policy committee's meeting and not with the annual targets. Also, the target for  $M_2$  is not a target as such, rather it is just a projection that depends on the overall projection of the economy. This argument is reinforced by the actions of the SBP in achieving the target for  $M_2$ , as this target has been missed frequently in the history. On the basis of absence of information on the operational target, SBP has been awarded zero score.

#### **(b) Policy Explanation**

SBP does provide some explanation when there is a policy change. For instance, when there was a change in required reserve ratio by the SBP for commercial banks, it explained the objectives and the likely effects of the policy

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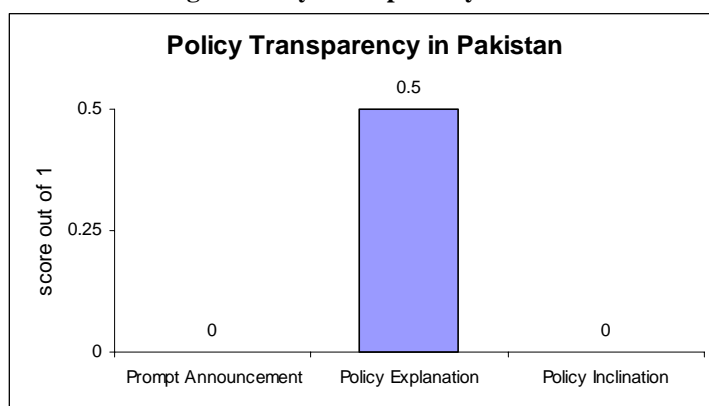
<sup>24</sup>The following statement, giving explanation of change in the required reserve ratio in July 2006, indicates that SBP focuses on interbank overnight rate (call money rate): "Keeping in view the current composition of bank deposits where almost 87 percent of the deposits are classified as demand deposits (as per new definition), the new requirements would result in the substantial draining of liquidity from the inter-bank market. The volume of additional cash requirements would be around rupees 40 to 45 billion. This would lay upward pressures on the overnight rates and in turn on the weighted average lending rates for the private sector". SBP Monetary Policy Statement, Jul-Dec 2006, Annex 4 (4.1), page 24. See also Agha (2005).



change as well as the rationale for such a change.<sup>25</sup> But it is important to note that these explanations are for the changes in the policy tools and not for the changes in the operational target of the SBP. Similarly, although the policy changes are explained, there is no tradition of explaining decisions in every policy committee's meeting.<sup>26</sup> Another point that needs to be discussed is that transparency requires explanation just after the committee's meeting and not after a substantial lag, which is the practice in Pakistan. For instance the explanation of policy change (stated above) was published six months after the policy decisions. Though still desirable, it is far from achieving the objectives of transparency.

In conclusion, the SBP is partially transparent in this respect and on the basis of the above discussion, SBP is awarded half score (shown in Figure 3) as it does not explain all decisions after every policy committee's meeting and provides explanation only after a substantial time lag.

**Fig. 3. Policy Transparency in Pakistan**



**(c) Policy Inclination**

SBP does some forward looking analysis in its quarterly reports as well as in six- monthly monetary policy statements (MPS). The information in these reports provides some indication about the future stance of the monetary policy. However, a somewhat deeper analysis is required to assess whether or not the SBP is transparent on this issue. There are three points that need to be discussed in this regard. First, the SBP does not publish projection of the future policy rate. Second, from most of the SBP reports, the message on future policy actions

<sup>25</sup>Monetary Policy Statement for July-December 2006.

<sup>26</sup>In Eijffinger and Geraats (2006), three central banks are not declared fully transparent on policy explanations, as they don't provide explanations after all policy decisions, although they do so in case of policy changes.

is not very clear. Occasionally in its reports, the SBP signals policy tightening while at the same time indicating possible actions for the output growth and vice versa. Third, although the SBP reports do contain some forward looking analysis but it is not done after every policy meeting, which is an essential requirement of transparency on this issue. On the basis of this analysis we can say that SBP does not clearly indicate future policy instrument path and hence is not transparent in this respect (zero score) as indicated in Figure 3.

#### **4.5. Operational Transparency**

Operational transparency is concerned with the role of monetary policy in achieving targets set by the government. Not all of the variables are in perfect control of monetary authority so there are chances of deviations from the targets. There are essentially three elements in this type of transparency: deviation from operational target (control errors), contribution of monetary policy in achieving final objectives, and unanticipated disturbances that may affect the transmission mechanism.

##### **(a) Control Errors**

State Bank of Pakistan, in all its reports, regularly announces target for monetary aggregate ( $M_2$ ) and also discusses past deviations and reasons for these deviations. Even in its quarterly reports, it carries out some forecast analysis to assess the likelihood of getting monetary aggregate on target. Though the SBP publishes deviations from the targeted monetary growth, it does not provide this kind of information on operating targets. However, we think that by this practice transparency is not affected because of the following two reasons. First, factors that make monetary aggregate deviate from the target are almost the same that cause deviation in operational target.<sup>27</sup> Second, the question on this issue does not require a time frequency that is greater than one year. So although operational target is needed to be announced and explained more frequently, the question of why the target was missed can be analysed at annual frequency. According to the options given in Eijffinger and Geraats (2006) question 5(a), SBP is transparent, getting full score on giving explanation for missing the target as shown in Figure 4.

##### **(b) Transmission Disturbances**

The State Bank of Pakistan provides information on the shocks only 'superficially' without a deeper analysis. In particular, the SBP explains

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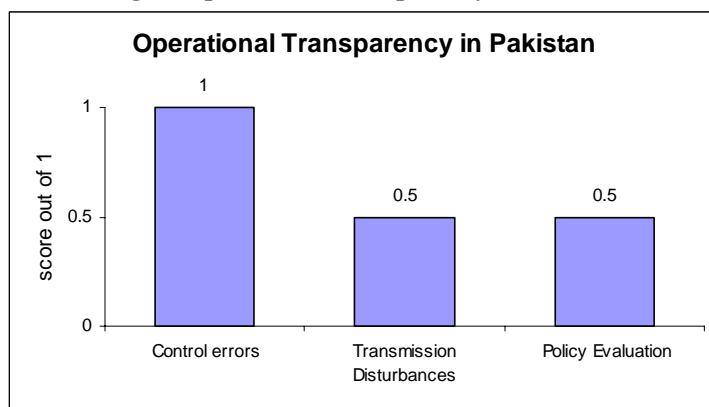
<sup>27</sup>Let's take the case of  $M_2$  being the intermediate target and reserve money as operational target. Then assuming that money multiplier remains fixed, any factor causing reserve money to change will lead to changes in  $M_2$ . For instance, any changes in NDA or NFA of the SBP transmit into  $M_2$ .

deviations from the target (for inflation and output) but not the forecast errors.<sup>28</sup> However, as targets for one year are just the projections, explaining the deviations from the target implicitly provides information on forecast errors. In this sense, the SBP explains past forecast errors in its documents, e.g. ‘Monetary Policy Statement’ of Jul-Dec 2006, gives some idea of explanation by SBP on why inflation target (projection) for the fiscal year 2005 was missed. However, as information provided is only indirect, the SBP is awarded half score on this issue as shown in Figure 4.

### (c) Policy Evaluation

Although the State Bank of Pakistan does not provide information on the exact contribution of monetary policy in achieving the objectives, it conducts some superficial analysis of policy evaluation. However one can infer from the analyses in the reports that whether or not the policy is successful in achieving stated objectives. There are certain statements in SBP reports showing the relationship between macroeconomic outcomes and monetary policy stance, though the exact contribution of monetary policy in achieving the targets is never mentioned. For instance, in Monetary Policy Statements of the last year, the SBP attempted to communicate that monetary tightening by the bank had contributed to lower inflation. So we have concluded from the statements in SBP reports that monetary policy in Pakistan is partially transparent on policy evaluation according to Eijffinger and Geraats (2006) definition and options in the questionnaire. As Figure 4 shows, SBP has been awarded half score on policy evaluation.

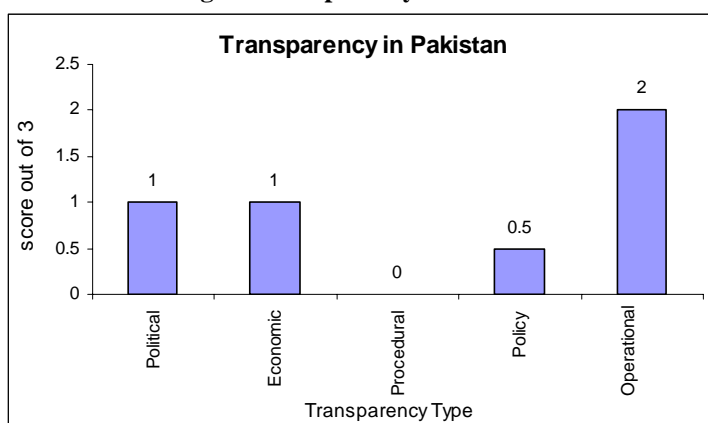
**Fig. 4. Operational Transparency in Pakistan**



<sup>28</sup>Forecast errors are real shocks as target miss might be due to the central bank’s own actions. But as internal forecasts are based on central bank’s policy setting, they could only become wrong if there is some unanticipated shock that disturbs the transmission mechanism of the economy.

In summary, the SBP has been awarded an aggregate score of 4.5 out of 15. This is lower than any of the central banks' score in Eijffinger and Geraats (2006). The most deficient area is the procedural transparency where SBP has scored zero because neither the monetary policy strategy is explicit nor is there a tradition of releasing voting records and minutes of the monetary policy committee's meetings. Another area where deficiency is prominent is the policy transparency, where the major deficiency is in the announcement and the clarity of policy operational target and in indicating future policy actions. In political and economic matters there is partial transparency and the major deficiency is in publishing medium term forecasts and in making policy model explicit. Operational transparency is the only area where there is a moderate level of transparency. Here the performance is better mainly because of providing information on control errors, though there is also partial transparency on transmission disturbances and policy evaluation. It is worth stating that 2 out of 4.5 (total score on transparency in Pakistan) is contributed by operational transparency. Figure 5 shows aggregate score of the SBP.

**Fig. 5. Transparency in Pakistan**



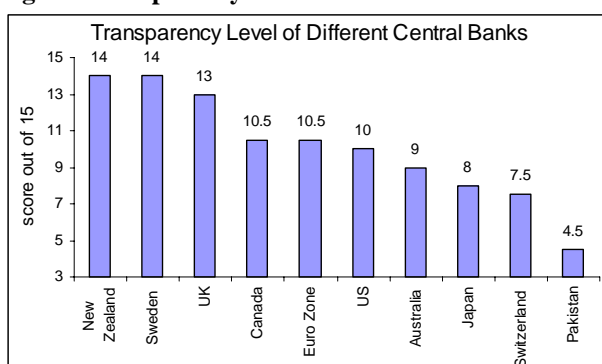
## 5. TRANSPARENCY OF SBP IN COMPARISON WITH THE OTHER CENTRAL BANKS

It is instructive to compare the transparency index for State Bank of Pakistan with central banks studied in Eijffinger and Geraats (2006).<sup>29</sup> The comparison mainly focuses on the practices of only those central banks that either got maximum score in an area or their score is very close to that of SBP.

<sup>29</sup>However one important point to note is that index values for other central banks were calculated on the basis of information available till 2002, but in case of Pakistan, our main focus was on the reports from 2004 onward.

Overall, SBP has scored 4.5 (out of 15) and lies at the bottom in comparison with these nine central banks. In Eijffinger and Geraats (2006), the maximum score (14 out of 15) is awarded to the Reserve Bank of New Zealand and Riksbank while the Swiss National Bank got only 7.5 score, the lowest in their sample. The main deficiency of SBP is in procedural transparency where it achieved zero score. Bank of England, Riksbank and Reserve Bank of New Zealand are fully transparent in this regard but most of the central banks are less transparent on this issue, e.g. Swiss National Bank, Reserve Bank of Australia, Bank of Canada and European Central Bank (ECB) got only 1 (out of 3) score on procedural transparency. These central banks are less transparent due to almost the same reason: opacity in providing minutes and voting records of monetary policy committee's meetings.

**Fig. 6. Transparency Level of Different Central Banks**



Another area where deficiency of the SBP is more prominent is policy transparency (0.5 score out of 3). Central banks with full score on policy transparency are Federal Reserve, Riksbank and Reserve Bank of New Zealand. The main reason for SBP being at the bottom is opacity in the announcement of operational target. It is interesting to note that none of the central banks in Eijffinger and Geraats (2006) is opaque on this issue. Reserve Bank of Australia, Bank of England and Bank of Japan are least transparent in policy matters as they scored only 1.5 (out of 3). The reason for their deficiency is opacity on policy inclination.

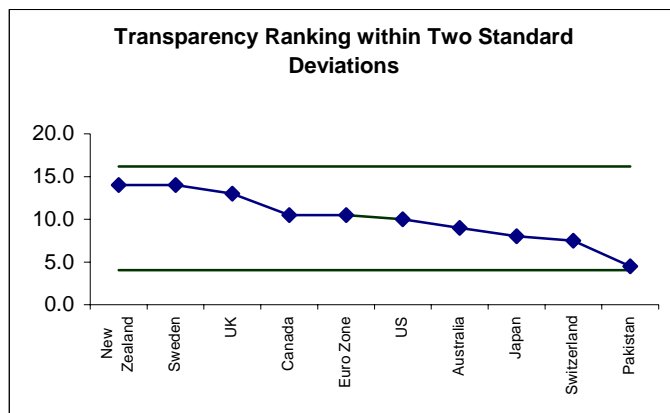
Most of the central banks in Eijffinger and Geraats (2006) got full score on political transparency. Interestingly, SBP and Federal Reserve are equally transparent (scoring 1 out of 3) in this respect. Not only this, their reason for deficiency is also the same: both are opaque on quantification of the targets. Bank of Japan that has also low score (1.5 out of 3) has similar reason for deficiency. SBP got the same score (1 out of 3) on economic transparency. Only two central banks, Bank of England and Reserve Bank of New Zealand are fully

transparent on this front. On the lower side is the Swiss National Bank with score 1.5. Reason for lower score—opacity regarding policy model—is same for SBP and Swiss National Bank.

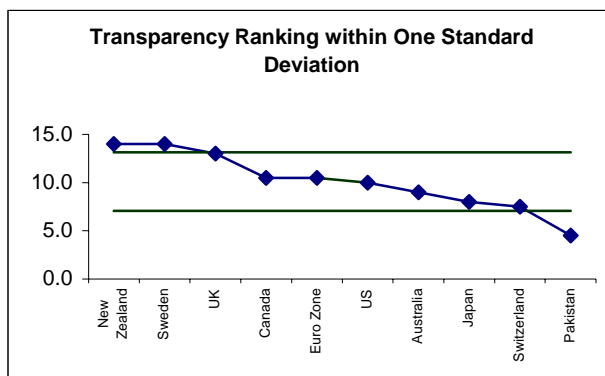
The only area where SBP has shown significant improvement is operational transparency. Interestingly Reserve Bank of New Zealand (the most transparent central bank on average) and SBP has the same score, i.e. 2 out of 3 on operational transparency. This is the only area where four of the central banks in Eijffinger and Geraats (2006) got score less than that of SBP. Reserve Bank of New Zealand, ECB and Bank of Canada got the same score as SBP did and the reasons for getting this score are common among all these three central banks and the SBP. Federal Reserve, Swiss National Bank, Bank of Japan and Reserve Bank of Australia got score less than that of SBP. A summary of all these results is given in Figure 6 whereas the detailed results are given in Figure B.1 and Table 1 in the appendix.

It is interesting to compare central banks' transparency level based on some basic statistics calculated in this study with Eijffinger and Geraats (2006). The average index value for all the central banks (including SBP) is 10 with a standard deviation of 3.<sup>30</sup> All of the central banks lie within two standard deviations from the average. As the sample size is too small, a more meaningful comparison is on the basis of one standard deviation. According to this criterion only the SBP lies outside the limit from the lower side, whereas two central banks, Reserve Bank of New Zealand and Riksbank, lie outside the limit from the upper side. These results suggest that these two banks are the most transparent while the SBP is the least transparent. So these three central banks are significantly different (in statistical sense) from other banks. Results are given in Figure 7.

**Fig. 7. Transparency Ranking within Two Standard Deviations**



<sup>30</sup>These figures are round offs. Exact figures are 10.10 and 3.03 respectively.



## 6. CONCLUDING REMARKS

This study has assessed the transparency of the State Bank of Pakistan using Eijffinger and Geraats (2006) index. The SBP is found to be least transparent on certain aspects of monetary policy and is far behind the advanced central banks. The potential areas where SBP can improve transparency include: quantification of the long term targets for primary objectives, making the policy model explicit, publication of minutes and voting records of policy committee's meetings, making monetary policy strategy explicit, and prompt announcement of policy decisions on operating targets and indication of possible future actions. However transparency can be improved in other areas as well.

Being the central bank of a developing country, the SBP also needs to focus on effective communication along with the release of information. As the public generally lacks awareness of central bank working and monetary policy, there is a need to educate the people on these issues. This will enhance private sector learning enabling them to make sound economic decisions, foster public debate on monetary policy issues thereby making objectives of the policy in accord with the society's preferences, and help improve the efficiency of the SBP. In line with Nijathaworn (2006), we also recommend the adoption of a sequential approach for achieving transparency. According to this approach central banks should start with data dissemination followed by releasing information on decision making process. Then they should focus on publishing economic forecasts and finally on providing information on central bank's operations.

## APPENDIX - A

### QUESTIONNAIRE<sup>31</sup>

The precise formulation of the central bank transparency index by Eijffinger and Geraats (2006) is reproduced here. There are a total of fifteen questions and all questions carry equal weight, so aggregate score for a particular central bank can vary from zero to fifteen.

#### 1. Political Transparency

Political transparency refers to openness about policy objectives. This comprises a formal statement of objectives, including an explicit prioritisation in case of multiple goals, a quantification of the primary objective(s), and explicit institutional arrangements.

- (a) Is there a formal statement of the objective(s) of monetary policy, with an explicit prioritisation in case of multiple objectives?  
 No formal objective(s) = 0.  
 Multiple objectives without prioritisation = 1/2.  
 One primary objective, or multiple objectives with explicit priority = 1.
- (b) Is there a quantification of the primary objective(s)?  
 No = 0.  
 Yes = 1.
- (c) Are there explicit institutional arrangements or contracts between the monetary authorities and the government?  
 No central bank, contracts or other institutional arrangements = 0.  
 Central bank without explicit instrument independence or contract = 1/2.  
 Central bank with explicit instrument independence or central bank contract (although possibly subject to an explicit override procedure) = 1.

#### 2. Economic Transparency

Economic transparency focuses on the economic information that is used for monetary policy. This includes economic data, the model of the economy that the central bank employs to construct forecasts or evaluate the impact of its decisions, and the internal forecasts (model based or judgmental) that the central bank relies on.

- (a) Is the basic economic data relevant for the conduct of monetary policy publicly available? The focus is on the release of data for the

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<sup>31</sup>This questionnaire is taken from Eijffinger and Geraats (2006). They used it to measure transparency for nine central banks.



following five variables: money supply, inflation, GDP, unemployment rate and capacity utilisation.

Quarterly time series for at most two out of the five variables = 0.

Quarterly time series for three or four out of the five variables = 1/2.

Quarterly time series for all five variables = 1.

- (b) Does the central bank disclose the formal macroeconomic model(s) it uses for policy analysis?

No = 0.

Yes = 1.

- (c) Does the central bank regularly publish its own macroeconomic forecasts?

No numerical central bank forecasts for inflation and output = 0.

Numerical central bank forecasts for inflation and/or output published at less than quarterly frequency = 1/2.

Quarterly numerical central bank forecasts for inflation and output for the medium term (one to two years ahead), specifying the assumptions about the policy instrument (conditional or unconditional forecasts) = 1.

### 3. Procedural Transparency

Procedural transparency is about the way monetary policy decisions are taken. It involves an explicit monetary policy rule or strategy that describes the monetary policy framework, an account of policy deliberations and how the policy decision was reached.

- (a) Does the central bank provide an explicit policy rule or strategy that describes its monetary policy framework?

No = 0.

Yes = 1.

- (b) Does the central bank give a comprehensive account of policy deliberations (or explanations in case of a single central banker) within a reasonable amount of time?

No, or only after a substantial lag (more than eight weeks) = 0.

Yes, comprehensive minutes (although not necessarily verbatim or attributed) or explanations (in case of a single central banker), including a discussion of backward and forward-looking arguments = 1.

- (c) Does the central bank disclose how each decision on the level of its main operating instrument or target was reached?

No voting records, or only after substantial lag (more than eight weeks) = 0.

Non-attributed voting records = 1/2.

Individual voting records, or decision by single central banker = 1.

#### 4. Policy Transparency

Policy transparency means prompt disclosure of policy decisions. In addition, it includes an explanation of the decision, and an explicit policy inclination or indication of likely future policy actions.

- (a) Are decisions about adjustments to the main operating instrument or target promptly announced?
  - No, or after a significant lag = 0.
  - Yes, at the latest on the day of implementation = 1.
- (b) Does the central bank provide an explanation when it announces policy decisions?
  - No = 0.
  - Yes, when policy decisions change, or only superficially = 1/2.
  - Yes, always and including forwarding-looking assessments = 1.
- (c) Does the central bank disclose an explicit policy inclination after every policy meeting or an explicit indication of likely future policy actions (at least quarterly)?
  - No = 0.
  - Yes = 1.

#### 5. Operational Transparency

Operational transparency concerns the implementation of the central bank's policy actions. It involves a discussion of control errors in achieving operating targets and (unanticipated) macroeconomic disturbances that affect the transmission of monetary policy. Furthermore, the evaluation of the macroeconomic outcomes of monetary policy in light of its objectives is included here as well.

- (a) Does the central bank regularly evaluate to what extent its main policy operating targets (if any) have been achieved?
  - No, or not very often (at less than annual frequency) = 0.
  - Yes, but without providing explanations for significant deviations = 1/2.
  - Yes, accounting for significant deviations from target (if any); or, (nearly) perfect control over main operating instrument/target = 1.
- (b) Does the central bank regularly provide information on (unanticipated) macroeconomic disturbances that affect the policy transmission process?
  - No, or not very often = 0.
  - Yes, but only through short-term forecasts or analysis of current macroeconomic developments (at least quarterly) = 1/2.
  - Yes, including a discussion of past forecast errors (at least annually) = 1.

- (c) Does the central bank regularly provide an evaluation of the policy outcome in light of its macroeconomic objectives?

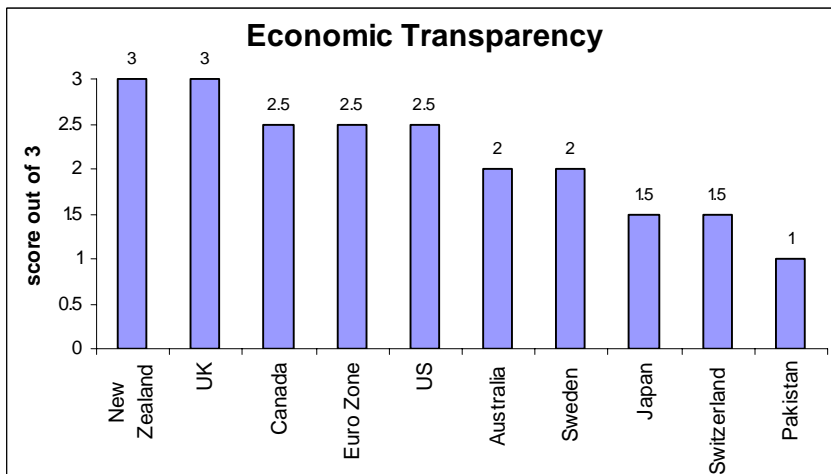
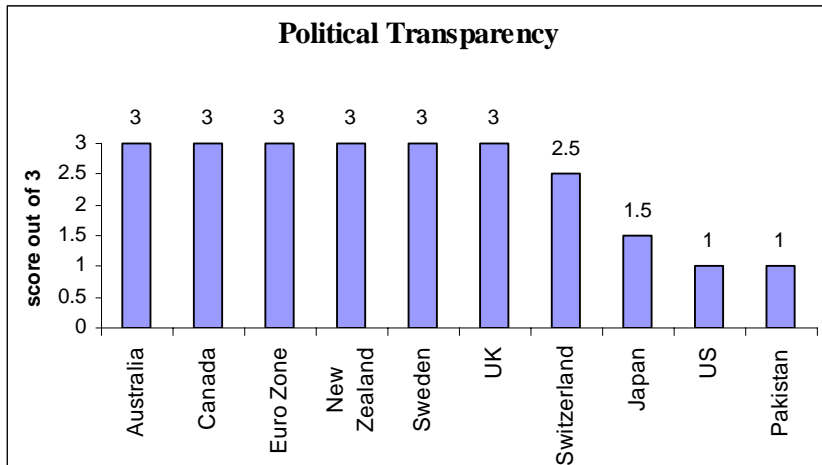
No, or not very often (at less than annual frequency) = 0.

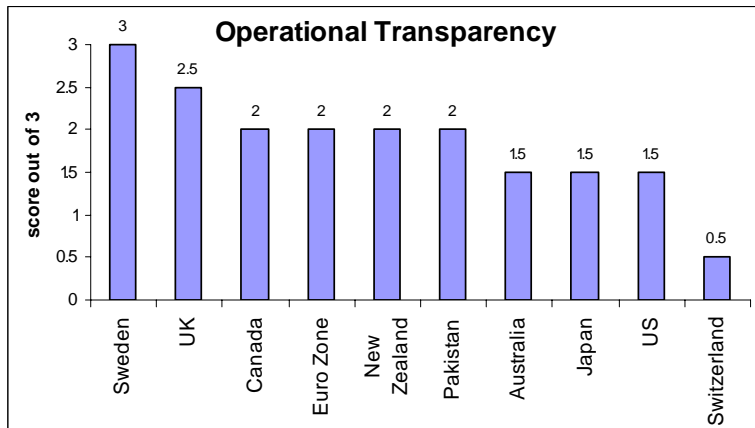
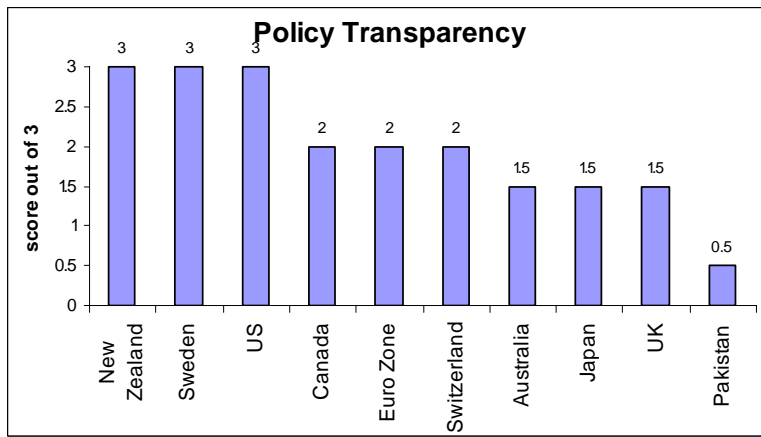
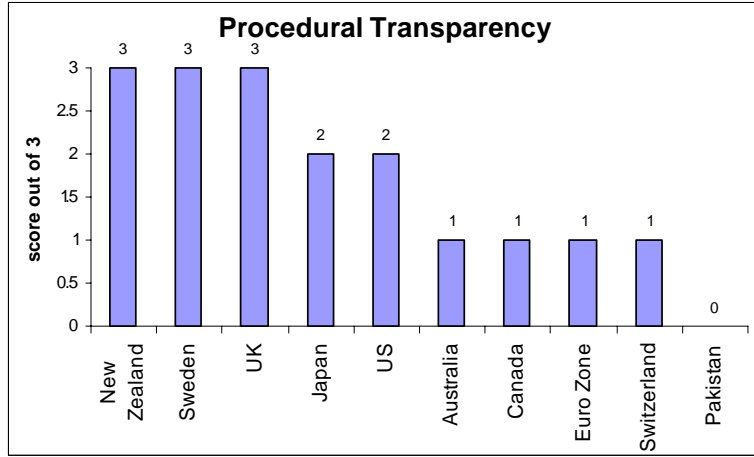
Yes, but superficially = 1/2.

Yes, with an explicit account of the contribution of monetary policy in meeting the objectives = 1.

#### APPENDIX - B

**Fig. B.1. Transparency Comparison of SBP with Other Central Banks**





## Appendix C

Table 1

*Comparison of Central Banks' Transparency Level\**

No.	CB Transparency	Australia	Canada	Euro Zone	Japan	New Zealand	Sweden	Switzerland	UK	US	Pakistan**
<b>1</b>	<b>Political</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>1.5</b>	<b>3</b>	<b>3</b>	<b>2.5</b>	<b>3</b>	<b>1</b>	<b>1</b>
a	Formal Objectives	1	1	1	0.5	1	1	0.5	1	0.5	0.5
b	Quantitative Targets	1	1	1	0	1	1	1	1	0	0
c	Institutional Arrangements	1	1	1	1	1	1	1	1	0.5	0.5
<b>2</b>	<b>Economic</b>	<b>2</b>	<b>2.5</b>	<b>2.5</b>	<b>1.5</b>	<b>3</b>	<b>2</b>	<b>1.5</b>	<b>3</b>	<b>2.5</b>	<b>1</b>
a	Economic Data	0.5	1	1	1	1	1	1	1	1	0.5
b	Policy Models	1	1	1	0	1	0	0	1	1	0
c	Central Bank Forecasts	0.5	0.5	0.5	0.5	1	1	0.5	1	0.5	0.5
<b>3</b>	<b>Procedural</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>0</b>
a	Explicit Strategy	1	1	1	0	1	1	1	1	0	0
b	Minutes	0	0	0	1	1	1	0	1	1	0
c	Voting Records	0	0	0	1	1	1	0	1	1	0
<b>4</b>	<b>Policy</b>	<b>1.5</b>	<b>2</b>	<b>2</b>	<b>1.5</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1.5</b>	<b>3</b>	<b>0.5</b>
a	Prompt Announcement	1	1	1	1	1	1	1	1	1	0
b	Policy Explanation	0.5	1	1	0.5	1	1	1	0.5	1	0.5
c	Policy Inclination	0	0	0	0	1	1	0	0	1	0
<b>5</b>	<b>Operational</b>	<b>1.5</b>	<b>2</b>	<b>2</b>	<b>1.5</b>	<b>2</b>	<b>3</b>	<b>0.5</b>	<b>2.5</b>	<b>1.5</b>	<b>2</b>
a	Control errors	1	1	1	0.5	1	1	0.5	1	1	1
b	Transmission Disturbances	0.5	0.5	0.5	0.5	0.5	1	0	1	0	0.5
c	Evaluation Policy Outcome	0	0.5	0.5	0.5	0.5	1	0	0.5	0.5	0.5
	<b>Total</b>	<b>9</b>	<b>10.5</b>	<b>10.5</b>	<b>8</b>	<b>14</b>	<b>14</b>	<b>7.5</b>	<b>13</b>	<b>10</b>	<b>4.5</b>

\*Values other than for Pakistan are taken from Eijffinger and Geraats (2006).

\*\*Values for Pakistan are based on information available till 2006, whereas that for other countries are only till 2002.

## REFERENCES

- Agha, A., Idrees Ahmed, Mubarak N., Yasir Ali, and Hastam Shah (2005) Transmission Mechanism of Monetary Policy in Pakistan. *SBP-Research Bulletin* 1:1.
- Barro, R. and D. Gordon (1983) A Positive Theory of Monetary Policy in a Natural Rate Model. *Journal of Political Economy* 91, 585–610.
- Bernanke, B. S., T. Laubach, F. S. Mishkin, and A. S. Posen (1999) *Inflation Targeting: Lessons from the International Experience*. Princeton, NJ: Princeton University Press.
- Bini-Smaghi, L. and D. Gros (2001) Is the ECB Sufficiently Accountable and Transparent? (CEPS Working Document 169.)
- Blinder, A., C. Goodhart, P. Hildebrand, D. Lipton, and C. Wyplosz (2001) How Do Central Banks Talk? Geneva Report on the World Economy 3, ICMB and CEPR.
- Briault, C. B., A. G. Haldane, and M. A. King (1997) Independence and Accountability. In I. Kuroda (ed.) *Towards More Effective Monetary Policy*. MacMillan, 299–326.
- Buiter, W. (1999) Alice in Euroland. *Journal of Common Market Studies* 37, 181–209.
- Cukierman, A. (1992) Central Bank Strategy, Credibility and Independence—Theory and Evidence. Cambridge, MA: MIT Press.
- Cukierman, A. (2001) Accountability, Credibility, Transparency and Stabilisation Policy in the Eurosystem. In C. Wyplosz (ed.) *The Impact of EMU on Europe and the Developing Countries*. Oxford University Press, chapter 3, pp. 40–75.
- Cukierman, A. (2002) Are Contemporary Central Banks Transparent About Economic Models and Objectives and What Difference Does it Make? *Federal Reserve Bank of St. Louis Review* 84:4, 15–35.
- Eijffinger, Sylvester C. W., and Petra M. Geraats (2006) How Transparent Are Central Banks? *European Journal of Political Economy* 22:1, 1–21.
- Faust, J. and L. E. Svensson (2001) Transparency and Credibility: Monetary Policy With Unobservable Goals. *International Economic Review* 42:2, 369–397.
- Fracasso, A., H. Genberg, and C. Wyplosz (2003) How do Central Banks Write? An Evaluation of Inflation Targeting Central Banks, Vol. Special Report 2 of Geneva Reports on the World Economy, Centre for Economic Policy Research.
- Fry, M., D. Julius, L. Mahadeva, S. Roger, and G. Sterne (2000) Key Issues in the Choice of Monetary Policy Framework. In L. Mahadeva and G. Sterne (eds.) *Monetary Policy Frameworks in a Global Context*. London: Routledge. pp. 1–216.

- Garfinkle, M. R. and S. Oh (1995) When and How Much to Talk: Credibility and Flexibility in Monetary Policy with Private Information. *Journal of Monetary Economics*.
- Georgios Chortareas, David Stasavage, and Gabriel Sterne (2002) Does it Pay to be Transparent? International Evidence from Central Bank Forecasts. The Federal Reserve.
- Geraats, P. M. (2002a) Central bank Transparency. *The Economic Journal* 112, pp. F532–F565.
- Geraats, P. M. (2002b) Transparency of Monetary Policy: Does the Institutional Framework Matter? (Mimeographed.)
- Geraats, P. M. (2005a) Transparency of Monetary Policy: Theory and Practice. (CESIFO Working Paper No. 1597.)
- Geraats, P. M. (2005b) The Mystique of Central Bank Speak. University of Cambridge. (Mimeographed.)
- Gersbach, H. (1998) On the Negative Social Value of Central Banks' Transparency. University of Heidelberg. (Working Paper.)
- Hahn, V. (2002a) The Transparency of Central-Bank Objectives. (Mimeographed.)
- Janjua M Ashraf, (2004) *History of the State Bank of Pakistan (1988–2003)*. Karachi: State Bank of Pakistan.
- Jensen, H. (2000) Optimal Degrees of Transparency in Monetary Policy-making: The Case of Imperfect Information about the Cost-Push Shock. (Mimeographed.)
- Jensen, H. (2002) Optimal Degrees of Transparency in Monetary Policy-making. *Scandinavian Journal of Economics* 104:3, 399–422.
- Kydland, F. E. and E. C. Prescott (1977) Rules Rather Than Discretion: The Inconsistency of Optimal Plans. *Journal of Political Economy* 85:3, 473–491.
- Levin, Andrew, Fabio M. Natalucci, and Jeremy M. Piger (2004) The Macroeconomic Effects of Inflation Targeting. *Federal Reserve Bank of St. Louis Review*.
- Malik, W. Shahid (2006) Money, Output and Inflation: Evidence from Pakistan. *The Pakistan Development Review* 45:4.
- Malik, W. Shahid (2007) The Taylor Rule and Macroeconomic Performance in Pakistan. Essay in PhD Dissertation.
- McCallum, Bennett T. (1995) Two Fallacies Concerning Central-Bank Independence. *American Economic Review* 85:2, 207–11.
- Mishkin, F. S. (2001) *The Economics of Money, Banking, and Financial Markets*. (6th Edition). Boston: Addison-Wesley.
- Mishkin, F. S. (2004) Can Central Bank Transparency Go Too Far? In C. Kent and S. Guttman (eds.) *The Future of Inflation Targeting*. Reserve Bank of Australia, pp. 48–65.

- Mishkin, Frederic S. and Adam S. Posen (1997) Inflation Targeting: Lessons from Four Countries. *Economic Policy Review* 3:3, 9–110. Federal Reserve Bank of New York.
- Morris, S. and H. S. Shin (2002) Social Value of Public Information. *American Economic Review* 92:5, 1521–1534.
- Nijathaworn, Bandid (2006) Are There Limits to Transparency? Paper presented at the IMF Conference on Central Bank Communication, 23-24 January 2006, Mumbai, India.
- Poole, William, Robert H. Rasche, and Daniel L. Thornton (2002) Market Anticipations of Monetary Policy Actions. *Federal Reserve Bank of St. Louis Review* 84:4, 65–94.
- Rogoff, Kenneth (1985) The Optimal Degree of Commitment to an Intermediate Target. *Quarterly Journal of Economics* 100:4, 1169–89.
- Roll, E., et al. (1993) Independent and Accountable: A New Mandate for the Bank of England. London: Centre for Economic Policy Research.
- Stein, J. C. (1989) Cheap Talk and the Fed: A Theory of Imprecise Policy Announcements. *American Economic Review* 79:1, 32–42.
- Svensson, Lars E. O. (2002) An Independent Review of Monetary Policy and Institutions in Norway. *Norges Bank Watch*.
- Svensson, Lars E. O. (2003) Monetary Policy and Learning. *Federal Reserve Bank of Atlanta Economic Review* Third Quarter.
- Walsh, C. E. (1995) Optimal Contracts for Independent Central Bankers. *American Economic Review* 85, 150–167.
- Winkler, B. (2002) Which Kind of Transparency? On the Need for Effective Communication in Monetary Policy-making. *ifo Studien* 48:3, 401–427.