INSTITUTE
OF ECONOMIC STUDIES
Faculty of Social Sciences
Charles University

# PEER EFFECTS IN CENTRAL BANKING

*Roman Horváth*

IES Working Paper 24/2020

Institute of Economic Studies,
Faculty of Social Sciences,
Charles University in Prague

[UK FSV – IES]

Opletalova 26
CZ-110 00, Prague
E-mail : ies@fsv.cuni.cz
http://ies.fsv.cuni.cz

Institut ekonomických studií
Fakulta sociálních věd
Univerzita Karlova v Praze

Opletalova 26
110 00 Praha 1

E-mail : ies@fsv.cuni.cz
http://ies.fsv.cuni.cz



**Bibliographic information**:
Horváth, R. (2020) : "Peer Effects in Central Banking" IES Working Papers 24/2020. IES FSV. Charles University.

# Peer Effects in Central Banking

Roman Horváth[a]

[a]Charles University, Prague

August 2020

**Abstract:**
We provide a new explanation for why central banks have become transparent over the last three decades. We apply recently developed social interaction panel regression models for the observational data, which allow the identification of peer effects. The identification is based on variations in the past monetary policy régime exogenously determined with respect to transparency. Previous literature has argued that domestic factors such as macroeconomic stability were behind the trend toward greater transparency. In contrast, our results indicate that transparency primarily increased because of a favorable global environment and, importantly, because of the peer effects among central bankers. Central bankers thus learned from each other's experiences regarding transparency. To our knowledge, our paper is the first econometric analysis of peer effects among public institutions or in the macroeconomic literature.

**JEL:** C31, D83, E58
**Keywords:** peer effects, central banks, transparency

**Acknowledgements:** We thank the Editor, Emine Boz, the two anonymous referees, Peter Claeys, Fabrizio Coricelli, Michal Franta, Martin Gregor, Christopher Hartwell, Klodiana Istrefi, Evzen Kocenda, Michele Lenza, Katarina Lucivjanska, Alexander Michaelides, Michael Moritz, Morten Ravn, Lucjan Orlowski, Jakub Seidler, Raju Singh, Cedric Tille, Borek Vasicek, Jan Zapal, and seminar participants at the Friedrich-Alexander-Universitat Erlangen-Nurnberg, Leibniz Institute for East and Southeast European Studies, Czech Economic Society conference, European Public Choice Society conference, ICMAIF conference, Society for the Study of Emerging Markets conference, European Association for Comparative Economic Studies conference, Networks, Complexity and Economic Development workshop, Swiss Society for Economics and Statistics annual conference, and Slovak Economic Association annual conference for their helpful comments. Pavla Brizova, Daniil Kashkarov, Tomas Krehlik, Boril Sopov, and Ivan Trestcov provided excellent research assistance. We acknowledge support from the Grant Agency of the Czech Republic 19-15650S.

# 1 Introduction

Central banks have substantially increased the transparency of their policies during the last three decades (Dincer and Eichengreen, 2014, Geraats, 2009, Posen, 2003). Currently, these policies are explained to the public in great detail. An extensive body of literature has analyzed the causes of this movement toward greater transparency (see Crowe and Meade, 2008, Dincer and Eichengreen, 2014, or Eijffinger and Geraats, 2006, among others). This literature typically concludes that the determinants of transparency are largely internal to each domestic policy or to the domestic macroeconomic characteristics. Not considered is that central banks interact with each other (Borio et al., 2008) and learn from the policy experiments of their peers.

Central banks typically have much stronger ties among themselves on the international level than do other public institutions. These banks regularly meet and discuss their policies and operations and have created several frameworks, such as the Central Bank Governance Forum at the Bank for International Settlements, to facilitate these discussions, including discussions related to governance and its various aspects, such as transparency. As a result, central bank transparency can be *influenced* not only by domestic economic, political, and institutional variables but also directly by the transparency of *other* central banks and their characteristics. In addition, many central banks formally transfer their know-how to their peers by offering so-called technical assistance. In this article, we focus on the estimation of peer effects among central banks. In line with Manski (1993), we define the peer effects as that the propensity of central banks to behave in some way varies with the prevalence of that behavior in some reference group.[1]

The empirical analysis of peer effects and social networks is a small but growing body of literature. To date, however, this analysis has focused on fields other than monetary economics or macroeconomics. Bayer et al. (2008) and Calvó-Armengol et al. (2009) examine peer effects issues in health economics and education economics, respectively. Conley and Udry (2010) investigate how farmers learn about new technologies. Saez and Duflo (2003) analyze participation in retirement plans. Bertrand et al. (2000)

[1] Manski (1993) also notes that " *These effects may, depending on the context, be called "social norms," "peer influences," "neighborhood effects," "conformity," "imitation," "contagion," "epidemics," "bandwagons," "herd behavior," "social interactions," or "interdependent preferences"*. Therefore, Manski (1993) states that the interpretation of peer effects depends on the context. We suppose that, in the context of central banks, peer effects largely coincide with learning, in the sense of both voluntary learning from experience of other central banks and peer pressure. We support this claim with the extensive anecdotal evidence provided in the following section.

examine welfare cultures, and Blume et al. (2015) provide a survey of the econometric literature on social interactions.[2]

The crucial issue in the literature on social interactions is the identification of peer (endogenous) effects, or how to distinguish peer effects from contextual (exogenous) or unobserved correlated effects. Central banks may change their transparency levels in tandem because they operate in a synchronized economic environment (this is labeled contextual effects). Central banks may also change their transparency levels because of unobserved effects (suppose the research excellence and the willingness to innovate differ among central banks). In both cases, the changes in the transparency level are correlated across central banks but may be independent without peer effects. In other words, the identification issue arises because a central bank's behavior depends on the behavior of its peer central banks, which at the same time depends on a central bank's behavior.

The identification of endogenous, contextual, and correlated effects often requires experimental data. However, Lee (2007) proposes the use of observational data to estimate and identify social interaction models, showing that identification is possible with sufficient peer group size variation (see also Lee et al., 2010). Individuals interact in the groups, and the group's size must vary sufficiently. Furthermore, at least three groups must typically exist for the model to be identifiable. Lee (2007) shows that the variation in group sizes creates exogenous variations in the reduced-form parameters across groups, which provides an identification of the model. We utilize this important theoretical finding.

Our identification strategy is based on the assumption that central banks' peers are banks that maintain the same monetary policy regime and that different policy regimes (groups) are of sufficiently different size. Sorting into different groups (i.e., into the same monetary policy regimes) should be exogenous with respect to the dependent variable (i.e., central bank transparency); therefore, we use the monetary policy regime as of the year 2000 and examine the existence of peer effects in the period after this year. This choice is reasonable because the monetary policy regime is set to achieve the target of low inflation (or stable exchange rate or full employment) rather than to achieve *ex*

[2]These models have been typically applied to analyze individual behavior. Decisions made at central banks are typically collective (Reis, 2013) and are made by a handful of central bank officials, although they are sometimes strongly influenced by the governor (Blinder et al., 2009). On a global scale, the average number of monetary policy committee members is approximately 5-7, which is slightly higher than the typical household. The peer effects among households in terms of consumption are examined by Maurer and Meier (2008) and Krishnan and Patnam (2014).

*ante* some desired transparency level.[3] Transparency is a by-product of the chosen monetary policy regime with inflation targeting countries being more transparent than other countries (Dincer and Eichengreen, 2014). In addition, the identification assumption can be based on a different timescale of decisions regarding monetary policy regimes and transparency changes. In our dataset, the transparency scores change approximately three times more often than monetary policy regimes. We use our identification scheme, and our results show that peer effects are systematically significant.[4]

As an alternative to our identification scheme, we utilize the inverse of geographical distance to measure the interaction among central bankers and thus estimate a more traditional spatial econometric model.[5] Although distance does not, in principle, solve identification issues, Buera et al. (2011) note that the identification problem is much less severe because a central bank is likely to discount information from all other central banks differently depending on their geographical locations. This feature breaks the symmetry that causes the collinearity problem, as they put it. Therefore, our alternative models with geographical distance closely resemble studies examining the diffusion of policy experiments, such as Simmons and Elkins (2004).[6]

The Lee (2007) model has only a handful of applications. Boucher et al. (2012) appear to provide the first application. They examine the peer effects in student achievement in secondary schools. Our innovation is to examine the diffusion of policy experiments among public institutions (namely, central bank decisions regarding their transparency). Unlike the previous literature on the diffusion of policy experiments, however, we emphasize model identification to pinpoint the specific sources behind changes in the transparency level. Without identification, the estimated parameters in the reduced form models do not have a clear interpretation, and thus, we cannot separate peer effects from other effects. In addition, some types of interaction effects cause the typically used ordinary least squares to be inefficient and biased.

We examine the determinants of central bank transparency in the area of mone-

[3]Leitemo and Roisland (2002) study the choice of monetary policy regimes and also note that this choice is motivated to achieve the target of stable inflation, exchange rate, or growth.

[4]Instead of actual monetary policy regimes, we also randomly generate the regimes in one of our robustness checks. In this case, as expected, peer effects disappear.

[5]Some of our robustness checks also consider membership in economic unions and in IMF regional departments as the measure of interaction.

[6]Gibbons and Overman (2012) discuss the importance of identification for applied spatial econometric model exercises and argue that, without proper identification, spatial econometrics is pointless. Volden et al. (2008) formally show that the diffusion of policy experiments due to learning from each others' experiences is often indistinguishable from the independent adoption of policy experiments; therefore, an identification strategy to distinguish between these two effects is critical.

tary policy.[7] Our regression specifications largely follow the previous literature, such as the study of Dincer and Eichengreen (2014). Our extension explicitly accounts for both peer and contextual effects. Therefore, our analysis may elucidate the extent to which central banks learn from each other (or imitate each other). To our knowledge, this approach is novel for the literature on central bank learning. This literature currently focuses on learning within a central bank or on how the public learns about central bank objectives.

The theoretical underpinning for our econometric exercises is provided by, among others, (Anderlini and Ianni, 1996), who show that subjects tend to learn more from their neighbors and that a strong path dependence exists in learning. Volden et al. (2008) and Callander and Harstad (2015) provide relevant theoretical models that examine the propensity to experiment with policies when districts learn from each other. Importantly for our research, Calvó-Armengol et al. (2009), Davezies et al. (2009), and Lin (2010) provide a theoretical model of peer effects and demonstrate that once we introduce these effects into the utility of welfare-maximizing agents, their optimal behavior will have a spatial structure.

Our results contribute to three different streams of literature. First, we provide a novel explanation for the causes of changes in central bank transparency. Second, in contrast to previous literature, we properly identify the specific sources behind the diffusion of policy adoptions. Third, we take a different perspective on central bank learning and show how central banks learn from each other.

More specifically, our results provide evidence of peer effects among central banks. In contrast to the previous literature on central bank transparency, our results indicate that domestic factors are not the only driving force behind the transparency increases. External factors and peer effects also play an important role. Consequently, our results improve the understanding of why central banks became transparent. Central banks observed the experience of frontrunners and followed their decisions, if the central banks positively evaluated the frontrunners' experience with more transparent policy framework. This finding has important implications for the theoretical literature on central bank transparency. Modeling not only how private agents learn about central bank policies but also how central banks learn from each other may be worthwhile. Our results also extend the previous literature on the diffusion of policy adoptions (or policy experiments), which argues that a diffusion exists but did not evaluate the question of

[7] In one of our robustness checks, we also use data on how central banks are transparent about their financial stability assessment from Horvath and Vasko (2016).

whether the policy adoptions – although correlated over time – are independent because the previous literature did not address identification issues.

This paper is organized as follows. Section 2 provides a brief survey of the theoretical and empirical literature on central bank transparency, including anecdotal evidence regarding cooperation among central banks. Section 3 introduces the data and our econometric framework. Section 4 provides the empirical results, and Section 5 concludes the paper. An Appendix with data definitions and additional regression results follows. An online Appendix with additional results is also available.

# 2 Central Bank Transparency: A Brief Survey

This section provides a brief survey of the theoretical and empirical literature on central bank transparency. A survey of central bank communication is provided by Blinder et al. (2009) and Blinder et al. (2017). Reis (2013) surveys the literature on central bank design, including transparency issues.

## 2.1 Theory

An important strand of the theoretical literature on central bank transparency focuses on the social welfare effects of public information. Morris and Shin (2002) emphasize that the benefits of greater transparency among public institutions may be limited if private agents have access to independent sources of information. Their model implies that the greater dissemination of information by public institutions may crowd out the information gathered by private agents and decrease welfare if the public signal about fundamentals is imprecise. Svensson (2006) employs the Morris and Shin (2002) model but concludes that their result is, in fact, pro-transparency because the setting in which more public information would have detrimental effects is exceptional. James and Lawler (2011) extend Morris and Shin (2002) by considering not only the dissemination of public information but also public policy actions. They conclude that greater public information dissemination unambiguously decreases welfare. Similarly, Lepetyuk and Stoltenberg (2013) are skeptical regarding transparency. They show that greater transparency in the form of monetary policy announcements, for example, may decrease welfare, even when individual preferences coincide with social welfare.

Several other papers extended the framework of Morris and Shin (2002) in various directions; see, for example, Angeletos and Pavan (2007) or Cornand and Heinemann (2008). Although their results might be viewed as less skeptical regarding the benefits

of transparency, they suggest that the optimal degree of publicity depends on the precision of the announcements. Other models also emphasize the idea of announcement precision and argue that the disclosure of certain information or to selected market participants is welfare-improving (Dale et al., 2011). Kool et al. (2011) show that greater transparency, even with accurate forecasts, is not beneficial if it crowds out private information. Cukierman (2009) also stresses the limits to transparency; for example, transparency that is too high could induce bank runs. More generally, these models suggest that some optimal level of transparency exists (see Walsh, 2007 or van der Cruijsen et al., 2010).

## 2.2 Empirical Evidence

The empirical literature typically focuses on testing the benefits and costs of various aspects of transparency. Again, the findings show some heterogeneity regarding whether transparency is welfare-improving. Crowe (2010) finds that the adoption of an inflation-targeting regime helps reduce the size of the forecast errors. Ehrmann et al. (2012) show that greater central bank transparency reduces the forecast dispersion of professional forecasters but that the effect is weak on the inflation expectations of the general public. Gerlach-Kristen (2004) and Horvath et al. (2012) find that the release of voting records from the monetary policy meetings of various inflation-targeting central banks helps predict the future course of monetary policy, supporting a case for transparency. However, Meade and Stasavage (2008) examine the transcripts from the Federal Reserve's monetary policy meetings and find that the decision to release full transcripts of Federal Open Market Committee meetings decreased the incentives of its participants to voice dissenting opinions.

Although the benefits and costs of central bank transparency are discussed in the literature, central banks have increased substantially the transparency of their policies during the last two decades. Dincer and Eichengreen (2014) document this shift using their monetary policy transparency index for a global sample of countries. Similarly, Horvath and Vasko (2016) develop an index of central bank transparency regarding their policy frameworks to promote financial stability in 110 countries from 2000 to 2011 and find that most central banks worldwide extensively increased their transparency in the 2000s. The achieved level of monetary policy transparency has rarely decreased, according to Dincer and Eichengreen (2014). Similarly, few central banks exhibited a decrease in their financial stability assessment transparency index; those that did were the most strongly affected by the current global financial crisis. These central banks

even stopped publishing their financial stability reports, which is a major communication channel for central banks regarding financial stability issues (Horvath and Vasko, 2016).

The monetary policy transparency index developed by Dincer and Eichengreen (2014) builds on previous contributions that gauge monetary policy transparency. Notably, Eijffinger and Geraats (2006) classify transparency in five areas: political, economic, procedural, policy, and operational transparency. Based on these classifications, they generate transparency indexes for nine central banks. More recent studies assess the transparency of central bank policies for issues other than monetary policy. In addition to the aforementioned study by Horvath and Vasko (2016), Liedorp et al. (2013) provide an index of transparency for banking supervisors in 24 countries.

Some studies, such as that by Liedorp et al. (2013), find that the determinants of transparency are largely country-specific. Dincer and Eichengreen (2014) and Horvath and Vasko (2016) find systematic variations in the degree of transparency. The results of Dincer and Eichengreen (2014) suggest that inflation, openness, financial depth, institutional quality, and political stability determine the transparency level. Horvath and Vasko (2016) find that the degree of transparency in the area of financial stability is strongly influenced by previous experience with monetary policy transparency. In addition, more developed countries that experience lower financial stress also exhibit a higher transparency score.

### 2.3 Anecdotal Evidence

Finally, we provide anecdotal evidence that central banks learn from their peers. First, we cite several central bank officials and central bank official publications to document that central banks consider the experience of other central banks in the area of transparency. More generally, Borio et al. (2008) provide an extensive overview of central bank cooperation. Second, we provide anecdotal evidence on how central banks learn from each other on a more institutionalized basis.

A number of central bankers document the high level of central bank interaction, even within the area of transparency. As noted by Deputy Governor Jan F. Qvigstad of the Norges Bank at the Norwegian Academy of Science and Letters on November 10, 2009, "*Our view on transparency and good communication is inspired by Wim Duisenberg, the first President of the European Central Bank.*" He continued his speech by analyzing the experience of the Bank of England and Sveriges Riksbank with transparent central bank policies.

Thomas Jordan, Governor of the Swiss National Bank (SNB), emphasized during

his speech at Zürcher Volkswirtschaftliche Gesellschaft on January 16, 2014, that "*the SNB is carefully monitoring international debates about the right objective and the best way of communicating monetary policy. Nevertheless, no central bank should simply jump on the latest monetary policy bandwagon without careful consideration.*"

When the National Bank of Moldova presented its new strategic plan for 2013–2017, Governor Dorin Drăguţanu said to centralbanking.com on October 3, 2012, that "*the plan considered the best practice and experiences of other central banks.*" Furthermore, the strategic plan itself stated that "*As any other modern entity, the NBM shall ensure a high level of efficiency, transparency and performance by aligning to the best international practices related to communication, credibility, and corporate governance.*" In addition, when introducing changes to their policy framework, the central bank of Botswana discusses extensively in its 2008 Annual Report the experiences of other central banks regarding transparency (Bank of Botswana, 2008).

The General Manager of the Bank of International Settlements, Malcolm D. Knight, noted that "*an important aim has always been to help central banks learn from each other, deepening mutual understanding*" (BIS, 2006). Woodford (2007) argues that the United States should learn from the communication policies of inflation-targeting central banks.

However, the anecdotal evidence regarding central bank cooperation in the area of transparency extends beyond central bank speeches and publications. Central banks also cooperate on an institutional basis. The Central Bank Governance Forum at the Bank for International Settlements serves as a forum to facilitate discussions on governance issues, including the transparency issues. In addition, some central banks, such as the Czech National Bank, provide this assistance for up to 20 central banks around the world (see, for example, the Czech National Bank press release from November 12, 2009). Others, such as the Bank of England, establish training centers to transfer knowledge (see the Centre for Central Banking Studies at the website of the Bank of England).

Some suppositions regarding the peer effects among central banks can also be drawn from the high transparency of central banks in Central and Eastern European countries (CEEC). Not surprising is that the most transparent central banks are in developed countries, such as New Zealand, Sweden, the United Kingdom, or the United States. Dincer and Eichengreen (2014) show that, as of 2010, two central banks from the CEECs are among the top ten transparent central banks (the Czech Republic, Hungary). Similarly, Horvath and Vasko (2016) show that the high transparency of central banks in the CEECs is in the area of financial stability transparency. According to Horvath and Vasko (2016), four out of ten most transparent central banks in 2010 are from the

CEECs (the Czech Republic, Hungary, Albania, and Romania).

# 3 Data and Social Interaction Models

## 3.1 Data

We use the monetary policy transparency (MPT) index provided by Dincer and Eichengreen (2014), which is available from 2000 to 2010. The resulting MPT index of central bank transparency is the sum of the scores of the answers to fifteen questions on political, economic, procedural, policy, and operational transparency. As an alternative, we also use the financial stability assessment transparency (FST) index developed by Horvath and Vasko (2016), which is available for 2000–2011. The resulting FST index is the sum of the scores of the answers to eleven questions on the general framework of political transparency, the coverage of financial stability reports, the availability of stress tests and financial soundness indicators, and information on financial stability provided on central banks' websites. We use the FST index for the robustness checks because our identification scheme is based on the monetary policy regime, which is obviously more plausible for the MPT index than for the FST index.

The data for both transparency indexes are drawn from central banks' websites. Both indexes are available for more than 100 central banks worldwide, and only small countries are not covered.[8] The average monetary policy transparency scores are presented in Figure 1 and illustrate the cross-country heterogeneity in the MPT index. More developed countries exhibit higher transparency scores, but many Central and Eastern European countries with inflation-targeting regimes do so as well.

Figure A1 provides the evolution of monetary policy transparency separately for the different monetary policy regimes (inflation targeting, exchange rate anchoring,

[8]The European Central Bank data are used to assess monetary policy transparency in the euro area, and the explanatory variables are averaged across the member countries in this case (unless they are readily available at the euro area aggregate level). Financial stability transparency is assessed at the country level. Noteworthy is that our results remain largely the same if we exclude the euro area countries from our sample. The list of countries is as follows: Albania, Argentina, Armenia, Aruba, Australia, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belize, Bermuda, Bhutan, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Cuba, Czech Republic, Denmark, Egypt, El Salvador, Estonia, Ethiopia, Euro Area countries, Fiji, Georgia, Ghana, Guatemala, Guyana, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Israel, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea, Kuwait, Kyrgyzstan, Latvia, Lesotho, Libya, Lithuania, Malawi, Malaysia, Malta, Mauritius, Mexico, Mongolia, Namibia, New Zealand, Nigeria, Norway, Oman, Pakistan, Papua New Guinea, Peru, the Philippines, Poland, Qatar Republic, Moldova, Romania, Russian Federation, Rwanda, Saudi Arabia, Sierra Leone, Singapore, Slovak Republic, Slovenia, Solomon Islands, South Africa, Sri Lanka, Sudan, Sweden, Switzerland, Tajikistan, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, Uruguay, United States, Vanuatu, Yemen, and Zambia.

monetary targeting, and other regimes, according to the IMF classification; more details on the regime classification are provided in the following subsection). Inflation targeting central banks display the highest degree of transparency, followed by central banks in the "other" policy regime. Central banks with an exchange rate anchor or with monetary targeting have lower transparency. Regarding the time variation in the monetary policy transparency scores, the transparency scores change frequently—approximately the value of every fourth observation changes with respect to the previous year (see Dincer and Eichengreen, 2014, and Horvath and Vasko, 2016), and the frequency of the changes is 24%. The Appendix also contains Figure A2, which shows the number of reversals in the monetary policy transparency index for each year. The results show that approximately 2% of central banks decrease their transparency relative to the previous year. The reversals increased during times of crisis; for example, in 2010, 5 central banks reduced their transparency score. The detailed description of transparency scores is available in Dincer and Eichengreen (2014) and Horvath and Vasko (2016). In the online Appendix, we present the descriptive statistics and the average transparency scores for the FST index.

We use the identical set of explanatory variables, as in the study on the determinants of monetary policy transparency by Dincer and Eichengreen (2014), to impose some structure on the regression specifications. The list of explanatory variables covers economic, financial, and political/institutional variables. Regarding the economic variables, we use inflation, GDP per capita, and openness. Our financial variable is financial depth (credit to GDP ratio). The political/institutional variables include political stability, rule of law, voice and accountability, government efficiency, and regulatory quality. The data definitions and sources are available in the Appendix.

### 3.2 Social Interaction Regression Models

We estimate the social interaction model to examine what drives central bank transparency.[9] To simplify the notation, we can write it as the Lee (2007) model in matrix notation:

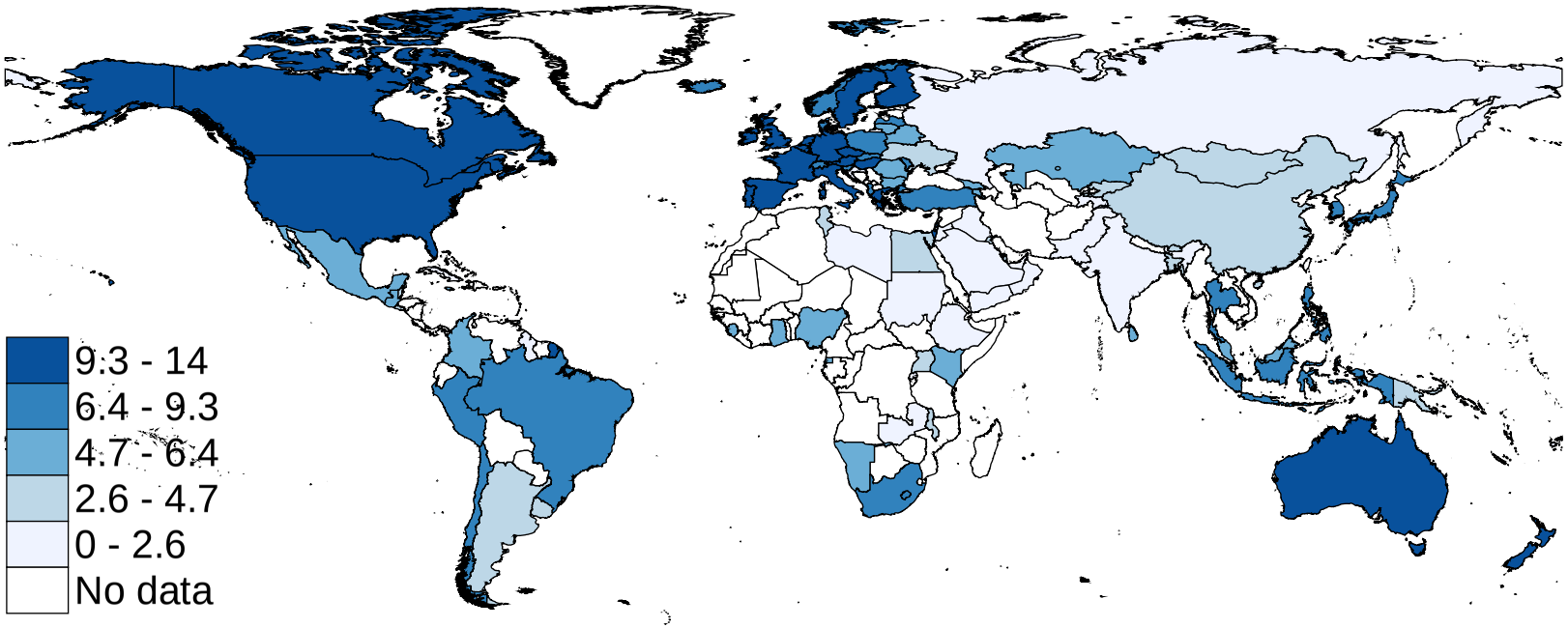
$$y = \lambda W y + x\beta_1 + Wx\beta_2 + \alpha + e, \tag{1}$$

where $y$ denotes the dependent variable (the index of central bank transparency),[10]

[9]The working paper version contains an illustrative theoretical model along the lines of Calvó-Armengol et al. (2009) and Davezies et al. (2009) and derives the empirical specification used in this article.

[10]Bramoullé et al. (2009) estimate the peer effects model as in Eq.(1) to analyze the participation in

Figure 1: Country Heterogeneity in Monetary Policy Transparency




Note: The average 2000-2010 scores for the monetary policy transparency index are presented.

$x$ is a vector of explanatory variables, $W$ is a social network weighting $N \times N$ matrix, $\alpha$ is a group fixed effect, and $e$ is a residual with $u \sim N\left(0, \sigma^2 I_n\right)$. Using the terminology by Manski (1993), $\lambda$ represents the endogenous peer effect, $\beta_1$ captures the exogenous (contextual) effect, and $\alpha$ represents the correlated effect.

The social groups in $W$ are defined depending on whether different central banks share the same monetary policy regime. If so, the value of the corresponding cell in the matrix is one and zero otherwise. $W$ is then row normalized such that $Wy$ and $Wx$ can be interpreted as the weighted average outcome of the peers.

We distinguish four main monetary policy regimes, $R$, based on the International Monetary Fund classification: inflation targeting, exchange rate anchoring, monetary targeting, and other regimes (the source of the data is the International Monetary Fund's Annual Report on Exchange Arrangements and Exchange Restrictions). These group (regime) sizes, $m$, are different. We classify countries according to the monetary policy regime as of 2000 and estimate the regression model for 2001–2010. Consequently, sorting into different monetary policy regimes is exogenous with respect to our dependent variable, not only because we employ past monetary policy regime but primarily because the monetary policy regime is set in advance to achieve the low inflation target (or stable exchange rate or full employment) rather than to achieve *ex ante* some desired transparency level. We have 44 countries with exchange rate anchoring, 13 with monetary targeting, 16 with inflation targeting, and 37 with another regime, including fund-supported or other monetary programs and IMF-supported or other monetary programs (the other group category often includes central banks with an orientation toward price stability but without explicit exchange rate anchor or explicit inflation target; these central banks sometimes adopted inflation or exchange rate targeting only later on).[11] The model is estimated using conditional maximum likelihood.

The statistically significant $\lambda$ indicates that peer effects are present for decisions about transparency. A significant $\beta_2$ suggests that the central bank peers' characteristics matter for transparency. For example, if peers exhibit low inflation, the central bank may increase its transparency level because of a favorable global inflation environment. The

recreational activities. The dependent variable in their model is an index of participation with values from 0 to 4. Therefore, the nature of their dependent variable is identical to our central bank transparency indexes.

[11] As an alternative, we classify countries according to the most common monetary policy regime that they had in 2000–2011. In principle, the common monetary policy regime can be endogenous to transparency scores even though the degree of endogeneity is likely to be low. In this case, we have 34 countries with exchange rate anchoring, 16 with monetary targeting, 27 with inflation targeting, and 33 with another regime, including fund-supported or other monetary programs and IMF-supported or other monetary programs.

significance of $\beta_1$ indicates that domestic factors are important drivers of transparency. The previous literature has estimated the restricted version of Eq. (1), specifically $y = x\beta_1 + \alpha + e$, and ignored contextual and peer effects.

As an alternative, we use a $W$ based on the inverse of distance in kilometers among the country's capital cities.[12] Therefore, we assume that central banks that are geographically close to each other are more likely to be influenced by each other than geographically distant central banks.[13] This assumption is consistent with Egger et al. (2014), who use geographical distance to proxy how exporting firms update beliefs (i.e., how they learn) about foreign markets; with Helmers and Patnam (2014), who examine spatial peer effects among children in India; and with Buera et al. (2011), who investigate the growth of nations. Clearly, learning is unobserved and likely to be mediated through a common monetary policy regime or geographical distance (i.e., a central bank is more likely to emulate the policy of its geographic neighbors than to emulate that of other central banks; see, for example, Simmons and Elkins, 2004, for a related literature on diffusion of policies). However, it is worth noting that controlling for confounding factors is also important to identify learning (Conley and Udry, 2010). We discuss this issue in greater detail in the following section.

In addition, we use two alternative $W$ to assess the other economic and institutional aspects of central bank cooperation. First, we set $W$ based on membership in economic unions (or free trade agreements).[14] Second, we set $W$ based on membership in the IMF regional departments. The IMF disseminates knowledge among central banks through Article IV missions and technical assistance, and this knowledge is typically concentrated within regional departments.[15] As a result, we construct $W$ based on whether countries belong to the same economic union or the same IMF regional department.

[12]Despite commonly held beliefs, LeSage and Pace (2011) show that the statistical inference in spatial econometric models is not very sensitive to the particular specifications used for the spatial weight structure in these models. Our results presented in the following section support this finding.

[13]It is worth noting that an alternative such as the trade intensity among countries could, in principle, work as well, but trade links are instrumented by geographical distance in most empirical research on international trade.

[14]We use the following economic unions to generate our matrix W: 1. CARICOM Single Market and Economy - CSME, 2. European Union - EU, 3. Eurasian Economic Union - EAEU, 4. Southern Common Market - MERCOSUR, 5. Gulf Cooperation Council - GCC, 6. Central American Integration System - SICA, 7. The Association of Southeast Asian Nations - ASEAN, 8. Economic Community of West African States - ECOWAS, 9. Common Market for Eastern and Southern Africa - COMESA, 10. European Free Trade Association - EFTA, 11. Greater Arab Free Trade Area - GAFTA, 12. North American Free Trade Agreement - NAFTA, and 13. Other. The membership is as of the year 2000 (given that the regressions use data from 2001 to 2010).

[15]The IMF's regional departments are as follows: African Department, Asia and Pacific Department, European Department, Middle East and Central Asia Department, and Western Hemisphere Department.

The model in Lee (2007) assumes that peer groups are known, which fits well with our case because monetary policy regimes are observable.[16] Central banks are assumed to interact within but not outside this group. This assumption is widely applied in the literature on social interactions. We are aware that there might be at least some level of interaction among central banks with different policy regimes, especially if they are geographically close. Therefore, we conduct robustness checks using the inverse of the geographical distance to measure the degree of interaction (and using the membership in economic unions and IMF regional departments).

Another assumption of the Lee (2007) model is that the central bank's peer group is everyone but the central bank itself. This assumption is important for identification (Lee, 2007) and is one of the main differences from the widely applied linear-in-means model by Manski (1993). Lee (2007) shows that identification is possible with sufficient peer group size variation (see also Lee et al., 2010) and with at least three different groups. Boucher et al. (2012) provide an interpretation behind the identification (see their subsection 3.2 on page 96). More technical descriptions of model identification are available in Lee (2007) and Davezies et al. (2009). In general, the variation in group sizes creates exogenous variations in the reduced-form parameters across groups, which results in identification.[17]

The model in Lee (2007) is theoretically identified but may suffer from weak identification with the actual data. Therefore, Lee (2007) undertakes Monte Carlo simulations to examine the extent to which maximum likelihood and instrumental variable estimators converge to true values for different $R$ (the number of groups) and $m$ (the size of the group).[18] Lee (2007) shows that $R$ must be at least three and $m$ sufficiently heterogeneous; that is, different groups should be of sufficiently different sizes.

Boucher et al. (2012) conduct additional Monte Carlo simulations to investigate

[16]Note that Davezies et al. (2009) show that the model in Lee (2007) is identifiable even if group members are not observed.

[17]The main issue is how to recover structural parameters from the reduced-form model. To understand the mechanics of model identification, expressing our regression equation as the within-group transformation is useful to eliminate the unobserved effects (group-invariant correlated effects) and present it separately for each monetary policy regime (group, $R$). Therefore, we obtain the following equation for central banks in the monetary policy regime $R$:

$$y_{R,i} - \tilde{y_R} = \frac{\beta_1 - \frac{\beta_2}{m_R - 1}}{1 + \frac{\lambda}{m_R - 1}}(x_{R,i} - \tilde{x_R}) + \frac{1}{1 + \frac{\lambda}{m_R - 1}} + (\epsilon_{R,i} - \tilde{\epsilon_R}) \tag{2}$$

where $\tilde{y_r}$, $\tilde{x_r}$ and $\tilde{\epsilon_r}$ are calculated using all central banks in the single monetary policy regime. There are three parameters—$\lambda$, $\beta_1$, and $\beta_2$—to be estimated in the equation; therefore, we need at least three different group sizes, $m$, to recover the structural parameters.

[18]Lee (2007) also finds that conditional maximum likelihood estimates are more efficient than those from two-stage least squares. Therefore, we do not estimate Eq. (1) using the latter technique.

the effects of both group sizes and their distribution on the precision and bias of the estimates. They find that the greater standard deviation of group sizes helps with identification. A comparison of $R$, $m$, and its standard deviation from our study with the results presented in Table 6 in Boucher et al. (2012) shows that the bias of our estimates is likely very small. In addition, we conduct our Monte Carlo simulations and show that the bias in our data is indeed small (more on this in subsection 4.5), which is not surprising because Lee (2007) shows that the estimator is more accurate if the groups are relatively small.

# 4 Results

This section contains our results regarding the determinants of central bank transparency. We estimate different social interaction regression models and present the results for both the determinants of monetary policy transparency and the determinants of financial stability transparency. We closely follow the regression specifications of Dincer and Eichengreen (2014) but extend their empirical model to include peer and contextual effects.

First, we present our baseline results. Next, we subject our results to a number of robustness checks, which are included in the following four subsections. The robustness checks focus on a variety of issues: different definition of $W$ (common monetary policy regime, geographical distance, membership in economic unions, IMF regional department membership, or different definitions of monetary policy regimes), different dependent variable, time effects, central bank involvement in financial regulation, and sub-sample analysis (central banks with no monetary policy regime change, monetary policy regime-specific estimation).

## 4.1 Baseline Results

Table 1 presents our results on the determinants of monetary policy transparency using the social network matrix based on the monetary policy regime as of 2000, and the regressions are estimated for 2001–2010. The regression table shows the effect of domestic characteristics, foreign characteristics—more specifically, the weighted average characteristics of their peer central banks—and peer effects.

According to our results, domestic characteristics help explain monetary policy transparency only to a certain extent, which is in line with Dincer and Eichengreen (2014). Openness is statistically significant in most regressions, suggesting that central

banks are more transparent in more open economies. However, other domestic characteristics do not matter.

Monetary policy transparency has additionally been influenced by the economic and institutional environments of central bank peers (i.e., the variables multiplied by the social network weighting matrix $W$ in Table 1). The institutional quality in the countries of their central bank peers matters consistently. Better institutions worldwide are conducive to monetary policy transparency. Other variables, such as the level of economic development and financial depth, also contribute to greater transparency, but their effect is less robust.

Peer effects are present for decisions regarding monetary policy transparency. The coefficient is positive and statistically significant, suggesting that central banks set their degree of monetary policy transparency with respect to their peers (i.e., those that share a common monetary policy regime).

Important to note is that our primary result—the existence of peer effects—holds even if we control for a number of economic, financial, monetary, institutional, and political characteristics of the countries and for fixed effects. Controlling for these characteristics is important to reduce the risk that the significance of peer effects does not represent the omission of important variables. Ignoring group fixed effects may lead to the overestimation of the degree of peer effects because central banks may sort into different monetary policy regimes based on unobserved characteristics.[19]

Our results provide two primary policy implications. First, policy interventions, such as those by international organizations targeting only a subset of central banks, may influence outcomes for other central banks that are not directly included in the intervention. Because of peer effects, the changes in individual covariates may become amplified; therefore, even relatively small shocks may have implications for central bank transparency at the global level.

Second, and relatedly, peer effects among central banks that share common monetary policy regimes may cause lower dispersion in the transparency level (note the positive coefficient on the peer effects in Table 1). If so, some central banks may become

[19]Finally, it is of interest to evaluate whether peer effects are concentrated in some specific dimensions of monetary policy transparency. However, estimating these regressions due to insufficient variation in the subcomponents of the monetary policy index is not possible. The overall monetary policy index consists of five subcomponents: political, economic, procedural, policy, and operational transparency. As previously noted, the frequency of changes in the overall monetary policy transparency index is 24%. Because we have 5 different subcomponents, on average, the frequency of changes in the subcomponent is 24/5, which is approximately 5%. This result implies that, on average, the subcomponent changes once in 20 years. For this reason, virtually no panel data research exists on the determinants of the subcomponents of monetary policy transparency.

Table 1: **Determinants of Monetary Policy Transparency: Baseline**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.18* | 0.43*** | 0.38*** | 0.27*** | 0.12 | 0.28*** | 0.36*** | 0.30*** |
| | (0.09) | (0.07) | (0.07) | (0.09) | (0.10) | (0.08) | (0.07) | (0.08) |
| Inflation | 1.08 | 1.25 | 1.24 | 1.08 | 1.44 | -2.33 | -2.25 | -2.28 |
| | (2.17) | (2.21) | (2.20) | (2.19) | (2.15) | (2.10) | (2.12) | (2.11) |
| Openness | 0.01* | 0.01 | 0.01* | 0.01* | 0.01** | 0.01** | 0.01** | 0.01** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.01) | (0.01) | (0.01) |
| Financial Depth | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| GDP per capita | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00* | 0.00* | 0.00* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of Law | -0.05 | | | | | | | |
| | (0.21) | | | | | | | |
| Political stab. | | 0.06 | | | | | | |
| | | (0.13) | | | | | | |
| Voice and acc. | | | 0.11 | | | | | |
| | | | (0.21) | | | | | |
| Government eff. | | | | 0.12 | | | | |
| | | | | (0.19) | | | | |
| Regulatory qu. | | | | | 0.82*** | | | |
| | | | | | (0.17) | | | |
| Democracy | | | | | | 0.05 | | |
| | | | | | | (0.04) | | |
| Autocracy | | | | | | | -0.02 | |
| | | | | | | | (0.04) | |
| Polity score | | | | | | | | 0.02 |
| | | | | | | | | (0.02) |
| W*Inflation | 2.07 | -0.12 | 2.00 | -1.39 | -2.33 | 10.80** | 7.95 | 10.02* |
| | (4.64) | (4.80) | (4.70) | (4.70) | (4.61) | (5.31) | (5.27) | (5.30) |
| W*Openness | -0.01 | -0.01 | -0.00 | 0.00 | 0.02 | 0.01 | -0.02 | -0.00 |
| | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) |
| W*Financial Depth | 0.02** | 0.02* | 0.03** | 0.02** | 0.03*** | 0.02 | 0.01 | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| W*GDP per capita | 0.00 | 0.00* | 0.00* | 0.00 | 0.00 | 0.00*** | 0.00** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 6.18*** | | | | | | | |
| | (1.13) | | | | | | | |
| W*Political stab. | | 0.55 | | | | | | |
| | | (0.53) | | | | | | |
| W*Voice and acc. | | | 2.92*** | | | | | |
| | | | (1.05) | | | | | |
| W*Gov. eff. | | | | 4.17*** | | | | |
| | | | | (0.94) | | | | |
| W*Reg. quality | | | | | 3.81*** | | | |
| | | | | | (0.80) | | | |
| W*Democracy | | | | | | 0.94*** | | |
| | | | | | | (0.18) | | |
| W*Autocracy | | | | | | | -1.03*** | |
| | | | | | | | (0.24) | |
| W*Polity | | | | | | | | 0.54*** |
| | | | | | | | | (0.11) |
| Observations | 729 | 729 | 729 | 729 | 729 | 720 | 720 | 720 |

Note: The Driscoll and Kraay standard errors are shown in parentheses: ***, **, and * denote statistical significance at the 1, 5, and 10% levels, respectively. W denotes the social network matrix based on the monetary policy regime as of 2000, whereas the dependent and explanatory variables are from 2001–2010.

too transparent, given the state of financial or macroeconomic stability. This argument can be vividly illustrated with the transparency of the communication of financial stability issues (the regression results are available in the following sub-section). During good times, central banks may follow their more transparent peers and increase their transparency levels without incurring substantial costs. However, during bad times, central bank communication regarding financial stability may become a delicate issue because transparently revealing the poor state of the financial sector and its risks may lead to bank runs and an escalation of the crisis (Goldstein and Sapra, 2014). In fact, Horvath and Vasko (2016) document that central banks in the countries that were most strongly hit by the financial crisis temporarily decreased their transparency regarding financial stability issues, to a large extent. For example, central banks in several European countries did not publish financial stability reports during the recent crisis. It is noteworthy that the decision to decrease transparency is likely associated with substantial reputational costs. As a result, an optimal level of transparency exists in the central bank framework to promote monetary (or financial) stability, which is likely to depend on the business or financial cycle. In this case, high transparency could eventually decrease social welfare, as noted by Morris and Shin (2002).

We subject our baseline results to a number of robustness checks. First, we estimate our regressions when, after calculating $W$, the monetary policy regime is no longer set as of 2000 but as the most common regime during 2000–2010. Second, we estimate the regressions with a lagged dependent variable (and explanatory variables), that is, introducing time dynamics into the peer effects. Third, we re-estimate the baseline regressions and additionally control for time effects to capture the potential time-varying unobserved heterogeneity.

Table A1 provides the regression results, where $W$ is based on the most common (representative) monetary policy regime in the 2000s. Therefore, $W$ is no longer necessarily exogenous but is based on the most representative monetary policy regime. The baseline results regarding the peer effects are virtually unchanged.

We present the regression results in Table A2 with the lagged peer effects and lagged explanatory variables. It may be the case that peer effects take time, and central banks react to their peers after a lag. In addition, transparency scores may change because of time-varying unobserved heterogeneity, such as changes in educational background or the analytical skills of the central bank staff. Therefore, we also include the time effects (yearly dummy variables) into the regressions. These results are available in Table A3. The results in Table A2 and A3 support our baseline findings. The peer effects coefficients are positive and statistically significant in all specifications except

one.

### 4.2 Alternative Networks: Geography, IMF Regional Department and Economic Unions

Our baseline results assume that central banks cooperate with each other if they share a common monetary policy regime. This subsection considers three alternative networks that determine cooperation: geographical distance, membership in the IMF regional department, and membership in economic unions.

The degree of interaction among central banks is also influenced by whether they are geographically close to each other. Clearly, the extent of interaction is not influenced only by distance; therefore, we consider the geography as the alternative network scheme.[20] Again, using the example of the Czech National Bank, this bank is more likely to provide technical assistance to more distant central banks, such as the one in Botswana, because they both use inflation targeting as their monetary policy regime. Therefore, we present the results with two different weighting matrices—one based on a monetary policy regime as the baseline results and the other based on geography.

We present the results on the determinants of monetary policy transparency using the inverse of distance to form $W$ in Table 2. We observe that the results are quite similar to the baseline regression results, which makes us believe that the identification issues are addressed sufficiently.

We conduct two additional checks by choosing different $W$ matrices to verify further whether our results are not sensitive to the construction of $W$. We use the information on the membership in IMF regional departments and on the membership in economic unions to construct $W$.

If countries (central banks) belong to the same IMF regional department, we expect them to cooperate more intensively. The results using IMF regional department membership as the input to construct the matrix $W$ are available in Table 3. Next, Table A4 (in the Appendix) provides the results of the determinants of monetary policy transparency using economic unions (free trade agreements) as of 2000 to construct the matrix $W$. Regardless of whether we use economic unions or IMF regional depart-

[20] In this regard, Conley and Udry (2010) emphasize that the adoption of new technologies (or the adoption of policy experiments, as in our case) may be spatially and serially correlated, not necessarily because of learning but because of some other omitted variable. These authors stress that the proper identification of social learning requires detailed data to control for otherwise confounding factors. Conley and Udry (2010) note that "*Spatial proximity is correlated with the presence of information links, but it is not their sole determinant. Information links occur over long as well as short distances*".

Table 2: **Determinants of Monetary Policy Transparency: Geographical Distance**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.03 | 0.02 | 0.03 | 0.02 | 0.09 | 0.31*** | 0.32*** | 0.31*** |
| | (0.14) | (0.14) | (0.14) | (0.14) | (0.14) | (0.10) | (0.10) | (0.10) |
| CPI | 1.67 | -2.76 | -2.35 | 1.95 | -4.05 | 1.73 | -4.42** | -4.63** |
| | (2.18) | (4.85) | (4.72) | (4.71) | (4.62) | (5.66) | (1.95) | (5.46) |
| Openness | 0.01* | 0.01 | 0.03* | 0.01 | 0.01** | 0.05** | 0.05** | 0.05** |
| | (0.00) | (0.02) | (0.02) | (0.02) | (0.02) | (0.01) | (0.02) | (0.02) |
| Financial depth | 0.00 | 0.00 | 0.06*** | 0.06*** | 0.06*** | 0.06*** | 0.06*** | 0.06*** |
| | (0.00) | (0.01) | (0.00) | (0.01) | (0.00) | (0.02) | (0.01) | (0.02) |
| GDP per capita | 0.00 | 0.00** | 0.00** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | -0.13 | | | | | | | |
| | (0.21) | | | | | | | |
| Political stability | | 0.20 | | | | | | |
| | | (0.13) | | | | | | |
| Voice and acc. | | | 0.16 | | | | | |
| | | | (0.21) | | | | | |
| Government eff. | | | | 0.15 | | | | |
| | | | | (0.19) | | | | |
| Regulatory qu. | | | | | 0.76*** | | | |
| | | | | | (0.17) | | | |
| Democracy | | | | | | 0.05 | | |
| | | | | | | (0.04) | | |
| Autocracy | | | | | | | 0.02 | |
| | | | | | | | (0.04) | |
| Polity score | | | | | | | | 0.01 |
| | | | | | | | | (0.02) |
| W*CPI | -0.57 | 2.18 | 1.85 | -2.83 | 2.12 | -4.58** | -1.93 | -0.41 |
| | (4.74) | (2.20) | (2.19) | (2.19) | (2.14) | (1.93) | (5.31) | (1.94) |
| W*Openness | 0.03 | 0.04** | 0.01 | 0.04** | 0.05** | 0.02** | 0.02** | 0.01** |
| | (0.02) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) |
| W*Financial d. | 0.05*** | 0.06*** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.01) | (0.01) | (0.01) | 0.00 | (0.01) | (0.01) | (0.02) | (0.01) |
| W*GDP p.c. | 0.00* | 0.00 | 0.00 | 0.00** | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 2.75*** | | | | | | | |
| | (1.038) | | | | | | | |
| W*Political stab. | | -0.13 | | | | | | |
| | | (0.76) | | | | | | |
| W*Voice and acc. | | | -0.04 | | | | | |
| | | | (1.01) | | | | | |
| W*Gov. eff. | | | | 0.85 | | | | |
| | | | | (1.01) | | | | |
| W*Reg. quality | | | | | 2.87*** | | | |
| | | | | | (0.91) | | | |
| W*Democracy | | | | | | 0.43 | | |
| | | | | | | (0.27) | | |
| W*Autocracy | | | | | | -0.10 | | |
| | | | | | | | (0.22) | |
| W*Polity | | | | | | | | 0.15 |
| | | | | | | | | (0.13) |
| Observations | 711 | 711 | 711 | 711 | 711 | 770 | 770 | 770 |



Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the network matrix based on the inverse of the distance.

Table 3: **Determinants of Monetary Policy Transparency: IMF Regional Department Membership**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect ($\lambda$) | 0.30*** | 0.32*** | 0.32*** | 0.32*** | 0.25*** | 0.22*** | 0.17*** | 0.18*** |
| | (0.05) | (0.03) | (0.03) | (0.03) | (0.07) | (0.05) | (0.05) | (0.05) |
| Inflation | 1.62 | 2.15* | 1.83 | 2.04 | 2.21 | -1.79 | -1.63 | -1.72 |
| | (1.19) | (1.32) | (1.27) | (1.30) | (1.57) | (2.48) | (2.56) | (2.55) |
| Openness | 0.01*** | 0.01*** | 0.01** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Financial depth | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| GDP per capita | 0.00*** | 0.00*** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | -0.28*** | | | | | | | |
| | (0.06) | | | | | | | |
| Political stability | | 0.16 | | | | | | |
| | | (0.19) | | | | | | |
| Voice and acc. | | | 0.09 | | | | | |
| | | | (0.23) | | | | | |
| Government eff. | | | | 0.18* | | | | |
| | | | | (0.10) | | | | |
| Regulatory qu. | | | | | 0.78*** | | | |
| | | | | | (0.12) | | | |
| Democracy | | | | | | 0.03** | | |
| | | | | | | (0.02) | | |
| Autocracy | | | | | | | -0.01 | |
| | | | | | | | (0.02) | |
| Polity score | | | | | | | | 0.02 |
| | | | | | | | | (0.01) |
| W*Inflation | -1.68 | -2.47 | -2.56 | -2.51 | -4.54 | 2.75 | 0.93 | 2.12 |
| | (2.40) | (2.51) | (1.96) | (2.21) | (2.78) | (2.55) | (2.88) | (2.79) |
| W*Openness | 0.01* | 0.01 | 0.01* | 0.01 | 0.01* | 0.04** | 0.03* | 0.04** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) | (0.02) | (0.02) |
| W*Financial d. | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.03*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| W*GDP p.c. | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.00) | (0.000) |
| W*Rule of law | 1.73** | | | | | | | |
| | (0.81) | | | | | | | |
| W*Political st. | | -0.07 | | | | | | |
| | | (0.28) | | | | | | |
| W*Voice Acc. | | | -0.69 | | | | | |
| | | | (0.23) | | | | | |
| W*Gov. eff. | | | | 0.04 | | | | |
| | | | | (0.37) | | | | |
| W*Reg. quality | | | | | 1.33* | | | |
| | | | | | (0.74) | | | |
| W*Democracy | | | | | | 0.33*** | | |
| | | | | | | (0.06) | | |
| W*Autocracy | | | | | | | -0.53*** | |
| | | | | | | | (0.06) | |
| W*Polity | | | | | | | | 0.24*** |
| | | | | | | | | (0.02) |
| Observations | 729 | 729 | 729 | 729 | 729 | 720 | 720 | 720 |



Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the network matrix based on the IMF regional department membership.

ment membership, we find that the coefficient of the peer effect is always positive and statistically significant.

### 4.3 Financial Stability Framework Transparency

Next, we examine whether our results hold only for monetary policy transparency or whether they also hold for transparency in other areas of central bank activities, that is, for the transparency in the central banks' frameworks to promote financial stability.

We estimate regressions using the financial stability transparency index (FST index from Horvath and Vasko (2016)) as the dependent variable. We estimate the regressions using the matrices $W$ based on the monetary policy regime and geographical distance. Additionally, we estimate regressions for which we additionally extend the set of regressors by including the variable that controls for the institutional structure of financial market supervision.

The results of the determinants of financial stability transparency are available in Tables 4 and A5 (in the Appendix) and indicate that domestic financial development and institutional quality determine the degree of transparency for the framework to support financial stability. Central banks in countries with a more stable institutional environment are more likely to display higher transparency. Furthermore, central banks in countries with developed financial markets place more emphasis on the transparent communication of their policies to safeguard financial stability. These results are broadly consistent with those of Horvath and Vasko (2016). The external environment of peers is important for domestic transparency.

Finally, all of our specifications indicate strong peer effects in financial stability transparency regardless of whether we use the monetary policy regime of geographical distance as the $W$ matrix. This result suggests that central banks started publishing their financial stability reports and stress tests because their peers did so. Overall, our results suggest that central banks learn from each other's experiences.

We also present the results for which we additionally control for the institutional structure of financial sector supervision to examine the determinants of transparency in central banks' financial stability frameworks. Based on the data from Melecky and Podpiera (2013), we construct a variable capturing of the extent to which a central bank is involved in financial market supervision. We assign the value of one if financial market supervision is fully under the umbrella of a central bank. The value of 0.5 is assigned if a central bank supervises only banks. We assign the value of 0 if a central bank is not involved in supervision. Controlling for the role that central banks play

Table 4: **Determinants of Financial Stability Framework Transparency: Common Monetary Policy Regime**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.19** | 0.18** | 0.14 | 0.18** | 0.17* | 0.16* | 0.16* | 0.16* |
| | (0.09) | (0.09) | (0.09) | (0.09) | (0.09) | (0.08) | (0.08) | (0.08) |
| Inflation | 3.23 | -5.08 | 3.07 | -6.82 | 3.55 | -4.92 | -1.47 | -5.69 |
| | (2.91) | (2.95) | (2.92) | (2.86) | (6.86) | (6.29) | (6.16) | (6.17) |
| Openness | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | -0.02 |
| | (0.01) | (0.01) | (0.03) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Financial depth | 0.01*** | 0.01*** | 0.05*** | 0.01*** | 0.01*** | 0.01*** | 0.03* | 0.02* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| GDP per capita | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00** | 0.00* | 0.00* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.91*** | | | | | | | |
| | (0.34) | | | | | | | |
| Political stability | | -0.07 | | | | | | |
| | | (0.18) | | | | | | |
| Voice and acc. | | | -0.02 | | | | | |
| | | | (0.29) | | | | | |
| Government eff. | | | | 1.67*** | | | | |
| | | | | (0.27) | | | | |
| Regulatory qu. | | | | | 1.24*** | | | |
| | | | | | (0.25) | | | |
| Democracy | | | | | | 0.04 | | |
| | | | | | | (0.06) | | |
| Autocracy | | | | | | | 0.08 | |
| | | | | | | | (0.05) | |
| Polity score | | | | | | | | -0.01 |
| | | | | | | | | (0.03) |
| W*Inflation | -5.51 | 2.91 | -4.21 | 3.71 | -6.17 | -2.06 | -6.09 | -1.87 |
| | (6.93) | (6.99) | (6.96) | (6.82) | (2.88) | (2.44) | (2.46) | (2.45) |
| W*Openness | 0.01 | 0.00 | 0.01 | 0.00 | 0.01 | -0.02 | -0.02 | 0.00 |
| | (0.03) | (0.03) | (0.01) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| W*Financial d. | 0.04*** | 0.04*** | 0.01*** | 0.04** | 0.04*** | 0.02* | 0.01*** | 0.01*** |
| | (0.01) | (0.01) | (0.02) | (0.01) | 0.00 | (0.01) | 0.00 | (0.01) |
| W*GDP p.c. | 0.00* | 0.00* | 0.00* | 0.00* | 0.00 | 0.00*** | 0.00*** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | -0.62 | | | | | | | |
| | (1.46) | | | | | | | |
| W*Political stab. | | -0.20 | | | | | | |
| | | (0.77) | | | | | | |
| W*Voice and acc. | | | 2.91** | | | | | |
| | | | (1.30) | | | | | |
| W*Gov. eff. | | | | 0.59 | | | | |
| | | | | (1.43) | | | | |
| W*Reg. quality | | | | | 0.64 | | | |
| | | | | | (1.12) | | | |
| W*Democracy | | | | | | 0.12 | | |
| | | | | | | (0.30) | | |
| W*Autocracy | | | | | | | -0.03 | |
| | | | | | | | (0.30) | |
| W*Polity | | | | | | | | 0.05 |
| | | | | | | | | (0.16) |
| Observations | 880 | 880 | 880 | 880 | 880 | 900 | 900 | 900 |



Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on the common monetary policy regime. The monetary policy regime is set according to the most common regime in 2000–2010.

in the supervision of financial markets is important because these banks may be more transparent in their framework to promote financial stability if they have the information and tools to combat a financial crisis (Cukierman, 2009).

These results are again largely in line with our baseline findings and are provided in Tables A6 and A7 in the Appendix (two regression tables, one with monetary policy regime to form W and the other with geography). We find that central banks, which are involved in financial sector supervision, are more likely to be transparent.

### 4.4 Alternative Classification of Monetary Policy Regimes

Next, we examine the extent to which alternative classifications of monetary policy regimes matter for our baseline results. We present the following seven different estimations.

1) We redefine the monetary policy regimes in two categories: inflation targeting central banks versus all other central banks. 2) We exclude from our sample all central banks with "other" monetary policy regimes as of 2000. 3) We estimate the regressions only with the central banks, which did not experience the change in the monetary policy regime from 2000 to 2010.

The other four estimations provide regime-specific results; that is, we estimate the regressions for the single monetary policy regime and exclude all three other regimes. Therefore, 4) we estimate the regressions and restrict the sample to central banks that maintained an exchange rate anchor in 2000 (therefore, we exclude all central banks that target inflation or money growth or have the so-called "other" policy regime). 5) We estimate the regressions using the sample of monetary targeting central banks, that is, the banks that targeted money growth in 2000 (all other central banks are excluded). 6) We estimate the regressions and include only central banks that had an explicit inflation target as of 2000. 7) We estimate the regressions based on the sample of central banks that, according to the IMF classification, maintained "other" monetary policy regimes in 2000.

We estimate the regressions for two groups—inflation targeters versus non-inflation targeters. Instead of having four different monetary policy groups, we create two main groups—inflation targeters versus all other regimes (exchange rate targeting, monetary targeting, and other policy group). It may be the case that our results regarding the peer effects are primarily driven by the inflation targeters for which learning from others' experiences are likely to be stronger than for other monetary policy regimes. Our results in Table 5 show that the peer effects are positive and statistically significant in 6 out of

Table 5: **Determinants of Monetary Policy Transparency: Do Peer Effects Matter? Inflation Targeters vs. Non-Inflation Targeters**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect | 0.09 | 0.53*** | 0.52*** | 0.25** | -0.34 | 0.39*** | 0.31*** | 0.35*** |
| | (0.14) | (0.08) | (0.08) | (0.12) | (0.21) | (0.10) | (0.11) | (0.10) |
| Inflation | 1.85 | 1.99 | 1.77 | 1.75 | 2.05 | -2.60 | -2.32 | -2.52 |
| | (2.19) | (2.23) | (2.22) | (2.21) | (2.14) | (2.10) | (2.11) | (2.11) |
| Openness | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01* | 0.01* | 0.01* |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Financial depth | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| GDP per capita | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.09 | | | | | | | |
| | (0.22) | | | | | | | |
| Political stability | | 0.12 | | | | | | |
| | | (0.13) | | | | | | |
| Voice and acc. | | | 0.13 | | | | | |
| | | | (0.21) | | | | | |
| Government eff. | | | | 0.13 | | | | |
| | | | | (0.19) | | | | |
| Regulatory qu. | | | | | 0.96*** | | | |
| | | | | | (0.17) | | | |
| Democracy | | | | | | 0.06 | | |
| | | | | | | (0.04) | | |
| Autocracy | | | | | | | -0.01 | |
| | | | | | | | (0.04) | |
| Polity score | | | | | | | | 0.02 |
| | | | | | | | | (0.02) |
| W*Inflation | 5.11 | -2.14 | -1.01 | -5.21 | -8.42* | 10.38* | 10.61* | 10.80* |
| | (5.17) | (5.25) | (5.08) | (5.11) | (5.01) | (5.91) | (5.90) | (5.92) |
| W*Openness | -0.03 | 0.02 | 0.02 | 0.05** | 0.05** | 0.03 | 0.01 | 0.03 |
| | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.03) | (0.03) | (0.03) |
| W*Financial d. | 0.01 | 0.02* | 0.03** | 0.05*** | 0.05*** | 0.02 | 0.00 | 0.02 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) | (0.02) | (0.02) |
| W*GDP p.c. | 0.00* | 0.000 | 0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.000) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 11.55*** | | | | | | | |
| | (2.34) | | | | | | | |
| W*Political st. | | 0.21 | | | | | | |
| | | (0.95) | | | | | | |
| W*Voice Acc. | | | 1.11 | | | | | |
| | | | (1.56) | | | | | |
| W*Gov. eff. | | | | 5.18*** | | | | |
| | | | | (1.32) | | | | |
| W*Reg. quality | | | | | 10.76*** | | | |
| | | | | | (2.05) | | | |
| W*Democracy | | | | | | 0.97*** | | |
| | | | | | | (0.24) | | |
| W*Autocracy | | | | | | | -1.66*** | |
| | | | | | | | (0.36) | |
| W*Polity | | | | | | | | 0.64*** |
| | | | | | | | | (0.15) |
| Observations | 729 | 729 | 729 | 729 | 729 | 720 | 720 | 720 |



Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on two groups of policy regimes: inflation targeters vs. non-inflation targeters, as of 2000.

Table 6: **Determinants of Monetary Policy Transparency: Do Peer Effects Matter? Other Policy Regime Excluded**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect | 0.12 | 0.09 | 0.13 | 0.01 | 0.05 | 0.26*** | 0.27*** | 0.26*** |
| | (0.12) | (0.12) | (0.12) | (0.12) | (0.12) | (0.09) | (0.09) | (0.09) |
| Inflation | 0.82 | 2.08 | 1.87 | 1.17 | 1.96 | 1.59 | 1.56 | 1.16 |
| | (3.37) | (3.39) | (3.39) | (3.36) | (3.37) | (3.61) | (3.61) | (3.60) |
| Openness | 0.01** | 0.01** | 0.01** | 0.01** | 0.01** | 0.02*** | 0.02*** | 0.02*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Financial depth | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| GDP per capita | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00** | 0.00** | 0.00** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | -0.63** | | | | | | | |
| | (0.26) | | | | | | | |
| Political stability | | -0.03 | | | | | | |
| | | (0.16) | | | | | | |
| Voice and acc. | | | -0.15 | | | | | |
| | | | (0.25) | | | | | |
| Government eff. | | | | -0.38 | | | | |
| | | | | (0.24) | | | | |
| Regulatory qu. | | | | | 0.32 | | | |
| | | | | | (0.21) | | | |
| Democracy | | | | | | 0.02 | | |
| | | | | | | (0.04) | | |
| Autocracy | | | | | | | -0.01 | |
| | | | | | | | (0.05) | |
| Polity score | | | | | | | | 0.01 |
| | | | | | | | | (0.03) |
| W*Inflation | 0.67 | 0.32 | -1.23 | -0.96 | -1.39 | 11.95 | 11.90 | 12.48 |
| | (6.37) | (6.42) | (6.41) | (6.32) | (6.36) | (7.85) | (7.89) | (7.90) |
| W*Openness | 0.01 | 0.04* | 0.03 | 0.03* | 0.02 | -0.02 | -0.04 | 0.02*** |
| | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.03) | (0.03) | (0.01) |
| W*Financial d. | 0.03** | 0.03** | 0.02** | 0.03*** | 0.03*** | 0.00 | -0.00 | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| W*GDP p.c. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00** | 0.00** | 0.00** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 2.61** | | | | | | | |
| | (1.60) | | | | | | | |
| W*Political st. | | -1.18* | | | | | | |
| | | (0.63) | | | | | | |
| W*Voice Acc. | | | -1.00 | | | | | |
| | | | (1.30) | | | | | |
| W*Gov. eff. | | | | 3.55*** | | | | |
| | | | | (1.11) | | | | |
| W*Reg. quality | | | | | 2.30** | | | |
| | | | | | (1.08) | | | |
| W*Democracy | | | | | | 0.64*** | | |
| | | | | | | (0.22) | | |
| W*Autocracy | | | | | | | -0.73*** | |
| | | | | | | | (0.27) | |
| W*Polity | | | | | | | | 0.37*** |
| | | | | | | | | (0.13) |
| Observations | 486 | 486 | 486 | 486 | 486 | 450 | 450 | 450 |



Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on a monetary policy regime, as of 2000. The monetary policy regime "other" is excluded.

8 specifications. We acknowledge, however, that the model is not necessarily identified in this case, and (Lee (2007) shows that we need at least three groups for the model to be identifiable). This result suggests that peer effects extend beyond inflation targeters.

We also estimate the regressions and exclude the central banks that were classified in the other monetary policy regime group as of 2000. However, the number of observations decreases substantially when excluding this set of central banks. We run 8 different regression specifications and find that the peer effects have positive and statistically significant coefficients in 3 of them. In the remaining 5 specifications, the peer effects are positive but not significant. The t-statistics decrease to approximately 1 in these remaining specifications, probably because of the lower number of observations. Therefore, this result also provides some evidence that peer effects extend beyond inflation targeters.[21]

Importantly, our results regarding the existence of peer effects among central banks may not necessarily reflect learning about optimal transparency policies but about optimal monetary policy regime. Note that our baseline regressions use the monetary policy regime as of 2000 as the social interaction matrix $W$. Central banks may subsequently change their transparency score because of switching to a different monetary policy regime rather than because of learning from other central bank experiences. To address this issue, we estimate the regressions only for central banks that did not experience any monetary policy regime change during our sample period.

We present the results in Table A8 in the Appendix. In total, these 35 countries (central banks) did not undergo a monetary policy regime change.[22] We find that the peer effects coefficients are positive and statistically significant in all 8 regression specifications. However, given the low number of countries, we use the (inverse of the) geographical distance as the weighting matrix $W$ to have a sufficient variation in $W$. We also have to exclude the foreign variables to reduce the number of explanatory variables. Because we do not include the foreign variables, we compensate for their lack by assuming the spatial structure in the error term.[23]

[21] Note that the other monetary policy group includes countries, such as Albania or Armenia. These countries subsequently adopted inflation targeting, and they were labeled as the "other" group because they initially lacked an exchange rate anchor or explicit inflation target. The "other" group also includes countries such as Belarus or Kazakhstan, which progressed from the "other" regime to the exchange rate anchor. The "other" group often consists of countries with the general ambition to safeguard price stability but did not accompany it with any explicit exchange rate anchor or inflation (or monetary) target.

[22] The number of observations in the regressions is slightly lower than 300 because of missing observations.

[23] However, regardless of whether the error term has or does not have the spatial structure, the peer effects remain significant.

We also estimate separately the regressions for a single monetary policy regime. In our baseline, we jointly estimate the regressions for all four monetary policy regimes. In this robustness check, we estimate the regressions separately for a) central banks with an exchange rate anchor, b) central banks with monetary targeting, c) central banks with inflation targeting, and d) central banks with "other" policy regime. The motivation for this exercise is to assess whether peer effects are concentrated on the group of inflation targeters or whether they extend beyond this group and are present in all monetary policy regimes. Estimating group-specific regressions addresses common factors that only apply within a group (monetary policy regime).

If we run these policy group-specific regressions, we cannot retain the monetary policy regime as the weighting scheme.[24] Therefore, we use the geographical distance as the $W$. The results suggest that peer effects are present; that is, $\lambda$ has a positive and statistically significant coefficient. More specifically, peer effects are present in 8 out of 8 specifications for inflation targeters, exchange rate targeters and the other group, and in 3 out of 8 specifications for monetary targeters. As a consequence, we find that peer effects are present in 27 out of 32 regression specifications. The results of this robustness check suggest that peer effects extend beyond inflation targeters. These results are available in Table A9, Table A10, Table A11, and Table A12 in the Appendix.

This robustness check is important to evaluate whether peer effects are present in all monetary policy regimes; however, the drawback of this exercise is the low number of observations. As a result, we have to exclude the foreign variables to reduce the number of explanatory variables (note that the regressions with the inflation targeters and monetary targeters have only 135 and 99 observations, respectively). Because we do not include the foreign variables, we compensate for their absence by assuming the spatial structure in the error term. However, our results do not change even if we do not consider the spatial structure in the error term.

### 4.5 Other Robustness Checks

Finally, we provide more econometric-oriented robustness checks. First, we estimate our model using randomly generated monetary policy regimes $W$. Second, we conduct Monte Carlo simulations to examine the bias of our estimator. Third, we also provide the so-called average direct, indirect, and total effects for our baseline regressions.

The results with randomly generated $W$ are available in Table A13 and show

[24] Clearly, the matrix $W$ would have the values of 1 in all of its elements (outside the diagonal).

that peer effects disappear. This result is important because it suggests that our results regarding the existence of peer effects are not driven by unobserved trends.

Regarding the simulations, Lee (2007) and Boucher et al. (2012) already conducted Monte Carlo simulations for the estimator that we employ and found that the bias is rather small when they employ data similar to ours (in terms of the number of observations, the number of groups, and the size of the groups). To be on the safe side, we conduct our own simulations. We set the number of observations, the number of groups ($R$), and the size of the group ($m$) to correspond exactly to our dataset and examine the size of the bias for the different peer effect values ($\lambda$).[25] Specifically, we consider the following values for $\lambda$ between 0.05, 0.1, 0.15, ...., 0.85, 0.9, and 0.95.

The results are available in Figure A3 in the Appendix. We present the Monte Carlo simulations for the data underlying the regression results in Table 1 columns 1–4. The remaining simulations are available on request. The diagonal line provides the true value; the dots represent the mean of the corresponding simulated values for the peer effect coefficient. The simulated values closer to the diagonal line suggest a smaller bias of our estimator. In general, we observe the simulated values to be close to the true values, and the difference becomes negligible with a greater peer effect coefficient. We consider the left figure, in which, for example, the true value of the peer effect coefficient is 0.50, whereas the simulated values are 0.47 and 0.53, respectively (note that the corresponding standard error is approximately 0.02). The exception is when the peer effect coefficient is small, such as 0.05 or 0.1. Then, for some regression specifications, a certain risk exists in concluding that the peer effect is statistically insignificant even though it is present. However, that the estimator encounters more difficulties in showing the existence of a weak rather than a strong peer effect should not be surprising.

In addition, Pace and LeSage (2006) show that the so-called average direct, average indirect, and average total effects can be estimated for each variable. The direct effect shows how changes in the x-th explanatory variable for the i-th country impact the i-th country's dependent variable, for i = 1; ...; n. The indirect effect shows the impact on the j-th country's outcomes $y_j$ from a change in the x-th explanatory variable from the i-th region if i $\neq$ j. In other words, the direct effects are calculated as the mean of the main diagonal elements of the $n \times n$ matrices, whereas the indirect effects

[25] The procedure for the Monte Carlo simulation is as follows: 1) Model is estimated with actual data. 2) The coefficient estimates from step 1 are taken as the true parameters, and the peer effect coefficient is set to 0.05. 3) Errors are randomly generated, and the dependent variable is calculated. 4) The coefficients are estimated with the dependent variable from step 3, and the estimates are saved. 5) Steps 3 and 4 are repeated 1000 times. The peer effects parameter is then consecutively increased to 0.1, 0.15, ..., 0.95.

correspond to the mean of the sum of the off-diagonal elements from each row of the $n \times n$ matrices. The total effects are the sum of the direct and indirect effects.[26] In the online Appendix, we provide the estimates of direct, indirect, and total effects using our baseline estimations from Table 1. The results show the dominance of institutional quality, financial depth, and economic development in explaining the transparency of monetary policy.

Overall, our results survive a long series of robustness checks. We use alternative social network matrices, different classifications of monetary policy regimes or different measures of central bank transparency. We also consider central bank involvement in financial regulation, control for time effects and evaluate various sub-sample analyses.

# 5 Conclusions

One of the largest changes that occurred in central banks over the last three decades was a movement toward greater transparency of their policies. A number of empirical studies proposed that central banks became more transparent because of more stable domestic economic and institutional environments and that greater transparency was beneficial because it helped anchor inflation expectations and contributed to price stability. In this paper, we re-examine the literature on the determinants of transparency using not only a monetary policy transparency index but also a newly created financial stability assessment transparency index. We provide a novel explanation for why central banks became more transparent. Importantly, we ask whether central banks became more transparent directly because of the transparency of their peers.

To address this question, we estimate various panel social interaction econometric models to analyze the determinants of central bank transparency. As much as possible, we attempt to mimic previous empirical studies in terms of regression specifications but extend them to explicitly account for peer and contextual effects. We control for a number of standard economic, financial, political, and institutional characteristics and find that peer effects are present for decisions about transparency. In addition, the economic, financial, and institutional environments of central bank peers matter. In contrast, domestic characteristics, which have been proposed by previous literature as the primary cause of transparency, help explain transparency only to a certain extent.

[26] Intuitively, a direct effect shows that when country $i$ increases the rule of law, what will be the average impact on the central bank's transparency in country $i$? To obtain the average direct effect, one needs to average across all countries. The indirect effects show the impact of all other countries raising their rule of law on central bank transparency on an individual country, again averaged over all countries.

Therefore, we believe that our results provide a richer perspective for understanding why central banks became transparent over the last two decades, and we highlight the need to pay more attention to an analysis of how central banks interact and learn from each other's experiences. In more general terms, our research provides unique evidence on the policy adoption of public institutions. Unlike previous literature, using our novel econometric framework, we identify the specific sources of these policy adoptions to rule out the possibility that policy adoptions are correlated over time but are otherwise independent.

## References


Anderlini, L. and A. Ianni (1996). Path dependence and learning from neighbors. *Games and Economic Behavior 13*(2), 141–177.

Angeletos, G.-M. and A. Pavan (2007). Efficient use of information and social value of information. *Econometrica 75*(4), 1103–1142.

Bayer, P., S. L. Ross, and G. Topa (2008). Place of work and place of residence: Informal hiring networks and labor market outcomes. *Journal of Political Economy 116*(6), 1150–1196.

Bertrand, M., E. F. P. Luttmer, and S. Mullainathan (2000). Network effects and welfare cultures. *Quarterly Journal of Economics 115*, 1019–1056.

BIS (2006). Central bank and the challenge of development. *Bank for International Settlements, Basel*.

Blinder, A. S., M. Ehrmann, J. de Haan, and D. j. Jansen (2017). Necessity as the mother of invention: Monetary policy after the crisis. *Economic Policy 32*, 707–755.

Blinder, A. S., M. Ehrmann, M. Fratzscher, J. de Haan, and D. j. Jansen (2009). Central bank communication and monetary policy: A survey of theory and evidence. *Journal of Economic Literature 46*(4), 910–945.

Blume, L., W. Brock, S. Durlauf, and R. Jayaraman (2015). Linear social interactions models. *Journal of Political Economy 123*, 444–496.

Borio, C., G. Toniolo, and P. Clement (Eds.) (2008). *The Past and Future of Central Bank Cooperation*. Cambridge, UK: Cambridge University Press.

Boucher, V., Y. Bramoulle, H. Djebbari, and B. Fortin (2012). Do peers affect student achievement? evidence from canada using group size variation. *Journal of Applied Econometrics 29*, 91–109.

Bramoullé, Y., H. Djebbari, and B. Fortin (2009). Identification of peer effects through social networks. *Journal of econometrics 150*(1), 41–55.

Buera, F., A. Monge-Naranjo, and G. E. Primiceri (2011). Learning the wealth of nations. *Econometrica 79*(1), 1–45.

Callander, S. and B. Harstad (2015). Experimentation in federal systems. *Quarterly Journal of Economics 130*(2), 951–1002.

Calvó-Armengol, A., E. Patacchini, and Y. Zenou (2009). Peer effects and social networks in education. *Review of Economic Studies 76*, 1239–1267.

Conley, T. and C. Udry (2010). Learning about a new technology: Pineapple in ghana. *The American Economic Review 100*, 35–69.

Cornand, C. and F. Heinemann (2008). Optimal degree of public information dissemination. *Economic Journal 118*, 718–742.

Crowe, C. (2010). Testing the transparency benefits of inflation targeting: Evidence from private sector forecasts. *Journal of Monetary Economics 57*, 226–232.

Crowe, C. and E. E. Meade (2008). Central bank independence and transparency: Evolution and effectiveness. *European Journal of Political Economy 24*, 763–777.

Cukierman, A. (2009). The limits of transparency. *Economic Notes 38*(1-2), 1–37.

Dale, S., A. Orphanides, and P. Österholm (2011). Imperfect central bank communication - information versus distraction. *International Journal of Central Banking 7*(2), 3–39.

Davezies, L., D. X., and D. Fougere (2009). Identification of peer effects using group size variation. *Econometric Journal 12*, 397–413.

Dincer, N. and B. Eichengreen (2014). Central bank transparency and independence: Updates and new measures. *International Journal of Central Banking*, 189–253.

Egger, P., M. Fahn, V. Merlo, and G. Wamser (2014). On the genesis of multinational foreign affiliate networks. *European Economic Review 65*, 136–163.

Ehrmann, M., S. Eijffinger, and M. Fratzscher (2012). The role of central bank transparency for guiding private sector forecasts. *Scandinavian Journal of Economics 114*(3), 1018–1052.

Eijffinger, S. and P. Geraats (2006). How transparent are central banks? *European Journal of Political Economy 22*, 1–22.

Geraats, P. (2009). Monetary policy? *Scandinavian Journal of Economics 106*, 299–313.

Gerlach-Kristen, P. (2004). Is the mpc's voting record informative about future uk monetary policy? *Scandinavian Journal of Economics 106*, 299–313.

Gibbons, S. and H. G. Overman (2012). Mostly pointless spatial econometrics? *Journal of Regional Science 52*(2), 172–191.

Goldstein, I. and H. Sapra (2014). Should banks' stress test results be disclosed? an analysis of the costs and benefits with haresh sapra. *Foundations and Trends in Finance 8*, 1–54.

Helmers, C. and M. Patnam (2014). Does the rotten child spoil his companion? spatial peer effects among children in rural india. *Quantitative Economics 5*(1), 67–121.

Horvath, R., K. Šmídková, and J. Zápal (2012). Central banks' voting record and future policy. *International Journal of Central Banking 8*(4), 1–19.

Horvath, R. and D. Vasko (2016). Central bank transparency and financial stability. *Journal of Financial Stability 22*, 45–56.

James, J. G. and P. Lawler (2011). Optimal policy intervention and the social value of public information. *American Economic Review 101*(4), 1561–74.

Kool, C., M. Middeldorp, and S. Rosenkranz (2011). Central bank transparency and crowding out of private information in financial markets. *Journal of Money, Credit and Banking 43*(4), 765–774.

Krishnan, P. and M. Patnam (2014). Neighbors and extension agents in ethiopia: Who matters more for technology adoption? *American Journal of Agricultural Economics 96*, 308–327.

Lee, L. (2007). Identification and estimation of econometric models with group interactions, contextual factors and fixed effects. *Journal of Econometrics 140*, 333–374.

Lee, L., X. Liu, and X. Lin (2010). Specification and estimation of social interaction models with network structures. *Econometrics Journal 13*, 145–176.

Leitemo, K. and O. Roisland (2002). The choice of monetary policy regime for small open economies. *Annales d'Economie et de Statistique 67-68*, 463–494.

Lepetyuk, V. and C. A. Stoltenberg (2013). Policy announcements and welfare. *Economic Journal 123*(571), 962–997.

LeSage, J. and R. K. Pace (2011). The biggest myth in spatial econometrics. Technical report, presented at the 50th Southern Regional Science Association Annual Meeting, New Orleans, LA, March 26.

Liedorp, F., R. Mosch, C. van der Cruijsen, and J. de Haan (2013). Transparency of banking supervisors. *IMF Economic Review 61*, 310–335.

Lin, X. (2010). Identifying peer effects in student academic achievement by spatial autoregressive models with group unobservables. *Journal of Labor Economics 28*(4), 825–860.

Manski, C. (1993). Identification of endogenous social effects: The reflection problem. *Review of Economic Studies 60*(3), 531–542.

Maurer, J. and A. Meier (2008). Smooth it like the 'joneses'? estimating peer-group effects in intertemporal consumption choice. *Economic Journal 118*(527), 454–476.

Bank of Botswana (2008). *Annual Report*.

Meade, E. E. and D. Stasavage (2008). Publicity of debate and the incentive to dissent: Evidence from the us federal reserve. *Economic Journal 118*(528), 695–717.

Melecky, M. and A. M. Podpiera (2013). Institutional structures of financial sector supervision, their drivers and historical benchmarks. *Journal of Financial Stability 9*(3), 428–444.

Morris, S. and H. S. Shin (2002). Social value of public information. *American Economic Review 92*(5), 1521–34.

Pace, K. and J. LeSage (2006). *Handbook of Regional Science*, pp. 1535—1552. Springer.

Posen, A. S. (2003). Six practical views of central bank transparency. *Central Banking, Monetary Theory and Practice: Essays in Honour of Charles Goodhart 1*, 53–172.

Reis, R. (2013). Central bank design. *Journal of Economic Perspectives 27*(4), 17–44.

Saez, E. and E. Duflo (2003). The role of information and social interactions in retirement plan decisions: Evidence from a randomized experiment. *Quarterly Journal of Economics 118*, 815–842.

Simmons, B. A. and Z. Elkins (2004). The globalization of liberalization: Policy diffusion in the international political economy. *American Political Science Review 98*(1), 171–189.

Svensson, L. (2006). Social value of public information: Comment: Morris and shin (2002) is actually pro-transparency, not con. *American Economic Review 96*(1), 448–452.

van der Cruijsen, C., S. Eijffinger, and L. Hoogduin (2010). Optimal central bank transparency. *Journal of International Money and Finance 29*(8), 1482–1507.

Volden, C., M. M. Ting, and D. P. Carpenter (2008). A formal model of learning and policy diffusion. *American Political Science Review 102*(03), 319–332.

Walsh, C. E. (2007). Optimal economic transparency. *International Journal of Central Banking 3*(1), 5–36.

Woodford, M. (2007). The case for forecast targeting as a monetary policy strategy. *Journal of Economic Perspectives 21*(4), 3–24.

# Appendix

## Data Definitions and Sources

**Monetary policy transparency index**: An index of monetary policy transparency taking values between 0 and 15. Dincer and Eichengreen (2014).

**Financial stability transparency index**: An index of financial stability transparency taking values between 0 and 15. Horvath and Vasko (2016).

**GDP p.c.**: GDP per capita in current USD. International Monetary Fund.

**Past inflation**: % change in the consumer price index. International Monetary Fund.

**Openness**: Exports of goods and services as a percentage of GDP. World Bank.

**Financial depth**: Private credit as a percentage of GDP. World Bank.

**Rule of Law**: Captures perceptions of the extent to which agents have confidence in and abide by the rules of society and, in particular, the quality of contract enforcement, property rights, the police, and the courts as well as the likelihood of crime and violence. Ranges from -2.5 (the lowest possible score) to 2.5 (the highest possible score). The Worldwide Governance Indicators - World Bank.

**Voice and Accountability**: Captures perceptions of the extent to which a country's citizens are able to participate in selecting their government as well as freedom of expression, freedom of association, and a free media. Ranges from -2.5 (the lowest possible score) to 2.5 (the highest possible score). The Worldwide Governance Indicators - World Bank.

**Government efficiency**: Captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Ranges from -2.5 (the lowest possible score) to 2.5 (the highest possible score) The Worldwide Governance Indicators - World Bank.

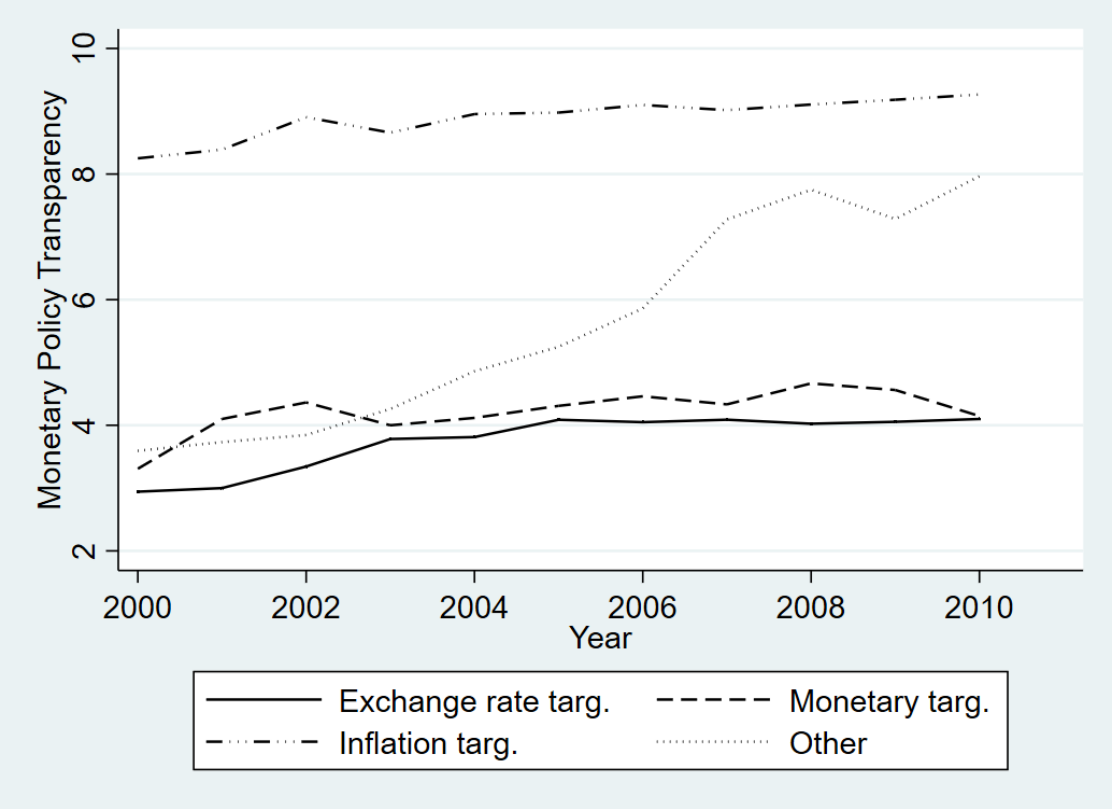
**Political stability and the absence of violence**: Measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism. Ranges from -2.5 (the lowest possible score) to 2.5 (the highest possible score). The Worldwide Governance Indicators - World Bank.

**Democracy**: Ordinal variable taking values from 0 to 10 that measures the level of democracy in the country by deliberating three main elements: 1. *"presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders"*, 2. *"the existence of institutionalized constraints on the exercise of power by the executive"*, and 3. *"the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation."* Polity IV.

**Autocracy**: Ordinal variable taking values from 0 to 10 measuring the level of autocracy in the country, taking into account the essential attributes: *"chief executives are chosen in a regularized process of selection within the political elite, and once in office, they exercise power with few institutional constraints."* Polity IV.

**Overall polity score**: The difference between the democratic score and the autocratic score. Ranges from +10 (for the most democratic countries) to -10 (for the most autocratic countries). Polity IV.

Figure A1: Evolution of Monetary Policy Transparency: Different Regimes




**Notes**: The figure presents the evolution of monetary policy transparency indexes for the different monetary policy regimes.

Table A1: **Determinants of Monetary Policy Transparency: Common Monetary Policy Regime**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.09 | 0.23** | 0.22** | 0.23** | 0.06 | 0.42*** | 0.42*** | 0.42*** |
| | (0.10) | (0.09) | (0.09) | (0.09) | (0.11) | (0.06) | (0.06) | (0.06) |
| Inflation | 1.97 | 2.26 | 2.06 | 2.10 | -4.72 | -4.27** | -8.51* | -4.21** |
| | (2.16) | (2.19) | (2.18) | (2.18) | (2.13) | (1.89) | (1.90) | (1.90) |
| Openness | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01** | 0.01** | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) | (0.01) | (0.01) | (0.01) |
| Financial depth | 0.00 | 0.03*** | 0.00 | 0.03** | 0.04*** | 0.04*** | 0.01 | 0.04*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.01) | (0.01) | (0.00) | (0.00) |
| GDP per capita | 0.00 | 0.00 | 0.00*** | 0.00*** | 0.00** | 0.00 | 0.00* | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.07 | | | | | | | |
| | (0.21) | | | | | | | |
| Political stability | | 0.06 | | | | | | |
| | | (0.13) | | | | | | |
| Voice and acc. | | | 0.18 | | | | | |
| | | | (0.21) | | | | | |
| Government eff. | | | | 0.13 | | | | |
| | | | | (0.19) | | | | |
| Regulatory qu. | | | | | 0.90*** | | | |
| | | | | | (0.17) | | | |
| Democracy | | | | | | 0.04 | | |
| | | | | | | (0.04) | | |
| Autocracy | | | | | | | 0.05 | |
| | | | | | | | (0.04) | |
| Polity score | | | | | | | | 0.00 |
| | | | | | | | | (0.02) |
| W*Inflation | -2.42 | -2.59 | -1.67 | -3.19 | 2.33 | -8.12* | -8.01* | -8.57* |
| | (4.53) | (4.66) | (4.70) | (4.57) | (4.47) | (4.83) | (4.83) | (4.82) |
| W*Openness | -0.01 | 0.01 | 0.01 | 0.01 | 0.01* | 0.02 | 0.02 | 0.01** |
| | (0.01) | (0.01) | (0.01) | (0.02) | (0.01) | (0.02) | (0.01) | (0.02) |
| W*Financial d. | 0.03*** | 0.00 | 0.04*** | 0.00 | 0.00 | 0.01 | 0.05*** | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | 0.00 | 0.00 | (0.01) | (0.01) |
| W*GDP p.c. | 0.00*** | 0.00*** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 3.88*** | | | | | | | |
| | (1.09) | | | | | | | |
| W*Political stab. | | -0.51 | | | | | | |
| | | (0.65) | | | | | | |
| W*Voice and acc. | | | 1.25 | | | | | |
| | | | (1.20) | | | | | |
| W*Gov. eff. | | | | 0.55 | | | | |
| | | | | (1.02) | | | | |
| W*Reg. quality | | | | | 2.61*** | | | |
| | | | | | (0.85) | | | |
| W*Democracy | | | | | | 0.19 | | |
| | | | | | | (0.20) | | |
| W*Autocracy | | | | | | 0.16 | | |
| | | | | | | | (0.23) | |
| W*Polity | | | | | | | | 0.03 |
| | | | | | | | | (0.11) |
| Observations | 711 | 711 | 711 | 711 | 711 | 770 | 770 | 770 |



Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on the common monetary policy regime, which is set according to the most common regime in 2000–2010.

Table A2: **Determinants of Monetary Policy Transparency: Lagged Regressors**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.27* | 0.57*** | 0.46*** | 0.48*** | 0.29* | 0.30** | 0.42*** | 0.28* |
| | (0.16) | (0.11) | (0.11) | (0.13) | (0.17) | (0.15) | (0.14) | (0.14) |
| Inflation | 1.83 | 1.42 | 1.65 | 1.52 | 1.90 | 1.90 | 1.89 | 1.34 |
| | (2.39) | (2.38) | (2.38) | (2.39) | (2.35) | (2.09) | (2.09) | (2.00) |
| Openness | 0.01** | 0.01** | 0.01** | 0.01** | 0.01** | 0.01*** | 0.01*** | 0.01** |
| | (0.005) | (0.005) | (0.005) | (0.005) | (0.005) | (0.004) | (0.003) | (0.005) |
| Financial depth | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| GDP per capita | 0.00* | 0.00 | 0.00* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.14 | | | | | | | |
| | (0.23) | | | | | | | |
| Political stability | | -0.06 | | | | | | |
| | | (0.14) | | | | | | |
| Voice and acc. | | | 0.12 | | | | | |
| | | | (0.22) | | | | | |
| Government eff. | | | | 0.31 | | | | |
| | | | | (0.21) | | | | |
| Regulatory qu. | | | | | 0.69*** | | | |
| | | | | | (0.18) | | | |
| Democracy | | | | | | 0.08* | | |
| | | | | | | (0.04) | | |
| Autocracy | | | | | | | -0.02 | |
| | | | | | | | (0.04) | |
| Polity score | | | | | | | | 0.03 |
| | | | | | | | | (0.02) |
| W*Inflation | 0.92 | -0.31 | -1.20 | -1.40 | 0.27 | 0.34 | 0.50 | 0.33 |
| | (4.63) | (4.67) | (4.53) | (4.54) | (0.19) | (4.71) | (4.73) | (4.75) |
| W*Openness | -0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02* | 0.02 | 0.01 |
| | (0.02) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| W*Financial d. | 0.02 | 0.00 | 0.04 | 0.04 | 0.02* | 0.03** | 0.02* | 0.02* |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| W*GDP p.c. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 4.04** | | | | | | | |
| | (1.99) | | | | | | | |
| W*Political stab. | | -0.53 | | | | | | |
| | | (0.68) | | | | | | |
| W*Voice and acc. | | | 1.64 | | | | | |
| | | | (1.05) | | | | | |
| W*Gov. eff. | | | | 0.43 | | | | |
| | | | | (0.94) | | | | |
| W*Reg. quality | | | | | 1.45 | | | |
| | | | | | (1.29) | | | |
| W*Democracy | | | | | | 0.66** | | |
| | | | | | | (0.29) | | |
| W*Autocracy | | | | | | | 0.41 | |
| | | | | | | | (0.31) | |
| W*Polity | | | | | | | | 0.43*** |
| | | | | | | | | (0.17) |
| Observations | 725 | 725 | 725 | 725 | 725 | 725 | 725 | 725 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on the monetary policy regime as of 2000. All regressors lagged by one year.

Table A3: **Determinants of Monetary Policy Transparency: Time Effects**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.36*** | 0.43*** | 0.38*** | 0.37*** | 0.30*** | 0.16* | 0.19** | 0.12 |
| | (0.08) | (0.06) | (0.07) | (0.07) | (0.07) | (0.09) | (0.09) | (0.10) |
| Inflation | 0.65 | 0.66 | 0.29 | 0.87 | 1.36 | 0.06 | 0.11 | 0.01 |
| | (2.31) | (2.32) | (2.31) | (2.37) | (2.26) | (2.29) | (2.31) | (2.30) |
| Openness | 0.004 | 0.004 | 0.004 | 0.003 | 0.004 | 0.01 | 0.01 | 0.01** |
| | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) | (0.01) | (0.01) | (0.01) |
| Financial depth | 0.006* | 0.007* | 0.006* | 0.006* | 0.006* | 0.01** | 0.01** | 0.01** |
| | (0.003) | (0.004) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| GDP per capita | 0.00** | 0.00** | 0.00** | 0.00* | 0.00 | 0.00*** | 0.00*** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.29 | | | | | | | |
| | (0.20) | | | | | | | |
| Political stability | | 0.17 | | | | | | |
| | | (0.12) | | | | | | |
| Voice and acc. | | | 0.65*** | | | | | |
| | | | (0.19) | | | | | |
| Government eff. | | | | 0.49*** | | | | |
| | | | | (0.18) | | | | |
| Regulatory qu. | | | | | 1.00*** | | | |
| | | | | | (0.15) | | | |
| Democracy | | | | | | 0.14*** | | |
| | | | | | | (0.04) | | |
| Autocracy | | | | | | | -0.09** | |
| | | | | | | | (0.04) | |
| Polity score | | | | | | | | 0.07*** |
| | | | | | | | | (0.02) |
| W*Inflation | 4.27 | 2.03 | 4.72 | 2.64 | 2.02 | 9.06* | 5.98 | 9.05* |
| | (4.98) | (4.92) | (5.05) | (4.95) | (4.85) | (5.04) | (4.95) | (5.03) |
| W*Openness | -0.03** | -0.02* | -0.02 | 0.02* | -0.02 | 0.01 | -0.01 | 0.01 |
| | (0.02) | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) | (0.01) | (0.01) |
| W*Financial d. | 0.01 | 0.03*** | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| W*GDP p.c. | 0.00 | 0.00** | 0.00** | 0.00** | 0.00** | 0.00*** | 0.00** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 1.62** | | | | | | | |
| | (0.67) | | | | | | | |
| W*Political stab. | | -0.04 | | | | | | |
| | | (0.45) | | | | | | |
| W*Voice and acc. | | | 1.05* | | | | | |
| | | | (0.61) | | | | | |
| W*Gov. eff. | | | | 1.19* | | | | |
| | | | | (0.61) | | | | |
| W*Reg. quality | | | | | 1.45** | | | |
| | | | | | (0.61) | | | |
| W*Democracy | | | | | | 0.77*** | | |
| | | | | | | (0.17) | | |
| W*Autocracy | | | | | | | -1.17*** | |
| | | | | | | | (0.24) | |
| W*Polity | | | | | | | | 0.56*** |
| | | | | | | | | (0.11) |
| Observations | 729 | 729 | 729 | 729 | 729 | 720 | 720 | 720 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on the monetary policy regime as of 2000, whereas dependent and explanatory variables are for 2001–2010. Time effects included.

Table A4: **Determinants of Monetary Policy Transparency: Membership in Economic Unions**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect ($\lambda$) | 0.21*** | 0.20*** | 0.21*** | 0.20*** | 0.15*** | 0.01*** | 0.01*** | 0.01*** |
| | (0.05) | (0.04) | (0.04) | (0.05) | (0.05) | (0.00) | (0.00) | (0.00) |
| Inflation | 2.30* | 3.15** | 2.01 | 2.74* | 2.69* | -3.67 | -3.92 | -3.77 |
| | (1.29) | (1.27) | (1.22) | (1.59) | (1.46) | (3.16) | (3.39) | (3.27) |
| Openness | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Financial depth | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| GDP per capita | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | -0.00 | | | | | | | |
| | (0.10) | | | | | | | |
| Political stability | | 0.15 | | | | | | |
| | | (0.15) | | | | | | |
| Voice and acc. | | | 0.14 | | | | | |
| | | | (0.23) | | | | | |
| Government eff. | | | | 0.14 | | | | |
| | | | | (0.14) | | | | |
| Regulatory qu. | | | | | 0.83*** | | | |
| | | | | | (0.12) | | | |
| Democracy | | | | | | 0.06** | | |
| | | | | | | (0.03) | | |
| Autocracy | | | | | | | -0.07* | |
| | | | | | | | (0.04) | |
| Polity score | | | | | | | | 0.04* |
| | | | | | | | | (0.02) |
| W*Inflation | -3.03 | -3.75 | -3.53 | -2.95 | -2.49* | 0.08 | 0.59 | 0.27 |
| | (2.40) | (3.39) | (2.93) | (2.22) | (1.50) | (0.27) | (0.48) | (0.39) |
| W*Openness | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | -0.00 | -0.00 | -0.00 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.00) | (0.00) | (0.00) |
| W*Financial d. | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.00 | 0.00 | 0.00 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.00) | (0.00) | (0.00) |
| W*GDP p.c. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 0.61** | | | | | | | |
| | (0.30) | | | | | | | |
| W*Political st. | | -1.29*** | | | | | | |
| | | (0.21) | | | | | | |
| W*Voice Acc. | | | -0.98 | | | | | |
| | | | (0.71) | | | | | |
| W*Gov. eff. | | | | 1.44*** | | | | |
| | | | | (0.53) | | | | |
| W*Reg. quality | | | | | 1.37*** | | | |
| | | | | | (0.19) | | | |
| W*Democracy | | | | | | -0.01 | | |
| | | | | | | (0.01) | | |
| W*Autocracy | | | | | | | -0.05 | |
| | | | | | | | (0.04) | |
| W*Polity | | | | | | | | 0.01 |
| | | | | | | | | (0.01) |
| Observations | 729 | 729 | 729 | 729 | 729 | 720 | 720 | 720 |



Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the network matrix based on the membership in economic unions.

Table A5: **Determinants of Financial Stability Framework Transparency: Geographical Distance**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.31*** | 0.27** | 0.33*** | 0.06 | 0.27** | 0.31*** | 0.34*** | 0.34*** |
| | (0.11) | (0.11) | (0.11) | (0.13) | (0.11) | (0.10) | (0.10) | (0.10) |
| CPI | 2.63 | 0.92 | -0.99 | -3.08 | -3.17 | 3.28 | 2.10 | 1.79 |
| | (2.89) | (2.91) | (7.31) | (7.10) | (2.86) | (7.62) | (2.43) | (7.35) |
| Openness | 0.00 | -0.02 | -0.02 | 0.01 | -0.01 | 0.00 | -0.05** | 0.00 |
| | (0.01) | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.01) | (0.01) |
| Financial depth | 0.01** | 0.01 | 0.02 | 0.04*** | 0.01*** | 0.01 | 0.01 | 0.01* |
| | (0.00) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.00) | (0.00) |
| GDP per capita | 0.00 | 0.00 | 0.00*** | 0.00*** | 0.00 | 0.00 | 0.00 | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.83*** | | | | | | | |
| | (0.30) | | | | | | | |
| Political stability | | 0.04 | | | | | | |
| | | (0.18) | | | | | | |
| Voice and acc. | | | -0.10 | | | | | |
| | | | (0.29) | | | | | |
| Government eff. | | | | 1.75*** | | | | |
| | | | | (0.26) | | | | |
| Regulatory qu. | | | | | 1.13*** | | | |
| | | | | | (0.24) | | | |
| Democracy | | | | | | 0.06 | | |
| | | | | | | (0.05) | | |
| Autocracy | | | | | | | 0.08 | |
| | | | | | | | (0.05) | |
| Polity score | | | | | | | | -0.01 |
| | | | | | | | | (0.03) |
| W*CPI | -0.53 | 2.56 | 2.46 | 2.87 | 2.94 | -1.90 | -0.99 | -1.60 |
| | (7.28) | (7.33) | (2.89) | (2.82) | (7.24) | (2.40) | (7.17) | (2.41) |
| W*Openness | -0.02 | 0.01 | 0.01 | 0.01 | 0.01 | -0.05** | 0.00 | -0.05** |
| | (0.02) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) | (0.02) |
| W*Financial d. | 0.02 | 0.01** | 0.01** | 0.01*** | 0.02* | 0.01** | 0.01* | 0.01 |
| | (0.01) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.01) | (0.01) |
| W*GDP p.c. | 0.00*** | 0.00*** | 0.00 | 0.00 | 0.00** | 0.00*** | 0.00*** | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 1.53 | | | | | | | |
| | (1.53) | | | | | | | |
| W*Political stab. | | 2.15** | | | | | | |
| | | (0.95) | | | | | | |
| W*Voice and acc. | | | 0.09 | | | | | |
| | | | (1.28) | | | | | |
| W*Gov. eff. | | | | 4.24*** | | | | |
| | | | | (1.45) | | | | |
| W*Reg. quality | | | | | 2.01 | | | |
| | | | | | (1.38) | | | |
| W*Democracy | | | | | | -0.11 | | |
| | | | | | | (0.33) | | |
| W*Autocracy | | | | | | | 0.39 | |
| | | | | | | | (0.27) | |
| W*Polity | | | | | | | | -0.15 |
| | | | | | | | | (0.16) |
| Observations | 880 | 880 | 880 | 880 | 880 | 900 | 900 | 900 |



Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the network matrix based on the inverse of distance.

Table A6: **Determinants of Financial Stability Framework Transparency: Common Monetary Policy Regime, Controlling for Supervisory Structure**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.27*** | 0.28*** | 0.28*** | 0.27*** | 0.21** | 0.19** | 0.08 | 0.14 |
| | (0.08) | (0.08) | (0.08) | (0.08) | (0.09) | (0.08) | (0.09) | (0.09) |
| CPI | 8.70** | 8.39* | 8.08* | -11.17 | 8.44** | -10.02 | -4.22 | -4.32 |
| | (4.27) | (4.29) | (8.71) | (8.61) | (8.63) | (7.85) | (3.80) | (3.78) |
| Openness | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | -0.01 | 0.00 |
| | (0.01) | (0.001) | (0.03) | (0.03) | (0.01) | (0.03) | (0.01) | (0.03) |
| Financial depth | 0.00 | 0.04*** | 0.04*** | 0.00 | 0.03*** | 0.04*** | 0.00 | 0.04*** |
| | (0.00) | (0.01) | (0.01) | (0.01) | 0.00 | (0.01) | (0.01) | (0.01) |
| GDP per capita | 0.00 | 0.00 | 0.00** | 0.00** | 0.00 | 0.00*** | 0.00** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Supervisor. struct. | 1.13** | 1.00* | 1.05* | 1.29** | 1.11** | 0.40 | 0.41 | 0.37 |
| | (0.56) | (0.56) | (4.91) | (0.55) | (3.90) | (0.48) | (0.47) | (2.37) |
| Rule of law | 0.77* | | | | | | | |
| | (0.44) | | | | | | | |
| Political stability | | -0.12 | | | | | | |
| | | (0.23) | | | | | | |
| Voice and acc. | | | 0.69 | | | | | |
| | | | (0.44) | | | | | |
| Government eff. | | | | 1.76*** | | | | |
| | | | | (0.35) | | | | |
| Regulatory qu. | | | | | 1.30*** | | | |
| | | | | | (0.36) | | | |
| Democracy | | | | | | 0.15* | | |
| | | | | | | (0.08) | | |
| Autocracy | | | | | | | -0.04 | |
| | | | | | | | (0.11) | |
| Polity score | | | | | | | | 0.07 |
| | | | | | | | | (0.05) |
| W*CPI | -9.89 | -8.70 | -9.25 | 8.34** | -8.75 | -3.91 | -9.45 | -9.91 |
| | (8.70) | (8.78) | (4.27) | (4.19) | (4.23) | (3.77) | (7.83) | (7.84) |
| W*Openness | 0.01 | 0.02 | 0.01 | 0.01 | 0.00 | -0.01 | -0.01 | -0.01 |
| | (0.03) | (0.03) | (0.01) | (0.01) | (0.03) | (0.01) | (0.03) | (0.01) |
| W*Financial d. | 0.03** | 0.00 | 0.00 | 0.03*** | 0.00 | 0.00 | 0.03** | 0.00 |
| | (0.01) | (0.01) | 0.00 | 0.00 | (0.01) | 0.00 | 0.00 | 0.00 |
| W*GDP p.c. | 0.00** | 0.00* | 0.00 | 0.00 | 0.00 | 0.00** | 0.00*** | 0.00** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Supervisor. str. | 1.62 | -0.20 | 0.36 | 1.49 | 2.08 | -0.43 | 1.47 | -0.17 |
| | (4.24) | (3.92) | (0.57) | (4.14) | (0.55) | (2.41) | (2.36) | (0.48) |
| W*Rule of law | 2.63 | | | | | | | |
| | (2.37) | | | | | | | |
| W*Political stab. | | -0.62 | | | | | | |
| | | (0.88) | | | | | | |
| W*Voice and acc. | | | 0.15 | | | | | |
| | | | (1.86) | | | | | |
| W*Gov. eff. | | | | 0.67 | | | | |
| | | | | (1.58) | | | | |
| W*Reg. quality | | | | | 4.66** | | | |
| | | | | | (1.94) | | | |
| W*Democracy | | | | | | 1.01** | | |
| | | | | | | (0.41) | | |
| W*Autocracy | | | | | | | 2.99*** | |
| | | | | | | | (0.68) | |
| W*Polity | | | | | | | | 1.00*** |
| Observations | 621 | 621 | 621 | 621 | 621 | 693 | 693 | 693 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on the common monetary policy regime, controlling for the institutional framework of financial supervision.

Table A7: **Determinants of Financial Stability Framework Transparency: Geographical Distance, Controlling for Supervisory Structure**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | 0.27** | 0.27** | 0.31** | 0.06 | 0.19 | 0.28** | 0.32*** | 0.30*** |
| | (0.13) | (0.13) | (0.12) | (0.15) | (0.14) | (0.10) | (0.10) | (0.10) |
| CPI | 7.59* | 7.61* | 7.10* | 7.22* | 5.51 | 25.98** | 22.52** | -6.66* |
| | (4.23) | (10.01) | (9.98) | (4.12) | (4.19) | (3.62) | (9.70) | (3.65) |
| Openness | -0.01 | 0.01 | -0.01 | -0.01 | 0.00 | -0.01 | -0.02 | -0.01 |
| | (0.01) | (0.01) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) | (0.01) |
| Financial depth | 0.00 | 0.03** | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 |
| | (0.00) | (0.02) | (0.00) | (0.00) | (0.00) | (0.01) | (0.01) | (0.01) |
| GDP per capita | 0.00 | 0.00** | 0.00** | 0.00 | 0.00 | 0.00*** | 0.00*** | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Supervisor. struct. | 0.92* | 0.96* | 0.87 | 1.05** | 0.79 | -7.19** | -6.27** | -6.73** |
| | (0.54) | (4.14) | (0.54) | (0.53) | (0.54) | (0.46) | (0.47) | (0.46) |
| Rule of law | 0.59 | | | | | | | |
| | (0.43) | | | | | | | |
| Political stability | | 0.07 | | | | | | |
| | | (0.23) | | | | | | |
| Voice and acc. | | | 0.74* | | | | | |
| | | | (0.43) | | | | | |
| Government eff. | | | | 1.91*** | | | | |
| | | | | (0.35) | | | | |
| Regulatory qu. | | | | | 1.21*** | | | |
| | | | | | (0.36) | | | |
| Democracy | | | | | | 0.23*** | | |
| | | | | | | (0.07) | | |
| Autocracy | | | | | | | -0.17 | |
| | | | | | | | (0.11) | |
| Polity score | | | | | | | | 0.13*** |
| | | | | | | | | (0.05) |
| W*CPI | 5.29 | 6.40 | 5.60 | 5.09 | 7.53* | -6.21* | -6.37* | 24.13** |
| | (9.97) | (4.22) | (4.23) | (9.753) | (9.89) | (10.09) | (3.68) | (9.94) |
| W*Openness | 0.04 | -0.01 | 0.02* | 0.02* | 0.02* | -0.01 | -0.01 | -0.01 |
| | (0.03) | (0.03) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.03) |
| W*Financial d. | 0.03** | 0.00 | 0.03** | 0.05*** | 0.04** | 0.01 | 0.00 | 0.00 |
| | (0.01) | 0.00 | (0.016) | (0.02) | (0.02) | 0.00 | 0.00 | 0.00 |
| W*GDP p.c. | 0.00* | 0.00 | 0.000 | 0.00** | 0.00 | 0.00 | 0.00 | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Supervisor. str. | -5.12 | -4.69 | -7.44* | -7.66** | -9.23** | 0.34 | 0.20 | 0.29 |
| | (4.07) | (0.54) | (3.98) | (3.86) | (3.89) | (3.02) | (3.02) | (3.01) |
| W*Rule of law | 3.46 | | | | | | | |
| | (2.30) | | | | | | | |
| W*Political stab. | | -1.70* | | | | | | |
| | | (1.00) | | | | | | |
| W*Voice and acc. | | | -1.10 | | | | | |
| | | | (1.67) | | | | | |
| W*Gov. eff. | | | | 2.51 | | | | |
| | | | | (1.70) | | | | |
| W*Reg. quality | | | | | 2.65 | | | |
| | | | | | (1.83) | | | |
| W*Democracy | | | | | | 0.16 | | |
| | | | | | | (0.54) | | |
| W*Autocracy | | | | | | (0.54) | 0.67 | |
| | | | | | | | (0.97) | |
| W*Polity | | | | | | | | -0.06 |
| | | | | | | | | (0.39) |
| Observations | 630 | 630 | 630 | 630 | 630 | 693 | 693 | 693 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the network matrix based on the inverse of distance, controlling for the institutional framework of financial supervision.

Table A8: **Determinants of Monetary Policy Transparency: No Change in Monetary Policy Regime**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect ($\lambda$) | 0.47*** | 0.47*** | 0.47*** | 0.46*** | 0.48*** | 0.66*** | 0.65*** | 0.66*** |
| | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.06) | (0.06) | (0.06) |
| Inflation | -4.69 | -5.105 | -5.426 | -3.875 | -5.063 | -9.130* | -8.954* | -9.004* |
| | (3.26) | (4.205) | (3.892) | (3.473) | (3.498) | (4.996) | (4.769) | (4.744) |
| Openness | 0.02** | 0.02** | 0.02*** | 0.02*** | 0.02*** | 0.01 | 0.01** | 0.01** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Financial depth | 0.02*** | 0.02*** | 0.02*** | 0.02*** | 0.02*** | 0.01 | 0.01 | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| GDP per capita | 0.00** | 0.00** | 0.00** | 0.00** | 0.00 | 0.00** | 0.00** | 0.00** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.61** | | | | | | | |
| | (0.25) | | | | | | | |
| Political stability | | -0.40*** | | | | | | |
| | | (0.15) | | | | | | |
| Voice and acc. | | | -0.22 | | | | | |
| | | | (0.15) | | | | | |
| Government eff. | | | | 1.16*** | | | | |
| | | | | (0.30) | | | | |
| Regulatory qu. | | | | | 0.96*** | | | |
| | | | | | (0.23) | | | |
| Democracy | | | | | | 0.14*** | | |
| | | | | | | (0.02) | | |
| Autocracy | | | | | | | -0.38*** | |
| | | | | | | | (0.13) | |
| Polity score | | | | | | | | -0.12*** |
| | | | | | | | | (0.02) |
| Observations | 297 | 297 | 297 | 297 | 297 | 286 | 286 | 286 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on the monetary policy regime as of 2000, whereas the dependent and explanatory variables are for 2001–2010. Only central banks with no change in the monetary policy regime during 2000–2010 included.

Table A9: **Determinants of Monetary Policy Transparency: Only Exchange Rate Targeters Included**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect ($\lambda$) | 0.59*** | 0.60*** | 0.58*** | 0.62*** | 0.60*** | 0.60*** | 0.60*** | 0.60*** |
| | (0.05) | (0.05) | (0.06) | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) |
| Inflation | 4.80*** | 5.240*** | 5.356*** | 4.273*** | 5.215*** | 0.126 | 0.116 | 0.121 |
| | (1.77) | (1.826) | (1.839) | (1.578) | (1.839) | (1.133) | (1.126) | (1.120) |
| Openness | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.04*** | 0.04*** | 0.04*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Financial depth | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.03*** | 0.03*** | 0.03*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.01) | (0.01) | (0.01) |
| GDP per capita | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | -0.892*** | | | | | | | |
| | (0.195) | | | | | | | |
| Political stability | | -0.049 | | | | | | |
| | | (0.158) | | | | | | |
| Voice and acc. | | | -0.282 | | | | | |
| | | | (0.265) | | | | | |
| Government eff. | | | | -0.741*** | | | | |
| | | | | (0.175) | | | | |
| Regulatory qu. | | | | | 0.100 | | | |
| | | | | | (0.087) | | | |
| Democracy | | | | | | 0.003 | | |
| | | | | | | (0.038) | | |
| Autocracy | | | | | | | -0.006 | |
| | | | | | | | (0.036) | |
| Polity score | | | | | | | | 0.003 |
| | | | | | | | | (0.019) |
| Observations | 261 | 261 | 261 | 261 | 261 | 231 | 231 | 231 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W is based on the inverse of geographical distance. Only central banks with exchange rate targeting as of 2000 are included.

Table A10: **Determinants of Monetary Policy Transparency: Only Monetary Targeters Included**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect ($\lambda$) | -0.02 | 0.05 | 0.01 | -0.08 | -0.12** | 0.42*** | 0.44*** | 0.42*** |
| | (0.05) | (0.07) | (0.06) | (0.05) | (0.05) | (0.09) | (0.08) | (0.09) |
| Inflation | -5.44 | -4.59 | -5.45 | -7.37 | -5.60 | -4.05 | -7.01** | -4.75 |
| | (4.64) | (3.30) | (3.58) | (5.06) | (3.67) | (3.42) | (3.36) | (3.64) |
| Openness | -0.01*** | -0.02*** | -0.012** | -0.019** | -0.01 | -0.03 | -0.03** | -0.03* |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) | (0.02) | (0.02) |
| Financial depth | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.03*** | 0.01* | 0.01* | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| GDP per capita | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.37 | | | | | | | |
| | (0.42) | | | | | | | |
| Political stability | | 0.44*** | | | | | | |
| | | (0.15) | | | | | | |
| Voice and acc. | | | 0.47** | | | | | |
| | | | (0.22) | | | | | |
| Government eff. | | | | -1.16*** | | | | |
| | | | | (0.22) | | | | |
| Regulatory qu. | | | | | 0.94*** | | | |
| | | | | | (0.32) | | | |
| Democracy | | | | | | 0.22 | | |
| | | | | | | (0.17) | | |
| Autocracy | | | | | | | 0.045 | |
| | | | | | | | (0.19) | |
| Polity score | | | | | | | | 0.12 |
| | | | | | | | | (0.13) |
| Observations | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W is based on the inverse of geographical distance. Only central banks with monetary targeting as of 2000 are included.

Table A11: **Determinants of Monetary Policy Transparency: Only Inflation Targeters Included**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect ($\lambda$) | 0.49*** | 0.48*** | 0.49*** | 0.46*** | 0.46*** | 0.65*** | 0.67*** | 0.66*** |
| | (0.10) | (0.10) | (0.10) | (0.10) | (0.10) | (0.10) | (0.10) | (0.10) |
| Inflation | 2.29 | 2.63 | 2.94 | 3.34 | 2.34 | 2.22 | 2.29 | 2.28 |
| | (3.88) | (3.15) | (4.04) | (4.30) | (3.37) | (4.31) | (4.44) | (4.35) |
| Openness | 0.04*** | 0.04*** | 0.04*** | 0.04*** | 0.05*** | 0.01 | 0.01 | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) | (0.02) | (0.02) |
| Financial depth | 0.01** | 0.01** | 0.01** | 0.01** | 0.01** | -0.01** | -0.01** | -0.01** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| GDP per capita | 0.00 | 0.00 | -0.00 | -0.00 | -0.00 | 0.00*** | 0.00*** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | -0.11 | | | | | | | |
| | (0.35) | | | | | | | |
| Political stability | | -0.048 | | | | | | |
| | | (0.195) | | | | | | |
| Voice and acc. | | | 0.261 | | | | | |
| | | | (0.177) | | | | | |
| Government eff. | | | | 0.459 | | | | |
| | | | | (0.293) | | | | |
| Regulatory qu. | | | | | 1.115*** | | | |
| | | | | | (0.402) | | | |
| Democracy | | | | | | 0.024 | | |
| | | | | | | (0.036) | | |
| Autocracy | | | | | | | -0.114** | |
| | | | | | | | (0.054) | |
| Polity score | | | | | | | | 0.024 |
| | | | | | | | | (0.020) |
| Observations | 135 | 135 | 135 | 135 | 135 | 154 | 154 | 154 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W is based on the inverse of geographical distance. Only central banks with inflation targeting as of 2000 are included.

Table A12: **Determinants of Monetary Policy Transparency: Only Central Banks With "other" Policy Regime**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effect ($\lambda$) | 0.75*** | 0.76*** | 0.75*** | 0.76*** | 0.68*** | 0.74*** | 0.78*** | 0.75*** |
| | (0.01) | (0.02) | (0.02) | (0.01) | (0.03) | (0.03) | (0.02) | (0.03) |
| Inflation | 1.11 | 0.03 | -0.04 | -0.29 | 1.30 | -5.90** | -5.43** | -5.86** |
| | (1.81) | (1.67) | (1.79) | (0.84) | (1.54) | (2.68) | (2.43) | (2.61) |
| Openness | 0.00 | 0.00 | 0.01 | 0.01 | 0.01** | 0.007* | 0.01* | 0.01* |
| | (0.00) | (0.00) | (0.00) | (0.01) | (0.01) | (0.00) | (0.01) | (0.00) |
| Financial depth | 0.01 | 0.02** | 0.02** | 0.01*** | 0.00 | 0.02*** | 0.02*** | 0.02*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| GDP per capita | 0.00 | 0.00 | 0.00 | 0.00 | 0.00* | 0.00* | 0.00 | 0.00* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 1.44*** | | | | | | | |
| | (0.41) | | | | | | | |
| Political stability | | 0.01 | | | | | | |
| | | (0.22) | | | | | | |
| Voice and acc. | | | 0.30 | | | | | |
| | | | (0.29) | | | | | |
| Government eff. | | | | 1.32*** | | | | |
| | | | | (0.38) | | | | |
| Regulatory qu. | | | | | 1.71*** | | | |
| | | | | | (0.20) | | | |
| Democracy | | | | | | 0.10*** | | |
| | | | | | | (0.03) | | |
| Autocracy | | | | | | | 0.00 | |
| | | | | | | | (0.02) | |
| Polity score | | | | | | | | 0.03** |
| | | | | | | | | (0.01) |
| Observations | 234 | 234 | 234 | 234 | 234 | 286 | 286 | 286 |

Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W is based on the inverse of geographical distance. Only central banks with the "other" monetary policy regime as of 2000 are included.

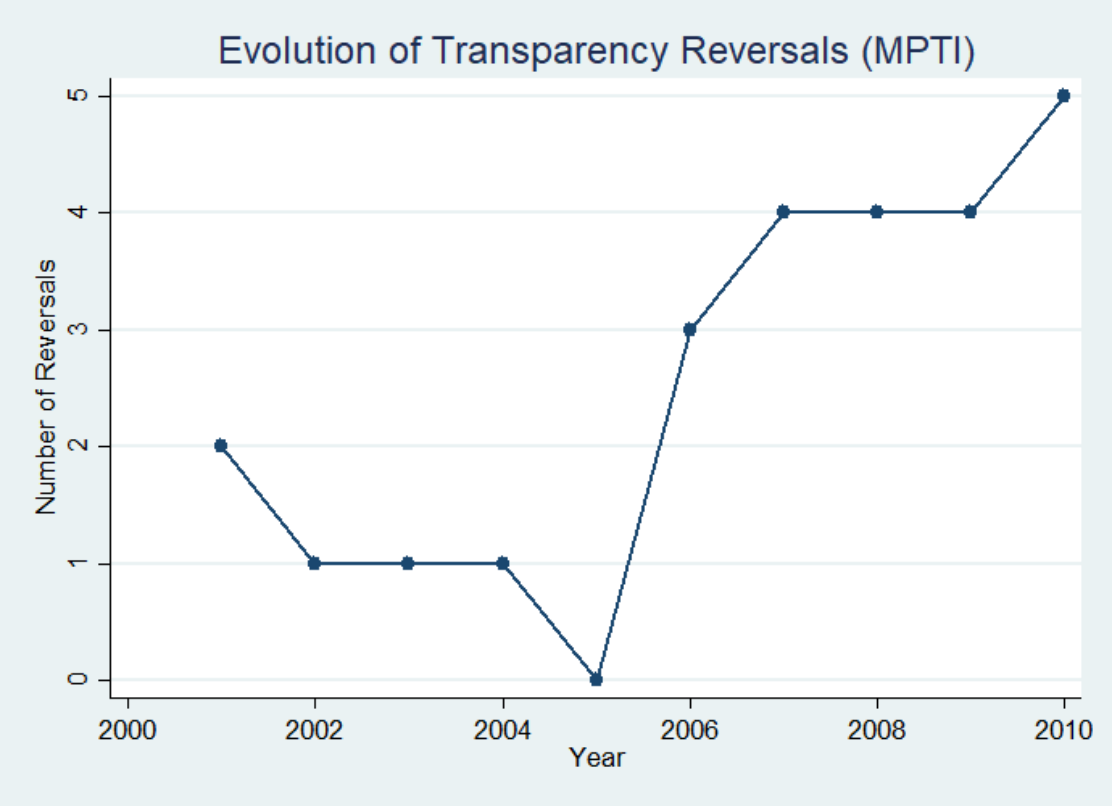
Table A13: **Determinants of Monetary Policy Transparency: *W* Randomly Generated**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| Peer effects ($\lambda$) | -0.32** | -0.05 | -0.13 | -0.14 | -0.21 | 0.01 | 0.01 | 0.01 |
| | (0.15) | (0.12) | (0.13) | (0.13) | (0.14) | (0.11) | (0.11) | (0.11) |
| CPI | 2.07 | 2.25 | -2.70 | 2.04 | -3.74 | 2.87 | -1.91 | -2.15 |
| | (2.13) | (2.17) | (4.62) | (4.58) | (2.12) | (2.08) | (2.09) | (5.10) |
| Openness | 0.01* | 0.01 | 0.01 | 0.01 | 0.01* | 0.03 | 0.03 | 0.01* |
| | (0.00) | (0.00) | (0.02) | (0.02) | (0.01) | (0.02) | (0.02) | (0.01) |
| Financial depth | 0.00 | 0.04*** | 0.04*** | 0.00 | 0.04*** | 0.04*** | 0.04** | 0.00 |
| | (0.00) | (0.01) | (0.01) | (0.01) | (0.00) | (0.00) | (0.01) | (0.00) |
| GDP per capita | 0.00 | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00 | 0.00*** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Rule of law | 0.030 | | | | | | | |
| | (0.21) | | | | | | | |
| Political stability | | 0.13 | | | | | | |
| | | (0.13) | | | | | | |
| Voice and acc. | | | 0.13 | | | | | |
| | | | (0.21) | | | | | |
| Government eff. | | | | 0.15 | | | | |
| | | | | (0.191) | | | | |
| Regulatory qu. | | | | | 0.84*** | | | |
| | | | | | (0.17) | | | |
| Democracy | | | | | | 0.04 | | |
| | | | | | | (0.04) | | |
| Autocracy | | | | | | | 0.01 | |
| | | | | | | | (0.04) | |
| Polity score | | | | | | | | 0.01 |
| | | | | | | | | (0.02) |
| W*CPI | -1.30 | -4.14 | 2.08 | -4.00 | 2.23 | -2.29 | 2.640 | 2.818 |
| | (4.58) | (4.60) | (2.16) | (2.16) | (4.51) | (5.10) | (5.095) | (2.089) |
| W*Openness | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 | 0.01* | 0.010** | 0.029 |
| | (0.02) | (0.02) | 0.00 | 0.00 | 0.0 | (0.01) | (0.005) | (0.005) |
| W*Financial d. | 0.05*** | 0.00 | 0.00 | 0.05*** | 0.00 | 0.00 | 0.003 | 0.04*** |
| | (0.01) | 0.00 | 0.00 | 0.00 | (0.01) | (0.01) | (0.014) | (0.014) |
| W*GDP p.c. | 0.00*** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00*** | 0.00 | 0.000 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| W*Rule of law | 4.71*** | | | | | | | |
| | (1.08) | | | | | | | |
| W*Political stab. | | -0.46 | | | | | | |
| | | (0.68) | | | | | | |
| W*Voice and acc. | | | 1.49** | | | | | |
| | | | (0.69) | | | | | |
| W*Gov. eff. | | | | 2.32** | | | | |
| | | | | (0.94) | | | | |
| W*Reg. quality | | | | | 2.25*** | | | |
| | | | | | (0.86) | | | |
| W*Democracy | | | | | | 0.15 | | |
| | | | | | | (0.12) | | |
| W*Autocracy | | | | | | | -0.35** | |
| | | | | | | | (0.18) | |
| W*Polity | | | | | | | | 0.12 |
| | | | | | | | | (0.07) |
| Observations | 729 | 729 | 729 | 729 | 729 | 720 | 720 | 720 |



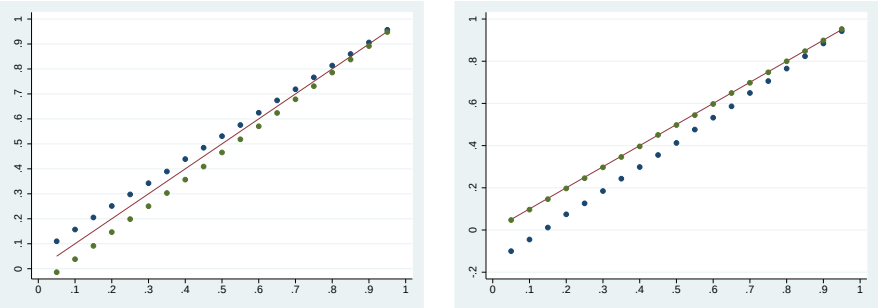
Note: Driscoll and Kraay standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W is randomly generated. As a result, peer effects should not be statistically significant.

Figure A2: **Reversals in Monetary Policy Transparency**




**Notes**: The figure presents the number of reversals of monetary policy transparency indexes over time. The reversal denotes the situation in which the value of the transparency index decreases with respect to the previous year.

Figure A3: **Monte Carlo Simulations: True vs. Simulated Values**



Note: The figures compare the simulated to the true values of the peer effect coefficient. The diagonal line pictures the true value; the dots represent the corresponding simulated values for the peer effect coefficient. The simulated values closer to the diagonal line suggest a smaller bias of our estimator.

# Online Appendix

Table B1: Descriptive Statistics

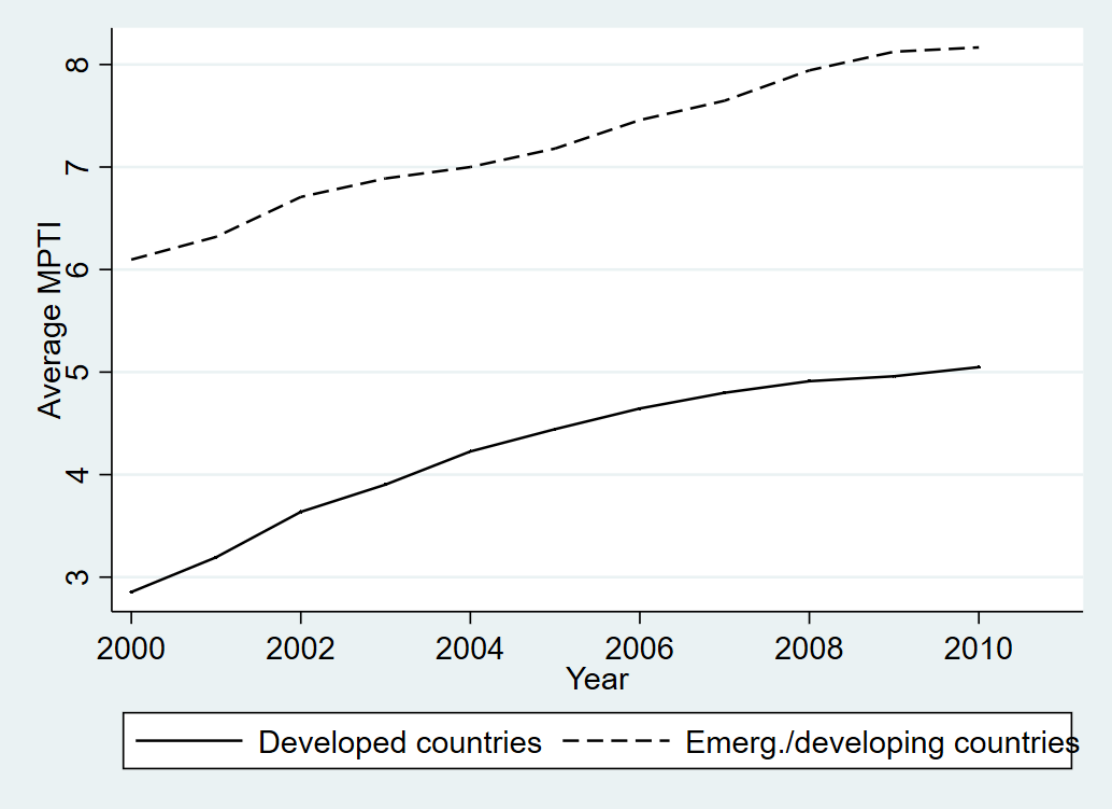
| Variable | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|
| MP Transparency | 5.92 | 3.44 | 0 | 14.5 |
| FS Transparency | 2.33 | 2.57 | 0 | 9 |
| GDP p.c. | 15096.45 | 18840.32 | 112.52 | 112028.5 |
| CPI | 0.02 | 0.02 | -0.05 | 0.21 |
| Financial Depth | 78.30 | 73.35 | 7.025 | 669.88 |
| Openness | 46.12 | 31.62 | 6.32 | 241.4 |
| Democracy | 6.56 | 3.75 | 0 | 10 |
| Autocracy | 1.45 | 2.69 | 0 | 10 |
| Overall Polity Score | 5.10 | 6.19 | -10 | 10 |
| Political Stability | 0.09 | 0.96 | -3.18 | 1.67 |
| Rule of Law | 0.27 | 0.99 | -1.93 | 2 |
| Voice Accountability | 0.21 | 0.97 | -2.04 | 1.83 |
| Government Eff. | 0.38 | 0.97 | -2.25 | 2.41 |
| Regulatory Qu. | 0.37 | 0.93 | -2.68 | 2.12 |

Table B2: **Determinants of Monetary Policy Transparency: Direct, Indirect and Total Effects**

| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) |
|---|---|---|---|---|---|---|---|---|
| | Direct Effect | | | | | | | |
| Inflation | 1.18 | 1.35 | 1.40 | 1.14 | 1.50 | -2.03 | -1.94 | -1.97 |
| | (2.19) | (2.26) | (2.24) | (2.22) | (2.19) | (2.15) | (2.17) | (2.15) |
| Openness | 0.01* | 0.01 | 0.01* | 0.01* | 0.01** | 0.01** | 0.01* | 0.01** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.01) | (0.00) | (0.00) |
| Financial depth | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| GDP per capita | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00** | 0.00** | 0.00** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Institutional quality | 0.02 | 0.08 | 0.20 | 0.02 | 0.20 | 0.08** | -0.05 | 0.03* |
| | (0.21) | (0.12) | (0.20) | (0.21) | (0.19) | (0.04) | (0.04) | (0.02) |
| | Indirect Effect | | | | | | | |
| Inflation | 2.92 | 1.05 | 4.16 | -1.23 | -2.23 | 13.99** | 11.19 | 13.27* |
| | (5.30) | (5.30) | (6.88) | (5.97) | (5.01) | (6.73) | (7.63) | (6.91) |
| Openness | -0.01 | -0.01 | 0.01 | 0.00 | 0.02 | 0.01 | -0.02 | -0.01 |
| | (0.02) | (0.03) | (0.03) | (0.02) | (0.01) | (0.02) | (0.03) | (0.03) |
| Financial depth | 0.02** | 0.03* | 0.04*** | 0.03** | 0.04*** | 0.02 | 0.02 | 0.02 |
| | (0.01) | (0.02) | (0.02) | (0.01) | (0.01) | (0.02) | (0.02) | (0.02) |
| GDP per capita | 0.00* | 0.00* | 0.00* | 0.00 | 0.00 | 0.00*** | 0.00** | 0.00* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Institutional quality | 7.46*** | 1.02 | 4.75*** | 5.65*** | 4.40*** | 1.30*** | -1.56*** | 0.77*** |
| | (1.08) | (0.90) | (1.56) | (1.07) | (0.67) | (0.20) | (0.34) | (1.22) |
| | Total Effect | | | | | | | |
| Inflation | 4.10 | 2.40 | 5.56 | -0.09 | -0.73 | 11.96 | 9.25 | 11.29 |
| | (5.20) | (7.88) | (6.99) | (5.94) | (4.85) | (6.88) | (7.83) | (7.08) |
| Openness | 0.00 | -0.00 | 0.01 | 0.01 | 0.03 | 0.03 | -0.01 | 0.01 |
| | (0.02) | (0.03) | (0.03) | (0.02) | (0.02) | (0.03) | (0.03) | (0.03) |
| Financial depth | 0.03** | 0.04** | 0.05*** | 0.04*** | 0.04*** | 0.03* | 0.02 | 0.02 |
| | (0.01) | (0.02) | (0.02) | (0.01) | (0.01) | (0.02) | (0.02) | (0.01) |
| GDP per capita | 0.00* | 0.00** | 0.00** | 0.00* | 0.00 | 0.00*** | 0.00*** | 0.00*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Institutional quality | 7.48*** | 1.10 | 4.95*** | 5.85*** | 5.25*** | 1.38*** | -1.62*** | 0.80*** |
| | (1.11) | (0.93) | (1.62) | (1.11) | (0.68) | (0.20) | (0.34) | (0.12) |

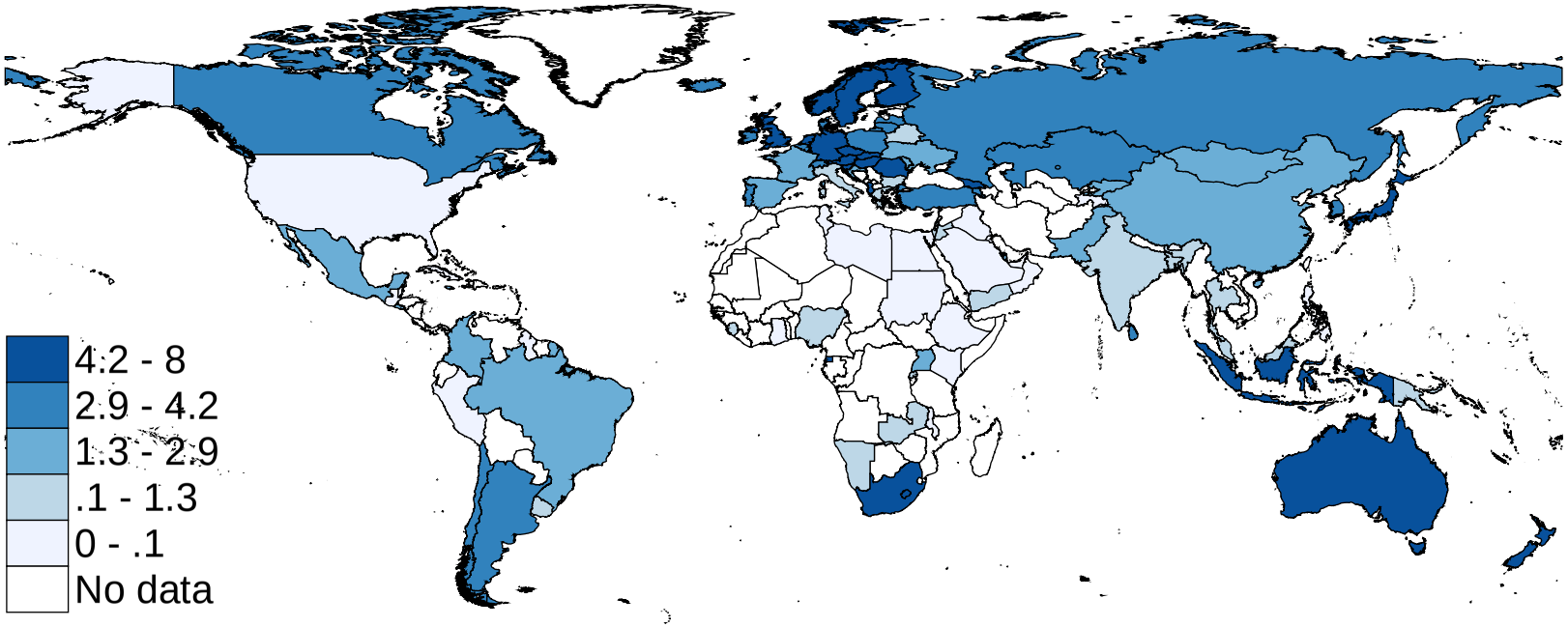
Note: Standard errors are shown in parentheses; ***, **, and * denote statistical significance at the 1, 5, and 10 % levels, respectively. W denotes the social network matrix based on the monetary policy regime as of 2000, whereas the dependent and explanatory variables are for 2001–2010.The line labeled Institutional quality denotes the following variables (the column number in which the variable appears in the brackets): Rule of law [1], Political stability [2], Voice and accountability [3], Government effectiveness [4], Regulatory quality [5], Democracy [6], Autocracy [7], Polity score [8].

Figure B1: **Evolution of Monetary Policy Transparency: Developed vs. Emerging/Developing Countries**




**Notes**: The figure separately presents the evolution of monetary policy transparency indexes for developed and emerging/developing countries. Country classification according to the World Bank data; developed countries are those included in the list of high income countries.

Figure B2: Country Heterogeneity in Financial Stability Transparency




Note: The average 2000–2010 scores for the financial stability transparency index are presented.

# IES Working Paper Series

## 2020

1. Tomas Kucera: *Cognitive Bias Mitigation: How to Make Decision-Making Rational?*
2. Tomas Kucera: *Are Employment Effects of Minimum Wage the Same Across the EU? A Meta-Regression Analysis*
3. Petr Hanzlik, Petr Teply: *Institutional and Other Determinants of the Net Interest Margin of US and European Banks in a Low Interest Rate Environment*
4. Michal Hlavacek, Ilgar Ismayilov, Ayaz Zeynalov: *Reassessment of the Fiscal Multiplier in Developing Countries: Regime-Switching Model*
5. Evzen Kocenda, Karen Poghosyan: *Nowcasting Real GDP Growth: Comparison between Old and New EU Countries*
6. Diana Zigraiova, Tomas Havranek, Jiri Novak: *How Puzzling Is the Forward Premium Puzzle? A Meta-Analysis*
7. Barbora Malinska: *Time-Varying Pricing of Risk in Sovereign Bond Futures Returns*
8. Shahriyar Aliyev, Evzen Kocenda: *ECB Monetary Policy and Commodity Prices*
9. Roman Kalabiska, Michal Hlavacek: *Regional Determinants of Housing Prices in the Czech Republic*
10. Boris Fisera, Roman Horvath: *Are Exchange Rates Less Important for Trade in a More Globalized World? Evidence for the New EU Members*
11. Jana Votapkova: *The Effect of Inpatient User Charges on Inpatient Care*
12. Lenka Slegerova: *Using 'Costs States' in a Semi-Markov Model to Estimate Cost-Effectiveness with an Illustration for Metastatic HER2+ Breast Cancer in the Czech Republic*
13. Periklis Brakatsoulas, Jiri Kukacka: Credit Rating Downgrade Risk on Equity Returns
14. Roman Horvath: *Natural Catastrophes and Financial Development: An Empirical Analysis*
15. Vit Machacek: *Globalization of Science: Evidence from Authors in Academic Journals by Country of Origin*
16. Nino Buliskeria, Jaromir Baxa: *Do Rural Banks Matter That Much? Burgess and Pande (AER, 2005) Reconsidered*
18. Kseniya Bortnikova: *Beauty and Productivity: A Meta-Analysis*
19. Radomir Mach, Milan Scasny, Jan Weinzettel: *The Importance of Retail Trade Margins for Calculating the Carbon Footprint of Consumer Expenditures: A Sensitivity Analysis*
20. Javier Garcia-Bernardo, Petr Jansky, Thomas Tørsløv: *Multinational Corporations' Effective Tax Rates: Evidence from Orbis*

*21.* Petr Jansky, Andres Knobel, Markus Meinzer, Tereza Palanska, Miroslav Palansky: *Country-by-Country Reporting and Other Financial Transparency Measures Affecting the European Union*

*22.* Marek Sedivy: *Mortality shocks and household consumption: The case of Mexico*

*23.* Lydia Chikumbi, Milan Scasny, Edwin Muchapondwa, Djiby Thiam: *Premium Price For Natural Preservatives In Wine: A Discrete Choice Experiment*

*24.* Roman Horvath: *Peer Effects in Central Banking*

*25.* Nicholas Tyack, Milan Scasny: *Estimating the Social Value of Specific Crop Diversity Conservation Plans: Do Czechs Care More About Conserving Hop, Wine or Fruit Tree Varieties?*

*26.* Salim Turdaliev: *Labor Force Participation of Married Woman in Russia*

*27.* Jaromir Baxa, Michal Paulus: *Exchange rate misalignments, growth, and institutions*

*28.* Michal Paulus, Jaromir Baxa, Eva Michalikova: *Does Enforcement Of the Rules Against Foreign Bribery Discourage Exports? A Case of the OECD Anti-Bribery Convention*

*29.* Tomas Havranek, Zuzana Irsova, Lubica Laslopova, Olesia Zeynalova: *Skilled and Unskilled Labor Are Less Substitutable than Commonly Thought*

*30.* Levan Bezhanishvili, William Appleman, Zurab Abramishvili: *Was the Georgian Policy Shifting Public Sector Working Hours by One Hour "Family Friendly" and Did It Increase Female Labor Participation?*

*31.* Fan Yang: *A Survey of Empirical Literature on Hedge Fund Performance*

*32.* Ali Elminejada, Tomas Havranek, Roman Horváth: *A Meta-Analysis of the Frisch Extensive Margin Elasticity*

*33.* Petra Landovská: *Business cycle sensitivity of Statutory Health Insurance: Evidence from the Czech Republic*

*34.* Natalia Li: *Estimating the Relationship Between Resource Intensity and Occupational Health and Safety in Kazakhstan*

*35.* Sophio Togonidze, Evžen Kočenda: *Macroeconomic Responses of Emerging Market Economies to Oil Price Shocks: Analysis by Region and Resource Profile*

*36.* Olena Chornaa, Lucas van der Veldeb : *Do Women Benefit from Minimum Wages?*

*37.* Sarah Godar and Petr Janský*: Corporate Profit Misalignment: Evidence from German Headquarter Companies and Their Foreign Affiliates*

*38.* Leyla Ates, Alex Cobham, Moran Harari, Petr Janský, Markus Meinzer, Lucas Millan-Narotzky, Miroslav Palanský: *The Corporate Tax Haven Index: A New Geography of Profit Shifting*

*39.* Ichiro Iwasaki, Evžen Kočenda, Yoshisada Shida: *Institutions, Financial Development, and Small Business Survival: Evidence from European Emerging Markets*

*40.* Laure de Batz, Evžen Kočenda: *Financial Crime and Punishment: A Meta Analysis*

*41.* Petr Janský: *Corporate Effective Tax Rates for Research and Policy*

*42.* Svatopluk Kapounek, Zuzana Kučerová, Evžen Kočenda: *Selective Attention in Exchange Rate Forecasting*

All papers can be downloaded at: http://ies.fsv.cuni.cz

Univerzita Karlova v Praze, Fakulta sociálních věd
Institut ekonomických studií [UK FSV – IES] Praha 1, Opletalova 26
E-mail: ies@fsv.cuni.cz http://ies.fsv.cuni.cz