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van Duuren, Tim; de Haan, Jakob; van Kerkhoff, Henk

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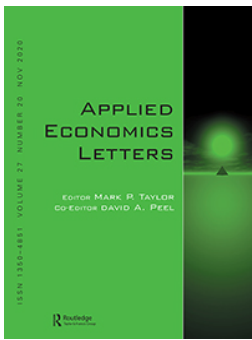
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## Does institutional quality condition the impact of financial stability transparency on financial stability?

Tim van Duuren<sup>a</sup>, Jakob de Haan<sup>a,b,c</sup> and Henk van Kerkhoff<sup>b</sup>

<sup>a</sup>University of Groningen, Groningen, The Netherlands; <sup>b</sup>De Nederlandsche Bank, Amsterdam, The Netherlands; <sup>c</sup>CESifo, Munich, Germany

### ABSTRACT

Using a fixed effects panel model on data for 110 countries over the period 2000–2011, we confirm previous findings that financial stability transparency increases the degree of financial stability in a country. However, our results also suggest that financial stability transparency is significantly negatively related to banks' non-performing loans only with low institutional quality.

### KEYWORDS

Financial stability; transparency; central banks; NPLs

### JEL CLASSIFICATION

E52; E58; E61

## I. Introduction

Until recently, central bank transparency about financial stability only received scant attention, unlike central bank communication about monetary policy. However, some recent studies provide evidence that communication about financial stability may enhance financial stability. Born, Ehrmann, and Fratzscher (2014) report that news reflected in Financial Stability Reports (FSRs) reduces market volatility. These effects are particularly strong if FSRs contain optimistic assessments of the risks to financial stability. Čihák et al. (2012) report that high-quality FSRs are associated with higher financial stability, where quality is determined based on the clarity, the coverage of the key risk in the financial system, and the consistency of the FSRs. Finally, Horváth and Vaško (2016) construct a Financial Stability Transparency index (FST-index) and show that this index is positively related to financial stability. This index is comprehensive and focuses not only on the coverage of financial stability reports but also on other communication channels, decision-making procedures and underlying legal aspects. In our view, the FST-index is the best available proxy for financial stability transparency and we therefore use it in our analysis.

We examine whether the relationship between the FST-index and financial stability (proxied by the non-performing loans ratio) is conditioned by institutional quality. Although institutional quality

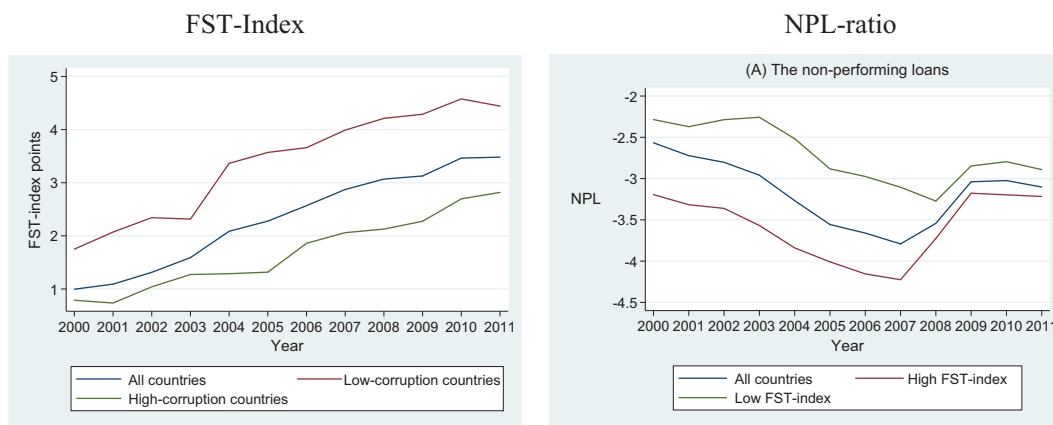
may have a direct impact on financial stability as reported by Das, Quintyn, and Chenard (2004), some recent papers report that the effectiveness of policies aimed at maintaining financial stability is mediated by some proxy for institutional quality (cf. Anginer, Demirgüç-Kunt, and Mare 2018).

This paper examines whether the relationship between the FST-index provided by Horváth and Vaško (2016) is conditioned by two widely used proxies for institutional quality, namely the Corruption Perception Index (CPI) provided by Transparency International and the Government Effectiveness (GE) index provided by the World Bank.

The rest of the paper is structured as follows. Section 2 explains the methodology and describes the data used. Section 3 presents the empirical results and section 4 concludes.

## II. Method and data

In line with several previous studies (including Horváth and Vaško 2016), the log of the ratio of banks' non-performing loans to total gross loans is used as dependent variable. Data for the non-performing loans ratio comes from the Global Financial Development database of the World Bank. Figure 1 shows that the average non-performing loans ratio decreased in the run-up to the Global Financial Crisis and sharply increased thereafter. The trend for countries with low and



**Figure 1.** Average non-performing loans ratio and FST-index, 2000–2011.

The left-hand side figure shows the FST-index for all countries in the sample and for countries with below/above median scores for the perceived corruption index. The right-hand side figure shows the average NPL ratio for all countries in the sample and for countries with below/above median scores for the FST-index.

high values of the FST-index seems identical, but the level of the non-performing loans ratio differs across these subgroups. Figure 1 also shows the FST index from Horváth and Vaško (2016). The relatively low average of the FST-index reflects that our sample includes many non-OECD countries. The figure also shows that countries which have lower levels of corruption, i.e. a higher institutional quality, are more transparent.

The following model is estimated:

$$\begin{aligned}
 Finstability_{it} = & \alpha_{it} + \beta_1 FSTindex_{it} + \beta_2 IQ_{it} \\
 & + \beta_3 FSTindex_{it} * IQ_{it} + C_{it} + B_{it} \\
 & + \varepsilon_{it}
 \end{aligned}
 \tag{1}$$

where  $Finstability_{it}$  represents Horváth and Vaško (2016) indicator of financial stability transparency for country  $i$  in year  $t$ .  $\beta_1$  captures the relationship between financial stability transparency and financial stability and  $\beta_2$  shows the direct impact of the quality of institutions on financial stability, while  $\beta_3$  shows the combined impact of financial stability transparency and institutional quality.  $C_{it}$  is a set of country-specific control variables. Following Horváth and Vaško (2016), we include the following country-specific controls in the model: gross domestic product per capita ( $GDPPC$ ), the growth rate of GDP ( $GDPG$ ), inflation measured in percentage change of the consumer price index ( $INFL$ ), the real interest rate change in percentage ( $REALINT$ ), domestic credit to GDP in percentage

( $CREDIT$ ), the change of the nominal exchange rate against the U.S. Dollar in percentage ( $EXCH$ ), stock market capitalization to GDP in percentage ( $MARKCAP$ ) and financial openness (the sum of foreign assets and liabilities divided by GDP;  $FINOPEN$ ). Furthermore,  $B_{it}$  is a set of bank-specific controls as proposed by Fazio et al. (2018), namely the ratio of non-interest income to total income in percentage ( $NONINT$ ) as a proxy for non-traditional activities of banks, banks' overhead costs to assets ratio ( $COST$ ) and banking concentration (measured as the total assets of the three largest banks in percentage;  $CONCEN$ ). Finally,  $\varepsilon_{it}$  represents the error term.

Our measures for institutional quality have been obtained from Transparency International and the World Bank's World Governance Indicators, respectively. The Corruption Perception Index (CPI) index ranks countries by their perceived levels of corruption (on a scale of 0 to 100, where 100 is very clean). The government effectiveness (GE) index captures perceptions of the quality of public services, i.e. 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. Data for most country-specific control variables have been obtained from the World Bank's World Development Indicators and Global Financial Development databases.<sup>1</sup> Both proxies have been widely used in the literature as indicators of institutional quality (see, for instance, La Porta et al. 1999).

Finally, the non-interest to income ratio (*NONINT*), bank overhead costs to total cost ratio (*COST*), and the banking concentration measure (*CONCEN*) come from the Global Financial Development database.

Table 1 shows summary statistics.

### III. Estimation results

Table 2 shows our estimation results for the model shown in equation (1). Several conclusions can be drawn. First, in line with the results of Horváth and Vaško (2016), our results show that financial stability transparency enhances financial stability as the coefficient on the FST-index is negative and significantly different from zero, except for the estimations shown in column (3). Second, also institutional quality seems to enhance financial stability. A higher score for the CPI index indicates less corruption and its coefficient is negative and significant. This finding is consistent with the results of Das, Quintyn, and Chenard (2004). However, the coefficient on our second proxy for institutional quality, i.e. government effectiveness, is estimated rather imprecisely.

**Table 1.** Descriptive statistics of the variables (515 observations).

	(1) Mean	(2) Stand. dev.	(3) Minimum	(4) Maximum
NPL	-3.165	1.075	-6.907	-0.519
FST-index	2.967	2.711	0.000	9.000
CPI-index	5.046	2.370	0.400	9.900
GE-index (497 obs)	0.572	0.885	-1.215	2.437
GDPPC	18,410.300	18,715.280	419.336	72,823.800
MARKCAP	64.057	61.870	0.010	464.721
CREDIT	70.093	49.667	0.186	312.019
REALINT	5.483	8.265	-20.129	48.341
INFL	4.665	4.305	-4.863	28.203
GDPG	4.280	3.762	-14.759	19.592
FINOPEN	3.596	6.785	0.414	75.757
EXCH	-0.502	8.466	-16.613	37.301
NONINT	36.416	12.219	7.977	77.234
COST	3.173	2.200	0.051	12.737
CONCEN	65.185	18.381	23.324	100.000

The dependent variable used is the natural logarithm of the transformed non-performing loans ratio (NPL). The FST-index is the Financial Stability Index of Horváth and Vaško (2016). The institutional quality measures are the CPI-index (corruption) and the GE-index (government effectiveness) as explained in the main text. Country-specific controls include GDP per capita (GDPPC), annual GDP growth (GDPG), yearly inflation in % (INFL), the real interest rate (REALINT), domestic credit provided to financial sector (CREDIT), the nominal exchange rate change (EXCH), the stock market capitalization (MARKCAP), and financial openness (FINOPEN). The bank-specific controls consist of non-interest income (NONINT), the overhead costs to total assets (COST), and banking concentration (CONCEN).

**Table 2.** The conditional effect of institutional quality on financial stability.

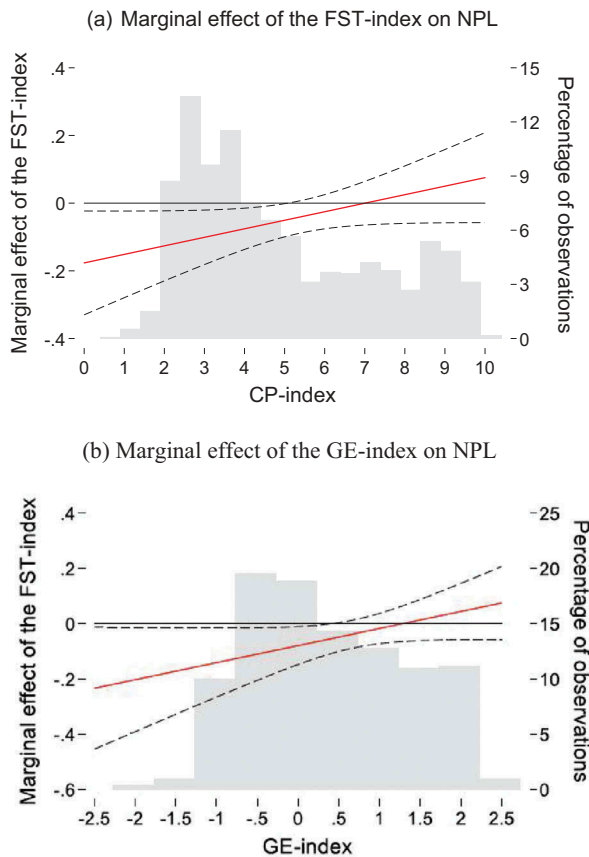
Variables	(1) NPL	(2) NPL	(3) NPL	(4) NPL
FST-index	-0.044* (0.025)	-0.170** (0.078)	-0.037 (0.026)	-0.0742** (0.0354)
CP-index	-0.283* (0.150)	-0.317** (0.155)		
FST-index*CP-index		0.0253* (0.0138)		
GE-index			-0.463 (0.383)	-0.703* (0.431)
FST-index*GE-index				0.0651* (0.035)
Country-specific controls	Yes	Yes	Yes	Yes
Bank-specific controls	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Number of obs.	515	515	497	497
Number of countries	66	66	67	67
R-squared	0.376	0.361	0.350	0.350

This table presents fixed-effects regressions of Eq. 1. Robust standard errors clustered by country are shown in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, and \* p < 0.1.

As shown by Brambor, Clark, and Golder (2006), the conditional effect of the FSR-index on the NPL-ratio should not be assessed on the basis of the significance (or lack thereof) of the coefficient on the interaction term. Figure 2(a) therefore presents the marginal effect of financial stability transparency on our indicator of financial stability for different values of the CP-index, based on the estimates as shown in column (2) of Table 2. There is a statistically significant effect of the FST-index on financial stability when the upper and lower bounds of the confidence intervals are both below or above zero. Figure 2(a) shows a negative marginal effect of the FST-index, which is statistically significant between the range of 0.0 to 5.0 for the CP-index. In contrast, for high values of the CP-index, the marginal effect of the FST-index is statistically insignificant.

Figure 2(a) shows the marginal effect of financial stability transparency on our indicator of financial stability for different values of the GE-index based on the estimates as shown in column (4) of Table 2. The results are quite similar to the results of the marginal effects when the CP-index is used as a measure of the quality of institutions. The marginal effect of the FST-index is negative and significant only for low levels of the GE-index.

<sup>1</sup>The nominal exchange rate change has been drawn from the IMF's International Financial Statistics, the measure for financial openness comes from Lane and Milesi-Ferretti (2007).



**Figure 2.** Marginal effect of the FST-index on NPL conditional on institutional quality.

#### IV. Conclusions

Our results suggest that the effect of financial stability transparency on financial stability is conditioned by institutional quality: only with low institutional quality (high level of corruption or low government efficiency) is financial stability transparency significantly negatively related to banks' non-performing loans.

#### Disclosure statement

No potential conflict of interest was reported by the authors.

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