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Stock Repurchases, ESG Ratings and Systemic Risk in Banking

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Summary

Stock repurchases of banks have become an increasingly popular instrument of banks' payout policies after the Great Financial Crisis. Recent empirical evidence documents that stock repurchases are particularly popular among global systemically important banks that tolerate relatively high levels of exposure to systemic risk. Hence, stock repurchases add to reducing risk-bearing capital precisely for those banks that have the greatest capital shortfall. The allow to secure short-term gains at the cost of long-run stability.

This thematic review of the empirical literature finds that various ESG-ratings are indeed informative about the true underlying intentions and planning horizons of bank business models. ESG-ratings are informative both, about idiosyncratic as well as systemic risk, and, hence, implicitly also about bank resiliency. While regulators generally are not in the business to save individual firms, in the banking industry, however, their mission is to maintain the stability of the financial sector as a whole. This implies to ensure that systemic risk remains within socially acceptable bounds. Especially the exposure to systemic risk as proxied by capital shortfall requires a sufficiently high level of bank capital.

Accordingly, one strong recommendation emerges from this survey of the relevant empirical literature: Since ESG-scores are particularly informative about the planning horizon of the underlying firms or banks, permission to repurchase stock should be granted particularly to those banks with higher ESG scores. Granting permission also to banks with lower ESG-scores increases bail-out risk for the tax payer, as experienced recently in the case of Credit Suisse.

Zusammenfassung

Seit der globalen Finanzkrise sind Aktienrückkäufe eine zunehmend beliebte Methode der Rückzahlung von Erträgen an die Eigentümer von Banken geworden. Insbesondere systemrelevante Banken nutzen Aktienrückkäufe, womit sie implizit risikobehaftetes Eigenkapital reduzieren und Insolvenzrisiken erhöhen. Während Aktienrückkäufe kurzfristige Aktionärsrenditen erhöhen, reduzieren sie andererseits langfristig die Widerstands-

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fähigkeit und Nachhaltigkeit der Bank. Im Falle von systemrelevanten Banken überträgt sich das Insolvenzrisiko einer Bank schnell auf das gesamte Bankensystem.

Mittlerweile wird Nachhaltigkeit mit sog. ESG-Kriterien gemessen. Mit solchen Kriterien könnte somit die grundsätzliche Frage beantwortet werden, inwieweit Aktienrückkäufe destabilisierend wirken, sowohl für die einzelne Bank als auch für das Bankensystem insgesamt. Dieser Übersichtsartikel bietet einen Überblick über die ersten aktuellen empirischen Befunde zur Beziehung zwischen Nachhaltigkeit und Risiko. Hierzu werden Studien vorgestellt, die konkret den Zusammenhang zwischen ESG-Maßen und bankspezifischen Risikomaßen analysieren, wobei der Zusammenhang zwischen ESG-Kriterien und dem systemischen Ausfallrisiko (SRISK) im Mittelpunkt der Analyse steht. Implizit stellt sich die Frage, inwiefern die Bankenaufsicht aus ESG-Maßen Informationen über die zugrundeliegenden Geschäftsmodelle der Banken entnehmen können, die eine Genehmigung von Aktienrückkäufen entweder nahelegen oder eher davor warnen.

Nach aktuellem Stand der Literatur können ESG-Kriterien spezifischer Anbieter solcher Informationen tatsächlich informativ über den effektiven Planungshorizont von Banken sein. Sie können daher grundsätzlich zu Zwecken der Bankenaufsicht zurate gezogen werden. Im Falle von Banken mit niedrigen ESG-Werten sollte die Bankenaufsicht besondere Vorsicht in der Genehmigung von Aktienrückkäufen walten lassen. Voraussetzung des Einsatzes von ESG-Innformationen ist natürlich eine sorgfältige Überprüfung des Informationswertes der spezifischen ESG-Maße mit Hinblick auf idiosynkratische Banken- und insbesondere auch Systemrisiken.

JEL classification: E63, G21, G28, H25

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1. Introduction

Stock repurchases have become a favorite payout policy of banks. Notably in the run-up to the Great Financial Crisis (GFC) in 2007/8 stock repurchases served as a popular instrument to enhance return on equity and guarantee return on equity of 25 %.[1] Surprisingly, despite the deep crisis experiences stock repurchases did not loose in terms of popularity among bankers. Rather stock repurchases are widely seen as reflecting intrinsic strength (e. g. Manconi et al., 2018). In the case of the banking industry, however, such a view is surprising given the extreme leverage of banks. Since the GFC capital shortfall has emerged as a major source of systemic risk for the whole banking sector. Moreover, it has proven notoriously difficult to recapitalize banks after the crisis without stringent regulatory pressure. Despite all the post-crisis regulatory reforms and adjustments to bank business models in March 2023 another wave of major banking failures occurred 2023 in the US (Silicon Valley Bank, Signature Bank, First Republic Bank) as well as in Europe (Credit Suisse). This recent evidence seems to lend support to the critical view that stock repurchases tend to secure short-

[1] See Gehrig (2013 and 2015).

term gains at the cost of long-run value (e. g. Fried, Wang, 2019, Lazonick, 2018).

This raises questions about the resilience of the banking sector at large (see Admati, Hellwig, 2024, Buyl et al., 2022). Has banking become more fragile in general, or did specific business models of particular banks have turned too risky? If so, what are the drivers? Are there ways of identifying socially excessively risky business models[2] with an eye of separating them from more resilient ones? In particular, given the modern focus on social responsibility, how informative are sustainability ratings, so-called ESG-ratings[3] in this regard? Are socially responsible firms less tolerant with regard to systemic risk? If so, how does it affect stock repurchases and what is the contribution of stock repurchases to systemic risk?

The measurement of social responsibility or sustainability is increasingly standardized. The early development of global reporting standards by the Global Reporting Initiative (GRI) has been transformed into legislation such as the EU—Corporate Sustainability Reporting Directive (CSRD), effective since January 2003. Essentially this process of standardizing sustainability measures comprise an E-pillar on environmental and economic concerns, an S-pillar on the social dimension and a G-pillar on governance policies. Each pillar again comprises sets of subcategories that are aggregated within that particular pillar. All together are aggregated into one overall ESG-score. Since most of the subcategories are of a qualitative nature, naturally the question arises about their informational content. Moreover, in order to avoid misleading frames the process of harmonization and standardization of sustainability reporting seems necessary (e. g. European Commission, 2023).

The role of share repurchases is typically not addressed in the literature on sustainability. Nevertheless, the literature on the relation between ESG scores and the riskiness of the underlying business models has direct relevance for banks resiliency. Therefore, the purpose of this paper is to bring together these strands of literature and highlight the role of share repurchases for bank resiliency. Unlike the standard ESG screens share repurchases do not exert a moderating role, neither on general business risk as measured by proxies of systematic risk, nor on the leading measures of systemic risk such as exposure risk and contribution risk.

The paper is organized as follows. Section 2 provides a short overview over the evolution of various risk measures. It emerges that capital shortfall is trend-

[2] See Gehrig (1997) for an early model of excessive risk in banking in a model of spatial com-petition and free entry and Gehrig (1998) for the heightened risk of cross-border banking.

[3] ESG is an acronym summarizing E = environment, S = social and G = governance.

ing upwards over time especially for systemically important banks. Since especially those banks in profitable years are regularly given consent to repurchase their own shares on the stock market, Section 3 provides empirical evidence for this market regularity. Section 4 provides a survey on the nascent literature about the relation between ESG scores and bank risk. It appears that ESG scores proxy for unobserved bank planning horizon. Accordingly, ESG activities play a moderating role on systemic as well as systematic risk in the banking sector. Section 5 presents policy advice derived from the evidence presented in this work and Section 6 concludes.

2. The Evolution of Systemic Risk in Banking

While systemic risk intuitively is related to the riskiness of the banking sector at large, it is less clear, how to precisely define and measure it. Not surprisingly, the number of potential economic rationales for systemic risk is mushrooming, and so is the number of systemic risk measures (see Giglio et al. 2016). For the empirical analysis of banking systems, however, two dominant concepts seem to emerge, the risk of repayment problems of one bank spilling over to other banks, associated with contribution risk, and the risk of becoming infected by spill overs from repayment problems of other banks, exposure risk.

Measures of contribution risk are closely related to the concept of $\Delta CoVaR$ introduced by Adrian and Brunnermeier (2016). This purely market based systemic risk measure assesses the spillovers of distress from a given bank to the financial system. Hence, it measures the contagion deriving from a bank being in distress to the whole banking system. In empirical work, this systemic risk measure is closely related to periods of banking stress. Over time this measure behaves in a rather stationary way with relatively little variation in the cross section across banks (e. g. Gehrig, Iannino, 2021, see box).

They use a quantile regression approach. The distress event of firm i is proxied by an equity loss equal to $(1-\alpha)$ % of its VaR, such that $r_{it} = VaR_{it}\,\alpha$. CoVaR represents the maximum loss of the market return within the α-confidence interval, conditionally on some event $C(r_{it})$ observed for bank i: $Pr(r_{\mu\tau} \leq CoVaR^{m|C(r_{it})}) = \alpha$. With this $\Delta CoVaR$ of the bank i is defined as the difference between the $CoVaR$ of the financial system conditional on firm i being in distress and the $CoVaR$ of the financial system conditional on firm i being in its median state, weighted by the bank's market capitalization:

$$\Delta CoVaR_{it}(\alpha) = -(CoVaR^{m|C(r_{it})}) = VaR_{it}(\alpha) - CoVaR^{m|C(r_{it})} = Median(r_{it}) * MV$$

where MV denotes market value. In line with the authors, $\Delta CoVaR$ is transformed in order to only generate positive values.

Measures of exposure to systemic risk are variants of measures of capital shortfall. The most widely used exposure measure is the SRISK-measure introduced by Brownlees and Engle (2017). It provides a data-based estimate of the cost of immediate recapitalization of a bank by issuing stocks on the market in order to render them compliant with capital regulation after a major shock comparable to the GFC.[4] It can be interpreted as measuring the likelihood of an individual bank *i* of getting infected by shocks from other banks. Hence, it can be interpreted as an infection measure.

More specifically, *SRISK* for bank *i* in period *t* can be estimated as:

$$SRISK_{it} = E_{t-1}[capital\ shortfall_i \mid crisis]$$
$$= E_{t-1}[k(Debt_{it}) - (1-k)(1-LRMES_{it})Equity_{it}]$$

where k is the prudential capital ratio, that we assume at 8 % (Engle, 2002); $LRMES_{it} = 1 - exp(ln(1 - d)\ beta)$ is the expected loss in equity value of bank *i*, if the market were to fall by more than a $d = 40\,\%$ threshold within the next six months (according to V-lab documentation), and the market beta is a dynamic correlation coefficient between the bank's and the market returns (Engle, 2002). SRISK is estimated daily and then aggregated annually.

In their analysis of whether the Basel process of capital regulation has made European banks more resilient, Gehrig and Iannino (2018) and Gehrig, Iannino (2021) find that the exposure risk has turned into the major source of concern. While trajectories of contribution risk essentially remain stationary in the period of analysis from 1988 – 2018[5] exposure risk as measured by SRISK increases in the run-up to the GFC in the highest size quintile of bank and remains elevated at levels higher than in 2006 for that quintile. In contrast, Figure 1 illustrates that the lowest three quintile of exposure risk remain stationary.

Most interestingly systematic risk has been declining for the smaller and systemically less important banks relative to those imposing the highest exposure risk[6]. Systematic risk of the most systemically important banks has essentially remained constant for the observation period from 1988 – 2018.[7] This suggests that exposure risk of European banks has not been growing due to heightened

[4] While the strategy of immediate recapitalization is not an optimal response, this market-based estimate allows to assess the market value of the lack of capital as the bank enters the brink of insolvency. This number is comparable across banks and can be traced across time.

[5] https://vlab.stern.nyu.edu/docs/srisk/MES.

[6] See especially Figure 5 of Gehrig, Iannino, 2021.

[7] Gehrig, Iannino (2021) find that the process of capital regulation has even been successful in reducing systematic risk of the smaller banks, while tolerating significant increases in capital shortfall, our measure of exposure risk, for the larger banks.

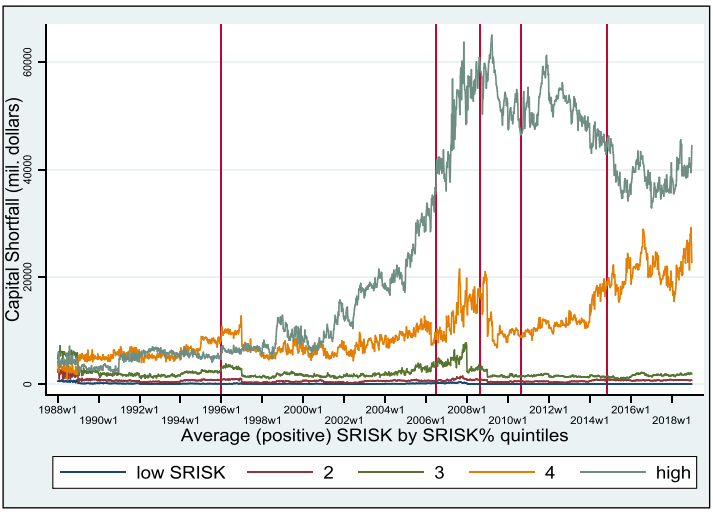

Figure 1: SRISK Quintiles: Trajectories of the estimated daily SRISK averaged across the quintiles. The quintiles are rebalanced annually. The top quintile consists of banks with highest level of positive SRISK, while the bottom quintile is corresponds to the group of banks with the lowest level of capital shortfall

Source: Gehrig, Iannino (2021).

business risk but rather due to regulatory policy or the use of internal credit risk models after 2006.

Moreover, in transatlantic comparisons, banking systems in US and Europe differ mainly in their risk exposure and to a much lesser extent in their contribution risk. Even when controlling for different accounting procedures Gehrig et al. (2024a and 2024b) document significantly larger capital shortfall for European banks relative to their US competitors.[8]

3. Stock Repurchases in Banking

Post GFC stock repurchases have turned into a favorite payout instrument of the banking sector (Hirtle, Zebar, 2023). They had already been important before and during the GFC (Hirtle, 2016) but their relative weight as an instrument of the policy has definitely increased in the US as well as in Europe post GFC (see Figure 2 for the US).

[8] At first sight the evidence of Bostandzic and Weiss (2018) seems to contradict this finding, but their samples are highly unbalanced.

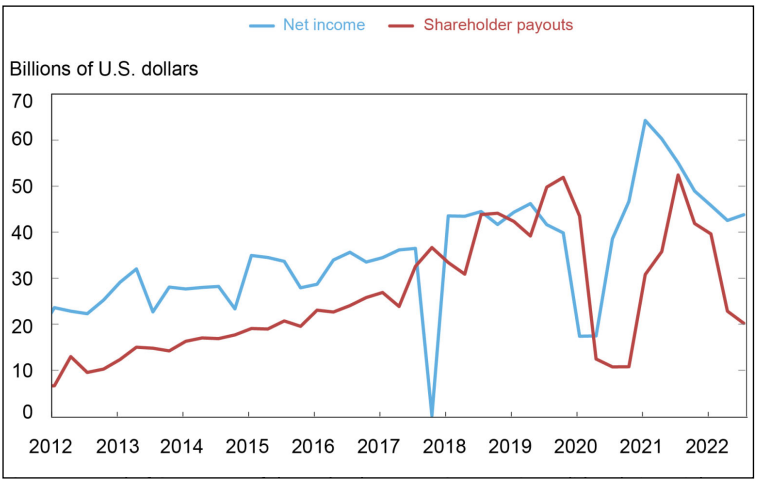

Figure 2: Dividends and Share Repurchases of Twenty-One Large Bank Holding Companies, 2012Q1 – 2022Q3

Source: Hirtle, Zebar (2023).

As documented already in earlier work (Hirtle, 2004) banks attempt to smooth payout via dividends while delegating the cyclical component of overall payout or crisis returns to stock repurchases. As such repurchases were completely phased out during the pandemic and largely reduced after the start of the Russian war against Ukraine. 2023 again has become a very profitable year for banks with record repurchasing programs being granted by the regulators on both sides of the Atlantic.

In light of the documented increase in exposure to systemic risk this recent development is potentially troublesome. Stock repurchases are just the opposite of recapitalization. This matters especially in challenging times when equity buffers are low. Hence, in the run-up to the GFC some bankers publicly boasted to consistently maintain high returns to equity against all market difficulties.[9] Return to equity has been—and still is—a favored performance measure of CEOs despite—or because of—the well-known defect that it can easily be manipulated by repurchasing stock. Since this "manipulation" is in the interest of incumbent stock holders they are unlikely to veto stock repurchase plans. Ultimately, only supervisors can stop banks from excessively conducting stock repurchases.

[9] One prominent example is the CEO of Deutsche Bank who consistently insisted on a return on equity target of 25 % (e. g. NZZ, 2012).

One implication of the ratchet effect is that banks are unlikely to voluntarily recapitalize by issuing new equity. In fact, the whole US banking system was recapitalized during the GFC by public intervention. In contrast, in Europe the public sector only intervened in failed banks such as the UBS in Switzerland. The unwillingness of banks to voluntarily recapitalize in periods of subdued market valuations is perfectly consistent with the interests of incumbent shareholders as dubbed the leverage ratchet effect (Admati et al. 2021).[10] This effect claims that incumbent shareholders prefer to avoid dilution of their shareholdings. This interest is amplified for bank investors when general tax advantages on leverage of the non-financial sector are also applied to the banking industry.[11]

While after the GFC US banks had been recapitalized by law, European banks were not. The forced recapitalization helped US banks to overcome the leverage ratchet effect and, thus, to regain competitive positions in global markets. In contrast, the largest European banks never regained back their dominant positions of the early millennium. In fact, since the GFC most of the European globally systemically important banks (GSIBs) have been trading at values well below book values (Ferretti et al. 2018, ECB, 2019), while tolerating higher capital short fall relative to the pre-crisis period (Gehrig, 2023). This phenomenon is illustrated in Figure 3. The evidence suggests that the European banking system was not able to rebuild trust lost in the GFC (see Lins et al. 2017, Fungacova et al. 2019 and Gehrig, 2013, 2015, 2024a). Even the harmonization of banking supervision in Europe by creating a European Banking Union in 2014 did not significantly contribute to rebuilding market trust and, hence, global competitiveness. The European evidence contrasts sharply to the evidence of the US.

One main argument in favor of stock repurchases lies in the undervaluation of stocks in the market relative to the underlying intrinsic value (Manconi et al, 2018). Interestingly, however, the transatlantic empirical evidence seems to suggest, that repurchases are a regular phenomenon of the banking industry independently on whether stocks trade above or below book value. Moreover, the pattern of over- or underpricing seems to be persistent over time. Therefore, a more likely explanation is tied to debt bias (Gehrig, 2023), which tends to incentivize banks to return capital in excess of the regulatory minimum rather than building large prudential buffers for reserve.

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[10] In fact, John Cryan, the CEO who had successfully managed the turn-around of UBS has been dismissed after only one year of tenure at the helm of Deutsche Bank after attempting to realize the entrusted mandate to increase the bank resiliency by issuing new stocks on the market at a time when market valuations were significantly below book values.

[11] For a discussion of how bank resiliency could be enhanced by eliminating the tax advantage on bank leverage see Schepens (2016) and Gehrig (2023).

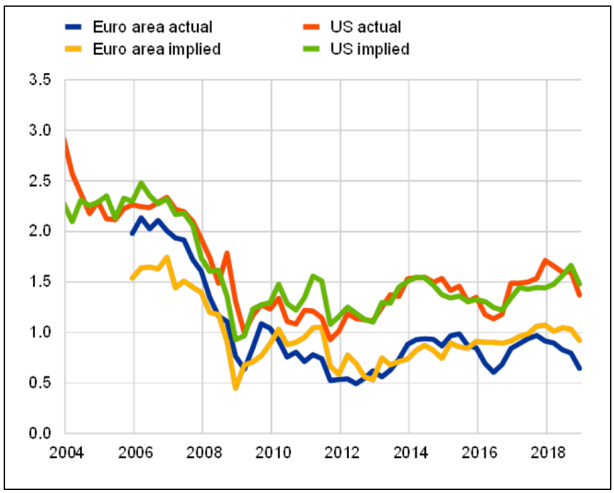

Figure 3: Recent developments in banks' market-to-book ratios

Source: ECB (2019), Financial Stability Report, Box 5.

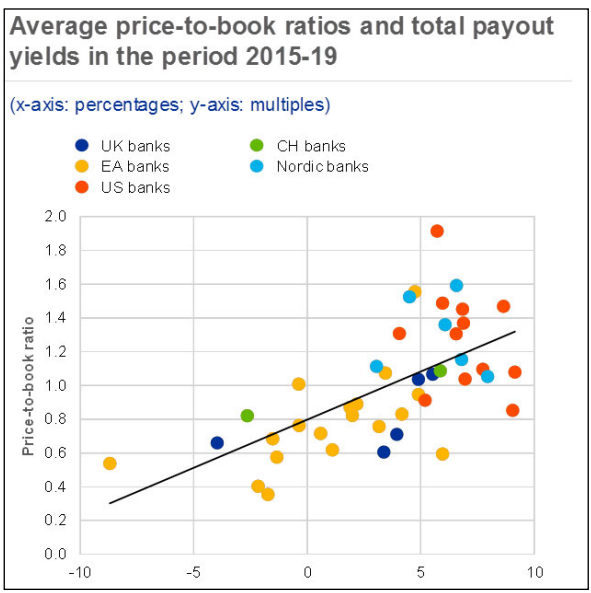

Figure 4: Total payout yields calculated as the sum of total net buybacks and total dividends paid by the sum of market capitalization. The sample consists of 43 banks, including 18 euro area, 12 US, six Nordic, five UK and two Swiss banks

Source: Gabor et al. (2020).

While the authors of the studies underlying figures 3 and 4 only report average values it should be emphasized that in our data there is significant variation even for European listed banks (Gehrig et al. 2022), with some globally systemic European banks delivering book-to-market valuations well above 1 post GFC, such as UBS after its recapitalization[12].

Overall European banks hold larger amounts of sovereign debt, and, thus, tolerate higher leverage. How does this increased risk tolerance of larger banks translate into social responsibility? Does it reflect a preference for short-term gains over long-term stability? This question will be discussed in the next chapter.

4. The Informational Content of ESG Ratings

ESG ratings have become increasingly important sources of information for investors in evaluating strategies and pro-social behavior of firms. But what precisely constitutes pro-social behavior and how to measure it? Data providers were quick in establishing a vast multitude of information bases to screen socially responsible behavior with regard to the environment, social concerns and governance rules, in short ESG. The UNEP Principles for Responsible Banking, published in 2018, provide the summary of early attempts of standard setting initiated already in 2006 to codify pro-social conduct as a basis for data collection and measurement.

Consequently, empirical analyses are mushrooming about the informational content of all kinds of available ESG-screens with respect to profitability and riskiness of the underlying business models. Let us concentrate on studies about the relation between ESG scores and the riskiness of the banking sector are of particular interest. Two main questions emerge in this context: What is the informational content of ESG ratings with respect to banks' business models and systemic risk? An what do ESG ratings reveal about systemic risk of banks business models?

Bauer et al. (2009) are probably the first paper to document a positive link between *employee satisfaction* and moderation of firm risk supported by Oikonomou et al. (2014) and extended by further categories such as *environment* and *product safety*. Similarly Sassen et al. (2016) report high ESG scores associated

[12] In our Bank of Finland discussion paper (Gehrig et al. 2018) we also compare the evolution of SRISK for Deutsche Bank and UBS, two banks that entered the GFC with similar balance sheets and risk metrics and fared quite differently since. This example demonstrates that SRISK is reliable systemic risk measure and that transatlantic differences accounting rules are not the major driver of the empirical evidence (see also Gehrig et al. 2024).

with lower levels of risk. This early evidence already suggests a moderating role of longer-term investments into ESG activities on bank risk.[13]

Another early study of the ESG-drivers of systematic risk in the U.S. is Bouslah et al. (2013). Scholtens and van't Klosters (2019) and Dorfleitner and Grebler (2020) have identified drivers of bank insolvency risk in global samples. Within the S-pillar they identify *lack of diversity* as a main driver of systemic risk in US and Europe, but not in Asia. For most of the environmental and corporate governance subcategories they verify a risk moderating role, while observing large geographic variation in the impact of particular screens. As documented in Dorfleitner and Grebler (2022) *product safety* is the dominant moderating factor for credit risk in US and Japan, while *employee relations* are dominant in Europe and *environmental* screens in Asia. Again, it is long-run investments that reflect risk moderation in business models.

With respect to systemic risk Anginer et al. (2018) find that high scores in corporate governance are typically related, if not causing, higher levels of systemic risk. This finding applies both for exposure risk as measured by SRISK and for contribution risk as measured by ΔCoVaR. They relate their findings to the supervisory process and the varying role of financial safety nets in different countries. In their study, it is especially too-big-to-fail banks that implement higher corporate governance standards but at the same time tolerate higher systemic exposure and contribution risk. Therefore, they call for improvements of prudential regulation prior to subjecting banks to specific ESG and particular climate goals.

Scholtens and van't Klosters (2019) study correlations between ESG scores and SRISK for a small sample of European banks, while Aevoae et al. (2023) also study correlations with $\Delta CoVaR$ in an international banking sample. At the aggregate level they find that essentially higher ESG scores are related to lower systemic risk. By digging deeper into the pillars of the ESG scoring method and into the individual subcategories of each pillar, Gehrig et al. (2024a) identify causal relations between the individual components of the ESG-scores and systematic as well as systemic bank risk measures. Moreover, they identify significant transatlantic differences in the relation between ESG-scores and systemic risk measures.[14] They find that among the ESG data provided by Thomson Reuter it is especially variables proxying for long- term management horizon such as *customer/product responsibility, society and human rights, employment quality* and *training and development* that exert a moderating effect on systemic risk as well as systematic risk. Transatlantic differences arise particularly for the mod-

[13] While the early analyses are restricted on documenting correlations between ESG scores and risk measures later analyses such as Dorfleitner and Grebler (2020) verify causal relations about the moderating role of various ESG-scores and -subscores.

[14] For additional evidence see Gehrig et al. (2024b).

erating role of investments in *emission reduction* and *product innovation*. The effects appear generally stronger among the smaller banks.

One seemingly surprising finding stood out when initially analyzing the former Asset-4 classification of Thomson Reuters: the score on *shareholder loyalty* negatively affected exposure risk on both sides of the Atlantic[15]. This finding, however, was easily reconciled with standard intuition when noting that Thomson Reuter under Asset 4 classification included stock repurchase programs as a loyalty program in determining the score of *shareholder loyalty*. Obviously, this screen could be interpreted as an investment of the board in the loyalty of incumbent shareholders at the expense of reducing capital buffers. Accordingly, the risk enhancing effect of this variable is readily explained by the definition of the particular screen. But at the same time, this finding exemplifies that ESG-scores can be rather misleading. While stock repurchases are measured as ESG enhancing variables by the data provider they are in fact detrimental to bank resiliency. And it is especially GSIBs that can profit from such communication and camouflage their de-facto destabilizing payout policies. Possibly such considerations contributed to modifying screens under the new Refinitiv framework implemented in 2018 by Thomson Reuters.[16] Under the Refinitiv classification there is no *shareholder loyalty* variable any more. Accordingly, the negative effect of share repurchases of systemic risk exposure can no longer be documented in future analyses on the basis of Thomson Reuter data.

Overall the evidence strongly suggests that ESG-screens can be quite informative about the underlying bank management horizon. By reflecting investments into long-term assets they can provide useful information about bank managements' preferences for short-term payouts relative to long-term values. This information can be valuable both for private investors as well as regulators and public authorities.

5. A Role for Policy?

To the extent that ESG information is useful it reveals information about the underlying planning horizon of bank management. This information is useful in order to assess the relative importance of short-term gains relative to long-run resiliency. Moreover, since regulators are concerned about the stability of

[15] Table 7 in Gehrig et al. (2021).

[16] As reported in Table 1 of Gehrig et al. (2021) shareholder loyalty under Asset 4 included all measures that did allow to raise return on equity. Effectively, the old measure did include stock repurchases. This is no longer the case under Refinitiv as reported by Gehrig et al. (2024a, see especially Table 2). These authors also discuss the implications of the change in scoring systems in the Thomson Reuter data for the analysis of risk. For a critical discussion of the implications of this change on first moments such as asset prices and returns see Berg et al. (2020) and Berg et al. (2022).

the overall banking system, both systemic risk exposure and contribution risk should also be key statistics in assessing the health of individual banks, and the banking system at large. In this sense, all ESG activities that contribute in stabilizing the banking system should be welcome activities. In a market economy the specific ESG strategies, however, should be left to the individual banks as long as their choices do not impose significant risk and externalities to the banking system or society at large.

Surprisingly, however, especially in Europe supervisors tolerate significantly larger systemic risk exposure precisely at those global systemically important banks that can contribute the largest damage to the national and European banking system, while possibly over-regulating the smaller and safer banks. In order to reverse policy towards enhancing stability, supervisors could make their decisions on permitting repurchase programs dependent on the performance of certain ESG criteria. By doing so the supervisor could reward stock repurchase options to banks with solid planning horizons and would reign in on short-term banks with fast payout policies imposing potentially higher bail-out threats on tax payers. This general advice complements earlier recommendations by Anginer et al. (2018), who also suggest to improve supervisory procedures before regulating ESG practices of firms.

Finally, the idea to regulate ESG-practices might generate unintended effects on the informational value of ESG screens. E.g. mandating firms to pursue certain climate policies or purchase green asset implies that the voluntarily chosen level of climate investments can no longer be observed freely, and, therefore, looses its informational value. In a sense, this situation is similar to the regulation of bank capital. While in the per-Basel period banks were free to select their capitalization, the "problem of excess capital" only did arise after the minimal admissible amount had been formalized by the Basle process.[17] Rather than regulating ESG- practices, a natural enhancement for regulatory purposes could be to eliminate the tensions between subsidizing leverage and stabilizing banks. Subsidizing equity in a revenue neutral way, would appear as a win-win strategy to achieve a stable banking system and reduce exposure risk at the same time.

6. Conclusion

A major lesson to take away from recent work on ESG-screens is the empirical property that commercially available screens can be informative about hidden characteristics of bank business models. It is especially the planning horizon that emerges as a driver of banks' ESG investments, and, consequently, the risk-

[17] A problem of "excess capital" mainly arises in the eyes of incumbent shareholders who prefer maximal leverage in order to benefit from tax advantages paid to debtholders that also applies to banks (e. g. Admati, Hellwig, 2024, Gehrig, 2024a).

iness of their business models. Therefore, ESG information is useful for investors, clients and supervisors in assessing a bank's resiliency. Supervisors might even conjecture to render permissions of banks stock repurchases dependent on the achievement of certain minimum ESG levels. Clearly, to provide guidance in this regard, much more empirical work needs to be done on possibly even more informative data sources and robustness of the findings. Preliminary work in this direction, however, suggests that this line of work may be worthwhile to pursue.

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