

A Green Supporting Factor — The Right Policy?

By

Jacob Dankert, Lars van Doorn, Henk Jan Reinders and Olaf Sleijpen
De Nederlandsche Bank N.V. (DNB)

JEL codes: G28, Q58.

Keywords: Bank Regulation, Capital Requirements, Climate Policy.

One of the policy tools contemplated in order to support bank lending to green finance is a Green Supporting Factor (GSF) in, among others, banking regulation. A GSF would lower capital requirements for banks for their green exposures, enticing banks to lend more. In this paper, we argue that the essence of capital requirements is to safeguard financial solidity and stability. A GSF should only be considered if “green exposures” are indeed less risky. As there currently is no conclusive evidence yet in this direction, lowering capital requirements by introducing a GSF will increase financial stability risks. Moreover, experiences with supporting factors show that a GFS is likely to have little effect in increasing green bank finance.

Introduction

In March 2018 the European Commission published its Action Plan on Sustainable Growth¹. The Action Plan builds upon the High-Level Expert Group on sustainable finance's recommendations² and sets out an EU strategy for sustainable finance. The Action Plan sets out a roadmap to boost the role of finance to achieve the transition to a well-performing European economy that aligns with the Paris Agreement signed in 2015.

One of the discussed proposals in this context is the possible introduction of a Green Supporting Factor (GSF) in capital and/or solvency frameworks of financial institutions, in particular banks. The underlying rationale is that a GSF can potentially align more closely banks' investment decisions with the green finance goals as determined by the EU. This would be achieved by reducing capital requirements for investments designated as green, thereby treating them as less risky than other investments or more carbon-intensive ('brown') investments.

While we support the goal to create incentives for green finance, we argue that caution is in order before introducing a GSF. We argue that the essence of capital requirements is to safeguard financial solidity and stability. Higher risks warrant higher capital requirements; and vice versa. Currently, there is no conclusive evidence that green exposures are indeed less risky. Consequently, lowering capital requirements by introducing a GSF might increase financial stability risks and distort the principle of risk-based capital requirements. Before going down this road, there should be more evidence that "green exposures" are indeed less risky. Moreover,

experiences with other supporting factors show that a GSF is likely to have little effect in increasing green bank finance.

Green Supporting Factor might not be the right policy instrument

Financial stability risks could increase

By regulation, banks are required to hold sufficient capital buffers to cover for unexpected losses and maintain solvent in a crisis. As a main principle, the amount of capital required depends on the risks related to the assets of a particular bank: the riskier an asset in the bank's books is, the higher the risk weight of this asset is and hence the higher the amount of capital that needs to be held³. These capital requirements exist to ensure banks and other financial institutions do not take undue risks at the expense of society, bank depositors or tax payers. Thus, capital requirements have a prudential purpose and serve to protect the soundness and safety of financial institutions and the financial system. Given the prudential purpose of capital requirements, we should be wary to pursue other goals through the same policy instrument, in this case the stimulation of green finance. As Tinbergen has asserted, a policy instrument can only serve one policy objective. Thus, if we want to stimulate the growth of green finance, this should be done through other policy instruments. Using capital requirements for more than one purpose risks failing at all of them.

Having sound, well capitalized banks improves financial stability by increasing the banks' loss absorption capacity and reducing their risk-taking

¹ European Commission (2018). "Sustainable finance: Commission's Action Plan for a greener and cleaner economy". Retrieved from: http://europa.eu/rapid/press-release_IP-18-1404_en.htm?locale=en.

² High-Level Expert Group on Sustainable Finance (2018). Financing a Sustainable European Economy'. Available at: https://ec.europa.eu/info/publications/180131-sustainable-finance-report_en.

³ In addition, a non risk-weighted capital requirement was introduced (leverage ratio) after the financial crisis, serving as a backstop for banks with substantial low-risk portfolios.

behaviour as banks bear most of the costs of those risks themselves. Moreover, better capitalized banks contribute to more robust and stable bank lending during the economic cycle. Despite the potential short run costs associated with stringent capital requirements, the empirical research shows that, at the current levels of capital, these costs are significantly lower than the potential benefits of a better capitalized banking system⁴. Using capital requirements as a tool to incentivize investments can have severe unintended consequences for financial stability, such as an underestimation of risks and a lower aggregate capitalization of the financial system.

No evidence yet that green is less risky

If one accepts the premise that the primary purpose of capital requirements is to ensure financial stability, one next question to ask is whether there are currently risks that are under- or overweighed in the established supervisory frameworks. So far, it has however been difficult to ascertain whether green investments are indeed less risky than their current capital requirement would imply. Most of the literature so far has looked at the broader category of ESG investments and taken the perspective of equity returns. The primary research question in this literature is whether there was a difference in return between ESG investments and regular investments. Meta-analysis of studies of ESG performance and

financial performance show that these are often positively linked or neutral⁵. However, the scope of most of the studies varies substantially. This is primarily because of two methodological shortcomings: the variation in used definitions in the literature and the little historical data available. Research into the risk differentials between green and brown debt financing, which would be necessary to calibrate a GSF, is a perspective that is still mostly lacking. If anything, most of the risk based evidence gathered supports the case that assets most exposed to climate-related risks are currently underappreciated by supervisory frameworks⁶. We will elaborate on these points below.

The first explanation for the diverging conclusions stemming from the literature is the lacking consensus regarding the definition of 'green finance'. Since definitions of green finance are generally developed on a case-by-case basis, there is a great variation of green finance definitions used in this literature. In fact, a literature study conducted by Lindenberg⁷ shows that some studies do not include a definition of green finance at all. This variety of definitions prevents comparison between different studies. Besides, studies analysing the same data sample can come to different conclusions based on their choice of definition. Many publications⁸ have acknowledged these problems and stressed the importance for a

⁴ See for instance: BCBS (2010) An assessment of the long-term economic impact of stronger capital and liquidity requirements or Dagher, J., Dell'Ariccia, G., Laeven, L., Ratnovski, L., and Tong, H. (2016) IMF Staff Discussion Note 2016/04 "Benefits and Costs of Bank Capital" .

⁵ See for instance: Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210-233 and Galema, R., Plantinga, A., & Scholtens, B. (2008). The stocks at stake: Return and risk in socially responsible investment. *Journal of Banking & Finance*, 32(12), 2646-2654.

⁶ See for instance: DNB (2017) Waterproof? An exploration of climate-related financial risks for the Dutch financial sector.

⁷ Lindenberg, N. (2014). Definition of green finance. German Development Institute, April 2014. Retrieved from <https://www.cbd.int/financial/gcf/definition-greenfinance.pdf>.

⁸ See for instance: Clapp, C, J. Ellis, J. Benn, J. Corfee-Morlot (2012), Tracking Climate Finance: What and How?, OECD Publishing, Della Croce, R. D., C. Kaminker and F. Stewart (2011), The Role of Pension Funds in Financing Green Growth Initiatives, OECD Publishing, European Commission (2017). "Defining green in the context of green finance", Defining green in the context of green finance, Luxembourg: Publications Office, Inderst, G., C. Kaminker and F. Stewart (2012), Defining and Measuring Green Investments: Implications for Institutional Investors' Asset Allocations, OECD Publishing, and UNEP Inquiry (2016). Definitions and concepts: Background note.

common definition. In this respect, the EU sustainable taxonomy being developed (expected in 2019) by the European Commission⁹ is welcome. This taxonomy will no doubt come with its own challenges though in determining if a specific loan or investment is indeed green. Introducing different capital requirements for green and non-green finance will then, apart from adding extra complexity, undoubtedly open up an avenue for regulatory arbitrage.

A second explanation for the diverging conclusions is the availability of historical data. For green exposures, historical data covers only short periods or is simply lacking. On the other hand, historical data for conventional exposures is often abundant. Yet, this data does not capture the challenges arising from the energy transition. Consequently, differences in sample periods might result in a time-period bias. An example of this effect is shown by Climent and Soriano¹⁰. They show that green mutual funds have a lower return compared to conventional mutual fund in the US during 1987-2009, but a similar rate of return during 2001-2009. This shows that more research including recent sample periods is necessary.

The above shows that currently there is no conclusive evidence that green exposures are indeed less risky. Therefore, we need to make sure more work is done to determine the risk inherent in “green”, but also in “brown” exposures. A very welcome strand of research tries to build forward-looking models for climate-related financial risks. This is still in its infancy, however, and suffers from a lack of sufficient, good-quality data. Several financial institutions have reacted, however, to the FSB Taskforce on Climate Related Financial Disclosures (TCFD)¹¹ call to start this work. Studies that explore climate-related risks and opportunities both

top-down (by scenario analysis) as well as bottom-up (on borrower level) are being developed, for example as spearheaded by UNEP FI in a pilot group of 16 banks¹². If these and other studies show there is substantial evidence that “green exposures” are indeed less risky than other exposures could a GSF be considered.

Finally, if solid evidence becomes available to justify changing capital requirements based on a green and brown distinction, it is likely that from a risk-based perspective both downward and upward adjustments for capital requirements need to be made. Indeed, risk-based capital requirements should incorporate new evidence of riskiness of certain asset classes. However, caution is in order when putting this principle into practice. Policy makers should be wary that these new measurements are used to lower aggregate capital. If we assume that existing capital requirements are a correct measurement of the aggregate risks within an entire (undifferentiated) asset class, finding that for a green subset of this asset class the risk is lower, and adjusting capital requirements accordingly, this must mean, all else being equal, that for the remainder of the asset class the risk should be higher.

Only lowering capital requirements for a subset of an asset class, e.g. green real estate, would ignore that the remainder of the portfolio would contain more of the (previously undifferentiated) risk. Hence, not accounting for this could lead to a lower aggregated capitalization of the financial system without a reduction in overall risk (this is also known as cherry picking). At the very least, when splitting an asset class into green and non-green assets, both subsets should be recalibrated.

Of course, if current aggregate risk is not measured correctly, measuring risk of different subsets (e.g. green and non-green) of an asset class might find a different level of total risk.

⁹ European Commission (2018). Sustainable finance: Making the financial sector a powerful actor in fighting climate change, May 24th 2018. Retrieved from http://europa.eu/rapid/press-release_IP-18-3729_en.htm.

¹⁰ Climent, F., & Soriano, P. (2011). Green and Good? The Investment Performance of US Environmental Mutual Funds. *Journal of Business Ethics*, 103(2), 275-287.

¹¹ TCFD (June 2017) Recommendations of the Task Force on Climate-Related Financial Disclosures.

¹² For first results of modelling transition risk, see UNEP FI (2018). Extending our horizons.

Effectiveness of Supporting Factors

Apart from the lack of evidence whether green exposures are indeed less risky, it is questionable if a supporting factor will be effective in increasing green investment. Several papers have empirically investigated the effectiveness of other (non-green) supporting factors (SFs). For example the European Banking Authority reported that there is currently no evidence that the SME SF resulted in increased lending to SMEs¹³. The SME SF was included in the EU's Capital Requirements Regulation (CRR) in reaction to the increase in capital requirements stemming from the Capital Conservation Buffer (CCB). Its main purpose was to ensure an adequate flow of credit and increased lending to SMEs¹⁴. Moreover, other country-based studies show mixed results¹⁵. Currently, there is no reason to believe that this would be different for a GSF.

Two reasons for limited effectiveness are the limited magnitude of additional funding costs imposed by capital requirements and the possibility that other risk management functions compensate for lower capital requirements (only when a GSF is not risk based). On the impact on funding costs, a modelling exercise of the proposed GSF by the 2^o Investing Initiative investigates the effectiveness of the GSF and argues it likely has a limited effect¹⁶. In their report, the authors analyse the hypothetical effect of a decrease in RWA on green investments below EUR 1,5 mln of 25 percent and 15 percent for the part above EUR 1,5 mln on bank's capital requirements. Drawing on previous research, they estimate that a

GSF in this range would result in a 5 to 25 basis points reduction in the cost of capital for green investments. This effect is too small to fundamentally change an investment decision, given that for instance onshore wind projects in the EU exhibit a cost of capital in the range of 350-1200 basis points¹⁷.

The introduction of a GSF without empirical evidence showing actual differences in risks would likely also be ineffective if risk professionals account for the lack of Pillar 1 capital requirements in another way. Prudent risk management functions may start to compensate for the unaccounted risks. For instance, prudential supervisors could include these risks in their Pillar II requirements. Additionally, banks' risk management would still rely on actual risk in their lending decisions and in the calibration of internal models. Consequently, it is unlikely that a politically motivated GSF will increase capital flows towards sustainable finance. Also, models used by credit rating agencies will still try to capture the actual perceived risks. This was already summed up by Moody's, which stated¹⁸ that a GSF could mean that *"credit implications for affected banks would be negative, because the lower capital requirements would likely lead banks to hold less capital for exposures that feature similar risk characteristics as traditional loans or bonds."* If rating agencies still account for the risk when setting the ratings of banks, part of the predicted reduced funding for 'green' finance might not materialise when the banks that hold less capital as a result of a GSF find the risk premiums of its bond funding have increased.

¹³ European Banking Authority (2016) "EBA Report on SMEs and SME supporting factor"

¹⁴ EBA (2016). EBA publishes report on SMEs and the SME Supporting Factor, March 23th 2016. Retrieved from <https://www.eba.europa.eu/-/eba-publishes-the-report-on-smes-and-the-sme-supporting-factor>.

¹⁵ See for instance: Dietsch, M., Düllmann, K., Fraisse, H., Koziol, P., & Ott, C. (2016). Support for the SME supporting factor: Multi-country empirical evidence on systematic risk factor for SME loans, Mayordomo, & Rodríguez-Moreno. (2018). Did the bank capital relief induced by the Supporting Factor enhance SME lending?, *Journal of Financial Intermediation*, and Izquierdo, J. F., Rubio, A., & Ulloa, C. (2017). Impact of capital regulation on SMEs credit.

¹⁶ 2 Degrees Investment Initiative (2018), Working Paper 2018/1, The Green Supporting Factor – Quantifying the impact on European banks and green finance

¹⁷ Diacore project (2016) The impact of risks in renewable energy investments and the role of smart policies, retrieved from <http://diacore.eu/results/item/enhancing-res-investments-final-report>

¹⁸ Reuters (2017) Moody's raps EU plans for lower capital charges on banks' green investment, December 18th, 2017. Retrieved from: <https://uk.reuters.com/article/eu-climatechange-banks-moodys/moodys-raps-eu-plans-for-lower-capitalcharges-on-banks-green-investment-idUKL8N10I2BA>.

Conclusion

This paper argues that caution is necessary before introducing a GSF for increasing green finance. We argue that capital requirements should be risk-based. The currently available evidence comes to different conclusions and does not yet support the claim that green exposures are indeed less risky. This can be explained by different definitions of green finance used in the literature and the little historical data available. Forward looking approaches are thus needed to incorporate the changing risk outlook in a

world that tries to align with the Paris Agreement. Initiatives in this area should indeed be promoted. Given its prime purpose as a tool to safeguard financial stability, lowering capital requirements now could lead to an underestimation of risks and an undercapitalization of the financial system.

Finally, the effectiveness of a GSF as a policy tool to increase green finance is likely to be limited. More effective tools are available, including fiscal policies (e.g. taxes and subsidies) and setting norms (e.g. energy efficiency requirements). Based on these arguments, we do not view the GSF as a promising policy tool.

References

- 2 Degrees Investment Initiative (2018), Working Paper 2018/1, The Green Supporting Factor – Quantifying the impact on European banks and green finance, retrieved from <https://2degrees-investing.org/the-green-supporting-factor-quantifying-the-impact-on-european-banks-and-green-finance/>
- Basel Committee on Banking Supervision (2010). An assessment of the long-term economic impact of stronger capital and liquidity requirements.
- Clapp, C, J. Ellis, J. Benn, J. Corfee-Morlot (2012), Tracking Climate Finance: What and How?, OECD Publishing.
- Climent, F., & Soriano, P. (2011). Green and Good? The Investment Performance of US Environmental Mutual Funds. *Journal of Business Ethics*, 103(2), 275-287.
- Dagher, J., Dell’Ariccia, G., Laeven, L., Ratnovski, L., and Tong, H. (2016) IMF Staff Discussion Note 2016/04 “Benefits and Costs of Bank Capital”
- Della Croce, R. D., C. Kaminker and F. Stewart (2011). The Role of Pension Funds in Financing Green Growth Initiatives. OECD Publishing.
- Diacore project (2016) The impact of risks in renewable energy investments and the role of smart policies, retrieved from <http://diacore.eu/results/item/enhancing-res-investments-final-report>
- Dietsch, M., Düllmann, K., Fraise, H., Koziol, P., & Ott, C. (2016). Support for the SME supporting factor: Multi-country empirical evidence on systematic risk factor for SME loans.
- DNB (2017). Waterproof? An exploration of climate-related financial risks for the Dutch financial sector
- EBA (2016). EBA publishes report on SMEs and the SME Supporting Factor, March 23th 2016. Retrieved from <https://www.eba.europa.eu/-/eba-publishes-the-report-on-smes-and-the-sme-supporting-factor>
- European Banking Authority (2016). EBA Report on SMEs and SME supporting factor. Retrieved from <https://www.eba.europa.eu/-/eba-publishes-the-report-on-smes-and-the-sme-supporting-factor>
- European Banking Authority (2016). EBA Report on SMEs and SME supporting factor.
- European Commission (2017). Defining green in the context of green finance, Luxembourg: Publications Office.
- Inderst, G., C. Kaminker and F. Stewart (2012), “Defining and Measuring Green Investments: Implications for

- Institutional Investors' Asset Allocations”, OECD Working Papers on Finance, Insurance and Private Pensions, No 24, OECD Publishing.
- European Commission (2018). Sustainable finance: Making the financial sector a powerful actor in fighting climate change, May 24th 2018. Retrieved from http://europa.eu/rapid/press-release_IP-18-3729_en.htm.
- Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210-233
- Galema, R., Plantinga, A., & Scholtens, B. (2008). The stocks at stake: Return and risk in socially responsible investment. *Journal of Banking & Finance*, 32(12), 2646-2654.
- High-Level Expert Group on Sustainable Finance (2018). Financing a Sustainable European Economy. Retrieved from: https://ec.europa.eu/info/publications/180131-sustainable-finance-report_en.
- Inderst, G., C. Kaminker and F. Stewart (2012). Defining and Measuring Green Investments: Implications for Institutional Investors' Asset Allocations, OECD Publishing.
- Izquierdo, J. F., Rubio, A., & Ulloa, C. (2017). Impact of capital regulation on SMEs credit, BBVA Bank, Economic Research Department.
- Kaza, N., Riley, S., Quercia, R., & Tian, C. (2016). Location Efficiency and Mortgage Risks for Low-Income Households. *Housing Policy Debate*, 26(4-5), 750-765.
- Lindenberg, N. (2014). “Definition of green finance”. German Development Institute, April 2014. Retrieved from <https://www.cbd.int/financial/gcf/definition-greenfinance.pdf>.
- Mayordomo, & Rodríguez-Moreno. (2018). Did the bank capital relief induced by the Supporting Factor enhance SME lending?, *Journal of Financial Intermediation*.
- Reuters (2017). Moody's raps EU plans for lower capital charges on banks' green investment, December 18th, 2017. Available at: <https://uk.reuters.com/article/eu-climatechange-banks-moodys/moodys-raps-eu-plans-for-lower-capital-charges-on-banks-green-investment-idUKL8N1OI2BA>.
- Sanderford, A., Overstreet, R., Beling, G., & Rajaratnam, A. (2015). Energy-efficient homes and mortgage risk: Crossing the chasm at last? *Environment Systems and Decisions*, 35(1), 157-168.
- TCFD (2017) Recommendations of the Task Force on Climate-Related Financial Disclosures.
- UNEP FI (2018). Extending our horizons.
- UNEP Inquiry (2016). Definitions and concepts: Background note.

About the author(s)

Jacob Dankert is a strategic advisor and project leader at the Supervision Policies division of De Nederlandsche Bank N.V. (DNB).

Lars van Doorn holds a master's degree in International Relations (University of Amsterdam) and Public Administration (Leiden University). At the time of writing he was an intern at DNB working on climate related policies.

Henk Jan Reinders is a strategic advisor and project leader at the Supervision Policy Division of De Nederlandsche Bank N.V. (DNB). He is one of the lead authors of the DNB climate risk report which was published in October 2017.

Olaf Sleijpen is Director of the Supervision Policy Division of De Nederlandsche Bank N.V. (DNB). Since 2007, he has also been part-time professor holding an endowed chair in European Economic Policy at Maastricht University.

SUERF Policy Notes (SPNs)

No 32	Central Bank Accountability and Judicial Review	by Charles Goodhart and Rosa Lastra
No 33	Populism and Central Bank Independence	by Donato Masciandaro and Francesco Passarelli
No 34	Modern financial repression in the euro area crisis: making high public debt sustainable?	by Ad van Riet
No 35	Strengthening the euro area Architecture: A proposal for Purple bonds	by Lorenzo Bini Smaghi and Michala Marcussen
No 36	Temporary Eurobill Fund (TEF): 30 FAQs	by Graham Bishop
No 37	A solid common landing ground for EMU	by Jeroen Dijsselbloem
No 38	The future for central bank balance sheets and their potential use as a macroprudential tool	by Paul Fisher
No 39	Green bond finance and certification	by Torsten Ehlers and Frank Packer
No 40	21st century cash: Central banking, technological innovation and digital currencies	by Fabio Panetta
No 41	Central banks should reflect climate risks in monetary policy operations	by Pierre Monnin
No 42	Preserving regulatory certainty: The review of insurers' capital requirements	by Gabriel Bernardino



SUERF is a network association of central bankers and regulators, academics, and practitioners in the financial sector. The focus of the association is on the analysis, discussion and understanding of financial markets and institutions, the monetary economy, the conduct of regulation, supervision and monetary policy. SUERF's events and publications provide a unique European network for the analysis and discussion of these and related issues.

SUERF Policy Notes focus on current financial, monetary or economic issues, designed for policy makers and financial practitioners, authored by renowned experts.

The views expressed are those of the author(s) and not necessarily those of the institution(s) the author(s) is/are affiliated with.

All rights reserved.

Editorial Board:
Natacha Valla, Chair
Ernest Gnan
Frank Lierman
David T. Llewellyn
Donato Masciandaro

SUERF Secretariat
c/o OeNB
Otto-Wagner-Platz 3
A-1090 Vienna, Austria
Phone: +43-1-40420-7206
www.suerf.org • suerf@oenb.at