



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Research Project

Prof. Giuseppe Torluccio

Department of Management

Academic discipline: SECS-P/11 Economics of Financial Intermediaries

Director of the Master's Degree Programme in Financial Markets and Institutions

“Dynamics of the banking system in the ‘twin transition’ context”

Background and motivation of the research

The current economic system is marred by deep uncertainty worldwide, as a “perfect storm” has been materializing over the last years: since the 2007-2009 global financial crisis (GFC), the market turmoil has affected financial and economic variables (particularly energy ones); geopolitical tensions have erupted into a war on European soil; public safety has been threatened by a pandemic, with dreadful effects on international merchandise trade, investment flows, and asset values; political institutions have been under increasing attack in many advanced democracies. As a result, many have started talking about a ‘deglobalization’ trend (James, 2018; Tooze, 2018; Roubini, 2020; Kafouros et al., 2022), whose direct consequence is the policy debate being shifted onto a local level again.

In this context, banks and other financial intermediaries play a critical role in the resource allocation. In addition, despite such difficulties in the macroenvironment, they are called to cope with the ongoing ‘twin transition’, namely the overhaul of business operations based on sustainability and the digital technology. The most recent policy measures aimed at counteracting the negative economic outlook have, in fact, primarily addressed those macro-trends: particularly the post-Covid Recovery Plans, passed at EU level and implemented in each single Member State (e.g., the PNRR in Italy).

In the most recent years, public authorities in the banking sector have started getting a closer look at the composition of both the banking and the trading book of credit institutions, with a specific focus on the counterparties’ compliance with the ESG paradigm (EBA, 2019; 2020; ECB, 2020). At company level, it is now clear in the literature that a commitment toward sustainability may be used



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

as a risk-mitigation tool (Jagannathan et al., 2018), and able to enhance corporate resilience (Ramelli et al., 2021; Cardillo et al., 2022).

Nevertheless, the literature on how the sustainable transition affects banks' financials remains relatively narrow, albeit growing attention is being devoted to climate risk (Faiella and Natoli, 2018), the monitoring of borrowers as of their abidance by ESG parameters (Calderón and Chong, 2014), and the consequences of re-orienting toward sustainability the rationale that underlies credit extension in developing economies (Yin et al., 2021; Sunio et al., 2021; Al-Qudah et al., 2022).

At the same time, while withstanding higher regulatory pressure as a long-term consequence of imperilled systemic stability, banks are facing increasing threats from non-bank lenders, somehow revolving around a 'digital' or an 'instant', web-based business model, with significant effects on banks' conduct itself. In this regard, however, both theoretical frameworks and empirical analyses have been inconclusive: according to some, the operations of fintech companies are a threat to banks (Tanda and Schena, 2019; Jünger and Mietzner, 2020; Thakor, 2020), particularly in a context of "local" institutions extending credit to SMEs; some others, conversely, see fintech services as a source of opportunity (Demirgüç-Kunt and Levine, 2018; Claessens et al., 2018; Stulz, 2019; Cornelli et al., 2021), particularly if they are properly embedded – like a specialized niche – into a bank's prevailing traditional model.

The aim of this project is threefold. It aims at developing a reliable methodology to assess the firm engagement toward the 'twin transition', and more specifically, toward the sustainability and digitalization. This effort should primarily target those 'private' firms that currently have no mandate to disclose non-financial information. Second, the research project aims to explore how "traditional" banks are threatened by non-bank newcomers in their ability to profitably take on the opportunities offered by the twin transition. This aspect is also relevant for the understanding of competition determinants for banks. Third, it investigates the financial effects on banks that result from their investments in companies actively engaging in the twin transitions.

While addressing these research aims, the project is set to pay specific attention on the Circular Economy (CE), which is a way of overcoming the limitations of both the Corporate Social Responsibility (CSR) approach and the Environmental-Social-Governance (ESG) approaches (Elkington, 2018). Particularly, the CE is a way for optimizing production (e.g., through the minimization of waste) while generating a positive impact on the environment, local communities,



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

etc., in a close abidance by the ‘stakeholder theory’ of corporate objectives (Freeman, 1984; Coleman, 1988). Hence, it inherently relies on innovation and has the digital technology as a key enabler.

Related literature

From a chronological standpoint, the first paradigm to account for firms’ non-financial performance – i.e., conduct of business – was the CSR, whose relevance to the financial sector has become clear in the aftermath of the GFC (Birindelli et al., 2015). Recently, the literature has been focusing on the potential risk mitigation associated with CSR-inspired activities at company level, albeit through the unescapable channel of an entity’s non-financial reporting (Karwowski and Raulinajtys-Grzybek, 2021). The ESG paradigm arose as an evolution of the CSR idea, which has become particularly relevant to the financial industry as a framework to assess – mainly in quantitative, measurable terms – a counterparty’s progress toward the sustainable transition (Birindelli et al., 2018; Landi and Sciarelli, 2019).

The current regulatory framework is centred on large, publicly-listed companies in the financial services industry: just think of the Non-Financial Reporting Directive (NFRD, No. 2014/95/EU), which de facto mandates reporting only for the most prominent companies; the Sustainable Finance Disclosure Regulation (SFDR, No. 2019/2088), which is mainly addressed at investment managers; and the Taxonomy Regulation (No. 2020/852), which drives the identification of environmentally-sustainable activities and provides the basis whereon financial institutions can compute specific KPIs. Nevertheless, some works have dealt with the possibility of SMEs undergoing an assessment of their sustainability performance, thus enabling lenders to account for this when judging the counterparty’s creditworthiness (Cosma et al., 2020; Leopizzi et al., 2020).

While the issuance of sustainability-related bonds and similar debt securities – which is one of the “trending topics” in the literature – remains typical of large entities, including public authorities, whose instruments are traded on capital markets, ESG-compliant products have been spreading in the banking industry. Unfortunately, the realm of sustainability ratings is still highly heterogeneous, so that many talk about ‘divergence’ (Berg et al., 2019; Jacobs and Levy, 2022); however, some benefits in terms of default and credit risk have been found as of more sustainable companies, including on their stock performance (Chatterjee, 2018). More broadly, although most of the research is focused on publicly-listed shares from equity investors’ standpoint, recent meta-analyses have concluded that



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

– despite a harsh ongoing debate that is far from reaching any consensus – about 60% of research finds a positive association between the degree of sustainability, on the one hand, and financial performance, on the other (Whelan et al., 2021).

The fintech macro-trend is facing intense scrutiny from the literature, too. While its innovation-related content is a serious challenge to the traditional business environment, with a gain on banks' managerial efficiency coupled with worsening profitability and asset quality (Zhao et al., 2022), the most important and long-standing question – that is, whether fintechs offer substitute services compared to banks – has no “universal” answer, for it basically depends upon the banking sector's characteristics (Hodula, 2022).

Moreover, the transformative content of both technology and sustainability has been increasingly connected to the Circular Economy (CE) paradigm, whose potential is to uphold an entity's sustainability performance while improving the financial one as well (MacArthur, 2013), also with a view to advancing the ‘impact’ 2030 Agenda deployed by the United Nations. By distancing themselves from the current ‘linear’ paradigm (made of the take-make-use-dispose pattern), circular companies manage to develop more efficient supply chains (Wegner-Kozlova and Guman, 2020), lower the transportation costs they face (Kiss et al., 2019) and become more capable of addressing both market turmoil due to exogenous shocks (Shukla and Pujari, 2022) and ordinary functioning problems (Wuyts et al., 2020). All the abovementioned elements are likely to make circular assets less risky: such conclusion is already clear in terms of reduced stock price volatility (i.e., applied to listed companies); at the same time, novel strands of literature are addressing system-wide effects too, with positive spillovers onto SMEs, as a systemic approach and a long-term orientation are inherent to the CE paradigm.

Finally, the ‘twin transition’ has been investigated with regard to strategic and managerial aspects in both the financial and the non-financial sector. Some authors maintain that research and development expenditure is doomed by information opaqueness; therefore, banks and other lenders would be particularly cautious in their credit policies, whereas government-backed players would often step in (Brighi and Torluccio, 2010; Brighi and Venturelli, 2017). Therefore, in line with the ‘strategic management theory’ (Coase, 1937; Williamson, 1981), some have investigated the potential rise of economies of scale and scope in financing these segments, thus enabling banks to profit from investments that are relatively risky (Forcadell et al., 2020),



Research expected outputs

At the end of the project, the selected candidate is supposed to generate at least one academic article that is suitable for an international research journal in the field of the economics of financial intermediation. Examples of potential targets are: *Journal of Financial & Quantitative Analysis*, *Journal of Corporate Finance*, and *Journal of Banking & Finance*.

Research Plan

The first stage of the research project consists of reviewing the prominent literature to detect, define, and address the existing research gaps and contributions, offering new contributions on the point. The second stage of the project is made of data collection, data management, and a first explorative analysis. The third stage of the project is mainly oriented to developing the first draft of the research outputs. Particularly, it is made of a second round of data analysis, the reporting of results, and the development of a first written draft. The latter will be presented to ad-hoc seminars and leading and international conferences to stimulate the research debate and possibly collect useful feedback for future improvements in the research. The last stage of the project is aimed at adjusting statistical and theoretical issues before accomplishing the final output.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Phase 1																									
Literature Review																									
Definition of Research gaps																									
Phase 2																									
Data Collection																									
Data Cleaning																									
Explorative Data Analysis																									
Phase 3																									
Second Data Analysis																									
Reporting results																									
First draft																									
Phase 4																									
Correction of Statistical Issues																									
Correction of Theoretical Issues																									
Final output																									



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Funding and Training opportunities

The selected candidate will have the opportunity to debate with leading public and private research centres interested in investigating the twin transition. The leading partners are represented by:

- Bocconi University (Milan, Italy)
- Birmingham University (Birmingham, the United Kingdom)
- S&P (Italian division) (Milan, Italy).

References

Al-Qudah, A. A., Hamdan, A., Al-Okaily, M., & Alhaddad, L. (2022). The impact of green lending on credit risk: evidence from UAE's banks. *Environmental Science and Pollution Research*, 1-13.

Berg, F., Koelbel, J. F., & Rigobon, R. (2019). Aggregate confusion: The divergence of ESG ratings. *Review of Finance*, forthcoming.

Birindelli, G., Dell'Atti, S., Iannuzzi, A. P., & Savioli, M. (2018). Composition and activity of the board of directors: Impact on ESG performance in the banking system. *Sustainability*, 10(12), 4699.

Birindelli, G., Dell'Atti, S., Iannuzzi, A. P., & Savioli, M. (2018). Composition and activity of the board of directors: Impact on ESG performance in the banking system. *Sustainability*, 10(12), 4699.

Brighi, P., & Torluccio, G. (2010). Traditional and R&D investments: are they really different?. In *New Issues in Financial Institutions Management* (pp. 59-87). Palgrave Macmillan, London.

Brighi, P., & Torluccio, G. (2010). Traditional and R&D investments: are they really different?. In *New Issues in Financial Institutions Management* (pp. 59-87). Palgrave Macmillan, London.

Calderon, F., & Chong, L. C. (2014). Dilemma of sustainable lending. *Journal of Sustainable Finance & Investment*, 4(2), 192-209.

Cardillo, G., Bendinelli, E., & Torluccio, G. COVID-19, ESG investing, and the resilience of more sustainable stocks: Evidence from European firms. *Business Strategy and the Environment*.



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Chatterjee, S. (2018). Fund Characteristics and Performances of Socially Responsible Mutual Funds: Do ESG Ratings Play a Role?. *arXiv preprint arXiv:1806.09906*.

Coase, R. H. (1991). The nature of the firm (1937). *The nature of the firm*, 18-33.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, 94, S95-S120.

Cosma, S., Venturelli, A., Schwizer, P., & Boscia, V. (2020). Sustainable development and European banks: A non-financial disclosure analysis. *Sustainability*, 12(15), 6146.

Elkington, J. (2018). 25 years ago I coined the phrase “triple bottom line.” Here’s why it’s time to rethink it. *Harvard business review*, 25, 2-5.

European Banking Authority [EBA] (2019). *Roadmap on sustainable finance*.

European Banking Authority [EBA] (2020). *On management and supervision of ESG risks for credit institutions and investment firms*.

European Central Bank [ECB] (2019). *Climate risks inclusion in loan origination and monitoring*.

Faiella, I., & Natoli, F. (2018). Natural catastrophes and bank lending: the case of flood risk in Italy. *Bank of Italy Occasional Paper*, (457).

Forcadell, F. J., Úbeda, F., & Aracil, E. (2021). Effects of environmental corporate social responsibility on innovativeness of spanish industrial SMEs. *Technological Forecasting and Social Change*, 162, 120355.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Cambridge University Press.

Hodula, M. (2022). Does Fintech credit substitute for traditional credit? Evidence from 78 countries. *Finance Research Letters*, 46, 102469.

Jacobs, B. I., & Levy, K. N. (2022). The Challenge of Disparities in ESG Ratings. *The Journal of Impact and ESG Investing*, 2(3), 107-111.

Jagannathan, R., Ravikumar, A., & Sammon, M. (2018). Environmental, social, and governance criteria: Why investors should care. *J. Invest. Manag*, 16, 18-31.

James, H. (2018). Deglobalization: The rise of disembodied unilateralism. *Annual Review of Financial Economics*, 10, 219-237.



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Kafouros, M., Cavusgil, S. T., Devinney, T. M., Ganotakis, P., & Fainshmidt, S. (2022). Cycles of de-internationalization and re-internationalization: Towards an integrative framework. *Journal of World Business*, 57(1), 101257.

Karwowski, M., & Raulinajtys-Grzybek, M. (2021). The application of corporate social responsibility (CSR) actions for mitigation of environmental, social, corporate governance (ESG) and reputational risk in integrated reports. *Corporate Social Responsibility and Environmental Management*, 28(4), 1270-1284.

Kiss, K., Ruskai, C., & Takács-György, K. (2019). Examination of short supply chains based on circular economy and sustainability aspects. *Resources*, 8(4), 161.

Landi, G., & Sciarelli, M. (2018). Towards a more ethical market: the impact of ESG rating on corporate financial performance. *Social Responsibility Journal*.

Leopizzi, R., Iazzi, A., Venturelli, A., & Principale, S. (2020). Nonfinancial risk disclosure: The “state of the art” of Italian companies. *Corporate Social Responsibility and Environmental Management*, 27(1), 358-368.

MacArthur, E. (2013). Towards the circular economy, economic and business rationale for an accelerated transition. *Ellen MacArthur Foundation: Cowes, UK*, 21-34.

Ramelli, S., Ossola, E., & Rancan, M. (2021). Stock price effects of climate activism: Evidence from the first Global Climate Strike. *Journal of Corporate Finance*, 69, 102018.

Roubini, N. (2020). The Specter of Deglobalization and the Thucydides Trap. *Horizons: Journal of International Relations and Sustainable Development*, (15), 130-139.

Shukla, M., & Pujari, P. (2022). The circular economy – A transformative resilience strategy. *Academy of Marketing Studies Journal*, 26(1), 1-7.

Sunio, V., Mendejar, J., & Nery, J. R. (2021). Does the greening of banks impact the logics of sustainable financing? The case of bank lending to merchant renewable energy projects in the Philippines. *Global Transitions*, 3, 109-118.

Tooze, A. (2018). The forgotten history of the financial crisis: what the world should have learned in 2008. *Foreign Affairs*, 97(5), 199-210.

Wegner-Kozlova, E. O., & Guman, O. M. (2020, May). Digitalization of environmental monitoring as an enabler of circular economy transition. In *2nd International Scientific and Practical*



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Conference “Modern Management Trends and the Digital Economy: from Regional Development to Global Economic Growth” (MTDE 2020) (pp. 1282-1286). Atlantis Press.

Whelan, T., Atz, U., Van Holt, T., & Clark, C. (2021). ESG and financial performance. *Uncovering the Relationship by Aggregating Evidence from, 1, 2015-2020.*

Williamson, O. E. (1981). The economics of organization: The transaction cost approach. *American journal of sociology, 87(3), 548-577.*

Wuyts, W., Marin, J., Brusselaers, J., & Vrancken, K. (2020). Circular economy as a COVID-19 cure?. *Resources, conservation, and recycling, 162, 105016.*

Yin, W., Zhu, Z., Kirkulak-Uludag, B., & Zhu, Y. (2021). The determinants of green credit and its impact on the performance of Chinese banks. *Journal of Cleaner Production, 286, 124991.*

Zhao, J., Li, X., Yu, C. H., Chen, S., & Lee, C. C. (2022). Riding the FinTech innovation wave: FinTech, patents and bank performance. *Journal of International Money and Finance, 122, 102552.*