
ANNALES
UNIVERSITATIS MARIAE CURIE-SKŁODOWSKA
LUBLIN – POLONIA

VOL. LVII, 2

SECTIO H

2023

ŁUKASZ SZEWCZYK

lukasz.szewczyk@uekat.pl

University of Economics in Katowice. Faculty of Finance

1 Maja 50, 40-287 Katowice, Poland

ORCID ID: <https://orcid.org/0000-0001-9313-0717>

GRAŻYNA SZUSTAK

grazyna.szustak@uekat.pl

University of Economics in Katowice. Faculty of Finance

1 Maja 50, 40-287 Katowice

ORCID ID: <https://orcid.org/0000-0002-3225-7412>

*Disclosure of Non-Financial Information in Banks – an ESG
Perspective. Regulatory Requirements and Banking Practice*

Keywords: environmental, social and governance (ESG); banking; non-financial disclosures; regulations

JEL: G21; G28; Q56

How to quote this paper: Szewczyk, Ł., & Szustak, G. (2023). Disclosure of Non-Financial Information in Banks – an ESG Perspective. Regulatory Requirements and Banking Practice. *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, 57(2), 157–174.

Abstract

Theoretical background: Banks, due to their nature and a specific role in the economy, are subject to significant regulations in the field of their activities. Currently, the increasing importance of ESG regulations is noticeable, which is on the one hand the result of changing requirements within the EU, as well as ownership requirements and noticeable market pressure. Non-financial disclosures in the area of ESG are becoming permanent and important element of the information policy of banks. Banks manage to monitor the indicators of their own environmental policy or disclose social and employee issues, although this certainly involves additional reporting burdens, and the scope of disclosures as well as the degree of their significance still vary.

Purpose of the article: The aim of the study is to identify, systematize and evaluate EU regulations in the area of ESG disclosures relating to the banking sector, taking into account the identification of major limitations related to their implementation.

Research methods: The literature review as well as ESG reporting regulations overview and a case study which presents the ESG disclosure practice.

Main findings: Effective communication of a bank with its stakeholders is of a crucial importance. As indicated, the legal solutions in this area are new, there are possibilities for their different interpretation, the practice has also not yet been developed. In addition, and perhaps above all, information on the implementation of environmental goals indicated in the Taxonomy flows to banks from their clients. Therefore, the approach of bank customers to the discussed issues is important, while for banks it is and will be a huge challenge to verify whether the financed investment is actually ecological and the business activity of the bank's client is sustainable.

Introduction

Banks, due to their nature and a specific role in the economy, are subject to significant regulations in the field of their activities. Currently, the increasing importance of ESG regulations is noticeable (Miralles-Qurios et al., 2019), which is on one hand the result of increasing pressure from the EU, as well as ownership requirements and noticeable market pressure (Rosiak & Szczęśna, 2022). It should be emphasized here that the bank's communication with its stakeholders, aimed at reducing the asymmetry of information, takes place through the publication of reports presenting financial and non-financial information. From the point of view of creating a bank's value, the second area is also important, where banks publish information on environmental, social and corporate governance (ESG) issues (Emerling, 2018). Those issues are a result of the significant impact of the bank's activity on the entire society and the belief that banks should contribute to promoting the idea of sustainable development, which has become particularly noticeable in the last decade (Lauesen, 2013). It is also worth mentioning that numerous studies show that there is a relation between broadly understood corporate social responsibility and an enterprise's value (Soana, 2011 p. 134) as well as ESG activities and bank's value (Preston & O'Bannon, 1997; Izcan & Bektas, 2022; Ersoy et al., 2022; Zhao & Murrell, 2016; Miralles-Qurios et al., 2019; Esteban-Sanchez et al., 2017).

The aim of the study is to identify, systematize and evaluate EU regulations in the area of ESG disclosures relating to the banking sector, taking into account the identification of major limitations related to their implementation. An important problem raised in the first part of the article is an attempt to present the importance of effective communication between the bank and its stakeholders. Today, it is emphasized that this communication is of key importance for limiting the phenomenon of information asymmetry in bank-stakeholder relations. The second part of the article focuses on the issue of regulatory requirements in the field of ESG reporting, including taxonomic/environmental requirements, both at the EU level and in Polish legislation. This part of the article was also supplemented with a presentation of the practice of

disclosures in the area of ESG (case study – ING Bank Śląski SA), which allowed to show the approach to this issue also from the point of view of business practice and to compare the compliance of published content with regulatory requirements.

Information about the company from a stakeholder perspective – literature review

Information is nowadays seen as one of the factors of production (alongside the classical factors of land, labor and capital in various forms). Acquiring specific information by an economic entity gives it the necessary knowledge, enabling it to gain an advantage over others, thanks to the possibility of using this information to achieve its goals (Dziekański, 2012, p. 389). In this context, it is also emphasized that information is a factor that creates knowledge (UNESCO, 2005, p. 18), which has now become some sort of a product and a source of innovation. The information society will, therefore, be characterized by, *inter alia*, (Makulska, 2012, p. 173):

- high degree of media interference in social life,
- the dominant role of the means of producing information over the specificity of the content conveyed and their quality,
- making many aspects of social life dependent on receiving and creating information.

Due to this state of affairs, certain phenomena related to the influence of information on the broadly understood development of societies are noticeable in the economy of the 21st century. They include, among others (Dziekański, 2012, p. 390):

- increase in information and knowledge, which is its derivative, as well as the dissemination of information and knowledge in various forms,
- blurring of differences between different types of information,
- globalization of information and knowledge,
- information chaos, having a number of consequences for the recipients of information.

Kawacki emphasizes that information has now become an important source of the company's competitive advantage. He emphasizes that "correct, comprehensive and reliably processed information is essential for business management". This information is important from the point of view of all stakeholders of the company, although the nature of the information obtained will vary depending on the recipient (Kawacki, 2018, p. 110). Porter and Millar indicate three areas of the influence of the information revolution on competition in the market (including the company's competitive position). They include (Porter & Millar, 1985):

- changing the rules of competition on the market as a result of changes in the structure of the economy,
- creating opportunities to build a sustainable competitive advantage, and, thus, enable enterprises to surpass their rivals,

– the initiation of whole new businesses, often from within a company's existing operations.

Currently, the relationship between the broadly understood information provided by the company to its stakeholders and its reputation is also emphasized. An important role is played here by non-financial aspects that affect the company's reputation. These include (Nawrocki & Sz wajca, 2022, p. 4):

- the company's involvement in CSR issues,
- the method of reporting information by the enterprise,
- the way the company communicates with its stakeholders,
- the company's approach to individual stakeholders.

In this particular context, the term "effective communication" seems to be appropriate to describe the ongoing process of information exchange between a company and stakeholders, which is done on a multiple levels. In this process a multiple types of communication channels are delivered, so the objective of communication may be achieved to the maximum level. The factors that constitute the process contain (Rajhans, 2018, p. 49):

- an exchange of information,
- an act of transmitting information,
- a verbal or written message,
- a technique for expressing ideas effectively.

To achieve the goals of effective communication with the stakeholders it is crucial to (Rajhans, 2018, p. 49):

- identify the stakeholders correctly,
- prioritize the stakeholders needs,
- create the necessary stakeholder management strategy,
- engage stakeholders into the process,
- monitor the stakeholder communication process.

It remains important that the demand of stakeholders for non-financial information has increased in the last decade. This fact is reflected in the results of many scientific studies. Due to the demand for such information, the nature of reports that also publish non-financial data is changing as well. The numerous research also emphasizes the relationship between the company's reputation and the quality of information presented as part of ESG reporting. This is undoubtedly influenced by the fact that the scope of disclosures in this area is wider than in the area of information of a purely financial nature, and thus the potential group of recipients of this information increases (Odriozola & Baraibar-Diez, 2017, p. 122). Moreover, enterprises are now also assessed in terms of their impact on society. The assessment of this impact takes place relatively quickly thanks to the development of new communication channels, including social media. The credibility and transparency of such information are of great importance here.

At this point it is worth noting that non-financial reports are seen as a tool designed to inform and persuade stakeholders in terms of corporate legitimacy and so they act as a one-way communication tool (Morsing & Schulz, 2006, p. 333).

Banks' information policy in the ESG area – regulatory requirements and the required scope of disclosures

Banks' disclosures of financial information should be and nowadays are actually supplemented with disclosures relating to non-financial information (information of a descriptive and numerical character, not necessarily expressed in monetary terms and coming from the outside of financial reporting) (Bek-Gaik & Krasodomska, 2018, p. 28). Of course, they can also generate financial consequences. In a narrower sense, it is about publishing environmental, social and governance (ESG) reporting, sustainability and corporate social responsibility (CSR), which emphasize slightly different aspects, but due to their similarities, these terms are often used interchangeably as synonyms. An important issue is the care for publishing the so-called non-financial "material" information, by which SASB¹ means information for which it is highly probable that the disclosure of the omitted fact may be considered by the investor to have a significant impact on the overall disclosure (Federation of European Accountants, 2016). The investor should therefore be able to access information on financial products, taking into account ESG issues, which is to facilitate their comparison (Pałejko, 2021). To sum up, the rationality of decisions that are made, requires the confrontation of financial information with non-financial information, hence the EU regulatory activity, which allows to develop uniform rules for presenting non-financial information, e.g. by banks (Błażyńska, 2018, p. 61).

Disclosures of non-financial information may bring benefits not only to the bank's stakeholders who expect such information, but also to the banks themselves, highlighting the most important opportunities and threats affecting the bank's current and future operations and its results. In addition, professional, complete and good-quality presentation of non-financial data shows the bank's innovativeness in terms of its approach to ESG issues, which increases the competitive advantage of such a bank over other banks in the sector (Federation of European Accountants, 2016). Disclosure of non-financial information allows to close the information gap, or more precisely the reporting gap (information that can be obtained minus information possessed), which makes the information needs of the stakeholders fully satisfied. This also applies to the entity (bank) itself, which, thanks to such information, can avoid decision errors in the management process (Spychała, 2018, p. 52).

Table 1 shows the scope of the most important non-financial disclosures required by the EU regulator.

¹ Sustainability Accounting Standards Board – an organization which aims to develop standards in sustainability accounting.

Table 1. The required scope of disclosures of non-financial data and information on diversity

Legal act	A scope of required disclosures – ESG area
NFRD Directive	<p>Important information about the bank’s own activities regarding:</p> <ul style="list-style-type: none"> – environmental impact of activities (renewable and non-renewable energy sources, greenhouse gas emissions, water consumption, etc.), – social and employee issues (equality, working conditions, social dialogue, employee access to information and participation in consultations, trade unions, health and safety, protection and development of local communities), – respect for human rights and counteracting corruption and bribery (preventing human rights violations, measures to combat corruption and bribery). <p>Presentation of the business model is required, taking into account the description of: the implemented due diligence procedures, the results of their application, the main types of risk related to them, including ESG risk and methods of risk management, performance indicators. Publication of non-financial information – an element of the management report or a separate report referenced in the management report. Published at the same time as the activity report / no later than six months from the balance sheet date.</p>
SFDR Regulation	<p>Disclosed information:</p> <p>at the product / service level (about the bank’s own financial products / services – but based on information on the activities of the entities financed by the bank’s products / services) and at the entity level – on the negative impact of the financial institution’s investment activities, e.g. on the environment – also in this respect, however, data on the activities of financed entities are necessary):</p> <ul style="list-style-type: none"> – information on strategies for introducing “sustainability risks” into the business (situation, environmental, social and management conditions that, if they occur, could have an actual or potential significant negative effect on the value of the investment. It is required to disclose the method of mitigating this risk in investment decisions. From December 30, 2022, information is to apply to each financial product, – taking into account (or not) the fundamental, unfavorable effects of investment decisions on factors of sustainable development, – ways to ensure the consistency of the remuneration policy with the introduction of sustainability risks to the business.
Regulation (EU) 2020/852 – Taxonomy. Environment only Commission Delegated Regulation (EU) 2021/2178	<p>Purpose of the regulation: increasing the level of environmental protection by additional preference for investing capital in environmental investments. Obligations of financial entities (regarding the transparency of their financial offer), in the case of financing investments of entrepreneurs meeting the environmental objectives indicated in the Taxonomy, i.e.: mitigating climate change, adapting to them, sustainable use / protection of water and marine resources, transition to a circular economy, prevention / pollution control, protection and restoration of biodiversity / ecosystems – disclosure of information about the environmental goal is required and a description of the manner and degree to which investments in the financial product are made in an economic activity qualifying as environmentally sustainable (according to the Taxonomy). An economic activity is sustainable if: it makes a significant contribution to the achievement of one or more environmental objectives; does not cause serious harm to any of them; is conducted under minimum guarantees; meets the technical qualification criteria.</p> <p>In 2022, reporting only covers climate goals. It is worth noting that the taxonomic reporting framework is not yet a closed catalog, and the current regulations leave a lot of space for interpretation. The scope of disclosures will increase and market interpretation and practice will develop systematically. The taxonomy does not evaluate the activity, but only describes in detail environmentally-friendly investments. It is to be a tool that will support investors and entrepreneurs in making informed investment decisions towards activities that will contribute to achieving climate neutrality of the European Union by 2050.</p>

Legal act	A scope of required disclosures – ESG area
	2021/2178 – specifies the content and presentation of information on environmentally sustainable economic activities to be disclosed by enterprises subject to Art. 19a or 29a of Directive 2013/34/EU, and the method of compliance with this disclosure obligation. Art. 8 sec. 2 of Regulation 2020/852 requires non-financial enterprises to disclose information on the percentage of turnover, capital expenditure and operating expenditure (“key performance indicators”) in their activities related to environmentally sustainable assets or processes related to economic activities. However, it does not specify the key performance indicators for financial enterprises, i.e. for credit institutions. Therefore, Art. 8 of Regulation 2020/852 to indicate key performance indicators for financial enterprises, and to specify the content and presentation of the information to be disclosed, as well as the method used to ensure compliance with this disclosure obligation.
CRD/CRR	<p>The CRD / CRR package – in addition to the requirements for publishing information in the area of prudential regulation of banks and prudential supervision over them, it introduces, <i>inter alia</i>, obligation to disclose information about the mechanisms of corporate governance of banks. According to the CRD directive, one of the basic obligations of EU countries is to ensure that the governing body is able to effectively and carefully manage the bank, divide responsibilities, prevent conflicts of interest, supervise the disclosure and transfer of information and senior management.</p> <p>CRR / CRR II – introduced the obligation to disclose information on the bank’s remuneration policy and practices, variable remuneration components, remuneration of employees whose professional activity significantly affects the bank’s risk profile – information presented in accordance with the template imposed by Regulation 2019/876 (Art. 450) and implementing regulation 2021/637, including:</p> <ul style="list-style-type: none"> – information on the decision-making process on the remuneration policy (including the number of management meetings for remuneration oversight in a given accounting year, composition and scope of tasks of the remuneration committee, external consultant, role of stakeholders), – link: salaries – results, – features of the remuneration system (including, <i>inter alia</i>, performance measurement criteria, risk adjustments), – ratio: fixed components of remuneration – variable components of remuneration; parameters and justification of variable components of remuneration and non-cash benefits, – aggregated information on remuneration, broken down by business areas of the entity; broken down by senior management and employees with a significant impact on the bank’s risk profile, – the number of employees receiving an annual salary of at least EUR 1 million, – total remuneration of each member of the board / senior management (if requested by the Member State / competent authority).

Source: (Directive 2014/95/EU; Regulation (EU) 2019/2088; Regulation (EU) 2020/852; Regulation (EU) No 575/2013; Regulation (EU) 2019/876; Directive 2013/36/EU; Directive (EU) 2019/878; Commission Delegated Regulation (EU) 2021/2178; Federation of European Accountants, 2016; Maruszkin, 2021; KNF, 2020; Deloitte, n.d.; Koleśnik, 2014; ING, 2022c; Kwiatkowska, 2020).

With regard to the NFRD and the Accounting Act implementing its provisions, it is also worth mentioning the Polish initiative of 2017. It concerns the publication of the Non-Financial Information Standard – SIN (a simplified form of the Global Reporting Initiative – GRI guidelines, which is an international model for responsible business reporting; since July 2018, the G4 guidelines were replaced with GRI Standards) (Błażyńska, 2019, pp. 11–12). The preparation of this environmental regulation was coordinated by the Polish Association of Stock Exchange Issuers and the Reporting Standards Foundation (FSR, 2017). The reporting area of the SIN standard is presented in Table 2.

Table 2. Reporting areas in the SIN Standard with exemplary indicators

Corporate Governance (total numbers of indicators – 15)	<ol style="list-style-type: none"> 1. Business model, strategic directions of development (their description including ESG aspects). 2. Governance (description including ESG aspects). 3. Social and environmental risk management (description of approach to risk, taking into account ESG; list of social/environmental risks with characteristics). 4. Ethics management (does the bank have a code of ethics, conducted ethical audits – at the request of suppliers/recipients, including those concluded with the identification of irregularities, list of suppliers who signed the Ethics Charter, number of complaints regarding ethical violations, number of trainings in the field of ethics along with the number of their participants, percentage contracts with contractors that include references to ethics, inclusion of ethical principles in credit and investment policies (financial institutions, including banks).
Environment – direct and indirect impact (total number of indicators – 30)	<ol style="list-style-type: none"> 1. Raw materials and other materials (type and amount of raw material/material used, with possible indication of renewable/recycled sources/with sustainable development certificates; consumption of key, individual categories, raw materials/materials per product or revenue unit). 2. Fuels and energy (total energy consumption in GJ by main sources of acquisition; percentage of energy from renewable energy sources; energy consumption per product/revenue unit) 3. Water (total water consumption in m³ by source; volume of reclaimed/reused water; water consumption per product/revenue unit). 4. Biodiversity (environmentally valuable areas in the vicinity/area of the company's impact and the nature of this impact; type and frequency of environmental monitoring; description of confirmed environmental losses, description of environmental monitoring activities compensating the environment for these negative effects). 5. Emissions to the atmosphere (mass of emitted greenhouse gases and other substances by type, emission of greenhouse gases and other substances per product/revenue unit). 6. Waste and sewage (total weight of waste broken down into hazardous and other, by management method; total volume of sewage discharged by treatment method; waste/sewage emission per product/revenue unit). 7. Other aspects (e.g. percentage of contracts with contractors, with the clause of respecting the natural environment). 8. Extended environmental responsibility: products and services (taking environmental protection into account in the credit/loan/investment policy – financial sector; revenues from products/services developed taking into account environmental criteria as a percentage of total revenues; value of loans granted with a prior environmental risk assessment – financial sector).
Social and work area (total number of indicators – 72)	<ol style="list-style-type: none"> 1. Using state aid and public orders. 2. The level of employment and the level of remuneration (e.g. number of employees, also as part of outsourcing, full-time jobs of new hires, full-time jobs liquidated – by age and gender; number of people employed under civil law contracts; number and percentage of disabled people in total employment; average salary – women and men; remuneration of the management board in relation to the lowest remuneration in the entity; information on non-wage benefits). 3. Relations with the employees and freedom of association (number of trade unions, union density, collective disputes, complaints procedure, its basis, complaints reported, resolved, information whether there is a works council, rules and results of dialogue with employees). 4. Occupational health and safety (number, frequency, severity of accidents at work and related absenteeism; diagnosed occupational diseases – number; involvement of trade unions in the area of OHS – occupational Safety and Health and others). 5. Development and education (number of training hours per employee – by gender, employee category; number of employees improving their professional qualifications, including those co-financed by the employer).

Social and work area (total number of indicators – 72)	<div>6. Diversity management (e.g. description of anti-mobbing and discrimination policy; number of reported/confirmed cases of discrimination, mobbing, sexual harassment).</div> <div>7. Human rights (Number of reported/confirmed cases of human rights violations; inclusion of respect for human rights in credit/loan/investment policies – financial institutions).</div> <div>8. Child labor and forced labor (e.g. the percentage of contracts with contractors containing a clause relating to human rights, including the prohibition of child labor/forced labor).</div> <div>9. Local communities and social involvement (e.g. description of the company’s policy and directions of social involvement; implemented pro-social activities; total amount of donations for social purposes; amount spent on sponsorship; number of employees – volunteers along with the number of hours worked by volunteers).</div> <div>10. Counteracting corruption (business areas exposed to corruption, number of reported cases of corruption, number of confirmed cases of corruption).</div> <div>11. Safety of products and consumers (including administrative proceedings, e.g. by the Office of Competition and Consumer Protection (UOKiK); value of fines for non-compliance with the law/regulations in matters related to customer safety).</div> <div>12. Marketing communications (e.g. value of fines for non-compliance with laws/regulations in matters related to the integrity/ethics of marketing communications).</div> <div>13. Privacy protection (number of personal data leaks; administrative proceedings against the company by the Inspector general for Personal Data Protection (GIODO); fines for violations of the General Data Protection Regulation (GDPR).</div> <div>14. Product labeling (e.g. administrative proceedings conducted, e.g. by UOKiK).</div> <div>15. Other social and market issues (e.g. percentage of liabilities paid within the contractual period).</div>
--	---

Source: (FSR, 2017; Błażyńska, 2019).

Referring to the problem of ESG issues regulation around the world, it should be noted that according to the Principles for Responsible Investment (PRI) research, recent years have brought over 730 changes to 500 regulations in the 50 largest countries (EBRD, 2021, p. 16). Regulation of ESG issues and ESG-related disclosures is very important, but it should be noted that the number of regulations, their extensiveness and frequent changes to regulations and technical standards are not conducive to optimizing ESG reporting. Looking at the latest EU regulations introducing the obligation to disclose taxonomic/environmental/ESG risks, one can point to the example of implementing technical standards (EBA/ITS/2022/01), which differs from the previous version from 2021 – e.g. the scope and dates of disclosures. The reason for the introduced changes are the emerging restrictions that hinder the implementation of the regulations in question, which include, for example, the lack of availability of data on greenhouse gas emissions, including the most important of them: carbon dioxide, or the lack of data estimation methodology for the purposes of such disclosures (Rocka & Flak, 2022). This means that the regulations are (partially) ahead of the practical possibilities of their quick application/implementation in practice. This is because the taxonomy of sustainable activities is a complex issue due to its strictly technical nature. Another problem is also the low percentage of enterprises meeting its requirements, despite sectoral diversity (Deloitte, 2021). At this point, it is worth mentioning that on a global scale, progress is visible in the pursuit of the goal of zero net emissions. In December 2020, 20% of the world’s largest listed companies

had such goals, now more than 30% of them have them, although at the same time 65% of these goals are still below the standards. In the case of countries, 128 of them adopted zero emission targets, including 104 that declared their achievement in the years 2041–2050. Importantly, on a global scale, these countries emit 83% of carbon dioxide (PWC, 2022). In 2022 (based on data from 2021), companies in the EU are required to publish the percentage of turnover and expenditure related to environmentally sustainable activities for the first time (Deloitte, 2021). At this point, it should be mentioned that the very process of examining the company's compliance with the Taxonomy is complicated. Banks' taxonomic/environmental disclosures, meanwhile, depend on the standard of information provided by their customers. Banks' credit exposures will also be analyzed by banks in terms of ESG risk (measurement/assessment). It is also worth noting that some provisions regarding ESG disclosures are ambiguous, for example, in Poland one may wonder whether all OSII banks are required to disclose ESG risks. It follows from the CRR regulation that no. Disclosures of large subsidiaries do not concern information on ESG risk (Rocka & Flak, 2022).

Despite the indicated legislative imperfections, the adopted direction of regulatory changes, especially in the difficult area of Taxonomy, makes sense. ESG disclosures are no longer treated as something trendy, a subjectively formulated accent that beautifies the image of a given entity, not necessarily reflecting the real practice, becoming one of the most important determinants of value creations in enterprises and the decision-making process of investors. The growing awareness of environmental protection, awareness of the need to protect the environment and stop the global warming process, as well as the increasingly widespread criticism of unethical, excessive consumerism also cause changes in consumer behavior and their system of values. More and more people are trying to limit their consumption in a rational way, e.g. food (Błoński & Witek, 2019, p. 8). The key role in the pursuit of sustainable consumption is played by the "zero waste concept", which assumes minimizing the use of natural resources, emissions of pollutants and waste (Badowska & Delińska, 2019, p. 8). Sobczyk also draws attention to the issue of new trends in consumption, including consumption based on e.g. on the principles of: ecology or social responsibility. The consumer is also increasingly conscious about investing and choosing suppliers of products/services, including financial ones, guided by their approach to ESG (Sobczyk, 2018, p. 174).

Thanks to the Taxonomy, in addition to a classification system for sustainable activities creation, the economy should gradually switch to a non-emission economy, and ultimately climate-neutral, and the available capital, not only banking, will gain a new priority – green financing (PWC, 2022). The Morningstar report indicates that in 2020, compared to 2019, the assets of ESG funds increased dynamically (by 28%). In the same year, in Europe, balanced funds recorded almost twice as much inflow of funds from investors than in 2019. Most funds whose investment policy is focused on, among others, for financing pro-environmental investments operates in

Europe – approx. 77% of all sustainable funds in the world. Europe also boasts over 81% of the world's ESG fund assets, which has been contributed to, among others, by conducive to such development, EU regulations in the area of ESG (Błaszczak, 2021). For comparison, in the USA, one could hear statements of well-known politicians against investing in ESG (Stankiewicz, 2023).

Disclosure practice in the ESG area – ING Bank Śląski SA (ING) case study

When assessing the ING from the perspective of the report on non-financial information, it is crucial to remember that banks, in the years 2022–2023 (in accordance with the Taxonomy) are required to report exposures to economic activities (ING, while defining economic activities, does not limit the analysis only to exposures to corporate clients) exposures of retail clients, which in the future will also be a component of the Green Asset Ratio (GAR) numerator described in the Taxonomy / qualifying for the Taxonomy and those not described in the Taxonomy. In this respect, they will use the information reported to them by corporate clients and rely on their own bills. For mandatory taxonomic disclosures:

- the obligation to publish non-financial information applies to clients specified in Directive 2013/34/EU, and they must specify what part of their revenues (turnover), costs (operating expenses) and capital expenditure is related to the activities described in the Taxonomy,

- balance sheet debt and equity exposures to identified clients are divided into: exposures with a specific financing purpose and general exposures (classification of clients using general financing, for activities described and not described in the Taxonomy, using the main PKD/NACE codes of the client),

- retail segment exposures – the mortgage portfolio analyzed in ING. These exposures support the Taxonomy's first climate goal – mitigating climate change,

- variants of calculated and published ratios: individual exposure groups as a percentage of total assets resulting from consolidated prudential reporting, and exposures as a percentage of the denominator of the green assets ratio (GAR) (published from 2024). Unlike total assets, the denominator of the GAR does not primarily include non-financial assets, expected credit loss allowances, and exposures to central governments, central banks and supranational issuers (ING, 2022c).

Additionally, ING voluntarily discloses the scale of investments in green bonds of the Polish treasury, as exposures to central governments are excluded from both the numerator and the denominator of the GAR green assets ratio (Table 3).

Table 3. Non-financial disclosure practice in the ESG area (2021), including indicators (on the example of the ING bank)

Taxonomic disclosures – indicators	Environmental issues	Social issues / employee issues / human respect / anti-corruption
Exposures eligible for taxonomy for different customer groups (financial institutions, non-financial corporations, local governments, households) / total assets (GAR indicator denominator) – in %	Bank's Ecological Declaration – after 2025, the bank will not finance clients whose activities are directly dependent on steam coal to a degree higher than 5%; the bank does not finance, among others, activities related to the cultivation and production of tobacco and with a negative impact on protected areas, forestry, animal welfare; by the end of 2023, it will allocate the declared funds to finance renewable energy sources and pro-ecological projects, the project: "Green commune / local government", support and promotion of electromobility; by 2040, it will reduce the share of financing for the fossil fuels industry (in addition to coal, which the bank does not finance) by 19% compared to 2019; it will implement an offer to finance projects related to pro-consumer energy in the segment of individual clients; will create a grant fund for start-ups and young Polish scientists for the implementation of projects in the field of sustainable development; will be climate neutral by 2030.	Disclosure of social issues concern: financial education of the bank, support for entrepreneurship, equal opportunities, social partnership, activities of the bank's foundation, donations and sponsorship, the number of hours of volunteering.
Exposures that do not qualify for taxonomy for various customer groups (financial institutions, non-financial enterprises, local governments, households) / total assets (GAR indicator denominator) – in %	Disclosure of policy results: recycling (in kg); electricity consumption (in kWh); consumption of other types of energy (natural gas, heating oil); water consumption; CO ₂ emissions broken down by emission sources and emitted gases.	Disclosure of employee issues / respect for human beings concern: information on work regulations, regulations of the annual interview process, employee bonus regulations, remuneration policy, occasional leaves, equal opportunities for employees (support for employees with disabilities and employees raising disabled children, promoting diversity), rules of professional ethics, policy care for a work environment free from discrimination and mobbing; procedures regulating the mode of action in case of suspicion of undesirable phenomena; diversity policy; environmental and social risk instruction indicates activities in which the bank does not invest due to a particularly high risk of violation of human rights; Code of Conduct for Suppliers.
Other exposures to various customer groups (financial institutions, non-financial companies, local governments, households) / total assets (GAR indicator denominator) – in %	Reduction by the bank: electricity consumption by 50% by the end of 2030 (base – 2014), water footprint by 20% by the end of 2022 (base – 2014), recycling 100% of bank waste, use of 100% renewable energy.	Publication of policy results: number of employees; the ratio of basic wages to men and women; rotation rate; the number of accepted applications eligible for consideration, concerning, <i>inter alia</i> , discrimination, mobbing or violation of the bank's internal regulations.
Exposures to central governments, central banks, supranational issuers, derivatives, non-financial corporates, trading book, interbank loans on demand, investments in green sovereign bonds (eligible (and not) taxonomy / total assets (denominator GAR indicator))	Performance indicators related to CO ₂ emissions: CO ₂ emissions per PLN 1 million of income; CO ₂ emissions per PLN 1 million of assets; CO ₂ emissions per 1 job.	Anti-corruption: description of the Bank's Anti-Bribery and Anti-Corruption Policy; Bank's anti-corruption declaration; Register of benefits – depending on the value of the benefits, it may be necessary to report gifts received or given, participation in special events or business meals – in relations with customers, business partners and government officials; an obligation to report irregularities related to corruption or a conflict of interest; internal control in this regard.
Description of the business model, ESG strategy and ESG risk:		
Business model, ESG strategy and ESG risk management strategy (ESG risk identification, assessment, management and reporting), that is: ESG risk management organization; ESG risk management principles; adaptation to supervisory requirements; climatic liquidity stress; directions / development of ESG risk management methodology.		

Source: (ING, 2022c).

In addition to taxonomic disclosures, as part of ESG disclosures, the bank publishes environmental, social, employee issues, respect for people, anti-corruption, and also discloses information on, *inter alia*, business model, ESG strategy and describes the ESG risk (Table 3). At this point, it should be noted that the report on non-financial information (ESG and ESG risk issues) significantly broadens the knowledge of internal and external stakeholders, derived from the financial statements, reports on the bank's activities and the annual report, also integrated (information on income and financial result and non-financial information, including ESG issues). The scope of disclosure of ESG issues complies with the regulator's requirements. The breadth of the disclosure of individual ESG issues varies, however, and the bank describes and quantifies environmental issues most extensively. In the future, the report under discussion will certainly be more extensive, due to the gradual expansion of the publication obligations of banks in the area of ESG and taxonomy.

Banks, on their websites, also publish information on the application (or non-application) of the recommendations and principles contained in the Best Practices of Warsaw Stock Exchange Listed Companies and the Principles of Corporate Governance for supervised institutions (Poland). It should be recalled here that corporate governance issues are also regulated in: Basel Committee on Banking Supervision (BCBS): Corporate governance principles for banks (2015); The European Association of Co-operative Banks (EACB): Corporate Governance in Co-operative Banks – Key Features (2016) or in the Polish recommendation Z (if the scope of recommendation Z is covered with the Principles of corporate governance for supervised institutions – recommendation FROM). The aforementioned recommendation Z contains a definition of corporate governance (bank management system, bank organization, principles of operation, powers, duties and responsibilities, mutual relations of the supervisory board, management board and key functions in the bank), guidelines on: general principles of internal governance in banks, rules activities, powers, duties, responsibilities and mutual relations of the supervisory board and the management board along with their (and key functions in the bank) responsibility; bank's standards of conduct and conflicts of interest – the bank's level (information on the policy of managing conflicts of interest should be publicly disclosed – the method of managing material conflicts of interest and conflicts with other entities of the group to which the bank belongs), outsourcing policy, remuneration principles, dividend policy; risk management and, finally, information disclosure (KNF, 2020).

The bank's stakeholders can, therefore, find information about important issues related to the corporate governance system in order to assess whether it balances the interests of various parties: management board, supervisory board, bank owners (relations with shareholders), employees (also the bank's remuneration rules), investors and other stakeholder groups (communication with them), conflicts of interest. Corporate governance also discloses information about the bank's organization, systems and internal functions. Recalling the practice of the ING, the annual assessment of the application of corporate governance principles and the report on

the assessment of the functioning of the remuneration policy in the bank (principles of the remuneration policy, remuneration components, supervision over the remuneration policy, report on the assessment of the functioning of the remuneration policy in a given year) are also published. In line with the requirements of CRR / CRR II on remuneration disclosures, ING also publishes, for each year, qualitative and quantitative information on capital adequacy and variable remuneration components. The document contains qualitative information on the decision-making process when determining the remuneration policy, the number of meetings organized in a given financial year by the managing body supervising remuneration, the composition and scope of tasks of the Remuneration and Appointment Committee, an external consultant whose services were used to determine the remuneration policy, the role of relevant stakeholders, linkage between remuneration and performance, features of the remuneration system (including information on criteria used in measuring performance and risk adjustment), deferral policy and vesting criteria. As part of the quantitative information, the bank discloses the variable remuneration of persons recognized as Identified Staff. The following information is published: remuneration awarded for a given financial year, special payments to employees whose activities significantly affect the bank's risk profile, deferred remuneration, remuneration of at least EUR 1 million per year, information on employees whose professional activity is significant impact on the institution's risk profile (ING, 2022a, 2022b).

At the same time, it should be clearly emphasized here that the European Financial Reporting Advisory Group points to the urgent need to improve both non-financial reporting and the quality of such disclosures, ensuring the significance of published data (which of course does not mean information minimization), their comparability and reliability (EBRD, 2021, p. 16). To these features should also be added: objectivity, future perspective and verifiability (EBRD, 2021, p. 21). The road to the optimal level of non-financial reporting, including taxonomic reporting, expected by regulators and stakeholders, therefore, seems long. There is still much to be done in this area also in the banking sector.

Conclusions

Non-financial disclosures in the area of ESG are becoming permanent and important element of the information policy of banks. Banks manage to monitor the indicators of their own environmental policy or disclose social and employee issues, respect for human beings, and anti-corruption, although this certainly involves additional reporting burdens, and the scope of disclosures as well as the degree of their significance still vary. These disclosures in themselves serve (for obvious reasons, discussed in the article) both the banks and their stakeholders. According to the authors of the article, the greatest controversy is caused by taxonomic disclosures (currently covering only climate goals), while the aforementioned controversies do

not concern the very idea of introducing a taxonomy and making banks important entities initiating pro-environmental activities in the economy, but rather the current possibilities of ensuring such reporting to be realistic, including published indicators of banks' green assets (green asset ratio, GAR).

As indicated, the legal solutions in this area are new, so there are possibilities for its different interpretation, the practice has not yet been developed. In addition, and perhaps above all, information on the implementation of environmental goals indicated in the Taxonomy flows to banks from their clients. Therefore, the approach of bank customers to the discussed issues is important, while for banks it is and will be a huge challenge to verify whether the financed investment is actually ecological and the business activity of the bank's client is sustainable. Banks will disclose information on the impact of their own financial products and services on the environment, but based on information on the activities of entities (customers) financed by these banks. This rule also applies to disclosures of the impact of the bank's lending/investment activities (as an entity) on the natural environment. The direction of the introduced changes is assessed positively by the authors, however, the identified dilemmas indicate that the party on which the future quality of bank taxonomic disclosures and the impact of banks' activities on the natural environment depends to the greatest extent are bank customers and their awareness of the importance of the problem and maturity in preparing strategies assuming a consistent transition to the economy low and ultimately zero-emission, including effective risk management for sustainable development. However, this will not be an easy or short-term task.

The costs of pro-ecological investments are very high, despite the availability of financing, not all borrowers have sufficient creditworthiness. On the other hand, customers whose investments do not meet the ecological criteria will encounter a barrier in the availability of long-term loans (because of the bank's care for its own image of a "green" bank). Such an outlook means trouble for a large part of customers, but at the same time, the results and even the stability of banks may suffer, which in total may undermine macroeconomic stability. On the other hand, however, the green transformation creates an opportunity to increase employment and creates prospects for creating new value for banks and their clients. To sum up, striving to introduce climate-friendly changes and thus disclosing information in the discussed area are indisputable and necessary, however, the pace, quality and number of regulatory changes, the pace of implementation of pro-environmental policy and disclosure requirements should be the result of expectations and real possibilities of their implementation.

References

- Badowska, S., & Delińska, L. (2019). The zero waste concept from the young consumer's perspective. Does gender matter? *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, 53(1), 7–17. doi:10.17951/h.2019.53.1.7-17
- Bek-Gaik, B., & Krasodomska, J. (2018). Informacje niefinansowe jako obszar współczesnej sprawozdawczości przedsiębiorstw – definicja, źródła i proponowane kierunki badań. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 2(974), 25–40. doi:10.15678/ZNUEK.2018.0974.0202
- Błaszczak, A. (2021). *Inwestorzy chcą uniknąć ryzyk ESG*. Retrieved from <https://www.rp.pl/biznes-odpowiedzialny-w-polsce/art210201-inwestorzy-chca-uniknac-ryzyk-esg>
- Błażyńska, J. (2018). Raportowanie informacji niefinansowych. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, 503, 59–67. doi:10.15611/pn.2018.503.05
- Błażyńska, J. (2019). Raportowanie na temat informacji niefinansowych według SIN. *Studia Oeconomica Posnaniensia*, 7(3), 7–27. doi:10.18559/SOEP.2019.3.1
- Błoński K., & Witek, J. (2019). Minimalism in consumption. *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, 53(2), 7–15. doi:10.17951/h.2019.53.2.7-15
- Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by specifying the content and presentation of information to be disclosed by undertakings subject to Articles 19a or 29a of Directive 2013/34/EU concerning environmentally sustainable economic activities, and specifying the methodology to comply with that disclosure obligation, OJ L 443/9, 10.12.2021.
- Deloitte. (n.d.). *Rekomendacja Z – konflikt interesów w sektorze bankowym*. Retrieved from <https://www2.deloitte.com/pl/pl/pages/Forensics/articles/rekomendacja-Z-konflikt-interesow-w-sektorze-bankowym.html>
- Deloitte. (2021). *Taksonomia – nowe obowiązki i praktyczne aspekty raportowania*. Warszawa.
- Directive (EU) 2019/878 of the European Parliament and of the Council of 20 May 2019 amending Directive 2013/36/EU as regards exempted entities, financial holding companies, mixed financial holding companies, remuneration, supervisory measures and powers and capital conservation measures, OJ L 150/253, 7.6.2019.
- Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC, OJ L 176/338, 27.6.2013.
- Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups, OJ L 330/1, 15.11.2014.
- Dziekański, P. (2012). Informacja jako dobro ekonomiczne będące źródłem przewagi konkurencyjnej. In M.G. Woźniak, *Nierówności Społeczne a Wzrost Gospodarczy*, 24.
- EBA/ITS/2022/01 – Final draft implementing technical standards on prudential disclosures on ESG risks in accordance with Article 449a CRR.
- EBRD. (2021). *ESG Reporting Guidelines. Guide for issuers*. Warsaw Stock Exchange, Steward Redqueen, May.
- Emerling, I. (2018). Znaczenie danych niefinansowych dla odbiorców sprawozdania finansowego. *Studia i materiały. Wydział Zarządzania Uniwersytetu Warszawskiego*, 1(27), 136–142. doi:10.7172/1733-9758.2018.27.12
- Ersoy, E., Świecka, B., Grima, S., Özen, E., & Romanova, I. (2022). The impact of ESG scores on bank market value? Evidence from the U.S. banking industry. *Sustainability*, 14(15), 1–14. doi:10.3390/su14159527
- Esteban-Sanchez, P., De La Cuesta, M., & Paredes Gazquez, J.D. (2017). Corporate social performance and its relation with corporate financial performance: International evidence in the banking industry. *Journal of Cleaner Production*, 162. doi:10.1016/j.jclepro.2017.06.127

- Federation of European Accountants. (2016). Dyrektywa UE w sprawie ujawniania danych niefinansowych i informacji na temat różnorodności. Jak zapewnić wysoką jakość i spójność sprawozdawczości. Stanowisko FEE. Retrieved from <https://www.pibr.org.pl/static/items/publishing/FEE-Dyrektywa-U-E-w-sprawie-ujawniania-danych-niefinansowych-i-informacji-na-temat-roznorodnosci-Jak-zapewnic-wysoka-jakosc-i-spojnosci-sprawozdawczosci.pdf>
- FSR. (2017). *Standard Informacji Niefinansowych*. Retrieved from <https://standardy.org.pl/wp-content/uploads/2017/10/SIN.pdf>
- ING. (2022a). *Informacje o charakterze jakościowym i ilościowym dotyczące adekwatności kapitałowej oraz zmiennych składników wynagrodzeń za rok 2021*.
- ING. (2022b). *Ocena stosowania w ING Banku Śląskim S.A. w 2021 roku Zasadładu korporacyjnego dla instytucji nadzorowanych*. Retrieved from https://www.ing.pl/_files/ing/item/q93m8wq.
- ING. (2022c). *Sprawozdanie niefinansowe Grupy ING Bank Śląski S.A.* Retrieved from https://www.fxmag.pl/attachments/espi/2022-03-11/20220311_184434_0975499420_PL_Sprawozdanie_inf_niefinansowe_Grupy_ING_Bank_Slaski_SA_2021.xhtml.
- Izcan, D., & Bektas, E. (2022). The relationship between ESG scores and firm-specific risk of Eurozone banks. *Sustainability*, 14(14), 1–21. doi:10.3390/su14148619
- Kawacki, M. (2018). *Ujawnianie informacji niefinansowych w raportach rocznych spółek*. Poznań: UE.
- KNF. (2020). *Rekomendacja Z Komisji Nadzoru Finansowego dotycząca zasadładu wewnętrznego w bankach*.
- Koleśnik, J. (2014). System zarządzania w bankach w świetle nowych wyzwań regulacyjnych. *Przegląd Organizacji*, 4(891), 29–34. doi:10.33141/po.2014.04.05
- Kwiatkowska, J. (2020). *Czym jest taksonomia UE i jak wpłynie na przedsiębiorców?* Retrieved from <https://www.atmoterm.pl/czym-jest-taksonomia-ue-i-jak-wplynie-na-przedsiębiorcow/>
- Lauesen, L.M. (2013). CSR in the aftermath of the financial crisis. In L.M. Lauesen, & D. Crowther (Eds.), *Global Crisis: Financial, Environmental, Sustainability and CSR Crises in the Aftermath of the Subprime Mortgage Crisis 2007* (pp. 641–663). Centre for Corporate Responsibility, Copenhagen Business School.
- Makulska, D. (2012). Kluczowe czynniki rozwoju w gospodarce opartej na wiedzy. *Prace i Materiały Instytutu Rozwoju Gospodarczego*, 88, 169–193.
- Maruszkina, R. (2021). *Czym jest Taksonomia? O nowym prawie UE dotyczącym klasyfikowania działalności gospodarczej jako zrównoważonej środowiskowo*. Retrieved from <https://www.parp.gov.pl/component/content/article/75026:czym-jest-taksonomia-o-nowym-prawie-ue-dotyczacym-klasyfikowania-dzialalnoscigospodarczej-jako-zrownowazonej-srodowiskowo>
- Miralles-Quirós, M.M., Miralles-Quirós, J.L., & Redondo Hernández, J. (2019). ESG performance and shareholder value creation in the banking industry: International differences. *Sustainability*, 11(5), 1–15. doi:10.3390/su11051404
- Morsing, M., & Schulz, M. (2006). Corporate social responsibility communication: Stakeholder information, response and involvement strategies. *Business, Ethics, Environment & Responsibility*, 15(4), 323–338. doi:10.1111/j.1467-8608.2006.00460.x
- Nawrocki, T.L., & Szwajca, D. (2022). The importance of selected aspects of a company's reputation for individual stock market investors – evidence from Polish capital market. *Sustainability*, 14(15), 1–15. doi:10.3390/su14159187
- Odrozola, M.D., & Baraibar-Diez, E. (2017). Is corporate reputation associated with quality of CSR reporting? Evidence from Spain. *Corporate Social Responsibility and Environmental Management*, 24(2), 121–132. doi:10.1002/csr.1399
- Palejko, A. (2021). *SFDR czyli obowiązki z zakresu zrównoważonego rozwoju w sektorze usług finansowych*. Retrieved from <https://www.cp.pl/sfdr/>
- Porter, M.E., & Millar, V.E. (1985). How Information Gives You Competitive Advantage. *Harvard Business Review*.
- Preston, L.E., & O'Bannon, D.P. (1997). The corporate social-financial performance relationship. *Business and Society*, 36, 419–429.

- PWC. (2022). *Raportowanie zgodnie z Taksonomią Unii Europejskiej za rok 2022*. Retrieved from https://www.pwc.pl/pl/pdf/Raportowanie_zgodnie_z_Taksonomia_Unii_Europejskiej_za_rok_2022.pdf
- Rajhans, K. (2018). Effective communication management: A key to stakeholder relationship management in project-based organizations. *The IUP Journal of Soft Skills*, 12(4), 47–66.
- Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector, OJ L 317, 9.12.2019.
- Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements, and Regulation (EU) No 648/2012, OJ L 150/1, 7.6.2019.
- Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088, OJ L 198, 22.6.2020.
- Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, OJ L 176/1, 27.6.2013.
- Rocka, D., & Flak, P. (2022). *Jak będą wyglądały ujawnienia ESG w ramach Filara III za rok 2022*. Retrieved from https://www.ey.com/pl_pl/biuletyn-ryzyka/ujawnienia-esg-w-ramach-filara3
- Rosiak, P., & Szczęsna, A. (2022). *Environmental, Social and Governance – co przez to rozumieć?* Retrieved from <https://home.kpmg/pl/pl/blogs/home/posts/2022/05/know-your-market-csr-esg-i-aspekty-prawne.html>
- Soana, M.G. (2011). The relationship between corporate social performance and corporate financial performance in the banking sector. *Journal of Business Ethics*, 104, 133–148.
doi:10.1007/s10551-011-0894-x
- Sobczyk, G. (2018). Zachowania konsumentów wobec nowych trendów konsumpcji – wyniki badań. *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, 52(1), 171–180.
doi:10.17951/h.2018.52.1.171
- Spychała, T. (2018). Raportowanie niefinansowe a zarządzanie strategiczne jednostką gospodarczą. *Studia i Prace. Kolegium Zarządzania i Finansów*, 163, 47–61.
- Stankiewicz, A. (2023). *U.S. sustainable funds suffer a worse quarter than conventional peers*. Retrieved from <https://www.morningstar.com/articles/1133418/us-sustainable-funds-suffer-a-worse-quarter-than-conventional-peers>
- UNESCO. (2005). *Towards Knowledge Societies*. UNESCO World Report.
- Zhao, X., & Murrell, A.J. (2016). Revisiting the corporate social performance-financial performance link: A replication of Waddock and Graves. *Strategic Management Journal*, 37(11), 2378–2388.