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ACCOUNTING FOR WRONGDOING: THE FINANCIAL CONSEQUENCES OF BANK MISCONDUCT

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Resumen

Este trabajo investiga los determinantes de las decisiones de los bancos de incluir en sus cuentas de pérdidas y ganancias los detalles de gastos relacionados con conductas indebidas, y evalúa hasta qué punto estos cargos pueden predecir futuros anuncios de sanciones por mala conducta. Las investigaciones precedentes se han centrado principalmente en el anuncio de sanciones como la principal variable para el estudio de las consecuencias financieras de la mala conducta bancaria. Sin embargo, el impacto en la cuenta de pérdidas de ganancias de las conductas indebidas está determinado por normas contables que obligan a los bancos a efectuar una provisión o cargar un coste antes del anuncio de una futura sanción. Utilizando una base de datos recopilada manualmente de Bancos de Importancia Sistémica Mundial, establecemos que la publicación en la cuenta de pérdidas y ganancias del detalle de provisiones efectuadas por conductas indebidas está determinada principalmente por las normas contables. También demostramos que estas provisiones se contabilizan antes de que se anuncie una sanción, y que por tanto proporcionan una indicación anticipada del importe de las sanciones futuras.

Aunque cuando están disponibles, las provisiones por conductas indebidas podrían considerarse la variable óptima para el análisis de las consecuencias financieras de la mala conducta bancaria, la evidencia empírica muestra que la publicación del detalle de estas provisiones en los estados financieros es limitada. No obstante, los bancos suelen dar a conocer en sus publicaciones financieras trimestrales los costes relacionados con conductas indebidas. Estas comunicaciones sobre gastos derivados de conductas indebidas son frecuentes, exhaustivas e independientes de los estándares contables. Los costes por conductas indebidas también comparten el carácter prospectivo de las provisiones. Esto implica, en primer lugar, que el principal determinante de su divulgación es la previsión de

una sanción futura, y que el importe del coste anticipa la cuantía estimada para la sanción. Además, la publicación de estos costes genera un impacto negativo en la rentabilidad para los accionistas, adelantando el efecto de la comunicación de la sanción.

Estas conclusiones tienen implicaciones significativas. En primer lugar, desde una perspectiva metodológica, nuestra investigación muestra que la selección de variable para la medición de la mala conducta condiciona los resultados, y que la variable generalmente utilizada no considera el impacto mediador de las normas contables. Desde el punto de vista de los accionistas de bancos, probamos que mala conducta tiene un impacto en la cuenta de resultados que se experimenta antes del anuncio de una multa. Este impacto reduce la rentabilidad para los accionistas tanto en términos relativos como absolutos, conectando así los factores ESG y la mala conducta con las decisiones de inversión. Desde un enfoque de gestión, exponemos cómo la publicación en las cuentas de pérdidas y ganancias de indicadores sobre la existencia de mala conducta actúa como señal para comunicar a los agentes externos la expectativa de futuras sanciones. Finalmente, en lo que concierne a los reguladores bancarios, demostramos cómo la fragmentación de normas contables complica el análisis de la mala conducta y de qué manera los costes impuestos por supervisores y reguladores castigan a los inversores a través de la reducción de la rentabilidad para los accionistas.

Nuestra investigación proporciona el primer análisis sobre los elementos contables de la mala conducta bancaria, la interacción entre la publicación en la documentación financiera de provisiones y costes de conductas indebidas y los anuncios de sanciones, y la influencia de la publicación en los documentos financieros trimestrales de gastos relacionados con conductas indebidas sobre los rendimientos bursátiles.

Palabras claves: conductas indebidas bancarias; malas prácticas bancarias; contabilidad bancaria; presentación de información financiera adicional; rentabilidad para los accionistas.

Abstract

This work investigates the determinants influencing banks' decisions to disclose P&L misconduct-related charges and assesses the extent to which these P&L charges can predict future misconduct penalty announcements. Previous research has largely focused on the penalty announcements as the primary indicator for the financial consequences of bank misconduct. However, the P&L impact of misconduct is influenced by accounting rules that drive banks to disclose a provision or cost ahead of the announcement of a future penalty. Using a sample of hand collected data for Global Systemically Important Banks, we establish that disclosure of misconduct provisions is primarily determined by accounting standards. We also demonstrate that misconduct provisions are accrued prior to a penalty being announced and provide advance indication of the amount of forthcoming penalties. While misconduct provisions, when available, could be considered the optimal measure of misconduct, the empirical evidence shows that their disclosure is limited. On the other hand, banks often make known their misconduct-related P&L costs on their quarterly financial documents. These disclosures are frequent, comprehensive and pervasive across different accounting standards, with expected penalty size as the primary determinant of their disclosure. P&L misconduct costs also share the forward-looking nature of provisions. This implies that, when P&L misconduct related costs are disclosed, markets react accordingly, anticipating a future penalty. Our conclusions have significant implications for different stakeholders. From a methodological standpoint, we show that the choice of metric for bank misconduct affects the conclusions. We also demonstrate that announced fines and penalties, the variable most common in previous research, understates the overall impact of misconduct and disregards the mediating impact of accounting rules. For bank shareholders and creditors, we show that the P&L impact of misconduct is experienced prior to the announcement of a penalty. This impact

reduces returns to shareholders on both a relative and absolute basis, thus connecting ESG and misconduct with investment decisions. From a managerial perspective, we demonstrate the ability of misconduct financial disclosures to act as signal to external observers of the expectation of future penalties. Finally, from a regulatory point of view, we show that, although fragmented accounting standards complicate the analysis of misconduct, the costs imposed by supervisors and regulators do punish investors through reduced stock returns.

This dissertation provides the first analysis of the accounting elements of bank misconduct, the interaction between misconduct disclosures and penalty announcements and the influence of these disclosures on stock returns.

Keywords: Bank misconduct; bank accounting; financial disclosures; bank shareholder value.

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Use of GenAI Statement

No GenAI tools or services have been used in the preparation of this PhD dissertation.

CRediT author statement

José Fernández de Bilbao: Conceptualization; Methodology; Software; Formal Analysis; Investigation; Data Curation; Visualization; Writing - Original Draft.

Isabel Figuerola-Ferretti: Supervision; Writing – Review and Editing; Project Administration.

Ioannis Paraskevopoulos: Writing – Review and Editing.

Alvaro Santos: Validation; Writing – Review and Editing.

The research paper that is the basis of this PhD dissertation has also benefitted from the comments of two anonymous reviewers at the Journal of Accounting and Public Policy.

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Chapter 1

Introduction

In a 2017 speech, Kevin J. Stiroh, Executive Vice President of the Federal Reserve Bank of New York and Head of the Supervision Group, defined bank misconduct risk as "the potential for behaviours or business practices that are illegal, unethical, or contrary to a firm's stated values, policies, and procedures" (Stiroh, 2017). Following on these comments, Mr Stiroh noted that "[I]n the U.S., official sector concern with the damage inflicted by employee misconduct dates back to the Banking Act of 1933". This bill provided the Comptroller of the Currency or Federal Reserve agents with the authority to dismiss banks officer and directors of any bank or trust company who, after being previously warned, continued to violate any law or "continued unsafe or unsound practices in conducting the business of such bank or trust company" (Banking Act of 1933, 1933, Section 30).

The widespread recurrence of corporate misconduct across the banking industry on the years leading to the financial crisis increased the regulatory concerns about bank misconduct. On February 4th 2015 the Chair of the Financial Stability Board (FSB) submitted a letter to the G20 Finance Ministers and Central Bank Governors stating that "[T]he scale of misconduct in some financial institutions has risen to a level that has the potential to create systemic risks" as "it threatens to undermine trust in financial institutions and markets" (FSB, 2015). Following up on these statements, in 2018 the FSB published a toolkit to mitigate misconduct risk (Financial Stability Board, 2018).

In line with the concerns of the FSB, the 2016 and 2018 European Banking Authority (EBA) stress tests characterised conduct risk as the main source of operational risk for European banks (European Banking Authority, 2016, 2018). Elaborating on this theme, Jose Manuel Campa, Chairperson of the EBA, highlighted in a 2020 speech the magnitude of the costs of financial

misconduct for banks (Campa, 2020). He also argued that "misconduct costs hit profits and the capital that prudential regulators want to ensure is available to absorb losses arising from banks' main activities, such as lending into the real economy".

The Bank of England has also added an additional misconduct element to its stress framework, on the basis that "since the financial crisis, misconduct costs have increased significantly for the banking sector" (Bank of England, 2014). Minouche Shafik, Deputy Governor for Markets and Banking at the Bank of England, highlighted how a "a combination of factors caused "ethical drift" across the industry where bad behaviour went unchecked, and became progressively more widespread and accepted as the norm" (Shafik, 2016). Those factors included inadequate market structures, weak systems of governance and control, weak market discipline, remuneration schemes focused on the short term and the prevalence of a culture of impunity.

Well after the financial crisis, the banking turmoil which threatened the post-COVID financial system recovery has also been influenced by a lack of rigorous governance. The bail-in and distressed sale of Credit Suisse provides evidence that misconduct related liabilities may contribute to bank distress: over 2021 and 2022 Credit Suisse reported USD 2.8 billion in P&L misconduct costs and provisions; an additional USD 4.0 billion provision was required under IFRS 3 following its acquisition by UBS[1]. In its report "Lessons Learned from the CS Crisis", FINMA, the Swiss Financial Market Supervisory Authority, notes that "[E]specially from 2018 onwards, confidence in the bank was dented by repeated scandals (e. g. the Mozambique case, the surveillance affair, as well as the Greensill and Archegos cases), which resulted in extensive measures, fines, losses and reputational damage" (Swiss Financial Market Supervisory

[1] See https://www.ubs.com/global/en/investor-relations/events/presentations/_jcr_content/mainpar/toplevelgrid_1768768_876325667/col1/table.0499986926.file/dGFibGVUZXh0PS9jb250ZW50L2RhbS9hc3NldHMvbmV3cy8yMDIzLzA1LzE3L0Y0LXByZXNlbnRhdGlvbl9NYXktMjN2LnBkZg==/F4-presentation_May-23v.pdf.

Authority (FINMA), 2023). FINMA considers this issue to one of the main factors for the failure of the bank.

Thus, bank misconduct has been and remains a key element of concern to bank regulators. As Tracey McDermott, director of enforcement and financial crime at the Financial Conduct Authority (FCA), indicated "[F]aced with this misconduct, which is so similar to that of the recent past, people can say that lessons are not being learned" (McDermott, 2014). Her comments are especially noteworthy because they highlight how the statements put out by fined banks keep repeating 4 themes: that misconduct is the work of a few individuals, that those people act against the standards of the firm, that lessons have been learned and changes made, and that it will not happen again. The data collected for our work shows that at least the last proclamation is not supported by empirical evidence.

The magnitude of bank misconduct has also originated a large body of research, which we explore in detail on Chapter 2. To date, most of this research has considered announced penalties or enforcements actions as the reference variable to measure misconduct. However, a comparison of the figures for announced penalties and the misconduct costs disclosed in banks' financials shows major discrepancies between these variables. Using a sample of 29 listed banks, including all G-SIBs in North America and Europe from 2011 to 2022, we compare the misconduct-related financial variables disclosed by banks, misconduct provisions and P&L misconduct costs, with announced penalties. and conclude that announced penalties do not capture the full impact of past misconduct on a bank's financial performance and that they may also mis-time the moment at which a bank experiences the financial consequences of misconduct.

In view of the limitations of announced penalties as a research variable, we propose two alternative metrics for the analysis of the financial impact of bank misconduct: P&L misconduct provisions and P&L misconduct costs. P&L misconduct provisions is an

accounting variable that, when available, may be obtained from the financial statements published by banks; P&L misconduct costs is a voluntary financial disclosure included in quarterly and annual investor documentation.

To date, research on bank misconduct has largely ignored misconduct provisions as a variable for bank misconduct. The sole exception is provided by Tracey and Sowerbutts (2018), who examine the link between misconduct, bank risk taking and regulatory capital in the UK. While this paper provides a new approach to the study of bank misconduct, its scope is limited: it does not address the differences between misconduct provisions and announced penalties nor considers the accounting drivers of misconduct provision disclosure. Furthermore, it only considers UK banks.

Not only has previous literature hardly analysed bank misconduct provisions: it has never considered P&L misconduct costs as a research variable. Thus, our study of these two elements addresses a significant research gap.

A key characteristic of these two variables is that they may not be always disclosed in a bank's financials. Thus, our work includes an in-depth discussion of the accounting rules that influence banks to disclose either a misconduct provision or a P&L misconduct cost. We observe that accounting standards (IFRS or US GAAP) play a very different role depending on the variable considered: while they are the primary determinant of the disclosure of misconduct provisions, they do not show a significant statistical relationship with the disclosure of P&L misconduct costs.

Regardless of this difference, we provide empirical evidence that both misconduct provisions and P&L misconduct costs behave similarly in that they anticipate the announcement of a future penalty and its expected size. As a consequence, when a penalty is announced, its P&L impact has been largely experienced. This finding is robust to the use of estimation methodologies that correct for potential endogeneity and selection bias.

Finally, we examine the consequences of the predictive component of P&L misconduct costs on bank stock returns. We demonstrate how, in a general manner, bank share prices are influenced by P&L misconduct costs, rather than announced penalties. As the disclosure of P&L misconduct costs predicts a following penalty, markets react to such disclosure without awaiting until the penalty is announced. We also proceed to examine how P&L misconduct cost disclosure interacts with penalty announcements, and, more specifically, what happens when a P&L disclosure is not provided in advance of a penalty. We show that, when P&L disclosures are available, these drive stock returns; however, when a disclosure has not been made, it is the announcement of penalties that influence bank share prices. This analysis is unique in the literature and revises some of the existing conclusions on the financial consequences of bank misconduct.

Our findings extend to a different area the research on the disclosure and financial impact of bank provisions, which has traditionally focused on loan loss provisioning. In doing so, we provide additional insights on the mediating effects of accounting rules on bank financial variables and expand the literature on the value of financial disclosures. Our research is the first to consider the accrual component (provisions) in relation to the cash element (penalties announced) of P&L misconduct cost disclosures and the interaction between financial disclosures and penalty announcements. We argue that this interaction, along with the quantitative differences between actual misconduct costs and announced penalties, sheds light on the different conclusions reached by the existing literature on bank misconduct. Reported results provide bank regulators and investors with a revised perspective on the financial impact of bank misconduct.

This dissertation is organized as follows. Chapter 2 reviews the existing literature on bank misconduct, bank provisioning and bank financial disclosures and identifies the research gaps addressed by our work. Chapter 3 compares the different parameters for the study of bank

misconduct and identifies the need for a variable that considers the mediating impact of accounting rules. Chapter 4 formulates our research hypotheses. Chapter 5 outlines our research design. Chapter 6 provides the descriptive statistics for our dataset and performs a preliminary graphical analysis of that data, while chapters 7 to 9 contain the main empirical analyses. Chapter 10 concludes.

Chapter 2

Literature review

Our research is connected to three different strands of literature. First, its theme and research questions position it within the studies on bank misconduct. Second, our consideration of misconduct provisions as a variable to study bank misconduct connect it to the literature on bank provisioning. Finally, our analysis of the determinants that lead to the inclusion of misconduct related items in a bank's P&L relate it to the works on bank financial disclosures. Over the following sections we will discuss the preceding research on these three areas.

2.1. The literature on bank misconduct.

2.1.1. Bank misconduct as a category of "operational loss".

The earliest papers dealing with the consequences of bank misconduct do so through the review of operational losses in banking. This initial approach is driven by the Basel Committee classification of operational risk events, which includes categories for misconduct-related risks. These include risks arising from "internal fraud", "external fraud", "clients, products and business practices" and "employment practices and workplace safety", all of them potentially misconduct related, as well as others which have a purely operational nature, such as "damage to physical assets", "business disruption and system failures" and "execution, delivery and process management" (Basel Committee on Banking Supervision, 2009).

Thus, de Fountnouvelle and Perry (2003) quantify the potential P&L loss from operational risk for U.S. banks using the data of two external databases, OpRosk Analytics and OpVantage, These authors estimate that bank capital charges for operational risk may exceed those for market risk. They also find that operational events classified as internal and external fraud and

"clients, products and business practices", all of which may be potentially related to bank misconduct, represent more than 90% of the total operational losses reported.

Several papers follow up on this pioneering research by analysing the effects of operational losses experienced by banks on their stock value. Cummins et al. (2006) analyse the impact of large operational risk events, defined as those with an impact of at least USD 10 million, on the market capitalisation of US banks and insurance companies. Once again, the most important type of operational risk event, "clients, products and business practices" is potentially misconduct related. The authors find a strong and statistically significant negative stock price reaction to the announcements of operational losses and conclude that market discipline may be an important tool for regulators to police the management of operational risk.

On a similar manner, Gillet et al. (2010) examine the market reaction to the announcement of operational losses by listed financial companies in the US and Europe. Their results show significant, negative abnormal returns at the announcement date of the loss, along with an increase in the volume of traded shares. These authors place special emphasis on losses caused by "clients, products and business practices", and "internal fraud", as these two categories represent 72% of their sample. As previously noted, both types of events may be originated by bank misconduct. When a loss is caused by internal fraud, the decrease in market value is larger than the operational loss announced; the authors consider this as a signal of reputational damage.

Fiordelisi et al. (2014) provide evidence that "external fraud" is the event type that generates the largest reputational damage in banks. However, their dataset evidences that losses caused by "clients, products and business practices" are the most common type of operational risk event, with 270 out of 426 observations (63.4%). The dominant presence of this category of operational loss emphasizes the significance of bank misconduct.

Finally, Barakat et al. (2019) explore how the tone of the announcement by media channels of operational losses influences their impact on the reputation of listed financial firms (primarily banks) in 18 countries over the years 2010 to 2014. "Reputational impact" is measured as cumulative abnormal returns on their equity and cumulative abnormal changes in their CDS spread. The authors conclude that announcements with a "negative" or "litigious" tone, as defined in the financial sentiment dictionary introduced by Loughram and McDonald (2011), have an adverse reputational effect, while an "uncertainty tone" has a favourable impact. However, the authors also note that regulatory and settlement announcements about the operational risk event dissolve the positive reputational impact of the uncertainty tone and mitigate the negative impact of the litigious tone. These authors do not provide a categorisation of operational risk events, so it is not possible to establish what part of their conclusions may be related to bank misconduct.

While the above studies consider the consequences of operational risk, Fiordelisi et al. (2013) take a different approach by focusing on the causes of reputational risk arising from operational losses in European and US banks. Their paper follows on the categorisation of "reputational damage" of Gillet et al. (2010), and defines "reputational risk" through cumulative abnormal stock returns at the moment an operational loss is announced and "reputational losses" as a cumulative abnormal return on the bottom third of the distribution. The authors conclude that the stock market losses caused by operational events are greater for profitable banks, large banks and banks with a higher percentage of intangible assets, and smaller for better capitalized banks.

2.1.2. Bank misconduct as a distinct bank risk factor.

In addition to the works that address operational losses in banking, the increasing relevance of bank misconduct has generated a body of literature that specifically explores the causes and consequences of wrongdoing as a separate bank risk variable.

This body of literature can be primarily grouped into two streams of research: the papers that address the causes of bank misconduct and those that consider the consequences of bank misconduct. The latter, in turn, can be subdivided into two additional categories: those that consider the relationship between bank misconduct and bank risk, and those that analyse how bank misconduct influences bank shareholder wealth. We will review the literature on each one of these groups over the following sections.

2.1.2.1. The literature on the determinants on bank misconduct.

Nguyen et al. (2016) study the impact of board monitoring and advising on preventing misconduct-related enforcement actions. The authors gather data on all severe enforcement actions against listed US banks announced by the Federal Deposit Insurance Corporation (FDIC), the Federal Reserve Board (FRB) and the Office of the Comptroller of the Currency (OCC) over the period 2000-2013. Bank misconduct is then categorised as "technical", if the enforcement actions have been driven by a violation of requirements concerning capital adequacy, liquidity, asset quality, lending or provisions, or "non-technical", if the enforcement action is related to failures in the bank's internal controls, anti-money laundering systems and consumer protection regulations. Results show that better board monitoring contributes to the prevention of both types of misconduct, while better advising by boards prevents misconduct of a technical nature. An important consideration made by this paper is the difference between the commission of misconduct and the detection of misconduct: as detection is not perfect, it is not possible to observe all instances on which misconduct has been committed.

Following on from this paper, and using its definition of misconduct, Martín-Flores (2018) considers the relationship between a bank's social capital and the enforcement actions levied by the Federal Reserve, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency on a sample of 8,953 US commercial banks for the period 2001-2015. Social capital is calculated based on an index which factors the number of non-profit

organizations and social and civic associations in a county, the voter turnout in presidential elections and the census response rate. The author concludes that banks with their headquarters in areas with higher social capital are less likely to receive an enforcement action, and that social capital is negatively associated with severe enforcement actions.

Arnaboldi et al (2020) also study the impact of board composition on bank misconduct, although their research is focused on the relationship between board gender diversity and misconduct-related fines. These authors analyse a sample of 863 fines levied by US regulators during the 2009-2018 period on a sample of 83 listed banks in 21 European Union countries and conclude that a greater presence of female board members decreases the number of fines. Based on the average amount of the fines levied in their sample, the authors note that the reduction in the frequency of fines received due to increased gender diversity amounts to USD 7.48 million per year.

Guerello et al. (2019) review the determinants of monetary penalties levied by the Italian regulatory authorities on domestic banks between 2015 and 2018. They observe that the number of penalties received by a bank has a significant negative association with gross loan growth, its net stable funding ratio, its capital ratio and its profitability.However, being listed increases the probability of receiving a penalty.

Sakalauskatie (2018) considers a sample of disciplinary actions imposed on 30 banks, including the largest banks in the USA and a subsample of European Globally Systemically Important Banks, during 2000-2016 and observes the persistence of misconduct over the years, concluding that its intensity increases as the business cycle reaches its peak. This paper differs from preceding literature in the approach it takes to the construction of its database, as it addresses the dynamics of the commission and investigation of misconduct and the announcement of disciplinary actions. The author observes that peaks in the commission of bank misconduct are followed by peaks in investigations and finally by the announcement

penalties, therefore further developing the work of Nguyen et al. (2016) by introducing a separation between the date when misconduct is committed, when it is detected and when it is punished. This separation of relevant dates leads the author to evaluate the amount of misconduct penalties levied acceding to the date on which the misconduct that generates a penalty was initiated, rather than on that when the penalty is announced.

A similar approach is followed by D'Avino and Tselika (2024), who note that "[T]he temporal lag between the start of the investigations for alleged misconduct and the bank's eventual payment of the settling penalty to resolve the claims brought against it, is typically long". Furthermore, they argue that "[T]his temporal lag varies across misconduct cases, preventing a rule-of thumb or an approximate one-for-all dating of the breach". Therefore, these authors link the announcement of misconduct-related penalties to the years on which, according to the announcement, the misconduct was generated to create a database focused on the date misconduct was committed, rather than on the year on which penalties are levied. This dataset is subsequently used to produce an empirical analysis of the effects of regulatory sanctions on bank misconduct, which leads to two conclusions: sanctions imposed on banks reduce the probability of future misconduct and sanctions to large banks send a deterrence signal to other banks and reduce the likelihood and intensity of misconduct across the industry.

Finally, Carretta et al. (2025) analyse the influence of governance at country level on bank misconduct, using a dataset of 251 sanctions on European banks announced between 2009 and 2019. We note that these authors only consider the number of sanctions received by a bank, with no differentiation according to the seriousness of the sanction or its economic impact. Reported findings show that the higher quality of country governance, construed on an index of indicators from the Worldwide Governance Indicators database, the lower the probability of detected bank misconduct. The authors also extend their analysis to consider the impact of

misconduct on bank deposits and conclude that detected misconduct reduces the level of deposits on the year following the announcement of a sanction.

2.1.2.2. The literature on the consequences of bank misconduct.

2.1.2.2.1. The literature on the general consequences of misconduct.

In addition to the literature on the consequences of bank misconduct on risk taking and stock prices, which we will address later, some papers study the impact of bank wrongdoing from a macroprudential or governance perspective or consider the financial consequences on other variables.

Along these lines, Danisewicz et al. (2018) examine the effects of bank supervisors' enforcement on the overall economy. The authors consider enforcement actions issued by the Federal Deposit Insurance Corporation, the Federal Reserve System, and the Office of the Comptroller of the Currency on US banks over the years 1999-2011. They find that severe enforcement actions reduce personal income growth and increase unemployment; these effects are a consequence of reduced bank lending and liquidity creation and are less severe in crisis years.

Cotugno et al. (2021) consider the impact of enforcement actions issued by the Bank of Italy on the board composition of Italian banks over the 2009-2015 period. They find that on the year of publication of a sanction, the sanctioned banks increase board turnover, reduce board size and tend to increase the educational level of the board.

Finally, the previously mentioned research of Guerello et al. (2019) also studies the broad financial consequences of bank misconduct, finding that regulatory sanctions reduce bank productivity, and asset and loan growth. However, this effect becomes smaller or not significant for banks that were sanctioned only once.

2.1.2.2.2. The relationship between bank misconduct and bank risk.

Among the first papers that examine the connection between bank misconduct and risk-taking, Altunbas et al. (2007) analyse the role of money laundering as a determinant of bank risk through the study of the announcements of regulatory enforcements and class action litigation for money laundering activities against publicly listed US banks over the 20024-2015 period. The authors find that money laundering increases bank risk according to 3 different measures: default risk, measured by the z-score of each bank, systematic risk, measured by the market reaction of the stock of each bank relative to the market index, and systemic risk, measured via the "marginal expected shortfall" ("MES"), a measure of risk based on the average return of the stock of bank at a percentage of its worst days. The effect of money laundering on bank risk is increased by the presence of powerful CEOs and reduced by large independent executive boards.

Delis et al. (2016) examine the impact of enforcement actions by the US Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency in US bank capital, risk and profitability over the 2000 to 2010 period. In contrast with the previous paper, they conclude that enforcement actions reduce banks' appetite for risk, as they lead to a decrease in risk weighted assets through a reduction in the loan portfolio and an increase of loan write-offs. This decline in risk-weighted assets produces an improvement in capital ratios.

Köster and Pelster (2018) study a sample of 68 listed banks from 20 countries, including all G-SIBs on the period between 2007 and 2014, and employ announced penalties as their variable for bank misconduct. They conclude that misconduct penalties increase a bank's risk, measured as its marginal expected shortfall, but not its contribution to systemic risk, as measured by the Value at Risk (VaR) of the financial system conditional on the VaR of a bank. Thus, according to those authors, misconduct penalties do not generate a financial shock that could spread to the rest of the banking system.

Our work is specially related to the Bank of England Staff Working Paper No. 671, authored by Tracey and Sowerbutts (2018). In contrast with previous analyses, which consider penalties announced as their key misconduct-related indicator, this paper employs the misconduct provisions disclosed in their semi-annual financial reports by the 23 largest lenders in the UK over the period 2010 to 2017 as the research variable to measure the impact of misconduct on bank capital and risk-taking. The authors remark that their use of misconduct provisions as instrumental variable addresses the difference in timing between "bank misconduct taking place", "misconduct provisions being made" and bank risk-taking decisions. In this way, their analysis provides the first empirical implementation of the time-related distinctions previously mentioned by Nguyen at al. (2016) and Sakalauskaite (2018). The main conclusion of this study is that bank misconduct provisions reduce bank capital, and that a decrease in capital leads to an increase in risk-taking in the mortgage market, as evidenced by an increase in the loan-to-value ratio for new mortgages, and higher issuance of mortgages with high loan-to-value ratios. As a consequence, bank misconduct generates higher risk for the banking sector. We observe that these conclusions differ from those previously reached by Delis et al. (2016) and Köster and Pelster (2018).

Bertsch et al. (2020) take a novel approach to the measurement of bank misconduct on their study of the impact of misconduct on bank online lending. In contrast with other papers, the authors use the number of customer complaints submitted between 2012 and 2016 to the U.S. Consumer Financial Protection Bureau as a proxy for bank misconduct; the complaints are subsequently filtered into misconduct and non-misconduct related. Estimation results show that bank misconduct has a positive association with online lending; this association is stronger for borrowers with lower credit scores.

The most recent work on the link between misconduct and bank risk has been produced by Thornton et al. (2025). This paper proxies misconduct by the number of class action litigation

judgements and enforcement actions announced by the US federal regulatory agencies on listed US banks over the period 1998 to 2023 and measures bank risk according to four different measures: probability of default, stock returns vs the market, marginal expected shortfall (a measure based on the average return of a bank at a percentage of its worst days) and bank idiosyncratic risk. Estimation results show that coefficients for the misconduct variable are positive and statistically significant for all four measures of risk; therefore, the authors argue that bank misconduct is positively associated with risk-taking. This relationship is increased where there are powerful CEOs and a higher proportion of institutional shareholders and mitigated where board members are older, more independent and busier, where there is a higher percentage of female board members and where independent board members are less experienced.

2.1.2.2.3. The literature on the relationship between bank misconduct and bank shareholder wealth.

Tilley et al. (2017) analyse the stock market reaction to fines on a subsample of Systemically Important Financial Institutions between 2002 and 2015, differentiating between the date an investigation is announced and the settlement date for the investigation, i.e., the date on which a fine is announced. They conclude that bank shares show negative abnormal returns at the date of announcement of an investigation while the returns at the date of announcement of a fine are negative on a 3-day window but then become positive for 5 and 10-day windows.

Köster and Pelster (2017) address the impact of bank misconduct on bank profitability and share price performance. As in their previously referenced paper on bank risk-taking, these authors consider a sample of 68 listed banks from 20 countries, including all G-SIBs on the period between 2007 and 2014, and employ announced penalties as their variable for bank misconduct. Using a Generalized Method of Moments (GMM) regression estimation, they conclude that there is a negative relationship between pre-tax financial penalties and pre-tax

profitability, but no relationship with after-tax profitability. The rationale provided to explain this result is that "parts of financial penalties are tax deductible, reducing tax expenditure"[2]. The paper also finds a positive link between financial penalties and one-year stock buy-and-hold returns, i.e., misconduct penalties increase returns to bank shareholders on the year after they are announced. The authors attribute this conclusion to investors' expectations that banks will improve their corporate governance after a penalty and to the belief by investors that the imposed penalty is smaller than the earnings previously obtained through misconduct.

Flore et al. (2021) examine the stock, bond, and CDS market reactions to the announcements of fines and settlements by the 25 largest global banks between 2005 and 2015. In a similar manner to Köster and Pelster (2017), their results indicate that the announcement of a fine or settlement has positive valuation effects on bank stock prices; these positive effects also extend to bond and CDS prices. The authors attribute this finding to the removal of the uncertainty on the eventual amount of the financial costs arising from having committed misconduct. Larger settlements lead to more pronounced changes, as the uncertainty removed is greater.

The regulatory relevance of the relationship between bank misconduct and stock prices is evidenced by the publication within the ECB's November 2019 Financial Stability Review of a note on this topic. In their writeup, Busetto et al (2019) analyse "damages, fines, settlements and litigation costs" above USD 1 million for a sample of 26 global banks in the USA, UK, Switzerland and the Eurozone. First, they note how "net income could have been one-third higher over the same [2008-2019] period without these misconduct costs, potentially helping strengthen capital buffers, if earnings were retained". They then proceed to estimate a regression on the impact of the announcement of fines over USD 100 million on the stock returns of a subsample of 8 Euro area banks. Their conclusion is that a one standard deviation

[2] We observe that in no tax regime the corporate tax rate exceeds 100% of pre-tax income; in general, tax rates usually range between 10 and 35%. Therefore, the reduction in tax expenditure generated by a cost can never eliminate the negative impact of that cost on after-tax income. This issue, however, is not addressed by the authors.

increase in misconduct costs is associated with a 0.2 standard deviation drop in equity returns, which the authors argue is comparable to the impact of NPLs on bank shareholder's wealth. The relationship between the announcement of misconduct penalties and stock returns was stronger during the Eurozone financial crisis; this is considered an indication that investors are more concerned with penalties during times of stress.

2.1.3. Recap: misconduct variables considered by the literature on bank misconduct.

Table 1 provides a review of the papers referenced over the previous sections, with a focus on the variables used to measure bank misconduct.

Table 1: Summary of the literature on bank misconduct and the variables considered for the measurement of misconduct

Paper	Research subject	Bank misconduct variable	Date for variable	Scope of analysis
Altunbas et al. (2007)	Relationship between money laundering and bank risk	Number of enforcement actions and class action litigation announced	Date of announcement of enforcement actions	Regulatory enforcements and class action litigation for money laundering activities against publicly listed US banks
Delis et al (2016)	Relationship between bank misconduct and bank capital	Announcement of a enforcement action (treatment effects model)	Date of announcement of enforcement actions	Enforcement actions by the FDIC and OCC against publicly listed US banks
Nguyen et al. (2016)	Role of board monitoring and advising on the prevention of bank misconduct	Number of enforcement actions announced	Date of announcement of enforcement actions	Enforcement actions by the FDIC, FRB and OCC against publicly listed US banks
Köster and Pelster (2017)	Relationship between bank misconduct and bank profitability and share price performance	Amount of the penalties announced	Date of announcement of penalties	Financial penalties imposed on a sample of 68 international listed banks
Tilley et al. (2017)	Relationship between bank misconduct and bank stock prices	Announcement of investigations and penalties (event study)	Date of announcement of investigations and penalties	Penalties imposed by US and UK regulatory agencies on Global Sistemically Important banks classified in the top 4 buckets
Danisewicz et al. (2018)	Macroeconomic consequences of regulatory enforcement actions	Announcement of an enforcement actions	Date of announcement of enforcement actions	Enforcement actions imposed on US banks by the FDIC, FRB and OCC
Köster and Pelster (2018)	Relationship between bank misconduct and bank and financial system risk	Amount of penalties announced	Date of announcement of penalties	Financial penalties imposed on a sample of 68 international listed banks
Sakalakaustie (2018)	Relationship between bank CEO incentive schemes and bank misconduct	Amount of misconduct penalties resulting from misconduct that started in a given year and number of misconduct cases that start in a given year	Date on which misconduct started	Disciplinary actions imposed on a sample of 30 US and international banks
Martín-Flores (2018)	Relationship between bank misconduct and board social capital	Number of enforcement actions announced	Date of announcement of enforcement actions	Enforcement actions imposed on US banks by the FDIC, FRB and OCC
Tracey and Sowerbutts (2018)	Relationship between bank misconduct and bank risk-taking	Misconduct provisions disclosed	Date of disclosure of the provision	Misconduct provisions disclosed by the 23 largest UK banks by lending amount
Guerello et al (2019)	Determinants and consequences of bank misconduct	Number of penalties announced	Date of announcement of penalties	Financial penalties levied on a Italian banks
Arnaboldi et al. (2020)	Role of gender diversity on the prevention of bank misconduct	Number of penalties announced (amount used for additional analyses)	Date of announcement of penalties	Penalties imposed by US regulatory agencies on a sample of EU banks
Bertsch et al. (2020)	Relationship between bank misconduct and online lending	Number of complaints received by the Consumer Financial Protection Bureau	Date of complaint received	Misconduct-related complaints received by the U.S. Consumer Financial Protection Bureau
Busseto et al. (2020)	Relationship between bank misconduct and equity returns and valuations	Amount of the penalties announced	Date of announcement of penalties	Penalties imposed on 8 listed eurozone banks
Cotugno et al. (2021)	Relationship between bank misconduct and board characteristics	Number and amount of the penalties announced	Date of announcement of penalties	Enforcement actions imposed on Italian banks by the Bank of Italy
Flore et al (2021)	Relationship between bank misconduct and bank stock, bond and CDS prices	Amount of announced fines and settlements	Date of announcement of fines and settlements	Legal settlements that involve one of the top 25 listed banks globally by market capitalisation
D'Avino and Tselika (2024)	Relationship between sanctions and bank misconduct	Number of misconduct instances	Date on which misconduct was commited	Sanctions and penalties imposed on US banks
Carretta et al (2025)	Role of country governance on the prevention of bank misconduct	Number of sanctions announced	Date of announcement of sanctions	Santions imposed on 109 European banks in 19 countries
Thornton et al. (2025)	Relationship between bank misconduct and bank risk-taking	Number of enforcement actions and class action judgements	Date of announcement of enforcement actions and class action judgements	Litigation judgements and enforcement actions by US bank supervisors against listed US banks

Table 1 summarises the themes addressed by previous papers on bank misconduct, the research variable considered, the date at which misconduct is measured and the scope of the database used.

A detailed examination of Table 1 leads to the following conclusions, which frame the research gap addressed by our work:

1. The most common variables used to measure bank misconduct are 1) the number of penalties or enforcement actions announced (10 papers out of 19) and 2) the amount of the monetary penalties levied (5 papers). Two papers consider both number and size of penalties, but only one of them uses both items as a variable to test the proposed hypotheses. Two other papers use alternative variables. In one case, misconduct provisions disclosed in the banks' financial statements is used as a substitute for penalties received; in the other, the number of claims received by the Consumer Financial Protection Bureau replaces the number of penalties received. The typical choice of variable for misconduct thus provides little or no differentiation in the consequences of misconduct based on the seriousness of the misconduct committed.
2. The most usual date of reference for the measurement of misconduct is that of the announcement of a sanction, enforcement action or penalty (14 out of 19 papers). Among the 5 papers that do not use the date of announcement of the penalty, two aim to establish the date on which the misconduct started or was committed as their relevant reference date, another refers to the date of announcement of an investigation and a fourth uses the date on which a consumer complaint is submitted. All these papers measure misconduct through the number of misconduct events observed, without quantifying the financial costs generated by those events. Only one paper considers the moment of the disclosure of a misconduct provision as an alternative reference date, while simultaneously using a variable that quantifies the financial impact of misconduct: misconduct-related P&L provisions.

3. The scope of the enforcement actions and penalties analysed is not homogeneous, and, in several cases, is not comprehensive. Most papers restrict their focus by region: 8 papers consider only US banks, 2 focus on EU banks, one deals with penalties levied on EU banks by US regulators, while three additional papers are limited to one European country (UK and Italy). Several studies only consider enforcement actions or penalties levied by specific regulators: for example, four papers dealing with US banks address enforcement actions by the FDIC, FRB and OCC; another, those by the FDIC and OCC; yet another only takes into consideration customer complaints submitted to the U.S. Consumer Financial Protection Bureau. Finally, there are papers which only address specific misconduct events: one paper in our sample deals only with money laundering sanctions, another with consumer complaints.
4. To the best of our knowledge, no paper considers the disclosure of misconduct-related information on a bank's financial statements.
5. The only paper that addresses the accounting elements of misconduct-related costs deals with the impact on misconduct on bank capital and risk taking. No paper takes a similar approach to analyse the impact of bank misconduct on stock prices.

2.2. The literature on bank provisioning.

Our use of misconduct provisions as a research variable implies that our work is related to the literature on bank provisioning. We note that this research has been primarily focused on loan loss provisions. Among the early literature on this topic, Wall and Koch (2000) highlight how the accounting criteria for loan loss provisioning is established by the Statement of Financial Accounting Standards (SFAS) No. 5: Accounting for Contingencies. SFAS 5 established two requisites for accruing an estimated loss contingency: that the loss is probable and that it can be quantified. These requisites are similar to those of IAS 37, which has replaced SFAS 5; however, the interpretation of these requirements when SFAS 5 was much stricter than it is

today. For example, the authors note how the SEC interpreted SFAS 5 in such a way that known events that would occur outside the current period would not generate a provision.

Ozili and Outa (2017) have produced a comprehensive analysis of loan loss provisioning research. These authors identify three major arguments within the literature: the use of loan loss provisioning ("LLP") to manage regulatory capital ("LLP and capital management hypothesis") or net income ("LLP and income smoothing") and its use to signal information on the quality of the loan portfolio of a bank ("LLP and signalling hypothesis").

With regards to the first two lines of research, we observe that misconduct or other types of provisions that imply discretionary estimations may also be an instrument for earnings smoothing and, subsequently, for capital management.

2.2.1. Bank provisioning and earnings smoothing.

Within the papers on loan loss provisioning and earnings smoothing, we start by highlighting the work of Benston and Wall (2005), who note how loan loss accounting requires the recognition of a loss when it is probable, and discuss the issues arising from the use of an estimate to determine what "probable" means. They emphasize how loan loss provisions should properly represent the underlying economic reality, as otherwise the users of the financial statements could not properly evaluate risk. They also introduce the possibility that managers use the discretion involved in producing estimates to understate reported losses and boost net income and capital, or to overestimate losses in a period when earnings are high so that they can be understated in future periods of low earnings.

Gebhardt and Novotny-Farmas (2011) explore the influence of accounting standards in the use of loan loss provisions for earnings smoothing. The authors observe how the restriction under IAS 39 to recognise only those losses which have been incurred reduces income smoothing. They also note that under this incurred loss model banks tend to delay the recognition of loan losses "until too late" and then recognise the accumulated losses over more than one period.

Along similar lines, Balboa et al. (2013) explore the characteristics of the earnings smoothing arising from the management of loan loss provisions. They conclude that the relationship between discretionary accruals and profit before tax is non-linear and is a function of the size of earnings. Thus, banks use provisions to reduce earnings when earnings are especially high ("cookie-jar" strategy) or when they report a substantial loss ("big-bath" strategy"); outside of these extremes, provisions are generally managed to serve as an earnings-increasing tool.

Finally, Dal Maso et al. (2018) consider the effect of accounting enforcement on abnormal loan loss provisions, which they use as a proxy for earnings quality. The authors document that higher bank enforcement and regulation reduces the amount of abnormal loan loss provisions and the propensity to manage earnings.

These papers are relevant to our work because they underscore the discretionary elements involved in the categorisation of a loss as probable and/ or the quantification of such loss, consider the influence of regulation and accounting rules on provisions disclosed or raise the potential of provisions as a tool for earnings management. We will return to all this themes in our empirical analyses.

2.2.2. The predictive ability of loan loss provisions.

Ozili and Outa (2017) produce a review of the literature on loan loss provisioning, and highlight the recurring argument of whether banks use loan loss provisions to signal private information to external parties. We argue that this use of loan loss provisioning may also be applied to the disclosure of misconduct provisions or P&L misconduct costs to provide advance information of a forthcoming penalty.

The research on loan loss provisioning that is more closely related to our analysis is that of Marton and Runesson (2017), who provide the first detailed study of the ability of loan loss provisions to predict future loan losses. Using a sample of 3,434 banks in Europe over the 2000 to 2011 period, the authors show that, on a general manner, loan loss provisions predict future

credit write downs over the next 3 years (4 years when a cumulative variable is considered). However, this predictive ability is lower for banks reporting under the IFRS incurred loss model and higher for banks that report under local accounting standards. They thus conclude that the IFRS incurred loss model is unable to predict credit losses in a timely manner and that it restricts management from providing private information on credit losses.

2.2.3. Loan loss provisions and bank stock returns.

Given that loan loss provisions provide information on future loan losses, it follows that they should also have an impact on bank stock returns. This relationship has originated a long stream of research in the literature. For example, Griffin (1998) demonstrates that the market reaction to a loan loss announcement is negative. This negative impact is more negative for banks that disclose the loss early within a quarter than for those that disclose it later within the quarter. The author concludes that "these results are mostly consistent with a stock market that obtains loan impairments information from timely sources of that information, for example, loan loss provisions reported in a bank's financial statements".

Similarly, Docking et al. (2000) establish that loan loss reserve announcements have a negative influence on the stock returns of US banks; these effects are more acute for regional vs money-center banks. They also argue that "accounting measures of bank soundness, and possibly regulatory pressure, appear to influence the market's assessment of loan loss-reserve information for announcing and non-announcing banks". Finally, Vyas (2011) shows that accounting credit losses lag the write-down schedule implied by credit indexes, and that stock returns reflect risk exposure faster for banks that have a write-down schedule that better follows the credit indexes. The author also provides evidence that the existence of a regulatory investigation by the SEC contributes to the timeliness of loan write-downs.

2.3. The literature on bank financial disclosures.

As noted by Core (2001) in their review of the empirical disclosure literature, companies endogenously optimize disclosure policy to maximize firm value. This optimisation process has been researched since the seminal study of Cerf (1961), who rated the disclosure of a random sample of 527 listed and unlisted US companies, found a positive association between disclosure and profitability and argued that a large amount of information desired by investors is not available in the typical earnings reports as they were prepared at that time.

Verrecchia (2001) suggests three broad categories of disclosure research. The first one, which is named "association-based disclosure", studies the effects of disclosure on investors' actions, primarily measured through asset prices and trading volume. The second category, labelled "discretionary-based disclosure", examines how managers and/or firms control the disclosure of information, and their incentives to disclose information known to them. The third category, "efficiency-based disclosure" discusses which disclosure agreements or strategies are preferred in the absence of prior informational knowledge.

Our work deals primarily with the first two of these categories: the banks' reasons to disclose misconduct-related information and the consequences of those disclosures. In doing so we address some of the research questions in the financial disclosure literature, as summarized by Healy and Palepu (2001). These questions include how effective are accounting standards in facilitating the communication between managers and investors, which factors affect management disclosure choices, what is the relationship between disclosure, corporate governance and management incentives, the role that boards play in the disclosure process, how do investors respond to corporate disclosures and what is the credibility of firm disclosures made outside the financial statements.

According to these authors, such questions are driven by the two research frameworks that aim to explain the role of disclosure in financial markets. The first is the information framework,

which considers the need of investors to differentiate between “good” and “bad” firms to properly allocate their capital. This provides companies with incentives to disclose private information and regulators with arguments to require those disclosures. The second one, the agency framework, focuses on the potential conflicts of interests between managers, shareholders and debtholders. The solutions to these conflicts often imply the release of relevant private information that allows debtholders to monitor shareholders and managers and shareholders and board members to discipline managers,

In developing these themes, Raffournier (1995) finds evidence that size and internationality, have a positive influence on the financial disclosure of Swiss companies. When considered individually, percentage of fixed assets, size of auditing firms and, to a lesser degree, industry type and profitability also favour disclosure. Ahmed and Courtis (1999) perform a meta-analysis of 29 disclosure studies, and confirm the positive association between size and disclosure level proposed by Raffournier, to which they add listing status and percentage of fixed interest securities relative to equity as factors that positively influence disclosure. On the other hand, they argue that there is no significant relationship between aggregate disclosure level and profitability or size of audit firm. The authors note the potential bias introduced by including within their sample a preponderant number of papers that find significant relationships between their research variables and financial disclosure and the limitation caused by differences in sample composition and methodology.

Burks et al. (2018) examine how an increase in competition influences voluntary disclosures. Using the relaxation of the restrictions for interstate branch bank opening in the US in the 1990s, they find that an increase in competition is associated with greater disclosure measured by press releases and increases in the disclosure of negative information. Conversely, banks already established in a territory reduce the disclosure of good news in order to discourage new entrants from moving into their territory.

Several papers explore the link between different corporate governance characteristics and disclosure. Eng and Mark (2003) consider a sample of 158 firms listed in the Singapore Exchange and find that lower managerial ownership and significant government ownership increase disclosure. A higher percentage of independent directors is also positively associated with disclosure. The authors highlight that, although disclosures in Singapore are considered among the best in Asia, they lag behind those in the USA, UK and Australia.

Reeb and Zhao (2013) explore the idea that boards with higher director capital alleviate conflicts of interest through higher disclosure. Using a sample of 687 industrial firms in the US, they establish that a one standard deviation in board capital is associated with 18% higher disclosure quality. Board capital is measured through three capital proxies. First, social capital, which considers the number of corporate and non-profit boards on which a director sits or in which it has served, the prior government positions of directors, the affiliation of directors to professional associations and the awards received by directors. Second, educational capital, which takes into account the educational level of directors, whether a director has a degree or an MBA from a top-ranked school. And, finally, director's working experience, measured as the expertise of directors in law, investment banking / venture capital, management consulting, accounting or academia, the professional certifications of board members, the number of positions above vice-president held and the number of firms with which a director has worked.

Chen and Yagi (2000), focus on the association between the percentage of independent non-executive directors and financial disclosures in the Hong Kong Stock Exchange, and conclude that the higher the ratio of independent to total directors, the higher the comprehensiveness of financial disclosures. This association is stronger for non-family-controlled firms.

Given our focus on bank misconduct disclosure, our paper is also aligned with the research on bank voluntary disclosures and on "bad news" disclosures.

Discretionary disclosure models are broadly based on the seminal work of Verrecchia (1983), who establishes a setting on which increased disclosure leads to a loss of competitive advantage. Under this setting, the threshold level of disclosure is related to the costs of that loss.

Skinner (1994) further develops the setting of Verrecchia (1983) by establishing an asymmetry between the disclosure of bad and good news. The author finds that stock price responses to bad news disclosures are larger than those to good news disclosures. Furthermore, the frequency with which the news contained in quarterly earnings announcements is pre-empted by voluntary corporate disclosures is high for earnings announcements that convey large negative earnings surprises, but not for those that include positive earnings surprises. These results suggest that managers bear large costs when investors are surprised by large negative earnings news, but not otherwise; they also imply that investors do not like large negative surprises and impose costs on managers which are opaque about potential earnings issues. On a follow-on study, this author also establishes that, while more timely earnings disclosures cannot avoid stockholder litigation, the incentive of managers to disclose early the existence of litigation increases as the earnings news becomes more adverse (Skinner, 1997).

Einhorn (2005) considers the interaction between mandatory and voluntary disclosures. They conclude that the likelihood of a voluntary disclosure is not related to the content of firm's mandatory disclosures, negatively related to the level of discretion in mandatory reporting and positively related to the scope of the disclosure requirements. In contrast with these conclusions Bagnoli and Watts (2007) argue that the content and likelihood of a voluntary disclosure depend on whether a mandatory report contains good or bad news. Thus, if the mandatory report contains a large amount of bad news, managers tend to disclose more private information. Moreover, voluntary disclosures also increase when the mandatory reports imply a large deviation from market expectations.

Finally, specifically addressing the disclosures imposed on banks by their supervisors, Bischof and Daske (2013) find that voluntary disclosures increase around the date of the announcement of the results of the EU-wide stress tests, and thus conclude that a one-time mandatory disclosures lowers the threshold for a commitment to voluntary disclosures. In addition to this effect, those banks that do not voluntarily maintain the mandatory disclosures on sovereign risk exposure derived from the stress tests experience a reduction in stock liquidity, as proxied by a larger increase in bid-ask spreads.

Chapter 3

The rationale for an accounting variable of bank misconduct

The June 2011 BIS Committee report on "Operational Risk – Supervisory Guidelines for the Advanced Measurement Approaches" sets up the notion that the measurement of the consequences of operational losses may differ based on the date of reference. As previously noted, the BIS Committee includes bank misconduct as a category of operational losses. Therefore, it follows, that the quantification of bank misconduct may change depending on when such quantification is made.

Paragraph 27 of the BIS report states that "[Banks] generally have several reference dates that can be captured for any individual operational loss, including date of occurrence, date of discovery, date of contingent liability, date of accounting (first financial impact), and date of settlement". It also adds that "supervisors are concerned that AMA banks could select a reference date for quantification that results in the omission of large internal losses, which can have a significant impact on the bank's operational risk capital charge at a given point in time, and over time" (Basel Committee on Banking Supervision, 2011). While analysing these potential disparities in the quantification of the impact, the report notes that "[W]hen collecting data, banks typically gather information from at least three reference dates: occurrence date, discovery date and accounting date", and suggests that "[T]he discovery date or accounting date are the most prudent choices for developing a bank's dataset for the quantification of the operational risk capital requirements related to that event".

Despite these considerations, the academic research related to bank misconduct has usually considered two variables to measure it, both based on the external announcement of misconduct-related information.

The first traditional measure for bank misconduct is the announcement of an enforcement action (Altunbas et al., 2007; Delis et al., 2016; Nguyen et al., 2016). As a binary variable,

which usually takes a value of 1 for the periods on when an enforcement action is announced and 0 when it is not, or a number that quantifies misconduct based on the number of announcements, this variable provides an indicator of the existence of misconduct, without disentangling the potentially different consequences of the misconduct committed.

The second metric commonly used to measure bank misconduct are penalties announced. This variable uses the moment of the announcement of the penalty as the point of time at which the financial impact of misconduct is quantified, and the size of the penalty as the measure of the costs of bank misconduct (Busetto et al., 2019; Flore et al., 2021; Köster & Pelster, 2017, 2018). In this case, in addition to the potential differences on the choice of relevant date for misconduct, there is also the need to contend with the different quantification that the choice of date may imply.

We note, however, that regardless of the quantification issue, the date of announcement of the penalty is different from any of the potential dates considered by the BIS Committee. It differs from occurrence date, as enforcement actions require first the discovery of misconduct. It also differs from discovery, as the investigations and regulatory proceedings that lead to an enforcement action should provide advance warning to banks that something is amiss. Over the next sections, we will also show that the date of announcement of a penalty does not properly reflect the timing imposed by accounting rules on the recording of misconduct-related P&L items. As a consequence, the use of penalty announcements may lead to the possibility advanced by the BIS Committee of the omission of internal losses that are eventually reported in a bank's financial statements. Our analysis evidences that this omission applies to datasets that consider penalty announcements by all regulators; it should become even more significant when a study is limited to those penalties levied by specific regulators. For example, Carretta et al. (2025), restrict their bank misconduct variable to sanctions imposed by the ECB and the national central banks participating in the Single Supervisory Mechanism, without including

penalties imposed by non-EU central banks, or EU regulators which are not central banks, such as the EU Commission or the domestic market and competition regulators.

The reliance on data extracted from the announcements of penalties made by regulators is also especially problematic for EU only datasets. On a report provided at the request of the Economic and Monetary Affairs Committee of the European Parliament, Götz and Tröger (2017) observe that "[D]etailed data on regulatory intervention in Europe is only scarcely publicly available; it is particularly inaccessible with regard to the ECB's practice". This leads to the paradox of the authors having to rely on the evolution of enforcement actions in the US to produce a study for the EU Parliament on the situation of fines for misconduct levied within the EU.

3.1. Accounting rules and the timing of misconduct disclosure.

IAS 37.14, which sets out the criteria for the recognition of provisions under International Financial Reporting Standards ("IFRS"), establishes the following:

"A provision shall be recognised when:

a. an entity has a present obligation (legal or constructive) as a result of a past event;
b. it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and
c. a reliable estimate can be made of the amount of the obligation.

If these conditions are not met, no provision shall be recognised."

The equivalent rules for US Generally Accepted Accounting Principles ("US GAAP") are set by ASC 450-20-25-2:

"An estimated loss from a loss contingency shall be accrued by a charge to income if both of the following conditions are met:

a. Information available before the financial statements are issued or are available to be issued (as discussed in Section 855-10-25) indicates that it is probable that an asset had

been impaired or a liability had been incurred at the date of the financial statements. Date of the financial statements means the end of the most recent accounting period for which financial statements are being presented. It is implicit in this condition that it must be probable that one or more future events will occur confirming the fact of the loss.

b. The amount of loss can be reasonably estimated."

Consequently, under both IFRS and US GAAP, a company must recognise a provision (IAS 37) or a loss contingency accrual (ASC 450-20-52-2) if:

i) a past event has generated a present obligation for a company;

ii) there is a significant probability that a payment will have to be made because of that obligation ("more likely than not" under IFRS; "likely to occur" under U.S. GAAP), and

iii) the amount of the obligation can be reliably estimated.

Therefore, a misconduct provision or loss contingency accrual must be established when a company becomes aware that a payment is ***probable*** and its amount can be reasonably estimated. This point of time may differ from the moment when a penalty is announced or when a payment arises from a penalty. In fact, from an empirical perspective, this implies that bank misconduct provisions and accruals are recognised when a bank becomes aware of an ongoing investigation or litigation, which in most cases happens well *before* the actual penalties are imposed and announced. Table 2 compares the timeline of P&L misconduct provisions with that of announced penalties.

Table 2. Timeline of financial impact of bank misconduct

	t - z	*t - y*	*t - x*	*t - x to t*	*t*
	Misconduct is committed	Investigation is initiated	Bank considers a fine or penalty probable	Investigation continues	Fine, settlement or penalty is announced
Misconduct provisions	No impact	No impact	Provision taken for the expected fine, settlement or penalty (as per IAS 37 or ASC 450)	Provision increased or decreased if the amount of expected fine, settlement or penalty changes	Final adjustment for the difference between previous provisions and the actual fine, settlement or penalty
Announced penalties	No impact	No impact	No impact	No impact	Full amount of penalty

Table 2 outlines the timeline of the financial impact of bank misconduct, comparing P&L misconduct provisions disclosures with announced penalties.

IFRS 3.23, which applies to business combinations, is still more forward-looking in the recognition of misconduct provisions:

"The acquirer shall recognise as of the acquisition date a contingent liability assumed in a business combination if it is a present obligation that arises from past events and its fair value can be measured reliably. Therefore, contrary to paragraphs 14(b), 23, 27, 29 and 30 of IAS 37, the acquirer recognises a contingent liability assumed in a business combination at the acquisition date even if it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation."

Thus, in the case of a business combination, all possible contingent liabilities, including misconduct provisions, must be recognised upon closing of the business combination, even if it is not probable that they result in an outflow of resources[3].

Once a provision or accrual has been established, its disclosure is determined by IAS 37 for IFRS and ASC 450 - ASC 275 for US GAAP.

IAS 37.84 indicates that for each class of provisions, "an entity shall disclose:

(a) the carrying amount at the beginning and the end of the period;

[3] This provision led UBS to announce an additional USD 4.0 billion misconduct provision in Credit Suisse following its acquisition of that bank.

(b) additional provisions made in the period, including increases to existing provisions;

(c) amounts used (ie incurred and charged against the provision) during the period;

(d) unused amounts reversed during the period; and

(e) The increase during the period in the discounted amount arising from the passage of time and the effect of any change in the discount rate".

However, IAS 37.87 allows for the aggregation of provisions of a similar nature on a single statement:

"In determining which provisions or contingent liabilities may be aggregated to form a class, it is necessary to consider whether the nature of the items is sufficiently similar for a single statement about them to fulfil the requirements of paragraphs 85(a) and (b) and 86(a) and (b)".

Furthermore, IAS 37.92 indicates that "in extremely rare cases", when "disclosure of some or all of the information required … can be expected to prejudice seriously the position of the entity in a dispute with other parties on the subject matter" … "an entity need not disclose information, but shall disclose the general nature of the dispute together with the fact that, and the reason why, the information has not been disclosed".

In contrast with IFRS, the US GAAP framework refers to the recognition and accruals of loss contingencies (ASC 450-20-25) and does not use the concept of "provisions"; in fact, it also adds that the term "reserve" shall not be used as it is "limited to an amount of unidentified or unsegregated assets held or retained for a specific purpose". ASC 450-20-50-1 indicates that "disclosure of the nature of an accrual" for a loss contingency "may be necessary for the financial statements not to be misleading". However, it also specifies that disclosure of the amount accrued is required only "in some circumstances". In fact, the illustrative example provided does not include a disclosure of the amount accrued even though an accrual has been made:

"Example 3: Illustrative Disclosure

450-20-55-37 Entity A provides the following disclosure in accordance with Section 450-20-50.

On March 15, 19X1, Entity B filed a suit against the company claiming patent infringement. While the company believes it has meritorious defenses against the suit, the ultimate resolution of the matter, which is expected to occur within one year, could result in a loss of up to $25 million in excess of the amount accrued."

ASC 450-20-50-3 indicates when a disclosure of a contingency shall be made:

"Disclosure of the contingency shall be made if there is at least a reasonable possibility that a loss or an additional loss may have been incurred and either of the following conditions exists:

a. An accrual is not made for a loss contingency because any of the conditions in paragraph 450-20-25-2 are not met.
b. An exposure to loss exists in excess of the amount accrued pursuant to the provisions of paragraph 450-20-30-1".

ASC 450-20-50-4 elaborates on the content of the disclosures to be made, indicating that they should include both the nature of the contingency and an estimate of the possible loss or range of loss, but makes no reference to any need to disclose the amounts accrued.

In parallel, ASC 275-10-50 addresses disclosures related to estimates:

"Reporting entities shall make disclosures in their financial statements about the risks and uncertainties existing as of the date of those statements in the following areas:

c. Use of estimates in the preparation of financial statements
d. Certain significant estimates".

These include those concerning misconduct, as the expected costs caused by penalties or remediation imply an assessment of future events. as per 275-10-50-8, disclosure regarding an estimate is required when both of the following criteria are met:

a. It is at least reasonably possible that the estimate of the effect on the financial statements of a condition, situation, or set of circumstances that existed at the date of the financial statements will change in the near term due to one or more future confirming events.
b. The effect of the change would be material to the financial statements.

The disclosure should include an indication "that it is a least reasonable possible that a change in the estimate will occur in the near term", as well as an estimate "of the possible loss or range of loss or state that such an estimate cannot be made" (275-10-50-9). However, no disclosure of the amount accrued is required. Furthermore, 275-10-50-10 indicates that when the criteria for disclosure set in 275-10-50-8 are not met as a result of risk-reduction techniques, the described in 275-10-50-9 "are encouraged but not required".

A comparative analysis of all previously mentioned provisions allows us to conclude that the differences between the two accounting standards can be articulated as follows:

1. The IFRS framework is more specific, as it distinctly provides in IAS 37.84 a comprehensive structure for the disclosures to be made; this level of detail is absent from US GAAP which only requires a disclosure of the contingency and the potential loss.
2. The IFRS framework is also more straightforward and self-contained within IAS 37; US GAAP specify a more complex regime across two separate ASC topics; disclosure of contingencies (ASC 450) and disclosures related to estimates (ASC 275).
3. The most important difference between both frameworks is the contrasting approach to disclosure. IFRS establish full disclosure, including disclosure of provisions made, as standard by referring to non-disclosure as acceptable only under "extremely rare circumstances" (IAS 37.92). On the other hand, for US GAAP non-disclosure is the default option, with disclosure of amounts accrued for a loss contingency being necessary only under "some circumstances" (ASC 450-20-50-1).

4. US GAAP place their emphasis on the disclosure of the total potential loss rather than on the accrued amount (ASC 450-20.50-4 and 275-10-50-9).
5. Finally, although IFRS consider disclosure as the default option, the acceptance of the aggregation of similar provisioning categories introduced by IAS 37.87 provides an instrument to avoid the specific reporting of misconduct provisions. The possibility of a "prejudice" caused by disclosure, contemplated by IAS 37.92 does not lead to a full avoidance of the reporting of a provision, but limits the information reported to the nature of a dispute, removing the need to reveal the amounts provisioned.

3.2. Addressing the total cost of misconduct.

Announced penalties are an *external proxy* for actual misconduct costs. As such, they face limitations, both in terms of the extent of the costs they include and the range of events that they capture. Specifically, announced penalties may only consider the punishment of the misbehaviour, not necessarily including the remediation of the damage caused to customers or other compensation considered necessary. In other situations, a bank may take compensatory action due to a customer complaint received without having been subject to a penalty. These limitations become more acute when only the penalties imposed by specific authorities are contemplated (see e.g. Carretta et at (2025)).

By contrast, misconduct provisions include any expenses or loss of revenues associated with misconduct, and not just those arising from a penalty. From the perspective of both IFRS 37 and ASC 450, all customer remediation costs (including refunds and compensation) qualify as an "obligation […] as a result of a past event" and thus must be provisioned or expensed. Table 3 summarises the amount differences between both variables.

Table 3. Quantity differences between misconduct provisions and announced penalties.

	Fines and penalties levied	Settlements with regulators	Customer remediation caused by a penalty	Customer remediation not driven by a penalty	Small individual court decisions	Reversal of previously accrued revenues	Other costs (legal, operational)
Misconduct provisions	Included	Included	Included	Included	Included	Potentially included	Potentially included
Announced penalties	Included	Included	May or may not be included	Not included	Not included due to lack of available data	Not included	Not included

Table 3 explains the differences in amount between misconduct provisions and announced penalties.

The limitations on the use of announced penalties as a proxy for the financial impact of misconduct can be observed through the analysis of the consequences of the mis-selling of payment protection insurance (PPI) in the UK. PPI was usually sold with products involving repayments, such as a loan, credit card or mortgage, to cover the case on which the customer could not make those repayments. On many occasions, PPI policies were sold to customers who were not able to benefit from the policy or were sold without a proper description or an adequate information process for the client.

Between 2011 and 2019, banks operating in the UK paid USD 60,926 million in PPI-related refunds and compensation to customers (Financial Conduct Authority, 2020)[4]; these payments correspond to millions of individual claims with an average redress amount of less than GBP 4,000 (FCA, 2020; Financial Conduct Authority, 2021). Over the same period the UK Financial Conduct Authority (FCA), announced USD 262 million in penalties related to PPI mis-selling. The comparatively small size of the penalties levied was apparently caused by the FCA's focus on ensuring that PPI victims received compensation fairly and quickly rather than penalise banks for what happened historically[5]. As a result of this approach, total misconduct provisions

[4] The FCA has not released this information for 2020-2022.

[5] See https://www.reuters.com/article/us-regulations-summit-ppi-fines-idUKKBN0DF0XE20140429

disclosed by the 5 banks in our sample with significant operations in the UK[6] amounted to USD 130,970 million, compared with USD 30,077 million in announced penalties; this implies a difference of USD 100,893 million (335.5%). The most extreme case is Lloyds Bank, which reports the largest amount of P&L misconduct provisions (USD 43,246 million) but has been levied the smallest amount of fines and penalties (USD 862 million).

Table 4: P&L misconduct provisions vs announced penalties for banks headquartered in the UK.

Bank	Total P&L misconduct provisions disclosed (USD mm)	# of time periods with a P&L misconduct provision disclosure	Total penalties announced (USD mm)	# of time periods with a penalty announced	Difference between misconduct provisions and penalties received (USD mm)
Barclays	32,648	24	7,347	25	25,301
HSBC	20,368	24	6,893	29	13,475
Lloyds	44,108	24	862	8	43,246
Natwest (RBS)	33,847	36	14,975	28	18,872
Total	*130,970*	*108*	*30,077*	*90*	*100,893*

Table 4 explains the differences in amount and number of periods reported between misconduct provisions and announced penalties for those banks headquartered in the UK. Although Santander has significant operations in the UK, it has not been included in this table as it is not headquartered in the UK and it does not disclose misconduct provisions on its quarterly and annual financial statements (misconduct provisions are included within "Provisions for taxes and other legal proceedings" and "Other provisions").

3.3. Misconduct provision disclosure in practice.

The empirical implications of the previous considerations are reported in Table 5, which summarises the P&L misconduct provision amounts disclosed in the refence sample of North American and European Global Systemically Important banks over the 2011- 2022 period and compares them with announced penalties.

[6] Standard Chartered is headquartered in the UK but does not conduct retail banking operations in that country.

Table 5. P&L misconduct provisions vs announced penalties summary.

	P&L misconduct provision disclosure	Total P&L misconduct provisions (USD mm)	# of time periods with a P&L misconduct provision disclosure	Total penalties announced (USD mm)	# of time periods with a penalty announced
Banks reporting under IFRS					
Barclays	Semi-annual disclosure	32,648	24	7,347	25
BBVA	Not disclosed (included within "Other provisions")	Not disclosed	Not disclosed	91	10
BNP	Semi-annual (2014-2022) & annual disclosure (2013). No disclosure prior to 2013	4,834	19	9,912	17
Credit Agricole	Semi-annual (2020-2022) & annual (2019) disclosure. Prior to 2019, no disclosure (combined with provisions for tax risk)	(51)	7	1,412	5
Commerzbank	Annual disclosure	2,699	12	1,778	8
Deutsche Bank	Quarterly from Q2 2015 to Q4 2018; annual before and after	20,344	27	16,064	33
HSBC	Semi-annual disclosure	20,368	24	6,893	29
ING Bank	Annual disclosure	494	8	945	5
Intesa	Not disclosed (provisions for legal disputes include non-misconduct related items such as bankruptcy clawbacks and revocatory actions)	Not disclosed	Not disclosed	282	8
Lloyds	Semi-annual disclosure	44,108	24	862	8
Nordea	Not disclosed (included within "Other provisions")	Not disclosed	Not disclosed	7	4
Royal Bank of Canada	Not disclosed (amounts cannot be estimated)	Not disclosed	Not disclosed	119	18
Natwest (RBS)	Semi-annual (H2 2021-H2 2022), quarterly (Q1 2014-Q2 2021), annual (2011-2013)	33,847	36	14,975	28
Banco Santander	Not disclosed (changes in provisions combines Provisions for taxes and other legal proceedings and Other provisions)	Not disclosed	Not disclosed	382	22
Societe Generale	Semi-annual (H2 2012- H1 2018); annual (2012); not disclosed before 2012 and after H1 2018 (included in "Other provisions")	3,880	12	3,732	20
Standard Chartered	Not disclosed (included in "Other provisions")	Not disclosed	Not disclosed	1,216	28
Toronto Dominion Bank	Annual disclosure	1,698	12	248	12
UBS	Quarterly disclosure	12,335	48	10,719	30
Unicredit	Not disclosed (provisions for legal disputes include non-misconduct related items such as bankruptcy clawbacks and revocatory actions)	Not disclosed	Not disclosed	1,284	9
Total banks reporting under IFRS		*177,203*	*253*	*78,267*	*319*
Banks reporting under US GAAP					
Bank of America	Not disclosed (US GAAP)	Not disclosed	Not disclosed	60,819	41
Bank of New York Mellon	Not disclosed (US GAAP)	Not disclosed	Not disclosed	1,062	14
Citigroup	Not disclosed (US GAAP)	Not disclosed	Not disclosed	17,876	43
Credit Suisse	Quarterly disclosure	16,903	48	11,166	23
Goldman Sachs	Quarterly disclosure	13,547	48	11,113	26
JP Morgan	Not disclosed (US GAAP)	Not disclosed	Not disclosed	32,151	42
Morgan Stanley	Not disclosed (US GAAP)	Not disclosed	Not disclosed	5,969	39
State Street Bank	Not disclosed (US GAAP)	Not disclosed	Not disclosed	838	12
US Bancorp	Not disclosed (US GAAP)	Not disclosed	Not disclosed	1,311	23
Wells Fargo	Not disclosed (US GAAP)	Not disclosed	Not disclosed	23,467	45
Total banks reporting under US GAAP		*30,450*	*96*	*165,772*	*308*
Total		207,653	349 (of which 155 on an annual basis)	244,040	627

Table 5 lists the amounts disclosed, disclosure policy and number of datapoints for P&L misconduct provisions and compares it with the amount and number of penalties announced for each bank in our database.

14 of the 29 banks within our sample report misconduct provision disclosures at some point during the 2011-2022 period. This figure appears to be influenced by the different disclosure frameworks under IFRS and US GAAP. Reported figures show that 8 out of the 10 banks reporting under US GAAP in our sample do not provide misconduct provision disclosures, despite receiving a combined USD 143,493 million in penalties. Instead, these banks include their balance sheet misconduct accruals within "Accounts payable and other liabilities" or "Other liabilities", and their P&L misconduct accruals within "Litigation expenses" or "Litigation charges", without further relevant breakdowns. Most notably, US GAAP banks disclose their potential loss *in excess of* the amount accrued, as per ASC 450, whilst not disclosing what the accrued amount is, as the standard does not require it.

There are some exceptions to the overall approach towards P&L misconduct provision disclosures under US GAAP. Goldman Sachs provides on a voluntary basis the figure for quarterly "net provisions for litigation and regulatory proceedings" within its "Management's discussions and analysis". Nonetheless, balance sheet accruals are still not disclosed, as they are included within "Accrued expenses and other" in "Other liabilities". Credit Suisse, which reports under US GAAP despite being based in Switzerland, provides a quarterly disclosure of P&L misconduct provisions and an annual statement of changes in misconduct provisions that follows the IAS 37 format. These disclosures might be driven by the influence of the largest Swiss bank, UBS, which reports under IFRS and provides full disclosure since 2006 (Credit Suisse initiated disclosure in 2010). Interestingly, State Street is the only US GAAP bank that discloses annually their balance sheet "aggregate accruals for loss contingencies for legal, regulatory and related matters", but does not detail the corresponding P&L charges.

Conversely, 12 out of the 14 banks in our sample that disclose their P&L misconduct provisions report under IFRS. It is however noted that misconduct provision disclosure under IFRS is not universal, as seven IFRS banks do not provide P&L misconduct provision data. In most cases

(six), this is caused by the application of IAS 37.87, which allows for the aggregation of misconduct provisions with other classes of provisions, such as provisions for bankruptcy proceedings, loan recoveries or tax-related litigation, grouping them all under "other provisions"[7]. Very rarely (one case), the rationale for the lack of disclosure is that provision amounts cannot be estimated.

It may also be noted that the interval for misconduct provision disclosures is not homogeneous. While five banks provide quarterly disclosures, only three do so for the whole period under review; five banks produce semi-annual disclosures, but, once again, just three for the whole period; the remaining four banks disclose on an annual basis.

We believe that this scarcity of datapoints for misconduct provisions, especially among US banks, may be the main reason why these have not been considered as a relevant variable by previous literature on bank misconduct. Preceding authors state that "[t]he annual reports of banks […] disclose the cost of financial penalties in a non-transparent manner, and there is no common internationally accepted standard for listing these items in reports" (Köster & Pelster, 2017), [misconduct] "expenses are simply added to other cost positions without any explanation" (Köster & Pelster, 2018) or that "the cost of pecuniary penalties and the number of sanctions is not disclosed in their [the banks'] balance sheets" (Carretta et al., 2025). Along these lines, the only preceding paper addressing misconduct provisions (Tracey & Sowerbutts, 2018) is limited to UK banks, which, beside the Swiss, are the only ones that provide this information on a recurrent and general basis.

We observe that the goal of the provision metric is to capture amounts that are recognized as liabilities in the balance sheet and affect the P&L statement. However, as observed by the above authors, these amounts may not always available to users of financial statements, as they may be combined with other items, such as other expenses in the P&L statement or other liabilities

[7] Two of the banks that report P&L misconduct provisions also resort to combining them with other provisions at some point of the reference period.

on the balance sheet. Several banks in our sample provide insufficient note disclosure to disentangle these combinations. Therefore, missing information on P&L misconduct provisions does not necessarily mean that a bank did not recognise a provision in the first place. Table 3 shows that P&L misconduct provisions for those banks that provide disclosure amount to USD 207,653 million, vs USD 97,166 million in penalties announced. This difference implies that the data for penalties announced may severely understate the financial consequences of misconduct borne by banks. We have also mentioned the timing difference between provisions and penalty announcements; section 5 provides a detailed quantitative analysis of this effect.

3.4. Introducing P&L misconduct costs as an alternative measure of misconduct.

We observe that over the last decade, banks have started to include detailed information about "P&L misconduct costs" in their quarterly financial documents: quarterly earnings releases, results presentations, financial data supplements and, for US banks, 10Q forms. Under this term we group different misconduct-related P&L items, commonly labelled as "litigation expenses", "litigation charges", "cost of legal risk", or even "operating losses related to litigation, customer remediation and regulatory matters". Values disclosed for these costs may vary across a wide range, with the smallest being USD 10 million and the largest amounting to several USD billion; occasionally, they also may become negative, thus representing an increase rather than a decrease in earnings. The characterisation of these items is not consistent across banks; banks may change their name from one quarter to another and, in some cases, go out of their way to avoid the term "misconduct" in their designation (see e.g. the term "conduct costs" used by some UK banks or their categorisation by a European bank as "impact of transaction with the EU Commission"). However, the analysis of our database makes clear that they always share a similar nature. Therefore, we analyse how these costs are disclosed by each

bank and unify the characterisation in the constructed database to provide homogeneity in the definition of P&L misconduct related items.

An overview of the P&L misconduct costs reported by the banks included in our sample is provided in Table 6.

Table 6. P&L misconduct costs vs announced penalties summary.

	P&L misconduct cost disclosure	Total P&L misconduct costs (USD mm)	# of time periods with a misconduct cost disclosure	Total penalties (USD mm)	# of time periods with a penalty announced
Banks reporting under IFRS					
Barclays	Quarterly	31,166	41	7,347	25
BBVA	Ad-hoc	622	1	91	10
BNP	Quarterly for Q4 2013-Q4 2015	9,075	5	9,912	17
Credit Agricole	Quarterly for Q2 2015-Q3 2019	843	10	1,412	5
Commerzbank	Ad-hoc	412	5	1,778	8
Deutsche Bank	Quarterly	20,706	46	16,064	33
HSBC	Quarterly	16,890	47	6,893	29
ING Bank	Ad-hoc	1,365	4	945	5
Intesa	Ad-hoc	242	1	282	8
Lloyds	Quarterly	44,257	42	862	8
Nordea	Ad-hoc	108	1	7	4
Royal Bank of Canada	Ad-hoc	29	2	119	18
Natwest (RBS)	Quarterly	33,705	44	14,975	28
Banco Santander	Ad-hoc	2,768	6	382	22
Societe Generale	Quarterly until Q3 2018	4,828	18	3,732	20
Standard Chartered	Ad-hoc	1,174	7	1,216	28
Toronto Dominion Bank	Ad-hoc	1,554	8	248	12
UBS	Quarterly	11,979	47	10,719	30
Unicredit	Ad-hoc	(550)	1	1,284	9
Total banks reporting under IFRS		*181,173*	*336*	*78,267*	*319*
Banks reporting under US GAAP					
Bank of America	Quarterly	62,680	48	60,819	41
Bank of New York Mellon	Ad-hoc	1,354	5	1,062	14
Citigroup	Quarterly until Q4 2016	21,165	28	17,876	43
Credit Suisse	Quarterly	16,903	48	11,166	23
Goldman Sachs	Quarterly	13,547	48	11,113	26
JP Morgan	Quarterly	28,069	46	32,151	42
Morgan Stanley	Quarterly for Q1 2012 - Q4 2015 and Q2-Q4 2022	6,726	18	5,969	39
State Street Bank	Ad-hoc	1,041	24	838	12
US Bancorp	Ad-hoc	1,191	6	1,311	23
Wells Fargo	Quarterly	34,057	48	23,467	45
Total banks reporting under US GAAP		*186,733*	*319*	*165,772*	*308*
Total		367,906	655	244,040	627

Table 6 lists the amounts disclosed, disclosure policy and number of datapoints for P&L misconduct costs and compares it with the amount and number of penalties announced for each bank in our database.

Upon review of Table 6, we detect that P&L misconduct costs present three characteristics that are important for the study of bank misconduct:

1. They are more common than any other misconduct-related variable. The banks in our database disclose P&L misconduct costs in 655 quarters (47.1% of total), vs 627 quarters with a penalty announced (46.3% of total) and 337 time periods (combining years, half-years and quarters, as disclosure is not homogeneous from a time perspective) with a provision disclosure.
2. Every single bank discloses a P&L misconduct cost at least once between 2011 and 2022, regardless of nationality and accounting standards. This leads to the most comprehensive amount: total P&L misconduct costs add up to USD 367,906 million, vs 244,040 million in penalties announced and 207,653 million in provisions disclosed. Therefore, even though announced penalties are theoretically always observable, while misconduct costs can only be observed when disclosed, the amount disclosed for P&L misconduct costs is 1.5 times the total for announced penalties. The multiple increases to 1.8 times when misconduct costs are compared with provisions. These figures illustrate that, in a similar way to misconduct provisions, P&L misconduct costs include the expenses implied by customer remediation, loss of revenues and other legal costs in addition to costs resulting from regulatory penalties. They also include penalties levied by all authorities.
3. Finally, P&L misconduct costs reflect internal bank data and are included within investors' documentation; as all banks considered in our sample are listed, this implies that they are subject to regulatory scrutiny. Therefore, although they are a voluntary disclosure, once disclosed the content of the disclosure cannot be arbitrary.

Similarly to misconduct provisions, detailed disclosure on P&L misconduct costs is not always available, as these costs may also be combined with other expenses in a way that cannot be

properly disentangled. Therefore, the lack of data on P&L misconduct costs does not always imply that these have not been recognised by a bank.

We note that the use of P&L misconduct costs as a research variable for the analysis of the consequences of bank misconduct raises two concerns. First, the characterisation of this P&L item is bank specific, and thus may differ across institutions. Secondly, as they are not explicitly accounting provisions, they may not properly separate actual misconduct payments from future probable payments. This may deliver a combination of different levels of accounting discretion. We address this matter in section 5, where we analyse their "current" vs "future" nature of misconduct costs to determine the extent to which they relate to present period or forthcoming payments.

3.5. Recap: The choice of variable to measure bank misconduct.

One of the gaps in the literature on bank misconduct is the lack of a detailed comparative analysis of the different metrics available for the timing and quantification of misconduct, including a critical evaluation of the advantages and disadvantages of each variable. Previous research on this topic either choose a variable without a detailed justification (Altunbas et al., 2007; Arnaboldi et al., 2020) or justify the rationale for the choice of variable, but do not contemplate the limitations implied by their choice, and, more specifically, do not address the impact of accounting rules on the use of the metrics proposed (Köster & Pelster, 2017, 2018; Tracey & Sowerbutts, 2018). While Karpoff et al. (2017) provide a detailed analysis of the problems related to the use of databases on misconduct-related announcements, they deal with these concerns by providing advice on the use of the data, not by suggesting any alternative misconduct metrics.

Thus, the analysis provided on previous sections is, to the best of our knowledge, provides the first detailed comparison on the benefits and the issues raised by the alternative variables for

the research of bank misconduct: penalty announcements, misconduct provisions and P&L misconduct costs. each variable. This comparison can be summarised as follows:

Table 7. Summary of the comparison of variables for bank misconduct.

	Announced penalties	Misconduct provisions	P&L Misconduct costs
Available for all banks	Yes	No	All banks in our sample disclose them for at least one time period
Available for all years	Yes	No	No
Consistent across banks	Yes	Yes	No, but a hand-collected "common elements" approach may be used to increase consistency
Consistent across time periods	Yes	Yes, when disclosed, but not always disclosed	Yes, when disclosed, but not always disclosed
Independent of accounting disclosure choices	Yes	No	No
Consistent with the timing of the impact of misconduct on a bank's financials	No	Yes	Yes
Consistent with the BIS Committee recommendations on quantification of operational risks	No	Yes	Yes
Includes all misconduct related cost elements	No	Yes	Yes
Total amount for full sample (USD mm)	244,040	207,653	367,906
Total amount for banks that provide misconduct provision disclosures (USD mm)	97,166	207,653	207,230
Total amount for banks that provide P&L misconduct cost disclosures (USD mm)	244,040	207,653	367,906

Table 7 provides a summary comparison of the key characteristics of the potential variables for the research of bank misconduct and quantifies the total amount for each variable for the banks in our database

Table 7 evidences the differences arising from the use of one variable over another. These include the time periods for which each variable is available, observability across subjects, cross-sample consistency, comprehensiveness, moment of time at which they measure misconduct, and alignment with accounting rules. Thus, as suggested by Karpoff et al. (2017), it is essential to match the data to the research question and the empirical test design. While announced penalties have the advantage of being consistent and universally available, they present two major problems: first, they may not reflect the moment at which the financial impact of misconduct is experienced, and secondly, they do not capture the full costs of

misconduct. On the other hand, while misconduct provisions are comprehensive and have a clear accounting nature, they are not always disclosed. Banks reporting under US GAAP rarely disclose them, as disclosure is not mandatory; IFRS banks often aggregate them with other provisions so that effectively, they are not observable. Finally, P&L misconduct costs provide the most comprehensive figure for misconduct and align disclosure with financial impact. Although they are not necessarily consistent across banks, consistency may be increased by grouping items based on their underlying nature, and not on their labelling by every financial institution, as we explain in Chapter 5. However, P&L misconduct costs are provided on a voluntary basis and do not separate current period expenses from future probable payments.

Chapter 4

Hypotheses development

4.1. The predictive ability of misconduct provisions.

The central part of this paper is related to the literature on the timing and determinants of bank provisioning, which has been primarily focused on loan loss provisions. Laeven and Majnoli (2003) note the tendency of banks to delay provisions until it is too late; Gebhardt and Novotny-Farkas (2011) discuss the implications of the incurred and expected loss accounting approaches on timely loss recognition; while Marton and Runesson (2017) focus on the ability of loan loss provisions to predict actual losses. They address the statement of the U.S. Securities and Exchange Commission (SEC) Staff Accounting Bulletin 102, stating that the validity of loan loss provisions is their ability to predict actual charge-offs, and extend it to the case of non-US banks. Several papers address the determinants and consequences of this predictive capacity; see e.g. Altamuro and Beatty (2010) and Dal Maso et al. (2018) who respectively consider its relationship with internal controls and accounting enforcement.

To the best of our knowledge, the analysis on the predictive ability of bank loan loss provisioning has not been extended to other types of provisions, including misconduct provisions. Tracey and Sowerbutts (2018), state that "[M]isconduct provisions are a timely and comprehensive measure of misconduct costs", as "[B]anks are required, in accordance with International Accounting Standards, to make adequate provisions for the periods they expect to face any likely misconduct costs". They also identify the timing differences between "bank misconduct taking place" and "misconduct provisions being made" and note that "misconduct penalties … sometimes take considerable time to be finalized and so banks have often previously provisioned for them". However, they do not provide empirical evidence to support these statements, focusing instead on the relationship between misconduct provisions and bank

capital and risk-taking. Sakalauskaite (2018) plots the start of misconduct cases and their investigations vs penalties imposed and discusses the time lag between the starting date of misconduct and the resulting costs, concluding that most cases are solved within 6 years, but does not address misconduct cost provisioning over that interval. In a similar manner, D'Avino and Tselika (2024) note that there is a variable, but usually long, lag between the moment investigations are started and the announcement of a penalty. Flore et al. (2021) compare the cash flow and P&L impact of announced penalties to conclude that "banks and, at least to a certain degree, investors are generally able to correctly anticipate impending financial penalties". Nevertheless, these authors do not explore the nature, mechanics and consequences of that anticipation, focusing instead on the resolution of uncertainty implied by the announcement of a penalty.

Drawing on the predictions of the literature on loan loss provisioning, we extend to misconduct the expectation that provisions anticipate future losses, formulating the following hypothesis:

H1: Misconduct provisions should anticipate the announcement of future penalties.

We note that, if this hypothesis is confirmed, the financial impact of bank misconduct should be captured at the time that the provision is made, rather than when the penalty is announced. The time difference between provision reporting and penalty announcement is therefore important. We also aim to test the extent to which this hypothesis applies to P&L misconduct costs, as defined in section 3.4. P&L misconduct costs exhibit a current as well as a forward-looking component; if the forward-looking component is dominant, they should also anticipate the announcement of future penalties.

4.2. The determinants of misconduct-related financial disclosures.

To test the validity of H1, we need to consider the availability of data on misconduct provisions (or P&L misconduct costs), as only those provisions that are disclosed can be related to future penalties. Thus, our research is also related to the literature on bank financial disclosures. The

conceptual framework for financial reporting published by the International Accounting Standards Board states that "in making decisions about presentation and disclosure, it is important to consider whether the benefits provided to users of financial statements by presenting or disclosing particular information are likely to justify the costs of providing and using that information" (IFRS Foundation, 2010). It therefore acknowledges that decisions on disclosure are based on weighing the expected costs and benefits of making the information public. Based upon this presumption, Frolov (2007) argues that banks are reluctant to disclose information of a negative nature, as management tends to perceive more the costs related with disclosing information that is uncertain or can be misinterpreted than the benefits of disclosure. As a result, bank disclosure is often dependant on the implementation and enforcement of accounting standards by the relevant regulators (Bischof, 2009), which should also address the costs and benefits of their regulatory intervention (Guttentag, 2004). This leads us to our second hypothesis:

H2: Misconduct provision disclosure is driven by accounting standards.

In a similar way to what we proposed on 4.1, we will also test how this hypothesis applies to P&L misconduct costs.

4.3. The relationship between misconduct-related disclosures and bank stock returns.

Previous literature on bank misconduct has traditionally considered the impact of penalty announcements on financial performance. Along these lines, Köster and Pelster (2017, 2018) find no relation between financial penalties and after-tax bank profitability, and determine that financial penalties increase banks' systemic risk exposure but do not significantly affect banks' contribution to systemic risk. Delis et al. (2016) conclude that the enforcement actions of the US Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency have no significant impact on profitability, although they increase its volatility; and have a positive impact on capital ratios via a decrease of risk weighted assets. Flore et al. (2021)

determine that the announcements of fines and settlements by banks have positive valuation effects on bank stocks, bond, and credit default swaps. However, the mediating effect that the bank's accounting framework and financial disclosures may have on the timing and magnitude of the financial consequences of bank misconduct has not been previously addressed[8].

Kaplan and Roll (1972), argue that "accounting statements are a principal means for disseminating information about the economic events of corporations". Following this statement, researchers have produced a large body of literature addressing the relationship between stock prices and accounting information (see e.g. Ball and Brown (1968), Beaver (1968) or Wild (1992)). A portion of this research studies the value of supplementary disclosures that complement primary financial statements (Barth, 1994; Barth et al., 1991; Beaver et al., 1989).

To frame our third hypotheses, we draw on the papers that study the market relevance of banks' disclosures. More specifically, we concentrate on the effect of loan loss provisioning on stock prices. Vyas (2011) finds evidence that exposure to risky assets is reflected earlier in stock returns for firms with timelier loan loss provisioning. Griffin (1998) and Docking et al. (2000) conclude that increases in loan loss provisions have a negative impact on bank stock prices; Lopez Espinosa et al. (2021), observe how the increase in loan loss provisions caused by the shift to a loan provisioning framework based on expected credit losses elicits lower stock returns. Thus, markets react to the announcement of a loan loss provision and not to the actual realization of the credit loss. We extend this prediction to bank misconduct to formulate the following hypothesis:

H3: Bank stock returns are expected to react negatively to the disclosure of a P&L misconduct cost, rather than to the announcement of a penalty.

[8] Tracey and Sowerbutts (2018) study the relationship between misconduct provisions and bank risk taking and capital, but do not extend their work to stock returns. Furthermore, their paper only considers UK banks.

Empirically testing this hypothesis requires that banks' reported disclosure of misconduct charges substitutes "provisions" for "P&L misconduct costs". As reported in chapter 3, P&L misconduct costs are commonly disclosed quarterly, while provisions may be disclosed on an annual, semi-annual or, very rarely, quarterly basis. Given that these two variables contain overlapping information on misconduct, stock prices will react to the one which is disclosed first. This will usually be P&L misconduct costs, given their quarterly nature. Therefore, given that semi-annual or annual provisions may add limited information, and quarterly provisions are rarely available, quarterly P&L misconduct costs emerge as most appropriate variable for the analysis of the effect of misconduct on stock returns.

Chapter 5

Research design

Our database is initially composed of listed financial institutions that have been classified as Global Systemically Important Banks (G-SIBs) by the Financial Stability Board ("FSB") at any time during the period 2011 to 2022. G-SIBs are defined as banks "of such size, market importance, and global interconnectedness that their distress or failure would cause significant dislocation in the global financial system and adverse economic consequences across a range of countries" (Financial Stability Board, 2010). G-SIB classification is based on size, interconnectedness, substitutability, complexity, and cross-jurisdictional activity[9]. By using the G-SIB list, we guarantee representativeness of the global banking sector within our sample. Furthermore, the greater degree of regulatory and investor scrutiny over banks that have been classified as "global systemically important" should imply a greater availability of the required information, both in terms of disclosures and of coverage by the press and the regulatory agencies of the penalties imposed. We stress that our sample selection is not determined by the availability of misconduct data: all banks that meet the G-SIB criteria (or the size plus domestic footprint in the case of the two additional banks) are included, regardless of their disclosure profile. However, for comparability reasons, we focus on banks headquartered in Europe and North America. These countries have relatively homogeneous regulatory regimes in terms of consumer and investor protection and money laundering and sanctions compliance and have fully implemented Basel III.

We expand the G-SIB list by including two additional banks: Intesa and US Bancorp. Although these two banks have not been classified as G-SIBs due to their local footprint, they are larger

[9] See https://www.bis.org/bcbs/gsib/

by both total assets and market capitalisation than some of the G-SIBs in their respective countries[10].

We use a sample of listed banks with the aim of exploring the impact of bank misconduct on shareholder value. Furthermore, the stock of North American and European G-SIBs is usually listed in the NYSE; thus, they all have the SEC as a market regulator.

This delivers a selection of 29 banks in 10 countries (the USA, the UK, Canada, Switzerland, France, Germany, Italy, Spain, the Netherlands and Sweeden / Finland), including 7 of the top 10 G-SIBs in 2022. The full list is provided in Tables 3 and 4. As of year-end 2022, the banks in our sample held USD 41,772 billion in total assets and had a combined market capitalisation of USD 2,315 billion.

Our sample size is similar to that of Flore et al. (2021) and Sakalauskaite (2018), who respectively consider 25 and 30 banks, including the largest US banks and a subgroup of G-SIBs. On the other hand, the global scope of our sample, which covers 10 different regulators and 5 different banking regimes, contrasts with some of the preceding research, which is focused on individual banking frameworks, such as the UK (Tracey & Sowerbutts, 2018), the US (Altunbaş et al., 2020; D'Avino & Tselika, 2024; Delis et al., 2016), or the EU (Arnaboldi et al., 2020; Busetto et al., 2019; Carretta et al., 2025). Our work also departs from the previous literature in that it considers two different metrics, misconduct provisions and P&L misconduct costs, to measure bank misconduct. This use of different misconduct metrics requires a combination of annual and quarterly data, depending on the variable considered. As explained in 3.3 and evidenced from Table 5, only five out of the 24 banks in our sample disclose their misconduct provisions on a quarterly basis, and two of these do so only on a partial manner, combining quarterly with semi-annual or annual disclosures. Six other banks provide provisions data on a semi-annual basis, although only three of these do so for the whole period

[10] In fact, Intesa is the largest Italian bank, although only Unicredit is classified as a G-SIB, while US Bancorp's assets exceed by more than 80% those of State Street Bank, the smaller US G-SIB.

considered. Finally, 3 banks disclose provisions only on an annual basis. Given this combination of quarterly, semi-annual and annual figures, we have chosen to use annual data for our analysis of P&L misconduct provisions, as it is both the common denominator (aggregation of quarterly and semi-annual allows to obtain annual figures, but not the other way around) and the timeframe that allows us to consider the maximum number of banks.

On the other hand, as can be observed in Table 6, when disclosed, P&L misconduct costs are published on a quarterly basis on interim bank financial documents; this allows for the use of a quarterly reference period for their study. We also note that Gambacorta and Marques-Ibanez (2011) argue that quarterly data is more appropriate for measuring the short term relationship between financial variables, as annual data aggregates over the year different inputs that may offset each other (Ball & Brown, 1968). In as similar manner, Kothari (2001) asserts that annual accounting figures do not provide a particularly timely source of information to the capital markets.

We obtain data on misconduct provisions and P&L misconduct costs from the banks' financial documents available on their corporate websites and / or on their filings with the relevant regulators. These sources used include Annual Reports and 10-K forms for annual data, and quarterly earnings reports, investors' presentations, financial data supplements and 10-Q forms for quarterly variables. We address the differences in characterisation of these items across banks by identifying misconduct costs based on the underlying nature of the cost items, not on their labelling. Therefore, we group together all misconduct related items, regardless of how they are designated by every individual banks. When a bank reports different types of misconduct costs, these are also grouped into a single category.

Our use of the bank's own financial documents as the origin of our data addresses the concerns raised by Karpoff et al. (2017) on the use of databases in financial conduct research. These

authors observe that the results from empirical analyses on misconduct may vary depending on the database used and attribute these discrepancies to four potential issues:

1. Each of the databases considered is limited by the use of a proxy event to identify misconduct Thus, "[E]ach database, by design, captures only a narrow and typically nonoverlapping slice of the information related to what we refer to as a "case" of financial misconduct" (Karpoff et al., 2017). This leads to differences on the quantification of misconduct.

   Our dataset addresses this concern by not being focused on specific proxy events, as it captures all sources of misconduct-related P&L charges, regardless of their source or nature. As previously shown, our dataset provides the most comprehensive quantification of misconduct available.

2. The databases identify different dates upon which investors learn about misconduct. The differences on reference dates used leads to variations on the measure of the stock market reactions to misconduct.

   This issue is related to the considerations on the different dates available for the measurement of an operational event, as highlighted by the Basel Committee on Banking Supervision (2011) and discussed in Chapter 3.

   Our database avoids this issue by considering a single criterion for the date on which investors learn about misconduct, which is the date on which the financial impact of past misconduct is disclosed on a bank's financials. Therefore, in our database there is a single source of relevant data (quarterly and annual financial disclosures by the banks), and each individual datapoint for misconduct provisions and P&L misconduct costs can be tracked to a specific financial disclosure document, thus ensuring transparency.

   This approach provides several advantages. First, it is homogeneous across all our data. Second, it reflects the possibility that banks' financial disclosures advance the

announcement of penalties, which will be explored in detail in our empirical analyses. Third, it uses as reference date for the impact of misconduct the date on which the bank itself acknowledges such impact.

3. The databases rely on their definition of fraud to establish misconduct; these definitions are not homogeneous across databases.

   In contrast with this approach, our dataset does not rely on any definition of fraud; in fact, it captures all misconduct-related P&L items regardless of whether they are associated with fraud or other types of misbehaviour. While it is possible that the definition of misconduct may not be consistent across all banks in our sample, we note that misconduct related disclosures are monitored by stock market supervisors, as they are investor-relevant information. All banks in our sample are listed in the NYSE Stock Exchange and therefore supervised by the SEC, which should ensure some degree of homogeneity and consistency on the definition of misconduct. Furthermore, we have individually reviewed the financials of all banks in our sample to consolidate into a single category potential different sources of misconduct-related charges, such as "customer redress", "regulatory provisions in Private Banking" and "settlements and provisions in connection with regulatory matters", each one of which is a separate P&L item in the financial statements of HSBC.

4. The databases omit some or the events they aim to capture; "omitted cases differ from the included cases in systematic ways" (Karpoff et al., 2017).

   In this case, our database may also omit events to the extent that it relies on the disclosure of misconduct by a bank. However, the analysis of Table 4 shows that, when P&L misconduct costs are used as they key research variable, our dataset provides a more comprehensive perspective than the collection of external data to determine the financial impact of misconduct. Therefore, although our database may not avoid the omission of certain misconduct costs, it still compares favourably with the available alternatives. While

misconduct provisions may also be comprehensive when they are disclosed, Table 3 shows that their disclosure is less pervasive than that of P&L misconduct costs.

A complementary source of data about the P&L impact of bank misconduct are the banks' disclosures around penalty announcements, which may occasionally refer to provisions previously set up. Although we review those and use them as appropriate, we observe that such disclosures present limitations. Some banks may announce that a penalty has been levied but not its amount[11]. Others only disclose that existing provisions "are appropriate" to cover the penalty announced[12]; in a few cases, banks make such announcements even when there is no indication of prior provisions being made[13]. Finally, the most comprehensive disclosures about penalties indicate the amount of the penalty, what portion is covered by previous provisions and what charge has been taken to the P&L during the current period, but there are no specifics on how the provisions already in place have accrued over time. Thus, the proposed research approach is made possible by the availability of misconduct disclosures that are independent of penalty announcements, not by those disclosures manifested when a penalty is announced.

Following the standard practice (see e.g. Patel et al. (2020)), we hand-collect from different external sources our data on penalties announced. For data related to the USA, we start with the "Violation tracker" database produced by the Corporate Research Project of Goods Jobs First, which covers penalties imposed by Federal and State agencies and regulatory bodies. This database has the advantage of being comprehensive. First, violations tracked include consumer and investor protection, economic sanctions money laundering and regulatory

[11] See e.g., the Q4 2022 Wells Fargo earnings release, which mentions the bank's agreement with the U.S. Consumer Financial Protection Bureau, but not the USD 3.7 billion it was ordered to pay; or the Bank of America Q2 2013 10-Q, which reports the settlements reached on bulk representations and warranties but does not disclose their amounts.

[12] See e.g. the Q1 2019 UBS quarterly report and its comments on the fine levied by the French authorities for assisting clients to commit tax fraud.

[13] See e.g. the Q2 2017 BNP results presentation, which mentions the settlements reached with US supervisory authorities regarding misconduct in the FX markets and notes that the penalties are covered by existing provisions despite the lack of any provision disclosure for the previous 12 quarters. On a similar manner, the Q1 2019 Unicredit results presentation announces a reversal of provisions related to US sanctions, despite never having disclosed that any provisions had been previously accrued.

compliance violations and competition, tax-related and employment offenses. Second, it covers a wide range of penalty-levying authorities, including the Federal Reserve, the Office of the Comptroller of the Currency, the Securities and Exchange Commission, the Commodity Futures Trading Commission, the Justice Department, the Financial Industry Regulatory Authority, the Consumer Financial Protection Bureau, the Office of Foreign Assets Control, and the different State Attorney General. Furthermore, the database is fully verifiable, as every sanction is linked to its source[14]. To guarantee the reliability of the data, we have cross-referenced this database with regulatory websites, press articles (sourced from the Financial Times, Wall Street Journal, Bloomberg, Reuters, and Google search engine) and banks' financial reports. There is no single source for fines, settlements and penalties levied by non-US regulators, so we have hand-extracted the relevant information from benchmark regulators' websites, including the EU Commission, national central banks and market regulators, press articles and the banks' own financial reports.

Control variables are drawn from previous research on bank financial performance, financial disclosure and bank misconduct and its consequences. Explanations for the choice of each control variable are provided in Chapters 7 to 9 to motivate the choice of variables used in the analysis[15]. In general terms, we have focused on three main categories of control variables: those related to a bank's financials characteristics, those concerning its board composition, and those associated with overall macroeconomic performance. When possible, we aim to use a similar set of variables for our analyses of the determinants of the disclosure of misconduct costs and the amounts of the misconduct costs reported in a bank's P&L. This is driven by our objective of examining the connections between disclosure and amounts disclosed. Thus, our control variables for these analyses are primarily those which are common in the literature on

[14] The full database is available online at https://www.goodjobsfirst.org/violation-tracker.
[15] Chapters 7 to 9 also formulate the different regression models used in the thesis.

bank disclosure and bank misconduct. We modify as required the control variables for the analysis of the impact on stock returns to accommodate the different nature of this dependent variable. Appendix 1 contains a full description of all control variables considered and the source used to obtain the relevant data.

A critical research issue considered in the selection of our variables is the minimisation of collinearity. We have identified and addressed three potential collinearity sources in our variables. First, we observe that previous papers analysing financial disclosure and bank misconduct usually include a size variable, measured as the natural logarithm of a bank's total assets (Diamond & Verrecchia, 1991; Hossain & Reaz, 2007; Raffournier, 1995). Using assets as an independent variable when the independent variable is divided by total assets (in our case, we use misconduct provisions, P&L misconduct costs and penalties as independent variables in different models, all divided by average total assets for normalisation), may create collinearity.

Furthermore, we are keen in observing how the classification of a bank as G-SIB, measured by its G-SIB bucket, influences misconduct disclosure and amounts disclosed, as the increased systemic relevance associated with a greater G-SIB classification may be considered a proxy for regulatory scrutiny[16]. We note, however, that size is collinear with G-SIB classification, which is based on size, interconnectedness, substitutability, complexity and cross-jurisdictional footprint (Basel Committee on Banking Supervision, 2024), with the last components 4 also being collinear with size. This inference is supported by the results of Spearman correlation tests.

Therefore, to avoid this source of multi-collinearity, we substitute size by the G-SIB classification variable as a proxy for both systemic importance and overall bank size. A side

[16] The rationale for the increased regulatory scrutiny arising from systemic importance is explained in the introduction to the revised G-SIB assessment methodology document (Basel Committee on Banking Supervision, 2018).

effect of this substitution is an overall reduction in VIF, as the size variable is associated with the denominator of our key research variables (provisions, P&L misconduct costs and penalties are normalised by dividing them by a bank's average total assets).

Another potential source of collinearity arises from the mathematical identity between misconduct costs and net income, as net income equals operating income minus operating expenses, misconduct costs, other non-operating items and taxes. To avoid this issue, we proxy bank profitability by the ratio of operating income to operating expenses, commonly known as "efficiency ratio". We underscore that our definition of "operating expenses" excludes misconduct costs. The use of this ratio, instead of the commonly used return on assets, has the added benefit of reducing the number of variables that have the bank's total assets in their denominator.

A final source of collinearity is derived from the operational nature of banks, which links its assets, liabilities and P&L account in a unique manner. In a bank, assets and asset composition are driven by the available capital base. Capital is determined by the accumulation of earnings; net profit is in turn driven by assets, completing a financial circularity. Asset quality and liquidity also affect profitability and capital ratios (banks with lower asset quality reduce their profitability via increased provisioning; non-performing assets deplete capital via the higher capital requirements they require; highly liquid assets consumer less capital and are usually associated with lower profitability, and so on). These links amongst a bank financial magnitudes makes advisable to carefully consider the number of variables utilised and their characteristics. Our chosen variables contemplate four of the six metrics considered in the CAMELS framework: asset quality is proxied by our use of the risk weighted assets to total assets ratio, as riskier and non-performing assets receive a higher weighting under the Basel capital framework; management quality is measured by several board composition metrics; earnings are represented by the ratio of operating income to operating expenses (we

deliberately avoid using total assets in the denominator for the reasons previously described); and sensitivity to market risk is proxied by bank size (Galán, 2021), which, as previously mentioned, we substituted by a bank's G-SIB bucket. This leaves out the capital and asset quality components, which we have excluded because both are collinear with earnings: capital results from an accumulation of (retained) earnings[17] and asset quality drives loan loss provisioning, which is a component of earnings.

One additional issue to address when choosing control variables is the global nature of our sample, which includes banks from 5 different regulatory frameworks (USA, Canada, the UK (before and post-Brexit), the Eurozone, and Switzerland) and 2 accounting standards (US GAAP and IFRS). These differences in regulatory and accounting regulations may reduce the comparability of some metrics. Therefore, we have focused on variables that are comparable across the whole range of banks in our database.

We collect all data in local currency and, when applicable, standardise it by dividing the relevant items by average total assets; the use of asset based financial ratios is a common approach to bank analysis (Altunbas et al., 2007; Demirgüç-Kunt & Huizinga, 1999, 2010). By using ratios calculated in local currencies we avoid any bias arising from exchange rate variations.

Stock market information is obtained from the *Factset Research Systems Inc.* database. Stock data and dividends are downloaded in local currencies to calculate local currency returns with dividend reinvestment; these are then compared to the relevant total return FTSE Global Equity Index for the banks' home markets to estimate index-adjusted total returns. The FTSE Global Equity Index Series provides a homogeneous benchmark for index-adjusted returns,

[17] This collinearity is further reinforced in our analyses, as retained earnings are a function of net income, which in turns includes misconduct costs as a component. Thus there is a mathematical identity between misconduct costs and bank capital as misconduct costs reduce available capital.

eliminating the bias that could be introduced by using different methodologies for index values calculation. Interest rate data is downloaded from the OECD database (data.oecd.org).

Chapter 6

Variables descriptive statistics and graphical analysis

6.1. Variables descriptive statistics.

Tables 8 and 9 report the descriptive statistics for the variables analysed. Given that the datasets for our analysis on misconduct provisions and P&L misconduct costs differ on time interval (annual vs quarterly), number of datapoints (as a consequence of the different time intervals) and variables (as a result of the extension of our analysis on P&L misconduct costs to their impact on shareholders returns), we provide separate descriptive statistics for each dataset. We note that the different number of observations across variables is determined by banks not reporting some variables on specific quarters. In connection with the dataset for P&L misconduct costs, we also note that our research horizon covers the Eurozone sovereign crisis and the COVID-19 pandemic, which had a strong impact on stock returns. The interval considered also includes periods of expansionary monetary policy with interest rates close to 0, making any change proportionally large. Finally, the use of lagged independent variables for the stock return regressions implies that we need one extra quarter of stock return data.

Table 8. Variables descriptive statistics: misconduct provisions.

Variable	Observations	Mean	Std. Dev	Min	Max
Misconduct provision disclosure	344	0.0427	0.0495	0.0000	1.0000
P&L misconduct provisions / ATAs	147	0.0010	0.0013	0.0000	0.0075
IFRS	344	0.0651	0.0477	0.0000	1.0000
US GAAP	344	0.0349	0.0477	0.0000	1.0000
Critical audit matter	187	0.4011	0.4914	0.0000	1.0000
Penalties announced / ATAs	344	0.0005	0.0013	-0.0014	0.1249
Operating expenses / Gross operating income	343	0.6476	0.1076	0.4404	1.0763
% of independent board members	344	0.7805	0.1713	0.2381	1.0000
% of female board members	344	0.3013	0.0990	0.0526	0.5000
% of board with financial services background	344	0.5460	0.1909	0.0625	1.0000
% of board with audit background	344	0.0741	0.0611	0.0000	0.2857
G-SIB bucket	344	1.3401	1.1212	0.0000	4.0000
Financials for compensation exclude misconduct	333	0.2733	0.0446	0.0000	1.0000

Table 8 provides descriptive statistics for the variables used on the analysis of misconduct provisions. Baseline number of observations is 344. There is one less observation for Opex/ Gross income as a bank reports negative gross income in one quarter. For the remaining variables with observations under 344, the difference is caused by lack of disclosure of the variable by a bank on a given year.

Table 9. Variables descriptive statistics: P&L misconduct costs.

Variable	Observations	Mean	Std. Dev	Min	Max
P&L misconduct cost disclosure	1,354	0.5303	0.4993	0.0000	1.0000
P&L misconduct costs / ATAs	1,354	0.0002	0.0005	-0.0006	0.0082
Stock total return	1,383	0.0189	0.1588	-0.7024	0.7234
Stock total return vs index	1,383	-0.0051	0.1168	-0.7613	0.5953
IFRS	1,354	0.6411	0.4799	0.0000	1.0000
US GAAP	1,354	0.3545	0.4785	0.0000	1.0000
Penalties / ATAs	1,354	0.0001	0.0006	-0.0001	0.0078
Opex / Gross income	1,354	0.6594	0.1297	0.4102	1.5544
Board indep.	1,354	0.7798	0.1763	0.1429	1.0000
Board female	1,354	0.2981	0.0989	0.0526	0.5000
Board financial	1,354	0.5436	0.1935	0.0625	1.0000
Board audit	1,354	0.0736	0.0605	0.0000	0.2857
G-SIB bucket	1,354	1.3690	1.1314	0.0000	4.0000
Comp. excludes misconduct	1,310	0.2664	0.4423	0.0000	1.0000
Tax / Op. Income	1,354	0.2338	1.6260	-5.7576	45.0976
Price to Book	1,354	0.9423	0.4781	0.1460	2.4696
RWAS / TAs	1,353	0.3995	0.1526	0.0009	0.8195
Δ GDP	1,354	0.0042	0.0275	-0.2099	0.1738
Δ 10 yr rate	1,354	0.0842	1.6753	-6.3146	31.2883
Environmental disclosure score	1,343	39.5469	10.6385	1.2383	76.7744

Table 9 provides descriptive statistics for the variables used on the analysis of P&L misconduct costs. Baseline number of observations is 1,354. Stock related variables have one additional quarter of observations as we relate Q4 2022 financials to Q1 2023 returns. 3 variables have less than 1,354 observations due to lack of disclosure in some quarters.

Full variables and source descriptions are provided in Appendix A. Additional data description charts are provided in Appendix B. Variable correlations are provided in Appendix C.

6.2. Graphical analysis.

In addition to the descriptive statistics, we also present a preliminary graphical analysis of the relationship between our research variables. While the conclusions drawn from a graphical assessment are only preliminary, they provide a relevant foundation for the regression estimations presented in a later stage.

Chart 1 compares the annual amounts of misconduct provisions disclosed vs the penalties announced for the 14 banks in our sample that produce provision disclosures.

Chart 1. P&L misconduct provisions / total assets vs announced penalties / total assets.

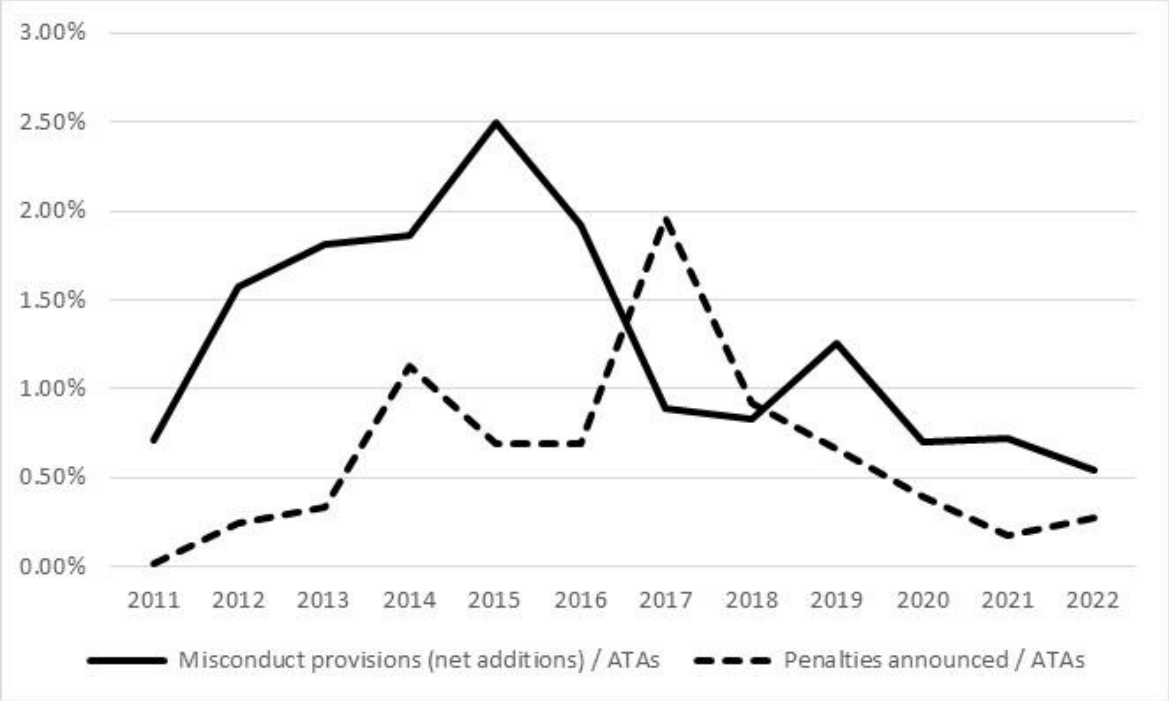

Chart 1 provides an annual comparison of P&L misconduct provisions vs announced penalties. Both variables have been normalised by dividing them by total assets.

Chart 1 shows that there are no quarters for which P&L misconducts provisions match the figure for announced penalties. Furthermore, provisions appear to accumulate over the 2012-2015 period, ahead of the peak on penalties announced in 2017. More specifically, the increases in provisions in 2012-2013 and 2015-2016, seem to precede the increases in penalties in 2014 and 2017.

The improved granularity provided by the quarterly disclosure of P&L misconduct costs allow us to present an alternative comparison. Thus, Chart 2 plots quarterly P&L misconduct costs vs quarterly penalties.

Chart 2. Quarterly P&L misconduct costs / total assets vs announced penalties / total assets.

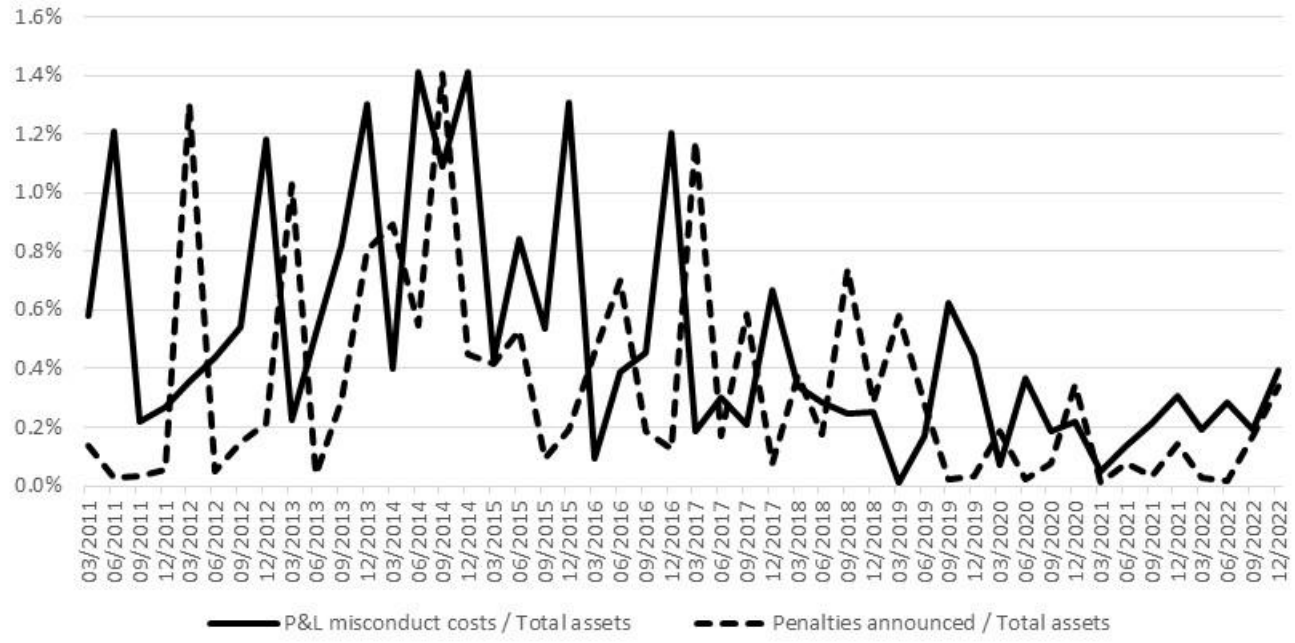

Chart 2 provides a comparison of P&L misconduct costs vs announced penalties. Both variables have been normalised by dividing them by total assets.

Once again, in none of the time periods P&L misconduct costs equal announced penalties. Instead, P&L misconducts costs exceed penalties by more than USD 2.0 billion on 23 of the 44 quarters considered, while penalties exceed P&L misconducts costs by more than USD 2.0 billion on 11 quarters; the average difference is USD 2.6 billion. Furthermore, peaks of P&L misconduct costs also seem to predate peaks in penalties (Q2 2011 vs Q1 2012, Q4 2012 vs Q1 2013, Q3 2013 vs Q1 2014, Q2 2014 vs Q3 2014, and so on).

Charts 3 and 4 provide a similar overview of misconducts provisions and P&L misconduct costs vs announced penalties on a cumulative, rather than quarterly, basis. By using cumulative data, we aim to observe how the difference between these variables evolves over time.

Chart 3. Cumulative P&L misconduct provisions / total assets vs announced penalties / total assets.

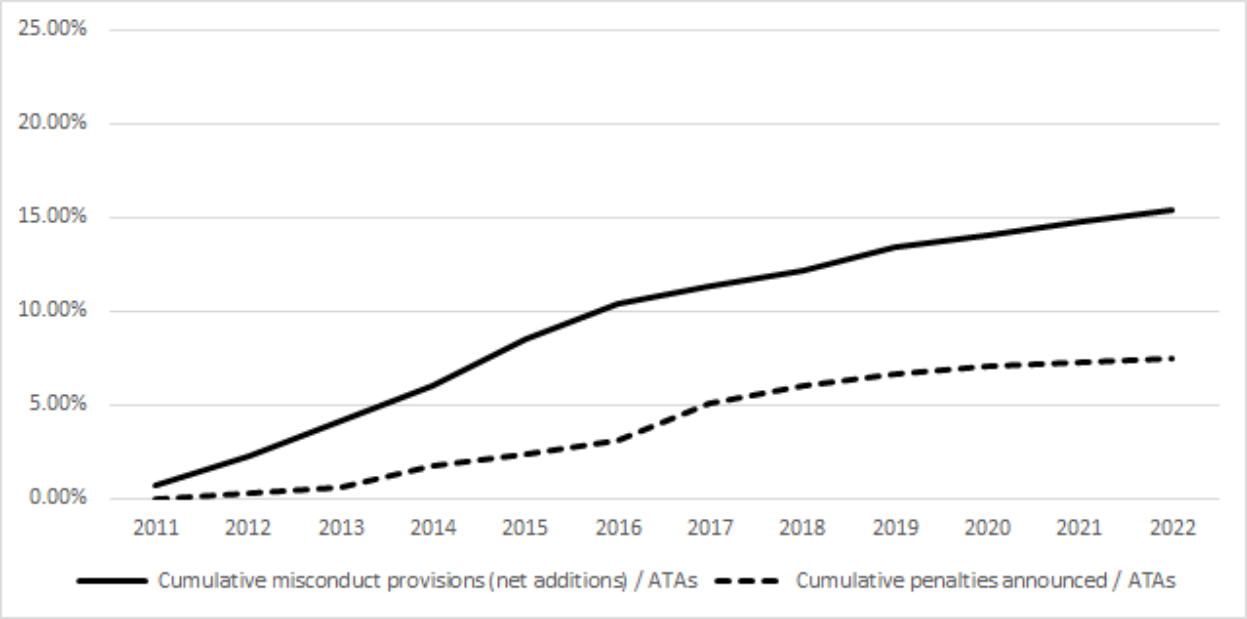

Chart 3 provides a comparison of cumulative P&L misconduct provisions vs announced penalties for the subsample of banks that disclose misconduct provisions.

Chart 4. Cumulative P&L misconduct costs / total assets vs announced penalties / total assets.

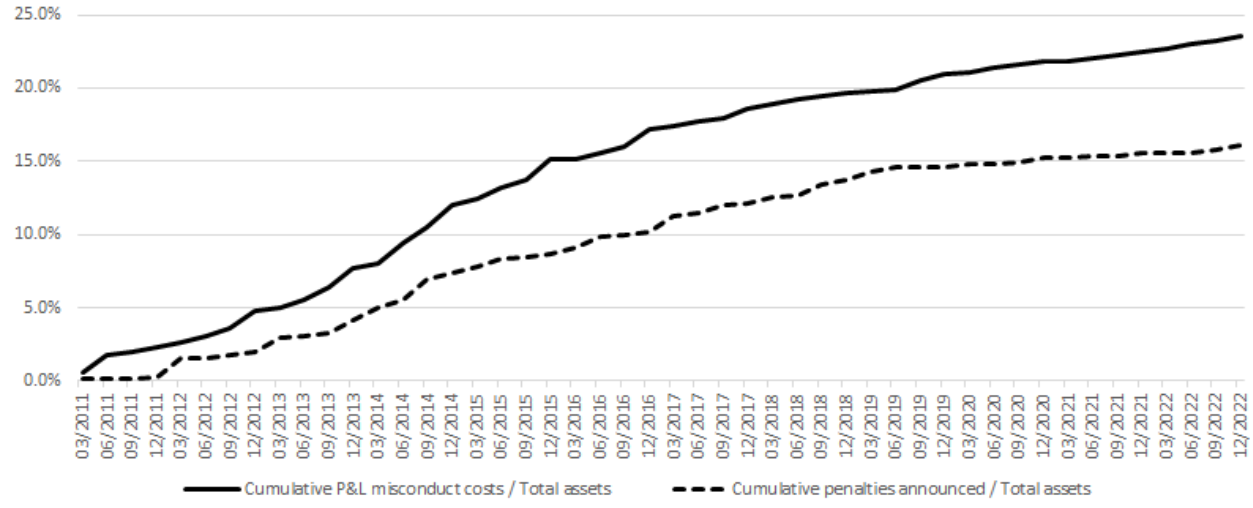

Chart 4 provides a comparison of cumulative P&L misconduct costs and provisions vs announced penalties.

Aggregate data shows that, throughout during the period considered, both misconduct provisions and P&L misconducts costs exceed announced fines, with the difference gradually

increasing over time. This preliminary observation confirms our argument that announced penalties do not fully capture the financial costs of misconduct.

H1 proposes that misconduct provisions and P&L misconduct costs anticipate the announcement of future penalties. Therefore, to obtain a preliminary graphical estimate of the validity of that hypothesis, we also plot both variables on a cumulative basis, with a 1-year difference for provisions (P&L misconducts provisions at $t = 0$ vs penalties announced at $t + 1$) and a 4-quarter difference for P&L misconducts costs (P&L misconducts costs at $t = 0$ vs penalties announced at $t + 4$).

Chart 5. Cumulative P&L misconduct provisions / total assets at t=0 vs announced penalties/ total assets at t+4.

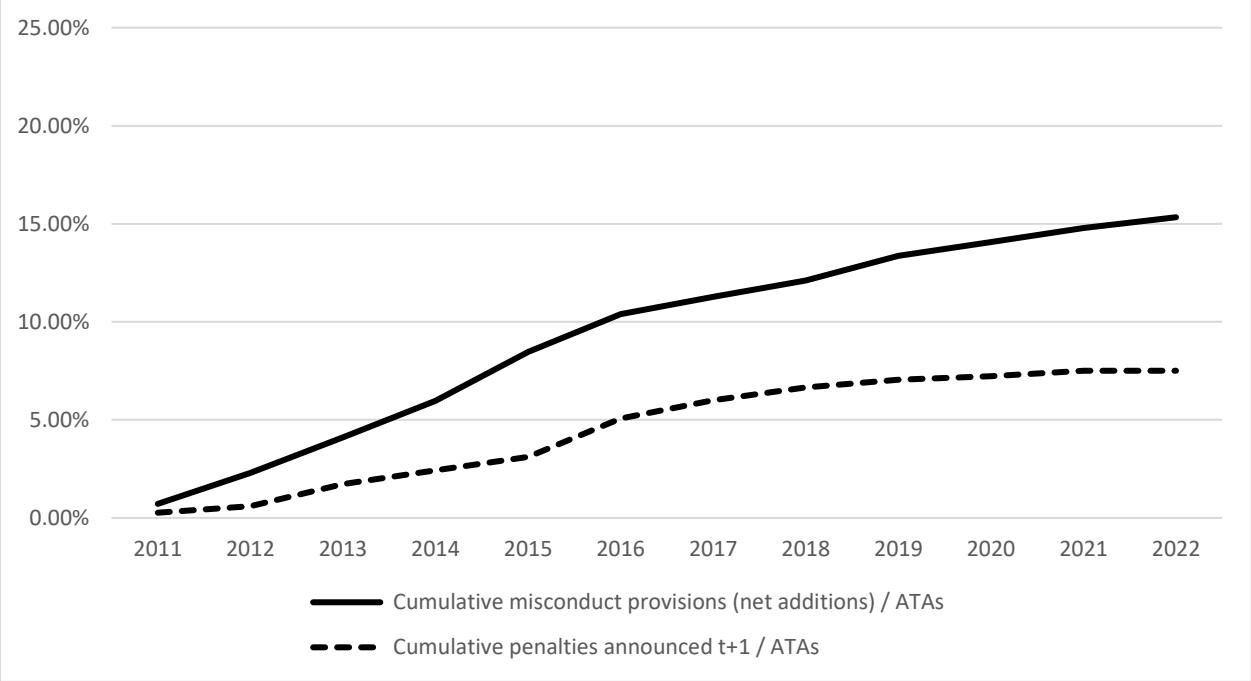

Chart 5 provides a comparison of cumulative P&L provisions vs announced penalties. Announced penalties have been moved back by 1 year, plotting the P&L cumulative provisions at t=0 vs the cumulative penalties at t+1. Both variables have been normalised by dividing them by total assets.

Chart 6. Cumulative P&L misconduct costs / total assets at t=0 vs announced penalties/ total assets at t+4.

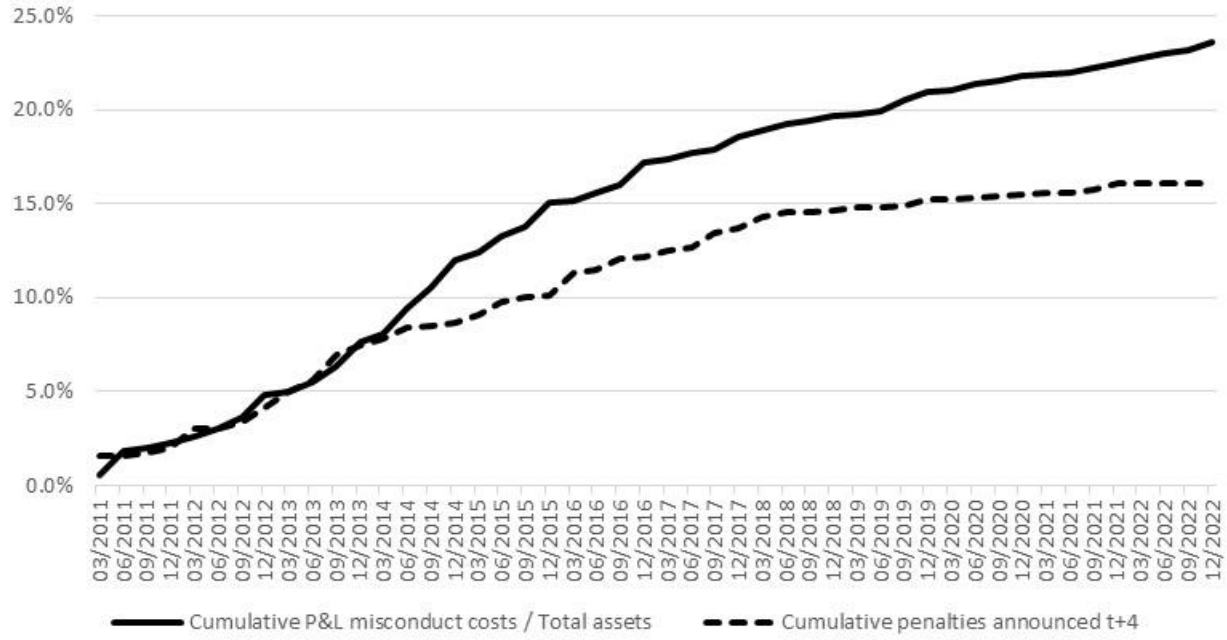

Chart 6 provides a comparison of cumulative P&L misconduct costs and provisions vs announced penalties. Announced penalties have been moved back by 4 quarters, plotting the P&L cumulative provisions at t=0 vs the cumulative penalties at t+4. Both variables have been normalised by dividing them by total assets.

Contrasting P&L misconduct provisions vs lagged announced penalties shows a smaller gap between both variables relative to that evidenced in Chart 3. Although this smaller gap may hint that provisions anticipate penalties, the evidence is not conclusive; therefore, we refer to the detailed statistical analysis implemented on Section 5. On the other hand, the comparison of cumulative P&L misconduct costs with cumulative announced penalties at t+4 offers more significant findings. the From Q1 2011 to Q1 2014, cumulative P&L misconduct costs are closely matched against the cumulative amount for penalties announced 4 quarters later: over this period the average difference between misconduct costs to total assets and penalties to total assets at t+4 is just 0.01%. This provides a clear suggestion that P&L misconduct costs may be a forward-looking indicator of penalties. Over the remaining of the timeframe of our analysis, the gap gradually increases, but, as was the case with provisions, it is always smaller than when using non-lagged penalties.

Finally, to provide an additional graphical analysis of the time distribution of P&L misconduct costs vs announced penalties, we group both variables by quarter and illustrate the results in Chart 7.

Chart 7. P&L misconduct costs and provisions / total assets vs announced penalties by quarter.

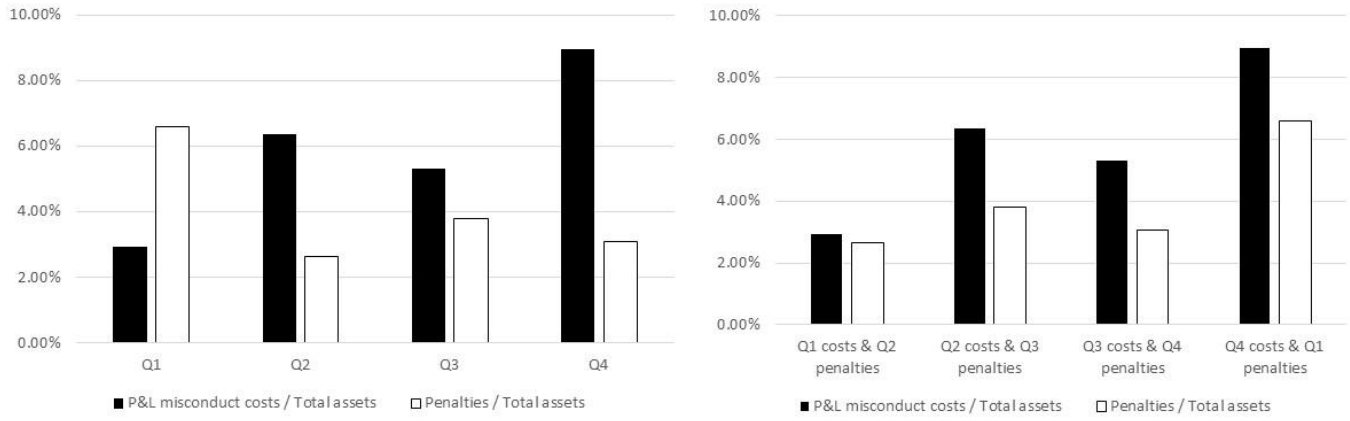

Chart 7 provides a comparison of P&L misconduct costs and provisions vs announced penalties grouped by quarters (left hand side) and compares the total provisions on each quarter with the total fines on the following quarter (right hand side).

We observe that Q1 is the quarter with the smallest quantity of P&L misconduct costs and the highest quantity of announced penalties. By contrast, Q4 shows the largest amount of P&L costs while announced penalties are relatively small. However, the differences in the distribution of both variables decrease substantially when we compare costs disclosed in a quarter with announced penalties on the next (right hand side chart). This provides indicative evidence of the time lag between P&L misconduct costs and announced penalties that we will explore in Chapter 8.

Chapter 7

Empirical analysis: P&L misconduct provisions and announced penalties

For ease of reference, we divide our empirical analyses on three chapters. Therefore, we now proceed to test H1 and H2 using misconduct provisions as the main research variable.

7.1. The determinants of misconduct provision disclosure.

The availability of P&L provisioning data is conditional on its disclosure. Therefore, to analyse P&L misconduct provisions, we first need to understand the drivers of their disclosure. Accordingly, we proceed to test H1 through the empirical estimation of a logit model with the following form:

$$Misconduct\ Provision\ Disclosure_{i,t} = \alpha_0 + \beta * \ Disclosure\ variables_{i,t} + \sum_{n=0}^{n=2} \gamma * \ Penalties_{i,t+n} + \delta * \ Controls\ _{i,t} + \varepsilon_{i,t} \ (1)$$

where *Misconduct Provision Disclosure*$_{(i,t)}$ is a dummy that takes a value of 1 if the bank makes a provision disclosure in that quarter and 0 if it does not.

Previous considerations lead us to first test for the relevance of disclosure variables related to accounting standards; i.e. whether a bank reports under IFRS or US GAAP.

Additionally, during our analysis of the banks' financials, we have observed that some banks exclude the impact of misconduct to determine executive compensation. The rationale behind this adjustment differs across banks[18]. In some cases, misconduct is excluded from the financials used to determine compensation as the bank needs to consider that current managers were not present when the misconduct was committed; in others, there are specific compensation mechanisms that penalise misconduct, so excluding it avoids double counting.

[18] In some cases, misconduct is excluded from the financials used to determine compensation as the bank needs to consider that current managers were not present when the misconduct was committed; in others, there are specific compensation mechanisms that penalise misconduct, so excluding it avoids double counting; in some cases, the adjustment is just implemented without any further explanation being provided.

Some banks just implement this adjustments without any further explanation being provided. Regardless of the rationale for the adjustment, we introduce a dummy variable that takes a value of 1 if financials to calculate compensation are adjusted for misconduct, and 0 otherwise, and test for the relevance of such variable by estimating a separate regression in the last column of Table 10. We note that this variable is not necessarily correlated with the disclosure of a provision. This is because misconduct provisions are disclosed in the financial statements included in the interim reports, Annual Reports or 10-Ks, while the adjustments to a bank's financials to determine executive compensation are included on the bank's proxy statement or governance section of the Annual Report.

Finally, we estimate equation (1) to test the relevance of the presence of misconduct within those elements identified as critical audit matters by a bank's external auditor. This estimation considers fewer datapoints as not every bank in our sample discloses critical audit matters every year.

$Penalties_{i,t+n}$ are penalties announced; when n=0, this variable refers to current period penalties; for n=1 or n=2, it refers to expected future penalties. We consider only the next two years, as penalties beyond this time horizon should be more difficult to predict and quantify.

As control variables, we start with operating expenses divided by gross income to assess the potential impact of profitability on disclosure. We also consider a number of exogenous regressors from the literature on financial disclosure: director independence (Chen & Jaggi, 2000), measured as the percentage of independent directors; gender diversity (Tingbani et al., 2020), measured as the percentage of female directors; and board capital, which, given the nature of our sample, is represented by the percentage of directors with a financial services background or with an audit background. Given the composition of our sample, and our interest in studying whether the scrutiny arising from a greater systemic importance has associated with disclosure any impact on misconduct provision disclosure, we include the bank's G-SIB

bucket as an additional variable, assigning a G-SIB bucket of 0 to those banks that are not G-SIBs at any given period. Given its correlation with a bank's total assets, this variable also acts a proxy for bank size. A full explanation of the collinearity between G-SIB classification and size, and the rationale four our choice of the former over the latter has been provided in Chapter 5.

As means of robustness, we estimate equation (1) through both logit and probit random effects regressions. The results of the probit model will also be of use for the Heckman two-stage approach that we will utilise in the next section[19]. Table 10 summarises the estimation results.

[19] A detailed description of this estimation methodology and the rationale for its use is provided on pages 78-82

Table 10. Determinants of P&L misconduct provision disclosure.

Dependent variable:	Misconduct provision disclosure									
	Logit estimation					Probit estimation				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Independent variables										
IFRS	16.2725 **					5.4773 **				
	(7.2455)					(2.1886)				
US GAAP		-24.5575 **					-9.9367 ***			
		(3.9862)					(1.8044)			
Financials for compensation			-0.5953					-0.1074		
exclude misconduct			(2.2007)					(1.0307)		
Critical audit matter				5.3035 ***					1.2893	
				(1.9827)					(1.1677)	
Penalties announced / ATAs $_{(t)}$	1283.0040	801.6525	606.4150	1131.8800	522.7479	329.6272	388.4862	342.1977	1219.3090	405.3961
	(1027.7910)	(716.3144)	(656.5569)	(715.9564)	(624.5905)	(367.7711)	(346.3945)	(353.1862)	(684.8285)	(333.8710)
Penalties announced / ATAs $_{(t+1)}$	2155.6980 **	1106.3360 *	529.3720	1362.3340	586.4760	303.5808	355.0416	400.5741	1207.5600	458.5953 *
	(1077.8810)	(580.4157)	(480.1157)	(1054.3610)	(458.8546)	(288.5740)	(251.6778)	(278.7172)	(1245.4350)	(275.5201)
Penalties announced / ATAs $_{(t+2)}$	-802.4464	-408.9061	-516.3954	-722.5674	-432.7702	-200.7688	-49.9142	-216.2152	-346.7721	-194.4556
	(1049.4210)	(668.3296)	(626.7021)	(767.6179)	(620.1832)	(380.8598)	(289.0365)	(337.4519)	(506.5429)	(346.5708)
Operating expenses / Gross	-16.0782	0.8042	4.4802	41.7897 ***	4.3187	4.8847	4.8391	3.9066	16.0659 ***	4.4841
operating income	(24.6957)	(13.5974)	(11.4716)	(10.6365)	(13.0244)	(7.4602)	(5.6327)	(6.9021)	(5.9164)	(6.7052)
% of independent board members	-8.6123	0.5532	-4.1627	12.6854	-4.1993	-0.9856	2.0114	-1.3965	2.5130	-2.4162
	(14.5241)	(11.6367)	(9.1408)	(9.8474)	(9.3294)	(3.4115)	(4.3369)	(4.1448)	(4.3050)	(4.1842)
% of female board members	77.3918 ***	52.1274 ***	48.9593 ***	31.2149 ***	46.5841 ***	27.9271 ***	23.0478 ***	28.8829 ***	19.6861 ***	29.3405 ***
	(18.8065)	(12.5070)	(9.9622)	(9.3477)	(10.7068)	(6.3909)	(5.1600)	(6.0352)	(6.6524)	(6.2625)
% of board with financial services	17.0427	6.0275	5.7263	3.1650	6.8437	2.5767	3.7353	5.0419	-1.3505	5.3122
background	(14.3438)	(8.5562)	(5.8015)	(6.1717)	(6.2320)	(3.2022)	(3.3191)	(3.9474)	(3.3108)	(4.3228)
% of board with audit background	29.1082	18.8311	12.1665	-6.7553	12.4839	2.0537	7.8714	9.2048	-1.8352	10.3319
	(41.8844)	(22.9141)	(22.3916)	(15.9581)	(21.9246)	(10.8038)	(8.1379)	(10.3886)	(8.9823)	(10.7077)
G-SIB bucket	4.3196	2.9408	2.1563 *	1.4476	1.8761 *	2.2772 ***	1.7182 **	1.2333	0.5400	1.2265 *
	-(51.2744)	(2.1864)	(1.0518)	(0.9586)	(1.1883)	(0.7582)	(0.6996)	(0.7952)	(0.5103)	(0.7179)
Constant	-51.2744 **	-29.4766 **	-28.0836 ***	-55.4926 ***	-27.0904 **	-23.1394 ***	-18.4755 ***	-15.6750 ***	-20.2569 ***	-17.5496 **
	(26.2100)	(14.3923)	(11.0992)	(13.0191)	(11.5789)	(8.0644)	(6.4467)	(6.9017)	(6.8445)	(7.1329)
Log likelihood	-38.5391	-38.3976	-39.4933	-27.5568	-40.0451	-38.7395	-38.3560	-40.1107	-28.1279	-39.5838
Chi squared	51.4100 ***	116.3300 ***	34.9100 ***	47.7700 **	25.0900 **	58.3300 ***	52.0700 ***	25.2600 ***	16.8200 *	31.1700 ***
Number of banks	29	29	29	29	29	29	29	29	29	29
Observations	285	285	274	128	285	285	285	274	128	285

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.
Table 10 reports results from the estimations of the determinants of misconduct provision disclosure, implemented via logit and probit random effects regressions, with the dependant variable taking a value of 1 when misconduct provisions are disclosed and 0 when they are not.

Differences in observations between the estimation of the regressions and the tables providing descriptive statistics are caused by the use of lagged variables in the regressions and the fact that not all variables are available across all time periods.

The results reported in table 10 confirm the points underlined under section 3.3 and corroborate that accounting standards influence provision disclosure. However, this influence has opposite signs depending on the standard: reporting under IFRS shows a statistically significant positive association with disclosure; for those banks that report under US GAAP the relationship is also significant but negative. These results are robust to the type of function considered. The size of the coefficients relative to the values of the variable (0/1) and the other estimated parameters for the regression also highlight the strength of the association, particularly in its negative form. Specifically, under the logit estimation banks reporting under US GAAP standards will be on average 19% less prone to disclose provisions than those reporting under IFRS. This validates our previous observation that the framework of IAS 37 favours disclosure, while that of ASC 450 and 275 supports non-disclosure. For the first two logit estimations (columns (1) and (2) of Table 10), the amounts of expected (next period) penalties also influence disclosure. This suggests that penalty size (labelled as "Penalties announced/ATAs") may be a factor for disclosure purposes, but it takes a secondary role relative to accounting standards; however, this relationship is not well established as it fails to become significant in other logit specifications or when a probit estimation is used.

The identifying assumptions behind our association between accounting standards and misconduct disclosure are as follows. First, we consider that misconduct generates future contingent liabilities as its commission is discovered by regulators and customers. The need for investigations and legal processes before misconduct can be punished or remediated implies that these liabilities arise over a period of time. We have previously mentioned how, according to Sakalauskaite (2018), this period can extend up to 6 years. Over this time, banks may become

aware of the forthcoming costs as they engage with regulators or receive customer claims. For example, some penalties in the US are levied following a settlement between bank and regulator, which implies a prior negotiation process. In the UK, PPI redress requests accumulated over more than 9 years until the claim deadline of August 2019, which allowed banks to gradually develop an estimate of how many claims they could expect to receive and their cost[20]. Finally, we assume that auditors and regulators enforce accounting rules, which require provisioning and asymmetrical disclosure of future liabilities.

Results also evidence that, under a logit estimation, the inclusion of misconduct provisions within the list of critical audit matters has a 5% positive impact on average disclosure probabilities[21]. This estimation is based on a lower number of datapoints, as banks have only recently started to include in their Annual Reports the list of critical audit matters flagged by their auditors (US banks only started providing this disclosure after 2019; several non-US banks started disclosure in 2016 or 2017). The significance disappears when a probit model is considered,

The presence of females in the board is the only control variable that shows a positive association with disclosure across all specifications and estimation methods. We attribute this to the correlation between board gender diversity and good governance established by several authors, including Wang et al. (2022) and Tingbani et al. (2020).

7.2. The relationship between misconduct provisions and announced penalties.

After considering the determinants of misconduct provision disclosure, we proceed to address the question of whether P&L misconduct provisions anticipate the announcement of penalties.

[20] For example, the Barclays 2018 Annual Report explains how the assumptions on future claims expected, claims received but not yet processed, average uphold rates per claim and average redress rate per claim shape the bank's PPI-related misconduct provision.

[21] We note that disclosure is not automatic even when misconduct is a critical audit matter, as there are several examples under both IFRS and US GAAP when misconduct provisions are considered a critical accounting factor but are not disclosed. See e.g. Bank of New York in 2019-2022 or Credit Agricole in 2011-2018.

To achieve this objective and test H2 with misconduct provisions as research variable, we formulate the following equation:

$$P\&L\ Misconduct\ Provisions\ /\ ATAs_{i,t} = \alpha + \sum_{n=0}^{n=2} \beta * Penalties_{i,t+n} + \delta * Controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

P&L Misconduct Provisions$_{i,t}$ represents the net P&L misconduct provision charge at period *t*, standardised by dividing it by average total assets over the same period. If the hypothesis established in Chapter 4 holds, $Penalties_{i,\ t+n}$ should be statistically significant; for it to hold in is strongest form, the coefficient of $Penalties_{i,\ t+n}$ should be larger than that of $Penalties_{i,t}$, thus indicating that not only future penalties shape current period provisions, but also that their influence is greater than that of current period penalties. With the objective of exploring the influence of profitability and governance over the amounts provisioned, we introduce controls similar to those considered for equation (1).

Following Gormley and Mansa (2014), we start by using a fixed effects estimation to address unobserved heterogeneity. This approach is also supported by the time-variant dependent variables and the Hausman test. We control for bank and quarter fixed effects and correct for the presence of heteroskedasticity by using robust standard errors.

We observe that, given that not all banks disclose their P&L misconduct provisions, the estimation of (2) may have to account for self-selection bias, as the misconduct provisions of banks that do not disclose them remain unobserved. This self-selection may create a sample with an incidental truncation where only the outcome of treated observations is observable (Wolfolds & Siegel, 2019; Woolridge, 2010). The estimation of a model that uses the self-selected sample may suffer from endogeneity; failure to statistically correct for endogeneity can lead to biased coefficient estimates and to faulty conclusions about theoretical propositions (Hamilton & Nickerson, 2003). Heckman (1974, 1979) proposed a method to avoid sample specification bias on a non-randomly-selected sample. This technique uses a two-stage

estimation, separating the selection process from the primary relationship of interest. Thus, the first stage, or selection equation, controls for selection bias by estimating the decision to participate through a probit model. The second stage, or outcome equation, regresses the outcome variable using least squares on the exogenous characteristics and the fitted values from the selection equation (Wolfolds & Siegel, 2019). The full mathematical justification of this methodology can be found on Heckman (1974, 1979). A comprehensive flowchart of the estimation process and a list of the Stata commands to be utilised is available in Bendig & Hoke (2022). Finally Lennox et al. (2012) provide a detailed discussion of the applicability of this model to accounting research and the most common problems found in those accounting papers that use it[22].

Hence, in addition to our fixed effects estimation, we also apply a Heckman two-stage model to equation (2). To do so, we consider equation (1), estimated through a probit regression, as our selection equation, as it identifies the determinants of the disclosure of our research variable, misconduct provisions. Full statistics for the estimation of our selection equation are included in column 10 of Table 10.

Once we have estimated the selection equation, we use the obtained results to calculate the Inverse Mills Ratio[23]. This Inverse Mills ratio is injected as an additional variable in equation (2) to produce our outcome equation (3).

$$P\&L\ Misconduct\ Provisions\ /\ ATAs_{i,t} = \alpha + \sum_{n=0}^{n=2} \beta * Penalties_{i,t+n} + \delta * Controls_{i,t} + Inverse\ Mills\ Ratio + \varepsilon_{i,t} \quad (3)$$

[22] We note that we specifically address the issues mentioned by these authors: we identify our exclusion restrictions and the rationale for their selection, fully specify our first stage selection model, identifying all variables and their coefficients, standard errors and statistical significance, and we compare different estimation approaches to check the robustness of our conclusions.

[23] The Mills ratio is defined as the ratio of a survival function to its probability density function. See e.g. Gasull and Utzet (2014) and Grimmett and Stirzaker (2020).

Even though the use of this approach is common on the literature on financial disclosures (see e.g. Cazavan-Jeny and Jeanjean (2007), Bose et al. (2017) or Kallias et al. (2022)), this is the first paper that implements this methodology for the analysis of the financial consequences of misconduct; this is probably driven by the common practice of using announced penalties as a measure for misconduct costs, as these are always observable and do not present the issue of self-selection bias.

In order to implement the Heckman estimator, we need to establish a valid "selection criteria" (also known as "exclusion condition" (Wolfolds & Siegel, 2019)). A variable is defined as an selection criteria if it affects the selection (first stage) equation but not the outcome (second stage) model. Certo et al. (2016) note that there is little consensus regarding the appropriateness of selection criteria, with some authors arguing that it must be evaluated on substantive rather than technical grounds (Bushway et al., 2007), while others suggest a quantitative approach to restriction choice (Leung & Yu, 1996).

One of the main challenges that arises in applying this method lies in the selection of a valid selection criteria as the previous literature has not studied the determinants of misconduct provision disclosure. One possible solution would be to select as selection criteria a variable proposed in the general disclosure literature. Skinner (1994) argues that large negative earnings surprises are more likely to be disclosed. Diamond and Verrecchia (1991) note that large firms "will disclose more information since they benefit most", while Cheng and Courtenay (2006) argue that higher board independence has a positive relationship with disclosure quality. However, the use of these variables raises further limitations, as all these factors may have a significant correlation with the size of the costs disclosed, which is our outcome variable. Thus, the requisite that the selection criteria is significant in the first stage equation but not in the second stage would not be met.

Therefore, to establish our selection criteria we use an alternative approach, based on the flowchart on the application of the Heckman two-stage estimation provided by Bendig & Hoke (2022). Our previous estimation of equation (1) concluded that the presence of female members on the board has a significant positive association with misconduct provision disclosure. This association holds through all the specifications of (1) considered and is independent of the use of a logit or probit estimator. A statistically significant outcome through a probit model is essential because "the features of the Heckman estimator are based on the assumption of bivariate normality and therefore require the use of the probit" on the first stage (Bushway et al., 2007). This positive association between the percentage of female board members and the quality of disclosure is supported through the literature, which argues that a female board presence contributes "to the board's ability to maintain an attitude of mental independence, diminishing the extent of groupthink and enhancing the ability of the board to monitor financial reporting" (Abbott et al., 2012).

On the other hand, the estimation of equation (2) through OLS indicates that the percentage of female board members has no association with the size of the provisions disclosed. Thus, the presence of women affects the selection equation (disclosure of provisions), but not the outcome equation (size of provisions disclosed), and thus provides a valid selection criteria for a two-stage Heckman estimation. We attribute these results to the gradual incorporation of women to bank boards (for example, over the period considered the average percentage of female board members doubled from 20.5% in 2011 to 39.7% in 2022) and the significant time lags between commission, disclosure and punishment of misconduct. Prior to the financial crisis, the presence of women in bank boards was relatively small; therefore, the improved governance associated with female board members could not influence the size of misconduct provisions and penalties levied due to events that occurred in the pre-crisis years. On the other hand, the enhanced governance associated with the increasing presence of women on boards

could influence the enhanced financial disclosure of the provisions related to these events, as disclosure happened several years later, when women had a greater role on bank boards[24].

Table 11 reports estimation results of equations (2) and (3). The results of the Heckman two-stage estimation reported in column (2) of Table 11 are obtained through the use of the estimations detailed in column (10) of Table 10 as first stage equation[25].

[24] Our conclusions appear to contradict that of Arnaboldi et al. (2020) that a greater presence of female board members prevents misconduct. However, we note that their database only includes fines levied on European banks by US regulators. Furthermore, their analysis does not consider the time difference between the moment misconduct is committed, the point of time on which the misconduct generates a cost in a bank's P&L and the date of the announcement of a fine. Finally, their dependant variable is the ***number*** of fines levied on a bank, not the size of the fines imposed nor of the misconduct provisions disclosed. Therefore, their analysis is not comparable to ours.

[25] Second stage estimation results do not change substantially when other specifications of (1) are selected as first stage equation.

Table 11. Relationship between misconduct provisions and announced penalties.

Dependent variable:	P&L misconduct provisions / Total assets	
	Fixed effects estimation	Heckman Two-stage estimation
	(1)	(2)
Independent variables		
Penalties announced / ATAs $_{(t)}$	0.0474	0.0624
	(0.0502)	(0.0482)
Penalties announced / ATAs $_{(t+1)}$	0.3295 ***	0.3450 ***
	(0.0637)	(0.0635)
Penalties announced / ATAs $_{(t+2)}$	0.1546	0.0149
	(0.1349)	(0.1298)
Operating expenses / Gross operating income	0.0003	0.0006
	(0.0017)	(0.0020)
% of independent board members	-0.0025	-0.0027
	(0.0022)	(0.0020)
% of female board members	-0.0079	
	(0.0019)	
% of board with financial services background	-0.0024 **	-0.0022 *
	(0.0011)	(0.0012)
% of board with audit background	0.0007	0.0011
	(0.0022)	(0.0024)
G-SIB bucket	0.0000	0.0011
	(0.0002)	(0.0003)
Financials for compensation exclude misconduct	-0.0001	-0.0015
	(0.0003)	(0.0003)
Inverse Mills Ratio (Heckman estimation only)		0.0001
		(0.0001)
Constant	0.0034 **	0.0026
	(0.0031)	(0.0038)
Bank fixed effects	Yes	Yes
Time period fixed effects	Yes	Yes
R squared	0.4544	0.4573
Number of banks	29	29
Observations	119	119

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.
Column (1) of Table 11 reports results from the estimation of the relationship between P&L misconduct provisions and announced penalties, implemented via an OLS estimation with bank and year fixed effects and robust standard errors. Column (2) reports the results of the second stage of a Heckman two-stage model, implemented through a fixed effects regression with bank and quarter fixed effects and robust standard errors and using percentage of female board members as selection criteria. The first stage of the Heckman model results from the estimation of equation (1) through a probit regression, as detailed in column (10) of Table 10. The R-Squared is provided at the bottom of the table.

These results confirm the strongest form of the hypothesis considered in Chapter 4: misconduct provisions anticipate future (next year) penalties, while current period penalties are not a significant determinant of P&L provisions. This suggests that banks establish their P&L misconduct provisions for a year based on the penalties they expect to receive on the following time period. The P&L impact of a penalty is therefore reflected through provisions one year ahead.

From an economic perspective, the estimated coefficients imply that announced penalties represent a significant drag on bank profitability as they translate into current period provisions. However, current misconduct provisions anticipate future penalties to a greater extent that future penalties translate into current provisions. A 1% increase in provisions implies a 0.63330% increase in next period penalties, while the same increase in expected (next period) penalties only results in a 0.3295% increase in future provisions. This can be attributed to the previously mentioned difference in magnitude between both variables: P&L misconduct provisions for banks that provide disclosure amount to USD 207,653 million, compared with USD 97,166 million in announced penalties. Thus, the use of announced penalties as research variable underestimates the negative impact of misconduct in bank profitability.

Identifying assumptions are similar to those mentioned in the previous section. Furthermore, we note that estimations presented in table 8 may be influenced by two underlying factors. First, the limited availability of P&L provision disclosures, combined with the use of lagged variables implies that the estimation is performed using a reduced number of observations. Secondly, there is the potential for endogeneity arising from the self-selection of the sample: data on P&L misconduct provisions over total assets is only available for those banks that disclose them. When considering this matter, it should also be observed that the different accounting frameworks lead to a lack of disclosure by most US banks; thus, results may be geographically biased. Furthermore, while the standards for making a provision, or, in the case

of US GAAP, an accrual, are relatively similar, as both establish that a provision should be made when a payment arising from a future obligation is probable and can be quantified, there appears to be a difference in the interpretation of "probable". Accounting practitioners note that under US GAAP "probable" generally implies that an event has a 75% or greater likelihood of occurrence, while under IFRS this likelihood is reduced to 50% (PWC, 2022). This difference in threshold may also lead to differences in whether a provision (or accrual) is recognised and disclosed or on the timing of its recognition. The significance of this element cannot be empirically tested as only 2 banks reporting under US GAAP disclose their misconduct provisions. However, our following analysis of P&L misconduct costs, which are disclosed by both IFRS and US GAAP banks, has some relevant implications for this issue; we will review them in Chapter 8.

Finally, while these considerations are important to interpret reported results with caution, we can state that, at a minimum, *when available (disclosed),* misconduct provisions precede the announcement of penalties. This inference has major implications for the literature on the financial impact of misconduct, as it implies that the use of penalties as an independent variable for misconduct not only underestimates the costs of misconduct, as noted on section 2, but may also capture their financial impact at a time when they have already been experienced.

Regarding the control variables, we have already discussed the lack of significance of the percentage of female board members on the size of the provisions disclosed and the reasons that may explain this result. Contrastingly, the percentage of board members with a background in the financial services industry shows a significant negative association with the amount of the provisions disclosed. A potential explanation for this result would be that the higher specialized expertise of these board members may lead to lower misconduct. However, we have mentioned the significant time gap between the moment misconduct is committed and the time a provision is made. Thus, a higher percentage of board members with financial expertise

at the time of the disclosure of a provision does not necessarily imply a similar board composition when misconduct was committed. An alternative explanation could well be that board members with financial expertise drive a lower quantification of the expected future losses.

On the other hand, operational profitability does not show a significant association with misconduct provisions. Therefore, there is no evidence to support that misconduct provisions are used for operational earnings smoothing. This contrasts with the results reported by Balboa et al. (2013) for loan loss provisions.

As a robustness test, we have also estimated the following alternative model for the relationship between provisions and penalties:

$$Penalties_{i,t} = \alpha + \sum_{n=0}^{n=2} \beta * P\&L\ Misconduct\ Provisions_{i,t-n} + \delta * Controls_{i,t} + \varepsilon_{i,t}$$

(4)

We observe that equation (4) is effectively the reverse of equation (2). Therefore, instead of exploring whether a provision anticipates a penalty, it examines whether a penalty follows a provision. There is no reason to consider the Heckman approach to estimate this equation as penalties announced may always be observed. Results of the estimation of equation (4) are included in Table 12.

Table 12. Relationship between announced penalties and misconduct provisions.

Dependent variable:	Announced penalties / Total assets
Independent variables	
P&L misconduct provisions / ATAs $_{(t)}$	-0.0219
	(0.9277)
P&L misconduct provisions / ATAs $_{(t-1)}$	0.6330 ***
	(0.1840)
P&L misconduct provisions / ATAs $_{(t-2)}$	0.2534
	(0.2470)
Operating expenses / Gross operating income	-0.0024 **
	(0.0010)
% of independent board members	0.0059
	(0.0041)
% of female board members	-0.0008
	(0.0020)
% of board with financial services background	0.0028 *
	(0.0015)
% of board with audit background	0.0015
	(0.0023)
G-SIB bucket	0.0000
	(0.0003)
Financials for compensation exclude misconduct	0.0007
	(0.0006)
Constant	-0.0052
	(0.0038)
Bank fixed effects	Yes
Time period fixed effects	Yes
R squared	0.3484
Number of banks	29
Observations	118

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.
Table 12 reports results from the estimation of the relationship between announced penalties and P&L misconduct provisions, implemented via an OLS estimation with bank and year fixed effects and robust standard errors.
The R-Squared is provided at the bottom of the table.

As expected, this alternative estimation offers similar results to those shown in table 11. The only relevant difference is that when announced penalties becomes the dependent variable, operational profitability shows a significant negative association with penalties announced. We attribute this difference to the large gap between penalties and provisions shown by the UK

banks, which represent a substantial amount of the total banks that report misconduct provisions (4 out of 14; i.e., 28.6%).

Chapter 8

Empirical analysis: P&L misconduct costs and announced penalties

When describing our research design, we explained how our first two hypotheses, H1 and H2, may be tested considering either P&L misconduct provisions or P&L misconduct costs as key research variables. In the previous chapter, we have presented our findings in regard to P&L misconduct provisions. Therefore, we now proceed to test them in connection with P&L misconduct costs.

The study of P&L misconduct costs is relevant for several reasons. First, their widespread disclosure may make them a suitable variable for the study of bank misconduct. Second, their analysis may lead to conclusions that could be extended to bank misconduct provisions. Finally, in themselves, they are useful for the understanding of the determinants and consequences of banks' voluntary disclosures.

8.1. The determinants of P&L misconduct costs disclosure.

To test the applicability of H1 to P&L misconduct costs, we adapt equation (1) to formulate the following model:

$$P\&L\ Misconduct\ Cost\ Disclosure_{i,t} = \alpha_0 + \beta * \ Disclosure\ variables_{i,t} + \sum_{n=0}^{n=4} \gamma * Penalties_{i,t+n} + \delta * \ Controls\ _{i,t} + \varepsilon_{i,t} \quad (5)$$

We note that, in contrast with (1), this equation is estimated on a quarterly basis, as that is the common period for disclosure of misconduct costs. Therefore, *P&L Misconduct Cost Disclosure$_{(i,t)}$* is a dummy that takes a value of 1 if the bank discloses a P&L misconduct cost in that quarter and 0 if it does not. The penalties variable is similar to that of (1), although in this case n extends from 0 (current period) to 4 to account for the different time basis. To maintain maximum consistency across our different models, control variables are those already used in (1). We note that similarly to misconduct provisions, P&L misconduct costs are not

always reported in banks' public financial data. Therefore, on this chapter we will resort again to the use of a Heckman two-stage estimation to address the potential endogeneity created by the self-selection arising of the decision to disclose P&L misconduct costs. The rationale for this approach and the way in which it addresses the econometric issues arising from self-selection are those already explained on Chapter 7.

However, we observe that in our study of the determinants of misconduct provisions, we have utilised the percentage of women in a bank's board as selection criteria for the Heckman estimation, as this variable was significant in the first stage equation (1), but not on for the outcome model (3). In the case of P&L misconduct costs, we find that that the percentage of women in the board does not have a statistically significant association with disclosure. Therefore, we need to find an alternative selection criteria that meets the necessary requirements. Once again, we follow the flowchart from Bendig and Hoke (2022) as a reference for our search process.

We have explored potential alternatives and noted that Bloomberg provides a rating of a firm's disclosure quality on the basis of three dimensions: Environmental, Social and Governance (ESG). These disclosure ratings are commonly used in financial research; see e.g. Li et al. (2018), who find a positive association between ESG disclosure and firm value. While social and governance disclosure ratings might be correlated with the size of misconduct costs, the analysis of our database, which contains 1,244 penalties, indicates that environmental breaches are not a significant source of bank misconduct[26]. Thus, if the environmental disclosure score is associated with misconduct cost disclosure, it must be because the bank has a positive attitude towards voluntary disclosures, and not because of a connection with the amount of misconduct costs. Thus, we introduce the Bloomberg Environmental Disclosure Score as an additional variable in equation (5). If it shows statistical significance for P&L misconduct

[26] The source of each of the penalties has been examined for this purpose.

disclosure, but not for the amount of misconduct costs disclosed, it will meet the requirements to become a valid selection criteria.

As previously, we estimate equation (5) through both logit and probit regressions, as the Heckman two-stage approach requires a probit model for the selection equation. Estimation results are provided in table 13.

Table 13. Determinants of P&L misconduct cost disclosure.

Dependent variable:	P&L misconduct cost disclosure					
	Logit estimation			Probit estimation		
	(1)	(2)	(3)	(4)	(5)	(6)
Independent variables						
IFRS	-0.5077			-0.2418		
	(1.2594)			(0.7210)		
US GAAP		0.9585			0.5315	
		(1.4602)			(0.8269)	
Penalties announced / ATAs $_{(t)}$	462.1558	463.5573	461.7347	294.5239	295.5965	294.0165
	(347.8049)	(347.9759)	(347.8772)	(193.7723)	(193.9403)	(193.6553)
Penalties announced / ATAs $_{(t+1)}$	4982.2370 ***	4979.3550 ***	4982.3270 ***	2714.8100 ***	2713.7230 ***	2715.3720 ***
	(1256.1780)	(1255.0050)	(1255.1140)	(628.1505)	(628.0907)	(627.7311)
Penalties announced / ATAs $_{(t+2)}$	1392.3660 ***	1389.9360 ***	1393.7000 ***	787.9820 ***	786.8682 ***	788.7904 ***
	(476.2485)	(476.3103)	(475.9886)	(276.6038)	(276.7454)	(276.5061)
Penalties announced / ATAs $_{(t+3)}$	682.4363 **	680.8700 **	682.9100 **	391.3192 **	390.4879 **	391.4341 **
	(341.9642)	(341.5404)	(342.4836)	(199.8505)	(199.6539)	(200.0388)
Penalties announced / ATAs $_{(t+4)}$	721.6886 **	720.4940 **	721.9512 **	413.5331 **	412.9214 **	413.6536 **
	(349.1860)	(348.6913)	(349.4836)	(202.4091)	(202.1666)	(202.5614)
Operating expenses / Gross operating income	1.7499	1.7687	1.7387	0.9305	0.9420	0.9253
	(1.4382)	(1.4389)	(1.4369)	(0.7618)	(0.7630)	(0.7613)
% of independent board members	3.0454	2.8502	3.2687	1.5858	1.4681	1.6838 *
	(2.5045)	(2.5320)	(2.4307)	(1.3124)	(1.3358)	(1.2788)
% of female board members	1.3431	1.4131	1.2710	0.9938	1.0368	0.9636
	(2.0083)	(2.0152)	(1.9974)	(1.1071)	(1.1142)	(1.1020)
% of board with financial services background	1.4258	1.4089	1.3512	0.5217	0.5134	0.4819
	(1.6083)	(1.6027)	(1.5982)	(0.8760)	(0.8745)	(0.8690)
% of board with audit background	-1.0657	-1.1146	-1.0411	-0.4754	-0.5050	-0.4650
	(3.4552)	(3.4554)	(3.4593)	(1.8403)	(1.8426)	(1.8429)
G-SIB bucket	1.4004 ***	1.3786 ***	1.4113 ***	0.7843 ***	0.8685 ***	0.7900 ***
	(0.3762)	(0.3796)	(0.4576)	(0.2022)	(0.2451)	(0.2021)
Financials for compensation exclude misconduct	1.6651 ***	1.6580 ***	1.6651 ***	0.8727 ***	0.2885 ***	0.8727 ***
	(0.4573)	(0.4572)	(0.4576)	(0.2449)	(0.0117)	(0.2451)
Bloomberg Environmental Disclosure Score	0.0529 **	0.0523 **	0.0528 **	0.2620 **	0.2885 **	0.0262 **
	(0.0219)	(0.0219)	(0.0219)	(0.0116)	(0.0117)	(0.1167)
Constant	-7.7365 ***	-8.2027 ***	-8.1834 ***	-4.0123 **	-4.2331 ***	-4.2186 ***
	(2.8714)	(2.6408)	(2.6544)	(1.5251)	(1.4081)	1.4139
Log likelihood	-281.2883	-281.1749	-281.3548	-282.6729	-282.5530	-282.7273
Chi squared	65.1200 ***	65.3800 ***	64.6800 ***	70.9800 ***	71.1400 ***	70.6100 ***
Number of banks	29	29	29	29	29	29
Observations	1,183	1,183	1,183	1,183	1,183	1,183

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.
Table 13 reports results from the estimations of the determinants of misconduct provision disclosure, implemented via a logit random effects regression, with the dependant variable taking a value of 1 when misconduct provisions are disclosed and 0 when they are not.

Reported results show that accounting standards do not have a statistically significant association with P&L misconduct cost disclosure. This is not surprising, as these are voluntary disclosures not determined by accounting rules. However, it is still noteworthy that US GAAP banks, which usually do not disclose misconduct provisions, choose instead to disclose P&L misconduct costs. On the other hand, the amount of expected penalties has a positive significant relationship with misconduct cost disclosure under all specifications. In fact, reported results show that only expected penalties are relevant in explaining disclosures, and contemporaneous penalties do not exhibit a statistically significant relationship with disclosure.

Consequently, we can extract three conclusions.

1. The determinant factor for the disclosure of P&L misconduct costs is the size of the expected penalty, and not the accounting framework. In fact, accounting standards do not have a significant influence on the disclosure of P&L misconduct costs (p-values of 0.687 for IFRS and 0.512 for US GAAP in the logit estimation and 0.721 and 0.520 under the probit model).
2. P&L misconduct cost disclosure has a forward-looking nature: a disclosure in the current period implies that a penalty is forthcoming over the next 4 quarters.
3. The association between P&L misconduct cost disclosure and expected penalty size is stronger for penalties announced on the following time-period, with the coefficients for t+2 to t+4 declining substantially. This outcome is constant across all estimations.

While most of the identifying assumptions underlying our conclusions are similar to those mentioned in our analysis of misconduct provisions, we note that in this case we cannot rely on the enforcement of accounting rules by auditors and regulators, as these disclosures are voluntary. However, as previously noted, disclosure may not only be based on auditor's

enforcement, but also on weighting the advantages relative to costs of providing this information to investors. Reported results point to the existence of a positive impact of disclosure, so that banks that disclose P&L misconduct costs in anticipation to the announcement of penalties obtain relative gains against the alternative behaviour of hiding the data among other overheads. This is aligned with the efforts of some banks to categorize these costs as non-operational or non-recurring. The analysis we will carry out in Chapter 9 also suggests that disclosure of P&L misconduct costs may provide banks with a tool to influence the timing of the impact of misconduct on stock returns.

In terms of control variables, we document a significant positive relationship between G-SIB bucket and disclosure. This finding is consistent with the results obtained for the disclosure of provisions and implies that the higher degree of scrutiny associated with a higher G-SIB classification promotes disclosure. Interestingly, the variable "financials for compensation exclude misconduct" also shows a positive and significant relationship with disclosure across all estimations. Thus, when a bank's management has an incentive to disclose the impact of misconduct on the P&L account of bank, they do so through the disclosure of misconduct costs rather than formal provisions. This highlights the information discovery role of the P&L misconduct cost variable.

Once again operational profitability does not show a significant association with the amount of P&L misconduct costs disclosed. Therefore, neither P&L misconduct costs nor provisions appear to be a tool for operational earnings smoothing.

Finally, contrary to what was previously reported for misconduct provisions, board composition is not associated with higher disclosure of P&L misconduct costs.

Table 14 also evidences that the Bloomberg environmental disclosure score variable introduced in the probit estimation is statistically significant in all estimations. On the other hand, when we introduce this variable in the outcome equation ((5), as described in the following section),

estimation results show that it is not associated with the size of the P&L misconduct costs disclosed. In consequence, we may conclude that the Bloomberg Environmental Disclosure Score provides a valid selection restriction for a Heckman two-stage model, as it has a positive association with the selection variable (disclosure) but no relationship with the outcome variable (size of penalties received)[27].

Finally, we observe that all banks in our sample disclose P&L misconduct costs at least once during the observed period. We thus have a significant number of datapoints for both US GAAP and IFRS banks. Consequently, we may produce separate estimations of equation (5) for each of these two subsamples, with the objective of analysing if the determinants of P&L misconduct costs disclosure change for banks subject to different accounting standards. Estimation results for these subsamples are detailed in table 14.

[27] Contrastingly, our tests show that the Bloomberg Environmental Disclosure Score is not a significant variable for the disclosure of misconduct provisions. Thus, it is not possible to use this variable as a selection criteria in the analyses included in Chapter 7.

Table 14. Determinants of P&L misconduct cost disclosure (IFRS and US GAAP subsamples).

Dependent variable:	P&L misconduct cost disclosure			
	IFRS banks only		US GAAP banks only	
Independent variables				
Penalties announced / ATAs $_{(t)}$	1753.2970	**	33.9915	
	(742.7856)		(501.9955)	
Penalties announced / ATAs $_{(t+1)}$	3837.1500	***	6063.3030	***
	(1474.8850)		(1988.9700)	
Penalties announced / ATAs $_{(t+2)}$	1480.6090	**	923.5548	
	(594.0820)		(688.6406)	
Penalties announced / ATAs $_{(t+3)}$	158.6999		1123.7400	**
	(635.9878)		(619.6508)	
Penalties announced / ATAs $_{(t+4)}$	34.1115		1276.2980	**
	(659.7765)		(700.3029)	
Operating expenses / Gross operating income	0.6178		5.5738	
	(2.0165)		(3.5188)	
% of independent board members	-1.2900		16.2302	
	(3.2337)		(9.9909)	
% of female board members	10.2546	***	-5.7589	
	(3.0745)		(4.4334)	
% of board with financial services background	2.8923		6.8895	
	(2.0804)		(4.6186)	
% of board with audit background	5.5485		2.1431	
	(4.8955)		(6.9250)	
G-SIB bucket	0.9499		1.3951	**
	(0.5866)		(0.6754)	
Financials for compensation exclude misconduct	3.8038	***	0.1121	
	(0.8389)		(0.7165)	
Constant	-6.5641	**	-18.7429	*
	(3.2986)		(10.6970)	
Log likelihood	-176.0657		-86.1412	
Chi squared	44.4700	***	31.6200	**
Number of banks	19		10	
Observations	748		440	

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.

Table 14 reports the results of estimating the determinants of misconduct provision disclosure for two subsamples: the first subsample includes only banks reporting under IFRS and the second one considers exclusively banks reporting under US GAAP only. Results are estimated via a logit random effects regression, with the dependant variable taking a value of 1 when misconduct provisions are disclosed and 0 when they are not. The sum of the US GAAP and IFRS estimation observations is different from the observations for the estimation with all banks

because the 2 Canadian banks report under local GAAP for the first 3 quarters of the period under review (6 observations).

The results outlined in table 14 allow us to produce some additional considerations.

First, the forward-looking nature of P&L misconduct cost disclosure observed for the full sample is more evident for US GAAP banks, where current period penalties announced are not significant, but penalties incorporating up to 4 quarters lead values positively impact disclosure. In contrast, misconduct cost disclosure for banks that report under IFRS can be explained by current period and 1-2 period lead penalties. This implies that the previously mentioned thresholds for considering a provision "probable" (50% chance for IFRS, 75% for US GAAP) do not affect the forward-looking component of P&L misconduct costs for US GAAP banks.

Finally, the statistical significance of control variables also differs across subsamples. For IFRS banks only, a higher presence of females in the board leads to higher disclosure. If we consider that US GAAP banks generally did not report misconduct provisions, this result is consistent with the conclusions drawn in section 6.2. Furthermore, banks reporting under IFRS also favour P&L misconduct disclosure when P&L misconduct costs are excluded from the calculation of executive compensation. Contrastingly, higher regulatory scrutiny (G-SIB bucket) influences disclosure for US GAAP banks only.

8.2. The relationship between P&L misconduct costs and announced penalties.

Pursuing a similar approach to the one we took for the study of misconduct provisions, we move on to test H2 using P&L misconduct costs as our research variable. Thus, we adapt equation (2) to analyse the relationship between misconduct costs and penalties under the following specification:

$$P\&L\ Misconduct\ Costs/\ ATAs\ _{i,t} = \alpha + \sum_{n=0}^{n=4} \beta * Penalties_{i,t+n} + \delta * Controls\ _{i,t} + \varepsilon_{i,t} \quad (6)$$

where $P\&L\ Misconduct\ Costs/ATAs_{\ i,t}$, are the misconduct cost P&L charges at quarter t, standardised by dividing them by average total assets over the same quarter.

As previously discussed, we use once more a Heckman two stage estimation to address the potential self-selection bias caused by the fact that only some banks choose to disclose their P&L misconduct costs. This leads us to equation (7):

$$P\&L\ Misconduct\ Costs/\ ATAs\ _{i,t} = \alpha + \sum_{n=0}^{n=4} \beta * Penalties_{i,t+n} + \delta * Controls_{\ i,t} + \gamma * Inverse\ Mills\ Ratio + \varepsilon_{i,t} \quad (7)$$

The Inverse Mills Ratio is obtained from the results detailed on column (6) of Table 14, which serves as the first stage equation of the Heckman two-stage estimation.

With the aim of maintaining consistency across our different models, equations (6) and (7) use the same control variables previously considered for equation (5), with the exclusion of the Bloomberg Environmental Disclosure Score which, as selection variable for the Heckman two-stage estimation, is not significant in the outcome equation.

In line with the previous Chapter, we also report separate estimations for IFRS and US GAAP banks, analysing the extent to which accounting standards have an impact on disclosure once we control for announced penalties and other variables.

Results for all estimations are tabulated in Table 15.

Table 15. Relationship between P&L misconduct costs and announced penalties.

Dependent variable:	P&L misconduct costs / Total assets			
	Full sample		Sub-samples	
	OLS	Heckman two-stage	US GAAP banks only	IFRS banks only
	(1)	(2)	(3)	(4)
Independent variables				
Penalties announced / ATAs $_{(t)}$	0.1077 *	0.1112 *	0.1090	0.1038
	(0.0544)	(0.0585)	(0.0706)	(0.0879)
Penalties announced / ATAs $_{(t+1)}$	0.1689 ***	0.1556 ***	0.2183 **	0.0956 ***
	(0.0487)	(0.0540)	(0.0755)	(0.0194)
Penalties announced / ATAs $_{(t+2)}$	0.1027 **	0.1040 **	0.1638 ***	-0.0214
	(0.0413)	(0.0454)	(0.0491)	(0.0328)
Penalties announced / ATAs $_{(t+3)}$	0.0142 **	0.1397 **	0.1032	0.2003
	(0.0613)	(0.0529)	(0.0689)	(0.1215)
Penalties announced / ATAs $_{(t+4)}$	0.0198	0.0105	0.0327	-0.0231
	(0.0344)	(0.0447)	(0.0629)	(0.0216)
Operating expenses / Gross operating income	0.0003	0.0006	0.0003	0.0002
	(0.0003)	(0.0051)	(0.0005)	(0.0026)
% of independent board members	0.0000	-0.0005	0.0014	0.0001
	(0.0002)	(0.0007)	(0.0017)	(0.0023)
% of female board members	0.0000	-0.0003	-0.0002	0.0011
	(0.0002)	(0.0004)	(0.0003)	(0.0002)
% of board with financial services background	0.0001	0.0001	0.0004	-0.0010
	(0.0002)	(0.0004)	(0.0009)	(0.0001)
% of board with audit background	0.0000	0.0000	-0.0006	0.0005
	(0.0003)	(0.0006)	(0.0003)	(0.0004)
G-SIB bucket	0.0001	0.0000	0.0000	0.0001
	(0.0000)	(0.0001)	(0.0001)	(0.0004)
Financials for compensation exclude misconduct	0.0001 **	0.0001	0.0002	0.0000
	(0.0000)	(0.0001)	(0.0001)	(0.0000)
Inverse Mills Ratio (Heckman estimation only)		0.0000		
		(0.0002)		
Constant	-0.0002	0.0005	-0.0015	0.0000
	(0.0003)	(0.0007)	(0.0016)	(0.0003)
Bank fixed effects	Yes	Yes	Yes	Yes
Time period fixed effects	Yes	Yes	Yes	Yes
R squared	0.2328	0.2767	0.3389	0.2292
Number of banks	29	29	10	19
Observations	1,194	646	440	748

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.

Table 15 reports results from the estimations of the relationship between P&L misconduct provisions and announced penalties- The estimations in columns (1), (3) and (4) are implemented via OLS with bank and quarter fixed effects and robust standard errors. The estimation in column (2) reports the results of the second stage of the Heckman model, implemented through a fixed effects regression with bank and quarter fixed effects and robust standard errors. The first stage of the Heckman model results from the estimation of equation (5) through a probit regression, as detailed in column (6) of Table 13. The sum of the US GAAP and IFRS estimation observations is different from the observations for the estimation with all banks because the 2 Canadian banks report under local GAAP for the first 3 quarters of the period under review.

The R-Squared is provided at the bottom of the table.

Reported results show that, when considering the full dataset, the expectations of future penalties for the next three quarters have a significant and positive influence on the amount of misconduct costs disclosed regardless of the estimation method considered. In fact, future penlties exhibit a higher statistical significance and, for the following (t+1) period, a larger coefficient, than penalties announced in the same quarter. Thus, while misconduct costs combine a current period and a forward-looking element, the forward-looking component is dominant. On a combined basis, the coefficients for future quarters add up to 2.7x the coefficient for the present quarter.

This effect is stronger when the equation is estimated through a Heckman two-stage process and, specially, when the sample is split between US GAAP and IFRS banks. For these subsamples, current period penalties are not significant and P&L misconduct costs become, from a practical standpoint, akin to provisions, with a forward-looking nature similar to the one provisions derive from IAS 37 and ASC 450.

From the economic point of view, estimation results show that future penalties generate a significant drag on current period profitability. This effect is especially strong for next quarter penalties and then decreases over time. It is also stronger for the subsample of US banks, with a combined statistically significant coefficient of 0.3821 vs 0.0956 for IFRS institutions. These results are in line with those reported in the previous analyses and with previously discussed expectations. For IFRS banks, which commonly disclose provisions, future penalties primarily translate into a current provision, while for US GAAP entities, which do not generally disclose provisions, future penalties primarily translate into current period misconduct costs. The robustness of this conclusion is confirmed by the similarity in coefficients across tables 8 and 10. The coefficients also indicate that the closer the expected future penalty, the higher its influence on misconduct costs.

Estimation results also highlight that there is a large amount of misconduct-related costs that cannot be explained by penalties, as the sum of the coefficients for penalties throughout the 5 time periods considered add up to a maximum of 0.6270 for the US GAAP subsample and are significantly lower when considering the full dataset (0.4134 for the OLS estimation and 0.5210 for the Heckman two-stage). This is consistent with the data from table 4, which demonstrates that misconduct costs exceed announced penalties by a factor of 1.5x, as they include additional items such as customer remediation. We have shown that UK banks show the largest difference between misconduct costs reported and penalties announced; this explains that the subsample IFRS banks produces the smallest total coefficient (0.3552).

Finally, we note that for our Heckman two-stage estimation, the Inverse Mills Ratio injected into the outcome equation is outside the significance threshold (p-value of 0.952).

Chapter 9

The impact of misconduct on bank shareholder wealth.

9.1. The impact of P&L misconduct costs on bank shareholder returns.

We now move on to study our third hypothesis, which addresses the relationship between P&L misconduct costs and bank shareholders' returns. This hypothesis uses P&L misconduct costs instead of misconduct provisions as the main research variable. The motivation for this variable choice was explained when formulating our hypotheses in Chapter 4.

Hence, we estimate the following equation:

$$Return_{i,t} = \alpha + \beta * \ P\&L\ Misconduct\ Costs_{i,t-1} + \gamma \ * \ Announced\ Fines\ and\ Penalties_t + \delta * \ Control_{i,t-1} + \ \varepsilon_{i,t} \quad (8)$$

where $Return_{i,t}$ is a variable for shareholder return on quarter *t* for bank *i,* $P\&L\ Misconduct\ Costs_{i,t-1}$ is a variable for bank misconduct costs and $Control^{i}_{i,t-1}$ represents a vector of control metrics. We use a one period time lag for the P&L misconduct costs and control variables, as the financial data for a quarter is released to the market on the next quarter; implying that it can only influence the stock returns of the following period (quarter). On the other hand, penalties are observed as they are announced, so no lag is required. Our primary measurement of stock returns is absolute buy-and-hold total return over the quarter. However, we underline that an absolute return analysis may not fully reflect the consequences of misconduct for bank shareholders. A positive absolute return over a period may not be acceptable for a shareholder if that return is below that obtained by investing in competing stocks. Similarly, a negative absolute return may be accepted by the investor if the market exhibits a greater decrease. Hence, we argue that to properly determine the impact of misconduct on bank shareholder returns, these returns should also be referenced to the benchmark index. This consideration delivers the following alternate specification:

$$Return_{i,t} = Return\ vs\ Index\ _{i,t} = Bank\ Stock\ Total\ Return_{i,t} - Index\ Total\ Return_{i,t} \quad (9)$$

This equation is first estimated through a bank fixed effects estimator with quarter time dummies.

Given the potential selection bias linked to the observability of P&L misconduct costs, which has been thoroughly discussed in previous sections of this document, we repeat the approach of using a Heckman two-stage estimation as a robustness test. We consider again the Bloomberg Environmental Disclosure Score as selection variable, as it has proved to be significant for the disclosure of P&L misconduct costs while empirical results show it is not associated with stock returns. The Inverse Mills Ratio is obtained from the results detailed on column (6) of Table 13, which serves as the first stage equation of the Heckman two-stage estimation.

Another common approach to correct for potential selection bias and endogeneity in panel data analysis is the use of a two stage least squares with instrumental variables estimation ("2SLS"). Examples of the use of this method include Cheng and Courtenay (2006), Adams and Ferreira (2009), Reeb and Zhao (2013), Li et al. (2018), and Tingbani et al. (2020). Certo et al. (2016) discuss the econometric issues created by sample selection bias, as is the case with P&L misconduct costs which are only observable when disclosed. They further note that, although endogeneity may arise from sample selection bias, it may also result from other sources, such as simultaneous causality or omitted variables that are correlated with both the independent variable and the error term. In those situations where endogeneity appears through multiple sources, they argue that 2SLS models "are less biased than Heckman models when traditional endogeneity and sample-induced endogeneity are both present". Therefore, they suggest estimating a 2SLS model and comparing this approach to a Heckman estimation; 2SLS should be favoured if the results are substantially different.

Therefore, to perform an addition test of the robustness of our conclusions, we follow the approach suggested by Certo et al. (2016) and estimate (9) through a 2SLS model. This model replaces the actual observations of P&L misconduct costs, which is considered the endogenous variable, with the results obtained from estimating the independent variable of equation (6) through a fixed effects model[28]. In this way, P&L misconduct costs become the instrumented variable, and the variables that determine them in equation (6) become instrumental variables (IV) in the estimation of the impact of misconduct on stock returns. The results obtained are then compared to those of the OLS and the Heckman-two stage estimations.

Results are reported in table 16.

[28] See column (1) of table 15 for the results of estimating the instrumental variable through a fixed effects OLS regression.

Table 16. Relationship between P&L misconduct costs and bank shareholder returns.

	OLS		Heckman two-stage		2SLS	
Dependent variable	Total return	Total return vs index	Total return	Total return vs index	Total return	Total return vs index
	(1)	(2)	(3)	(4)	(5)	(6)
Independent variables						
Announced penalties / ATAs $_{t}$	6.2551	4.5241	7.0414	5.0635	12.0385	7.9689
	(4.5217)	(4.7722)	(4.4739)	(4.8535)	(7.3805)	(5.9779)
P&L misconduct costs / ATAs $_{(t-1)}$	-22.7430 ***	-21.5497 ***	-22.1494 ***	-20.7037 ***	-52.6753 **	-38.7742 **
	(5.9418)	(5.8250)	(5.5777)	(5.4866)	(26.2577)	(19.7527)
Operating expenses $_{(t-1)}$/Gross op. income $_{(t-1)}$	-0.1299 ***	-0.1025 ***	-0.0938 **	-0.0819 **	-0.0850 **	-0.0756 **
	(0.0385)	(0.0323)	(0.0368)	(0.0326)	(0.0383)	(0.0336)
Tax expenses$_{(t-1)}$/Operating income$_{(t-1)}$	-0.0069 ***	-0.0059 ***	-0.0043 ***	-0.0033 ***	-0.0053 ***	-0.0040 ***
	(0.0015)	(0.0013)	(0.0010)	(0.0008)	(0.0016)	(0.0010)
Price to Book Value $_{(t-1)}$	-0.1275 ***	-0.1002 ***	-0.1332 ***	-0.1105 ***	-0.1322 ***	-0.1101 ***
	(0.0200)	(0.0170)	(0.0224)	(0.0173)	(0.0226)	(0.0168)
Risk weighted assets $_{(t-1)}$/Total assets$_{(t-1)}$	-0.1123	-0.0385	-0.0844	-0.0134	-0.0864	-0.0264
	(0.0806)	(0.0629)	(0.0829)	(0.0640)	(0.0851)	(0.0630)
Δ GDP $_{(t-1)}$	1.4014 ***	0.7406 ***	1.2842 ***	0.6482 ***	1.3104 ***	0.6815 ***
	(0.2280)	(0.2020)	(0.2328)	(0.1956)	(0.2351)	(0.1943)
Δ 10yr sovereign rate	-0.0024 **	-0.0011	-0.0027 **	-0.0014	-0.0023 **	-0.0010
	(0.0012)	(0.0012)	(0.0011)	(0.0011)	(0.0010)	(0.0010)
GSIB bucket $_{(t-1)}$	-0.0151 *	-0.0203 ***	-0.0156	-0.0211 **	-0.0160 **	-0.0219 ***
	(0.0076)	(0.0067)	(0.0099)	(0.0083)	(0.0077)	(0.0067)
Constant	0.2007 ***	0.1345 ***	0.0155 **	0.1059 **	0.1642 ***	0.1187 ***
	(0.0521)	(0.0430)	(0.0576)	(0.0477)	(0.0547)	(0.0443)
Inverse Mills Ratio $_{(t-1)}$			0.0100	0.0084		
			(0.0097)	(0.0067)		
Bank fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time period (quarter) fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.6772	0.4862	0.6860	0.5073	0.6816	0.5091
Number of banks	29	29	29	29	29	29
Observations	1,323	1,323	1,182	1,182	1,155	1,155

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.
Table 16 reports results from the outcome equation of the OLS (columns (1) and (2)), Heckman two-stage (columns (3) and (4)) and 2 stage least squares (columns (5) and (6)) estimations of the relationship between P&L misconduct costs and bank shareholder returns. The first stage of the Heckman model results from the estimation of equation (5) through a probit regression, as detailed in column (6) of Table 13.
All estimations use bank and time-period fixed effects and robust standards errors. The R-Squared is provided at the bottom.

Reported results show that P&L misconduct costs have a significant negative association with stock returns on the quarter on which they are disclosed. This outcome is consistent across all regression methodologies and is robust to considering either return metric. Thus, we confirm the null hypothesis that the market reacts to the announcement of a P&L charge that predicts the loss, and not to the actual loss being incurred. This reaction resembles the way in which

stocks respond to the disclosure of loan loss provisions, rather than to the actual credit loss, as highlighted by Marton and Runesson (2017). Consequently, we may conclude that P&L misconduct cost disclosure provides investors with the first credible information into the detection of bank misconduct, or that, at least, it provides market-relevant information by validating previous external reports through the bank's own financial disclosures.

The estimated coefficients confirm the economic relevance of the impact of misconduct costs on bank returns. The median misconduct cost in our sample is 0.0001188 of risk-weighted assets, which translates into a -0.22%/-0.23% decline in stock price under OLS and Heckman estimators and doubles when we take the results from the 2SLS estimator. As misconduct costs are non-granular, this impact becomes much greater for the largest charges. For example, the misconduct charge taken by Bank of America in Q2 2011 of 0.08157 of risk-weighted assets implies a decrease in stock price of 17 to 43% depending on estimation method; at the top of the range, this would imply that most of the 44% decrease experienced by this bank's stock price on the following quarter was driven by misconduct.

All control variables have the expected signs and effects. Higher efficiency ratios and tax rates reduce profitability and thus have a significant negative association with on stock returns. A higher price to book value signals that a stock is expensive and therefore reduces stock returns; in a similar way, a lower price-to-book characterizes a cheap stock and leads to higher returns[29]. Conrad et al (2002) also observe that this is consistent with investor psychology, as the Barberis, Shleifer and Vishny model (Barberis et al., 1998) explains "why do value stocks (or, more generally, stocks which have underperformed in the past) appear to outperform glamour stocks (or stocks which have outperformed in the past)". Bigger size and higher complexity, represented by a higher G-SIB bucket, cause lower stock returns. The positive contribution of

[29] This effect is derived from the $\frac{P_0}{BV_0} = \frac{ROE - g_1}{r - g_1}$ formula: ceteris paribus, when the market increases a stock's P/BV above its fundamental value, it should converge downwards, while a P/BV below fundamental value should eventually lead a stock increase.

GDP growth to stock returns is associated with the relationship between GDP growth and bank profitability and the positive connection between profitability and stock returns (Irresberger et al., 2015). Finally, while increases in interest rates on the same quarter have a negative association with absolute stock returns, they do not have a significant effect on returns benchmarked against the index, as all stocks in the index are similarly affected.

As in prior cases, the Inverse Mills Ratio are not significant in the estimations of both Heckman outcome equations (p-values of 0.310 and 0.222). This implies that estimation bias is negligible. We also observe that the results of the 2SLS estimation are not substantially different from those obtained through the Heckman-two stage, thus dispelling the concerns raised by Certo et al. (2016).

Estimation results also show that current period fines do not have a statistically significant association with bank stock returns. This is consistent with the predictive nature of P&L misconduct costs established in Chapter 8. If P&L misconduct costs predict a future penalty, and the market reacts negatively to the disclosure of a misconduct cost, at the time a penalty is announced the market reaction has already been experienced. Thus, it makes sense that penalty announcements do not affect share prices. Regardless, in order to further test the robustness of this conclusion, we proceed to remove P&L misconduct costs from (8) and estimate the following equation:

$$Return_{i,t} = \alpha + y * Penalties_t + \delta * Control_{i,t-1} + \varepsilon_{i,t} \quad (10)$$

We estimate (9) through a fixed effects OLS regression, as penalties can always be observed and hence do not raise the selection bias issues addressed via the Heckman two-stage and SLS models. The outcome, which is detailed in table 17, further confirms the lack of significance of announced penalties for stock price formation already mentioned; the results for the control variables do not show significant differences with those of table 16.

Table 17. Relationship between announced penalties and bank shareholder returns.

Relationship between announced penalties and bank shareholder returns.

	OLS			
Dependent variable	Total return		Total return vs index	
Independent variables				
Announced penalties / ATAs $_{t}$	2.3222		0.7975	
	(4.1520)		(4.3534)	
Operating expenses $_{(t-1)}$/Gross op. income $_{(t-1)}$	-0.1379	***	-0.1101	***
	(0.0412)		(0.0347)	
Tax expenses$_{(t-1)}$/Operating income$_{(t-1)}$	-0.0067	***	-0.0056	***
	(0.0148)		(0.0013)	
Price to Book Value $_{(t-1)}$	-0.1239	***	-0.0967	***
	(0.0215)		(0.0184)	
Risk weighted assets $_{(t-1)}$/Total assets$_{(t-1)}$	-0.1181		-0.0440	
	(0.0807)		(0.0627)	
Δ GDP $_{(t-1)}$	1.3815	***	0.7218	***
	(0.2255)		(0.1994)	
Δ 10yr sovereign rate	-0.0024	*	-0.0010	
	(0.0012)		(0.0011)	
GSIB bucket $_{(t-1)}$	-0.0154	*	-0.0206	**
	(0.0084)		(0.0075)	
Constant	0.2001	***	0.1340	***
	(0.0558)		(0.0460)	
Inverse Mills Ratio $_{(t-1)}$				
Bank fixed effects	Yes		Yes	
Time period (quarter) fixed effects	Yes		Yes	
R2	0.6737		0.4862	
Number of banks	29		29	
Observations	1,323		1,323	

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.

Table 17 reports results from OLS estimation of the relationship between announced penalties and bank shareholder returns, with bank and time-period fixed effects and robust standards errors. The R-Squared is

provided at the bottom.

9.2. Bank stock returns and the interaction between P&L misconduct costs and provisions and announced penalties.

The preceding section demonstrates how disclosed P&L misconduct costs have a significant negative influence on stock returns, while announced penalties do not. This leads to an additional question: what happens when a P&L misconduct cost has not been disclosed in advance of a penalty announcement? In this case, the market can not anticipate the forthcoming penalty, so it would make sense that the impact of misconduct be captured when the penalty is announced.

To test this extension of our third hypothesis (H3), we produce separate estimations of equations (8) and (10), differentiating those quarters in which there is a P&L misconduct cost disclosure at t-1, from those for which there is not such disclosure. This segmentation allows us to document when the market has been able to anticipate the penalty and treat these instances differently from those when there is no advance indication that a penalty is forthcoming. We perform these estimations via an OLS approach; as selection in this case is deliberate, we do not need to correct for any potential bias.

Table 18 includes estimation results.

Table 18. Interaction between P&L misconduct costs and announced penalties and their relationship with bank shareholder returns.

	Subsample: P&L misconduct costs $_{(t-1)} \neq 0$		**Subsample: P&L misconduct costs$_{(t-1)}$ = 0**	
Dependent variable	Total return	Total return vs index	Total return	Total return vs index
Independent variables				
Announced penalties / ATAs $_{t}$	6.3765	4.7063	-22.2087 **	-23.2454 ***
	(4.6388)	(4.6294)	(9.0798)	(7.8657)
P&L misconduct costs / ATAs $_{(t-1)}$	-19.2384 ***	-18.6615 ***		
	(6.8882)	(6.6098)		
Operating expenses $_{(t-1)}$/Gross op. income $_{(t-1)}$	-0.1823 ***	-0.1445 ***	-0.0697	-0.0530
	(0.3945)	(0.0336)	(0.0419)	(0.0377)
Tax expenses$_{(t-1)}$/Operating income$_{(t-1)}$	-0.0060 ***	-0.0055 ***	-0.0107	-0.0055
	(0.0018)	(0.0016)	(0.0088)	(0.0095)
Price to Book Value $_{(t-1)}$	-0.0912 ***	-0.0730 ***	-0.1624 ***	-0.1299 ***
	(0.0211)	(0.0189)	(0.0262)	(0.0238)
Risk weighted assets $_{(t-1)}$/Total assets$_{(t-1)}$	-0.0290	0.0256	-0.1578	-0.0867
	(0.0977)	(0.0872)	(0.1406)	(0.0996)
Δ GDP $_{(t-1)}$	1.3699 ***	0.7476 ***	1.6735 ***	0.9326 **
	(0.2110)	(0.2046)	(0.4267)	(0.3683)
Δ 10yr sovereign rate	-0.0519	-0.0049	-0.0013	-0.0002
	(0.0067)	(0.0058)	(0.0013)	(0.0013)
GSIB bucket $_{(t-1)}$	-0.0098	-0.0162	-0.0224 **	-0.0301 ***
	(0.0109)	(0.0096)	(0.0087)	(0.0075)
Constant	0.0143 *	0.0918	0.2304 ***	0.1665 ***
	(0.0781)	(0.0658)	(0.0779)	(0.0593)
Bank fixed effects	Yes	Yes	Yes	Yes
Time period (quarter) fixed effects	Yes	Yes	Yes	Yes
R2	0.724	0.5761	0.6898	0.4618
Number of banks	29	29	29	29
Observations	639	639	684	684

*** = coefficient that is statistically significant from 0 at the 1% level. ** = coefficient that is statistically significant from 0 at the 5% level. * = coefficient that is statistically significant from 0 at the 10% level. Standard errors are provided in brackets.
Table 18 reports results from of the estimation of equation (6) separating observations where there is a prior (t-1) P&L misconduct cost disclosure from those where there is not. All equations are estimated through an OLS regression with bank and quarter fixed effects and robust standard errors. The R-Squared is provided at the bottom of the table.

The results evidence that a preceding P&L misconduct cost disclosure has a significant negative impact on bank stock returns. However, when a P&L misconduct cost has not been disclosed in the previous quarter, the market reacts in similar manner to the announcement of a penalty. We also note that the negative coefficient for preceding P&L misconduct costs is

lower than that associated with announced penalties. This shows the degree of uncertainty underlying the long-term component of misconduct costs, which estimate and anticipate the P&L impact of future penalties, as mentioned in previous chapters.

Estimations for control variables remain generally consistent with previous regressions: although in some cases statistical significance may change due to sample selection, the signs of the coefficients remain unchanged, and the coefficients themselves are relatively in line with those previously calculated.

The conclusion from the above analysis is that bank stock returns are not solely influenced by the disclosure of P&L misconduct costs, as such disclosures are not always available, nor by the announcement of penalties, as these may be anticipated by a prior disclosure of a P&L misconduct cost. In fact, these two variables interact with each other, so that the disclosure of a P&L misconduct cost takes precedence for the formation of stock price when it is available, as they announce a forthcoming penalty, while the announcement of a penalty influences stock returns when such an announcement has not been made. Under both scenarios, the coefficients are negative, indicating that the markets react negatively to bank misconduct.

We highlight that this interaction is a new contribution to the literature on the consequences of bank misconduct, which has previously focused on the impact of a single variable (penalty announcements) on stock returns.

Chapter 10

Conclusions

10.1. Key contributions.

Throughout this work, we have examined how misconduct-related costs are represented in a bank's financial statements, as well as the determinants and consequences of that representation. Preceding literature has studied the relationship between bank misconduct and bank financial performance through the use of announced penalties as a proxy for misconduct. However, we have provided evidence that the use of announced penalties as a research variable does not consider the influence of accounting rules (IAS 37 and ASC 450) on the timing of the P&L impact of misconduct. We have also shown that the amounts of announced penalties may fail to fully reflect all overheads generated by misconduct. Therefore, we shift the focus from announced penalties to the actual P&L charges caused by misbehaviour, which we have measured through two variables: misconduct provisions and P&L misconduct costs.

We have first explored the factors that lead banks to disclose either a misconduct provision or a P&L misconduct cost. We have also considered how the timing of those disclosures relates to the announcement of a penalty. We have subsequently proceeded to analyse the factors that influence the amounts of misconduct provisions or costs disclosed. Finally, we have studied the connection between misconduct and bank shareholders' returns and how the disclosure of P&L misconduct costs interacts with the announcement of penalties to influence those returns. These analyses add to the research of bank misconduct through the following contributions:

1. We provide the first comparative analysis of the different metrics to measure misconduct, including a discussion of the strengths and weaknesses of each;
2. We produce an in-depth evaluation of how accounting rules shape the disclosure and quantification of misconduct-related charges in a bank's earnings statement;
3. We introduce P&L misconduct costs as an alternative variable for the research of bank misconduct;
4. We analyse the determinants of misconduct provisions disclosures and determine that these are also influenced by non-accounting factors such as female representation in the board;
5. We ascertain the informational value of the disclosure of P&L misconduct costs for the prediction of future penalties and the formation of bank stock prices;
6. We establish that, when misconduct costs are observed at the time they are disclosed, bank misconduct has a negative impact on shareholder's wealth.

10.1.1. Measuring the financial costs of bank misconduct.

We first address some of the issues raised by the use of external non-accounting metrics for the analysis of the financial impact of bank misconduct. In doing so, we observe how a significant percentage of papers on misconduct measure bank wrongdoing by the number of enforcement actions or penalties received. This approach does not take into account the differences in severity of the misconduct events that generate the enforcement actions or the penalties. The descriptive statistics for our penalty data, as detailed in Tables 8 and 9, show that both on an annual and quarterly basis, the standard deviation of penalties over average total assets is a multiple of its mean value: 2.6x for annual data, 6x for quarterly figures. The scatterplot in Chart B4 also provides evidence that, while a significant number of penalties stay within a

range, there are also cases which end in very large penalties. The use a of variable based on the number of cases does not account for this diversity in severity.

Another commonly used variable is the amount of the penalties announced, measured at the time of such announcement. A number of authors (Carretta et al., 2025; Köster & Pelster, 2017, 2018) have justified their use of this metric on the basis of the limitations of the accounting disclosures of misconduct, highlighting that those disclosures may be available only for certain years and that their itemization may vary. However, these authors do not consider the shortcomings of their own chosen metric, under the assumption that the higher external observability of the announced penalties variable equals completeness and comprehensiveness. We show that is not the case: empirical evidence indicates that, by taking this proxy, previous papers are underestimating the financial costs of misconduct, as the differences between penalties announced and misconduct costs charged against bank earnings are significant. For the banks in our sample that disclose misconduct provisions, these exceed penalties levied by USD 110,487 million: this means that provisions amount to 153.2% of penalties received. If we examine P&L misconduct costs, which are disclosed at some point by every bank in our sample, the differences amount to USD 123,867 million, which implies that P&L misconduct charges represent 150.8% of the total penalties announced[30].

The differences in the total amounts provided by each alternative variable are driven by several factors. First, announced penalties may or may not include customer remediation costs. Second, there are circumstances where a bank has to indemnify a client for the financial damage caused, without having to pay a penalty for causing that damage. Third, the figures for announced penalties may not consider the cumulative financial impact of a large number of small court decisions. Fourth, announced penalties do not reflect the reversal of revenues arising from

[30] The reason why the percentage of P&L misconduct costs over announced penalties is lower than that of misconduct provisions is that the percentage of P&L misconduct costs over announced penalties is calculated over the total sample, as all banks in our database disclose a misconduct cost at some point, while the percentage of misconduct provisions is estimated only for those banks that disclose them.

misconduct that were previously accrued. Finally, misconduct generates legal, operational and other costs that are not included within the penalties' figures.

10.1.2. Introducing accounting rules into the analysis of bank misconduct.

We propose that, when available, misconduct provisions provide a comprehensive metric of misconduct with a clear accounting nature. However, disclosure of misconduct provisions is driven by accounting standards: IAS 37, ASC 450 and ASC 275. This entails that, in practice, provisions are rarely revealed by US GAAP banks. Furthermore, misconduct provision disclosure by banks under IFRS is not regular, as banks may use IAS 37.87 to combine misconduct provisions with other types of provisions and provide just an aggregate figure for "Other provisions".

Observed results for our estimations confirm the leading role of accounting standards in influencing misconduct provision disclosure: accounting under IFRS shows a significant positive association with disclosure, while in the case of US GAAP the relationship is significant and negative. Board composition, and, more specifically, the percentage of female board members, is also positively associated with misconduct provision disclosure.

We also demonstrate that, when disclosed, misconduct provisions anticipate next year penalties. This result is consistent across different estimation methods and the introduction of adjustments to account for the potential selection bias arising from the fact that provisions are not always disclosed. Such an outcome is consistent with the requirements of IAS 37.14 and ASC 450-20-52-2, which indicate that a provision must be made when ***it becomes probable*** that a loss may occur as a consequence of a past event, instead of when the actual outflow or loss happen. It is also concordant with the behaviour of loan provisions, which precede actual credit losses (Marton & Runesson, 2017). As a consequence, we argue that misconduct provisions provide a timely measure for the analysis of the financial (P&L) impact of misconduct. On the other hand, announced penalties do not: current period penalties do not

have a statistically significant association with provisions, which implies that they do not impact a banks' earnings when they are announced, but rather on the preceding year.

10.1.3. P&L misconduct costs as a variable for bank misconduct.

Another potential variable for the measurement of the financial consequences of bank misconduct are P&L misconduct costs, i.e., the misconduct related charges that are disclosed by banks in their interim financial reports and investors' documentation. These differ from provisions on that they do not have a pre-defined accounting nature, as their disclosure and estimation are not specifically covered by accounting rules. The labelling of these costs is also bank-specific and may differ across entities, although a thorough analysis of quarterly financial reports and investor documentation enables a clear identification of these costs as related to misconduct. Similar to provisions, some banks may offer insufficient disclosures to separate these costs from other expenses. As a result, missing information on these costs does not necessarily indicate that a bank has not recognised them. Finally, P&L misconduct costs do not separate their current period information from their potential forward looking component; they may therefore combine incurred expenses with provisions for future penalties.

Despite all these issues, P&L misconduct costs are widely reported: every bank in our sample reports them for at least one quarter. This widespread reporting provides the most comprehensive figure for the financial impact of misconduct: our database covers a total of USD 367,906 million in P&L misconduct costs, spread over 655 datapoints, vs USD 244,040 million and 627 datapoints for announced penalties and USD 207,653 million and 349 datapoints for misconduct provisions.

10.1.4. Determinants of misconduct provision disclosure.

We produce the first study of the determinants of financial disclosures related to bank misconduct. In doing so, we establish that, while accounting standards drive misconduct provision disclosure, they do so in opposite manners: while reporting under IFRS has a positive

association with misconduct provision disclosures, the relationship between US GAAP and provision disclosure is negative. Another key finding is that a higher percentage of female board members has a positive association with misconduct cost disclosure: this confirms previous research that established a positive relationship between board gender diversity and good governance.

10.1.5. The informational value of P&L misconduct cost disclosures.

In contrast with misconduct provisions, the disclosure of P&L misconduct costs is not influenced by accounting standards. This is consistent with its voluntary nature. This is consistent with their voluntary, non-accounting nature. Instead, we prove that their disclosure has a significant positive association with the size of an expected penalty

This conclusion leads us to raise the question of why banks disclose P&L misconduct costs. Reported results show that P&L misconduct costs have primarily a forward-looking nature, i.e., a dominant provisioning component. This conclusion illustrates that, even though they are voluntary disclosures without a distinct accounting component, P&L misconduct costs behave in practice in a similar manner to misconduct provisions (accruals). Therefore, based on reported findings, we raise the possibility that misconduct costs is an instrument for US GAAP banks, who are not required to disclose provisions, to provide information on the impact of misconduct on their P&L. This deduction is aligned with the research of Skinner (1994), who concludes that managers have an incentive to pre-empt negative earnings surprises via the voluntary disclosure of information. Thus, P&L misconduct cost disclosure provides an instrument to communicate the negative financial impact of past misbehaviour. This information discovery takes place on a more recurrent and discretionary basis relative to the less frequent and more formalised disclosure through the provisioning data included in the statutory accounts.

The informational component of misconduct-related financial disclosures is also supported by our finding that, when available, the disclosure of a P&L misconduct cost anticipates the negative stock return impact of a forthcoming penalty. The information discovery role of these disclosures provides some level of discretion for banks to manage the timing and apportion the magnitude of the negative impact of misconduct.

Finally, under some circumstances, the preference to disclose P&L expense data instead of balance sheet provisions or accruals could be guided by the banks' fears that public knowledge of how much they have set aside to cover misconduct (i.e., their balance sheet provisions or total accruals) may condition the amount of the penalties received. For example, Societe Generale states in its 2022 Annual Report that "No detailed information can be disclosed on either the recording or the amount of a specific provision given that such disclosure would likely seriously prejudice the outcome of the disputes in question" (Societe Generale, 2022). This is especially relevant in the US where banks often negotiate penalty amounts with regulators to avoid civil or criminal proceedings.

10.1.6. The negative impact of bank misconduct on shareholders' wealth.

Finally, we show that, when the financial costs of misconduct are measured at the point of time at which they are disclosed in a bank's P&L, they have a significant negative association with stock returns, both in absolute terms and relative to the relevant index. When a disclosure is not available, the market instead reacts to the announcement of a penalty. This consideration of two substituting variables is novel in the analysis of bank misconduct. Our approach highlights the issues associated with the study of voluntary disclosures and may explain some of the contradictory results of previous literature on bank misconduct.

10.2. Implications of our analyses.

The preceding conclusions have significant implications for researchers, bank shareholders and creditors, bank management and banking regulators.

10.2.1. Implications for future research.

From a methodological perspective, we show that using an external proxy for a P&L variable requires consideration of the accounting rules that connect the external proxy and the P&L statement. The mediating effect of these accounting regulations may change the timing as well as the size of the P&L impact of an external event and thus condition the analysis of the financial consequences of the variable under consideration.

We emphasize that we do not claim that our proposed variables, misconduct provisions and P&L misconduct costs, solve all issues related to the measurement of misconduct. However, our research is the first to examine the different alternatives and the advantages and disadvantages of each metric. It is also the first to empirically test the implications of using alternative and substituting variables. Future researchers may thus use our findings to decide which indicator of bank misconduct is the most appropriate to address their research questions. While we have studied their relationship with bank stock returns, further research may be carried out on how misconduct provisions and P&L misconduct costs influence other bank financial metrics such as funding structure or risk taking (the work of Tracey and Sowerbutts (2018) on the relationship between misconduct provisions and risk taking is restricted to UK banks and does not study misconduct costs). By taking our variables into account, researchers would accommodate the guidelines of the BIS Committee, which considers the accounting date of an operational loss as one of the most prudent choices for its quantification.

Finally, we observe that, although our empirical findings are confined to the field of misconduct, their methodological implications could be extended to any area that may fall

under the guidelines of IAS 37.14 or ASC 450-20-25-2, i.e., any situation where a future payment is probable as a result of a past event.

10.2.2. Implications for bank shareholders and creditors.

We provide evidence that bank misconduct has negative financial consequences for the banks that misbehave. Our database shows USD 367,906 million of misconduct related expenses reported over the 2011-2022 period. This figure provides a revised and improved quantification of the overall P&L cost of misconduct for the banks in our sample, as the corresponding penalty figure is USD 244,040 million. Thus, the financial costs of misconduct are larger than previously considered. Our amended misconduct figures have implications for ESG-driven investors, as certain banks see their overall misconduct data increased due to remediation expenses that are not properly captured by penalties. That is the case, for example, of all UK banks. ESG-focused investors also benefit from the increased disclosure of misconduct associated with banks that a higher percentage of women on their boards.

These expanded misconduct expenses reduce earnings and, consequently, regulatory capital. Thus, banks with higher misconduct costs suffer increased capital erosion and their creditors (both debtholders and depositors) have a smaller capital cushion to protect them from potential losses.

Our research also shows that misconduct provisions and P&L misconduct cost disclosures provide stakeholders with an advance signal of a forthcoming penalty. This finding implies that, from a misconduct perspective, the relevant point of time for investors and creditors to focus is when a misconduct cost is disclosed on a bank's P&L, rather than when a penalty is announced. It is at the time of disclosure that bank shareholders experience a decrease in their wealth via lower returns both in absolute terms and relative to their reference index. It is also when the increased misconduct costs reduce earnings, deplete the bank's capital base and reduce the protection provided to creditors by the bank's equity cushions.

We show that misconduct provision disclosure is associated with the percentage of women on a bank's board. Henceforth, investors (both shareholders and creditors) seeking the increased transparency provided by this indicator should consider focusing on banks with gender-diverse boards.

Finally, we prove that shareholders in banks that commit misconduct see their wealth reduced as a consequence the bank's misbehaviour. As noted in Chapter 9, the median misconduct event in our sample implies a -0.22%/-0.23% decline in stock returns; as misconduct costs are non-granular, this impact becomes much greater for the largest charges. This has major implications for all bank investors and connects ESG and misconduct with investment decisions.

10.2.3. Implications for bank managers.

Throughout Chapters 7 and 8 we have provided evidence that the disclosure of misconduct provisions is influenced by accounting standards and by the designation of misconduct as a critical audit matter by the bank's auditor. However, banks have greater discretion for the disclosure of P&L misconduct costs, which is voluntary (i.e., not determined by accounting standards) and influenced primarily by the size of the expected penalties.

The signalling element inherent in the disclosure of a misconduct cost provides a bank's board with a tool to manage the moment investors become aware of a forthcoming penalty. Costs and price impact may also be apportioned over successive periods until the penalty is announced. This tool is limited though. If no prior disclosure is made, the announcement of a penalty determines price changes when a disclosure has not been made. Therefore, bank managers do not get away with not disclosing misconduct.

10.2.4. Implications for bank regulators.

Finally, from a regulatory perspective, we show that fragmented accounting standards complicate the analysis of bank misconduct. This heterogeneous reporting is to some extent the consequence of the application of general provisioning and contingency accounting rules

to misconduct provision disclosure. The lack of a specific regulation for misconduct provisions diverges from the detailed accounting rules for loan loss provisions (IFRS 9 and 7 for IFRS and ASC 326, Accounting Standards Update (ASU) No. 2016-13 and article 9 of SEC regulation S-X among others, for US GAAP) or pension contingencies (IAS 19 and 26 for IFRS, ASC 715 for US GAAP). The contrast in accounting framework is notable given the significance of bank misconduct over the past decade.

In fact, it would seem logical to assume that the concerns expressed by regulators about the extent and recurrence of bank misconduct should translate into an interest on making customers and investors aware of the consequences of the misconduct committed by a bank. We have proved that simply communicating the penalties levied does not fully reflect misconduct costs. Additionally, public disclosures on stress test data, which for Eurozone and UB banks includes a misconduct element is usually provided on an aggregate basis[31]. This communication strategy passes onto customers and investors the tasks of searching the announcements of every possible regulator in order to develop a comprehensive picture. The difficulties implied by this process have already been raised by the report to the EU Parliament on the situation of misconduct fines (Götz & Tröger, 2017).

In contrast with the lack of regulatory pressure to disclose misconduct costs, the Basel Committee on Banking Supervision issued in 2021 a document on voluntary disclosure of sovereign exposures (Basel Committee on Banking Supervision, 2021). While the disclosure templates included in this document are voluntary in nature, at least they provide some common ground to reporting for those entities that wish to do so. A similar effort has yet to be undertaken for misconduct related disclosures.

[31] For example, the Bank of England reference to misconduct on the 2022/23 stress tests states "[I]n the 2022/23 ACS, the aggregate stressed projection for such additional conduct costs is £11.1 billion over the five years of the stress. Around £4 billion of these are realised in the first year" but does not provide a breakdown of how these costs are distributed by bank (Bank of England, 2023).

A second regulatory implication of our work is that the costs imposed by supervisors and regulators due to bank misconduct do punish bank investors through reduced stock returns. This effects supports the argument raised by Cummins et al. (2006) that "market discipline can serve as a powerful tool for regulators in policing the management of operational risk". It is unclear, however, whether this disciplining is enough to deter misconduct: our dataset suggests that, although misconduct costs peaked in the aftermath of the financial crisis, they remain substantial throughout the years[32]. This also raises questions on the focus of some regulators on financial stability rather than misconduct discouragement (see e.g. the statement of the FCA highlighting that "If many firms were to go out of business or withdraw from the market, this could make it more expensive for consumers to borrow money to buy a car in the future"[33]).

10.3. Final remarks: bank misconduct and ESG disclosures.

As an end note, it is relevant to consider that misconduct disclosure data is often absent from ESG documentation: several of the banks in our database do not include any data on items such as penalties received or number and types of customer complaints on their ESG reports, beyond a generic referral to the notes on litigation incorporated on the Annual Report[34]. Bank of America states that incidents of non-compliance concerning product and service information and labelling and marketing communications are reported "according to SEC standards", with no further information provided (Bank of America, 2021). Deutsche Bank indicates that such incidents are "[N]ot reported in detail due to confidentiality restraints" and that "[I]f any significant incidents of non-compliance occurred, these would be reported in Note 27 "Provisions" of the Annual Report" (Deutsche Bank, 2022).

[32] Examples of misconduct-related costs that have emerged after the period reviewed in our dataset include the "unfair treatment" of car financing customers in the UK (https://www.ft.com/content/90e2efe6-28de-427e-ad95-e3a62cbdd85a) or the levy of a USD 1.3bn fine on Toronto-Dominion Bank for violating anti-money laundering regulations (https://www.fincen.gov/news/news-releases/fincen-assesses-record-13-billion-penalty-against-td-bank).

[33] https://www.ft.com/content/e12010f4-8af8-4443-9e21-6575438bf58a

[34] See e.g. the ESG documentation of BNY Mellon and Credit Suisse

When more detailed disclosures are provided, these may also be partial. Even before GRI 419 was withdrawn and replaced by Disclosure 2-27, some banks that provided data on GRI 417-2 and 3 (services and product offering, customer relations and marketing), did not make any reference to GRI 419-1 (penalties and non-monetary sanctions for non-compliance with laws and/or regulations in the social and economic area)[35]. Barclays refers to the FCA website for the number of complaints received (Barclays Plc, 2017). It also reports percentage changes in the number of complaints "excluding PPI", which is the main source of customer complaints in the UK (Barclays Plc, 2022). HSBC provides extremely detailed figures on the number of complaints, but no amounts that may indicate how severe those complaints are, nor data on the outcome of those complaints and on whether they have led to any regulatory action (HSBC Holdings Plc, 2022).

In some cases, the omissions of events or the manner on which they are presented are specially glaring. Neither the 2019 Corporate Responsibility Highlights nor the 2020 Wells Fargo ESG report (Wells Fargo & Company, 2019, 2020) make any mention to the USD 3,000 mm penalty levied on February 2020 by the US Department of Justice in connection with the banks sales practices, which involved the opening of accounts without customer authorization. In a similar manner, the requirement issued on February 2018 by the Board of Directors of the Federal Reserve that Wells Fargo replaces four board members is referred in the bank's ESG Report as the board's "refreshment process" (Wells Fargo & Company, 2018).

Further to these issues, misconduct cost disclosure is not considered by any ESG metric. Our research shows that misconduct costs go beyond fines and penalties awarded and provide a more comprehensive measure of the relevance of the misconduct committed by a bank. Their lack of relevance for ESG disclosure is difficult to comprehend.

[35] See e.g. the ESG documentation of Santander and BBVA.

We observe an increased regulatory sensitivity to litigation and misconduct risk management within the EU, as evidenced by the "Final Report" on the "Guidelines on the management of environmental, social and governance (ESG) risks" released by the EBA in January 2025 (European Banking Authority, 2025) and the revised scope of the EBA ESG materiality analyses. Nonetheless, these guidelines and materiality reports are still pending implementation and will apply exclusively to Eurosystem banks. Thus, the disjointed approach to misconduct within ESG documents is worrisome on a business environment focused on ESG.

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Appendix A

Variable description and data sources

Table A. Variable description and data sources.

Variable	Description	Source
Main variables		
Misconduct provision disclosure	Dummy variable that takes a value of 1 if a bank discloses a P&L misconduct provision on the year and 0 if it does not	Annual Reports, 10-K forms
P&L misconduct provisions/ ATAs	Annual net additions to provisions, scaled by average total assets. The sign of this variable has been inverted so that higher values indicate higher provisions; negative values indicate the reversal of a provision	Annual Reports, 10-K forms
P&L misconduct cost disclosure	Dummy variable that takes a value of 1 if a bank discloses a P&L misconduct cost on the year and 0 if it does not. P&L misconduct costs are defined as P&L charges related to misconduct disclosed in any of the financial documents of a bank.	Quarterly earnings reports, investors presentations, financial supplements and 10-Q forms
P&L misconduct costs / ATAs	Quarterly P&L misconduct costs, scaled by average total assets. P&L misconduct costs are defined as P&L charges related to misconduct disclosed in any of the financial documents of a bank. The sign of this variable has been inverted so that higher values indicate higher costs	Quarterly earnings reports, investors presentations, financial supplements and 10-Q forms
Announced penalties / ATAs	Quarterly announced misconduct fines, settlements and penalties, scaled by average total assets. Higher values indicate higher penalties; a negative value indicates a reversal or reduction of a previously announced penalty.	Own calculation, based on regulators' websites; press articles; "Violation Tracker" database, produced by the Corporate Research Project of Good Jobs First (www.https://www.goodjobsfirst.org/), banks' financial reports
Dependent variables		
Total return	Absolute quarterly total return of the stock (assumes dividends are reinvested at the stock price of the date the dividend is paid)	Own calculation, based on data from Factset Research Systems
Total return vs index	Quarterly total return of the stock, with dividend reinvestment, minus the return of the FTSE Total Return Index of the bank's home market	Own calculation, based on data from Factset Research Systems
Independent control variables		
IFRS	Dummy variable that takes a value of 1 if a bank's accounting and financial reporting policies conform to International Financial Reporting Standards, and 0 if they do not	Annual Reports, 10-K forms
US GAAP	Dummy variable that takes a value of 1 if a bank's accounting and financial reporting policies conform to US Generally Accepted Accounting Principles, and 0 if they do not	Annual Reports, 10-K forms
Critical audit matter	Dummy variable that takes a value of 1 if misconduct or litigation are considered a critical (key) accounting matter in the audited accounts of a bank	Annual Reports, 10-K forms
Operating Expenses (Opex) / Gross income	Quarterly operating gross income divided by operating expenses. Statutory income and expenses have been adjusted to remove misconduct related items, which are included in the *P&L Misconduct* variable, and, when applicable, non-operating revenues and expenses, such as gains or losses on asset disposals, changes in value of own debt or impairments of goodwill and intangibles	Own calculation, based on the banks' quarterly financial reports, Annual Reports and 10-K forms

Table A. Variable description and data sources (continued).

Variable	Description	Source
Independent control variables		
Board independence	Percentage of independent directors on the bank's board	Own calculation, based on the banks' Annual Reports and proxy statements
Board female	Percentage of female directors on the bank's board	Own calculation, based on the banks' Annual Reports and proxy statements
Board financial	Percentage of directors with a financial services background on the bank's board. A financial services background is defined as prior working experience on a bank, insurance firm or banking regulator. Individuals with no prior financial services experience who have held non-executive board positions in other financial institutions are not considered to have a financial services background.	Own calculation, based on the banks' Annual Reports and proxy statements
Board audit	Percentage of directors with an audit background on the bank's board. An audit background is defined as prior experience as an auditor. Individuals with no prior audit experience who have held non-executive board positions in audit firms are not considered to have an audit background.	Own calculation, based on the banks' Annual Reports and proxy statements
G-SIB bucket	G-SIB bucket classification as disclosed by the Financial Stability Board. Banks that are not G-SIBs are assigned a 0 bucket	Financial Stability Board G-SIB disclosures
Compensation excludes misconduct	Dummy that takes the value of 1 if the compensation structure of the bank is adjusted to exclude misconduct costs or 0 otherwise	Own calculation, based on the banks' Annual Reports and proxy statements
Tax / Op. Income	Tax expense divided by operating income. Operating income is as defined for the Operating expenses / Gross income ratio variable	Own calculation, based on the banks' quarterly financial reports
Price to Book	End-of period market value of equity divided by book value of equity	Factset Research Systems for market value of equity; quarterly financial reports for book value of equity
RWAS / TAs	Risk weighted assets, as calculated for regulatory compliance purposes, divided by total assets	Own calculation, based on the banks' quarterly financial reports
Δ GDP	Quarterly % change in GDP in the bank's home country	Own calculation, based on country GDP data from the OECD database (https://stats.oecd.org/)
Δ 10 yr rate	Quarterly % change in GDP in the bank's 10 year sovereign debt rate	Own calculation, based on country GDP data from the OECD database (https://stats.oecd.org/)
Enviromental disclosure score	Bloomberg Environmental Disclosure Score	Bloomberg propietary score based on the extent of a company's Environmental data disclosure, as a pillar of Environmental, Social and Governance (ESG) data. The score ranges from 0 for companies that do not disclose any of the Environmental data included in the score, to 100 for those that disclose every data point. The score is published annualy in line with the annual basis of ESG disclosures; given the quarterly basis of our data, we use the last score published until a new score is released

Appendix B

Additional data description charts

Chart B.1. Quarterly P&L misconduct costs / total assets histogram.

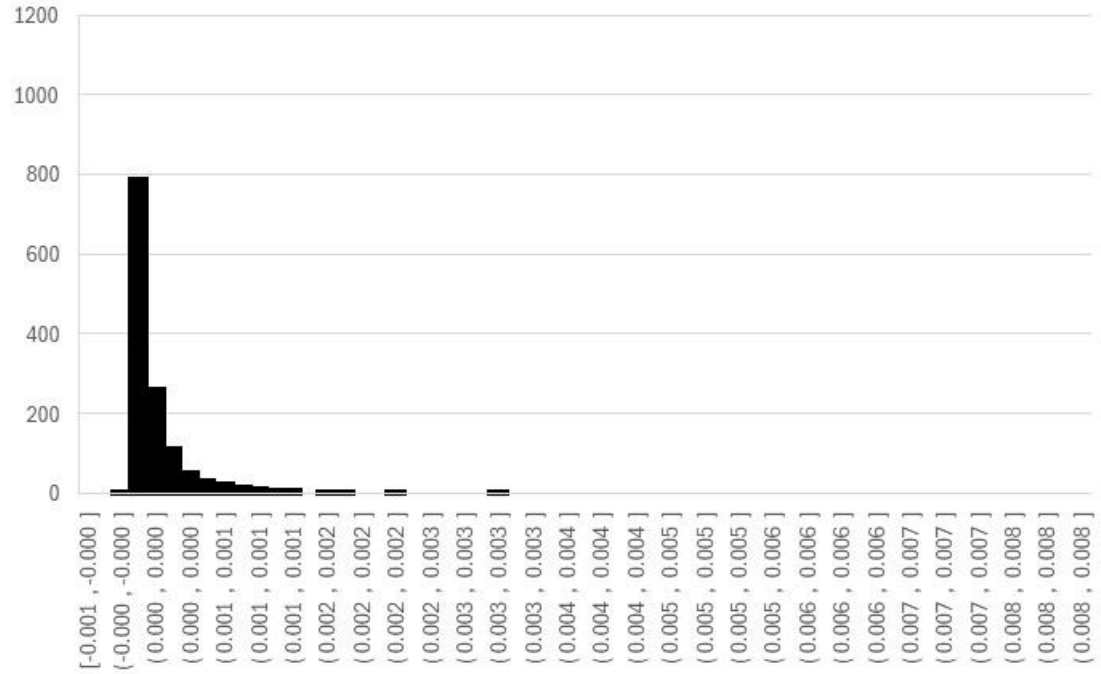


Chart B.2. Quarterly penalties announced / total assets histogram.

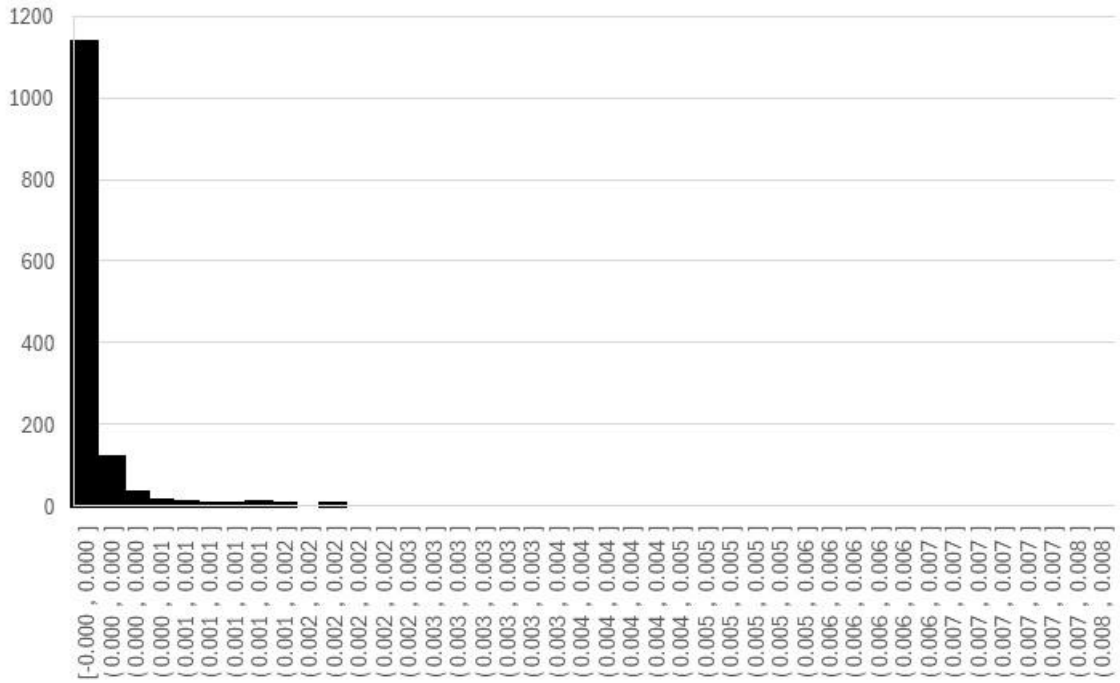


Chart B.3. Quarterly P&L misconduct costs / total assets scatterplot.

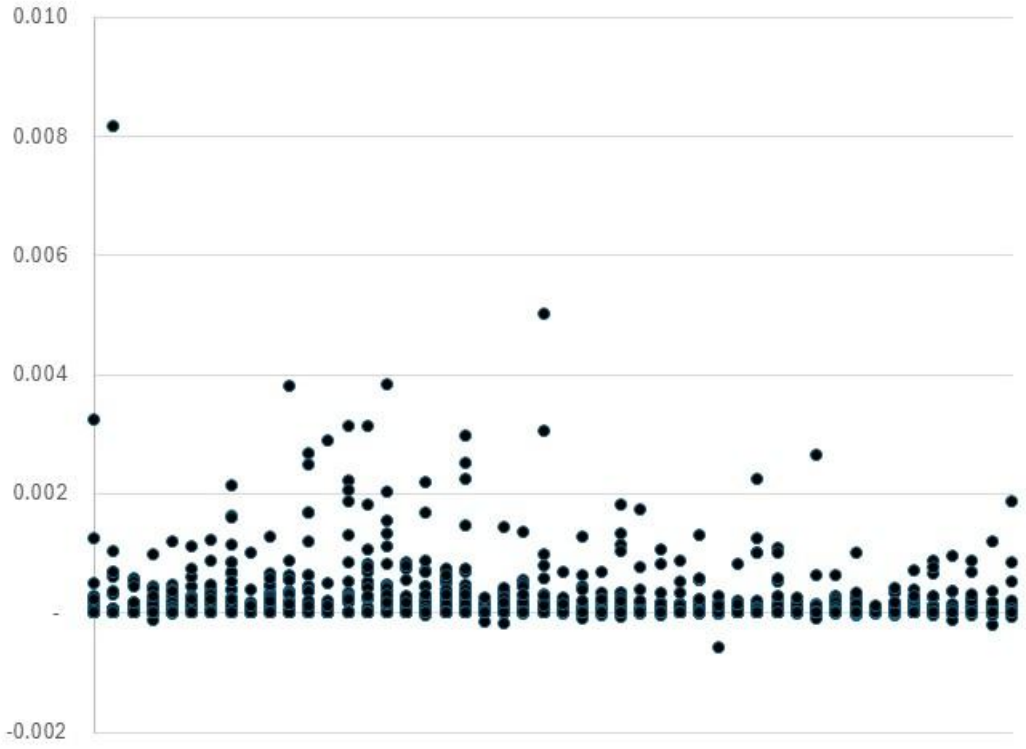
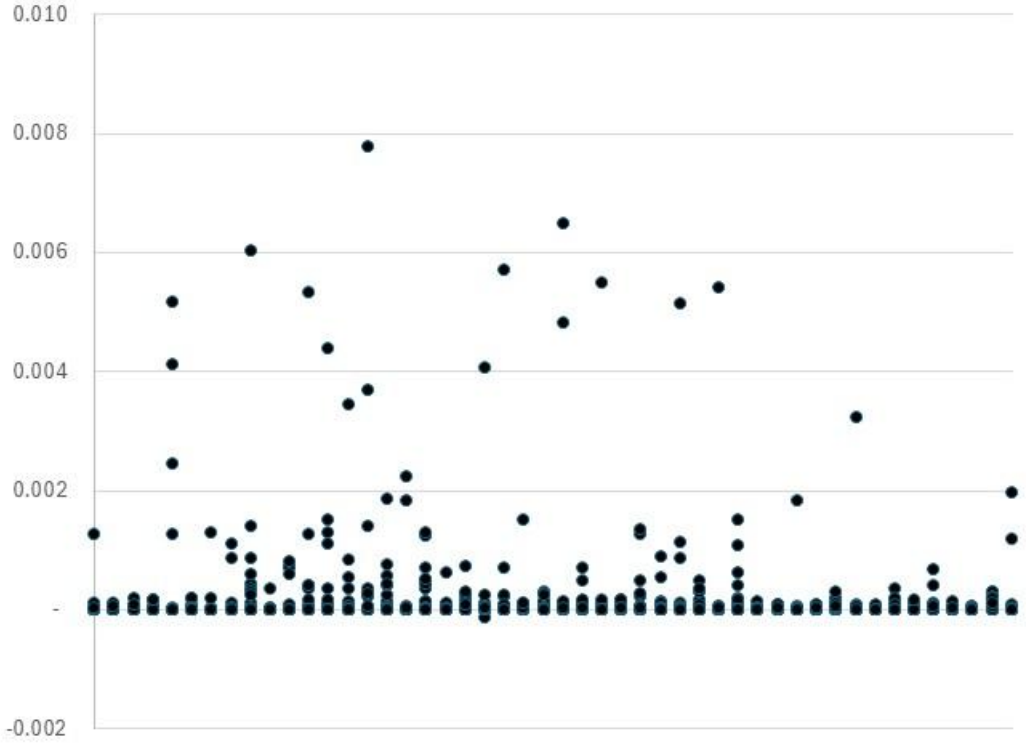


Chart B.4. Quarterly penalties announced / total assets scatterplot.



Appendix C

Variable correlation tables

Table C.1. Spearman correlation analysis: annual variables (dummy variables are omitted).

	P&L misconduct costs/ ATAs	Announced penalties / ATAs	Opex / Gross income	Board indep.	Board female	Board financial	Board audit	G-SIB bucket
P&L misconduct costs/ ATAs	1							
Announced penalties / ATAs	0.03838	1						
Opex / Gross income	0.1369	0.2279	1					
Board indep.	0.0746	0.1121	-0.1764	1				
Board female	-0.4539	-0.1574	-0.2093	-0.1327	1			
Board financial	0.2924	0.1063	0.0127	-0.1978	-0.038	1		
Board audit	0.2234	0.1367	0.0878	0.5001	-0.3441	-0.1846	1	
G-SIB bucket	0.0739	0.2163	0.14	-0.1529	-0.1933	-0.2044	0.0456	1

Table C.1 details the Spearman pair-wise correlations for the annual variables used in the analyses with misconduct provisions as research variable.

Table C.2. Spearman correlation analysis: quarterly variables (dummy variables are omitted).

	P&L misconduct costs/ ATAs	Announced penalties / ATAs	Stock total return	Total return vs index	Opex / Gross income	Board indep.	Board female	Board financial	Board audit	G-SIB bucket	Tax / Op. Income	Price to Book	RWAS / TAs	Δ GDP	Δ 10 yr rate	Enviromental disclosure score
P&L misconduct costs/ ATAs	1															
Announced penalties / ATAs	0.3004	1.0000														
Stock total return	0.0141	-0.0042	1.0000													
Total return vs index	-0.0002	-0.0226	0.8544	1.0000												
Opex / Gross income	0.1426	0.1030	-0.0249	-0.0545	1.0000											
Board indep.	0.2141	0.2012	0.0415	0.0277	-0.0494	1.0000										
Board female	-0.1924	-0.0566	0.0237	0.0570	-0.1577	-0.0580	1.0000									
Board financial	0.1360	-0.0296	-0.0376	-0.0413	0.0904	-0.3505	0.0555	1.0000								
Board audit	0.1322	0.1407	0.0218	0.0050	0.1475	0.2089	-0.0361	-0.0683	1.0000							
G-SIB bucket	0.3276	0.3198	-0.0103	-0.0506	0.2042	0.0520	-0.1751	0.0946	0.1157	1.0000						
Tax / Op. Income	-0.0688	0.0269	0.0038	0.0097	0.0280	0.1156	-0.0518	-0.0630	0.0279	0.0189	1.0000					
Price to Book	-0.0173	0.0312	0.1480	0.1595	-0.3692	0.4915	-0.0494	-0.3593	0.0188	-0.1648	0.0884	1.0000				
RWAS / TAs	0.0691	0.2245	0.0121	-0.0119	-0.1984	0.3452	-0.2899	-0.5225	0.1586	0.0501	0.0185	0.0308	1.0000			
Δ GDP	0.0696	0.1041	0.1196	0.0879	-0.0335	0.1497	0.0260	-0.0072	0.0828	0.0357	0.0133	0.2168	0.0695	1.0000		
Δ 10 yr rate	-0.0318	0.0236	0.0756	0.1500	-0.0441	0.0608	0.0899	-0.0058	0.0365	-0.0366	0.0212	0.0925	0.0468	0.0434	1.0000	
Enviromental disclosure score	0.1561	0.1061	0.0055	-0.0058	0.1788	0.2102	0.1677	-0.0844	0.1522	-0.0102	0.0358	-0.0806	0.0117	0.0578	0.0569	1

Table C.2 details the Spearman pair-wise correlations for the quarterly variables used in the analyses with P&L misconduct costs as research variable.