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## **Red Flags for Financial Fraud: Uncovering the Wirecard Fraud Case**

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Master in Accounting

Supervisory:

Prof. Doutora Maria do Rosário Costa e Silva Veiga, Prof. Auxiliar,  
ISCTE Business School

October 2021





BUSINESS  
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Department in Accounting

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## Resumo

Wirecard AG, uma empresa inovadora que prometeu revolucionar a indústria de pagamentos, declarou falência em junho de 2020. A empresa deu como desaparecido um total de 1,9 bilhões de euros, assumindo que provavelmente estes nunca tinham existido. Este incidente prejudicou a credibilidade da entidade reguladora alemã e a reputação dos auditores externos.

Relatórios Anuais da Wirecard e outras fontes, como o jornal Financial Times, foram analisadas à luz de trinta e sete bandeiras vermelhas identificadas no estudo de Múrcia e Borba (2007), apoiado pela International Standard on Auditing (ISA) 240, para determinar se as bandeiras vermelhas presentes nesta norma eram suficientes para indicar potencial fraude nas Demonstrações Financeiras no caso Wirecard.

Vinte e quatro das trinta e sete bandeiras vermelhas examinadas sugerem potencial fraude. Dezanove destas bandeiras vermelhas estão incluídas na ISA 240, permitindo concluir que as bandeiras vermelhas presentes nesta norma eram suficientes para indicar potencial fraude nas Demonstrações Financeiras no caso Wirecard, e qualquer analista externo à empresa poderia ter detetado e incorporado estes sinais prévios na sua tomada de decisão. Esta informação também evidencia que os auditores negligenciaram a sinalização das bandeiras vermelhas.

Embora a ISA 240 tenha provado ser eficaz, cinco das vinte e quatro bandeiras vermelhas estavam ausentes nesta norma. Estas bandeiras vermelhas são significativas, pois expõem problemas nas empresas, implicando que uma modificação na ISA 240 para integrar bandeiras vermelhas essenciais similares é necessária de forma a torna-la mais eficaz. Adicionalmente, o caso Wirecard revelou seis novas bandeiras vermelhas significativas que podem ser incorporadas na ISA 240.

Palavras-chave: Wirecard; Fraude; Bandeiras Vermelhas; Auditoria

Sistema de Classificação JEL: M41 Contabilidade; M42 Auditoria





## **Abstract**

Wirecard AG, a forward-thinking corporation that aimed to reshape the payment industry, declared bankruptcy in June 2020. The company reported missing a total of EUR 1.9 billion, assuming they had probably never existed. This incident harmed the credibility of the German's financial regulator and the reputation of the external auditors.

Wirecard's Annual Reports and other sources, such as the Financial Times newspaper, were examined in light of the thirty-seven red flags identified in Murcia and Borba's (2007) study, which was supported on the International Standard Auditing (ISA) 240, to determine whether the red flags included in this standard were sufficient to indicate potential Financial Statement fraud in the Wirecard case.

Twenty-four of the thirty-seven red flags examined sign potential fraud. Nineteen of these red flags are included in ISA 240, leading to the conclusion that the red flags present in that standard were sufficient to indicate potential Financial Statement fraud in the Wirecard case, and any outsider analyst could have detected and incorporated these early warning alarms into their decision-making. This also makes clear that auditors neglected the red flags signalization in the Wirecard case.

Although ISA 240 proved to be effective, five of the twenty-four red flags were absent in this standard. These red flags are significant since they expose business issues, implying that a modification of ISA 240 to integrate similar essential red flags is required to make this standard more effective. Moreover, the Wirecard case raised six new significant red flags that can be incorporated in ISA 240.

**Keywords:** Wirecard; Fraud; Red Flags; Audit

**JEL Classification System:** M41 Accounting; M42 Auditing



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## **Glossary of abbreviations**

ACFE – Association of Certified Fraud Examiners

BaFin – Federal Financial Supervisory Authority

CEO – Chief Executive Office

CFO – Chief Operational Office

COO – Chief Operating Officer

CPO – Chief Product Officer

DAX – Deutscher Aktien Index

EBITDA – Earnings Before Interest, Taxes, Depreciation and Amortization

EMIF – Emerging Markets Investment Fund

EPS – Earnings per Share

EUR – Euro

FSE – Frankfurt Stock Exchange

IAASB – International Auditing and Assurance Standards Board

ISA – International Standard on Auditing

ROA – Return on Assets

ROE – Return on Equity

SAS - Statement on Auditing Standards

SPE – Special Purpose Entities

USD – Dollar





## CHAPTER 1

# Introduction

Since the beginning of trade, fraud has remained a significant concern for accountants (Dorminey et al., 2012). The existence of multiple definitions of fraud makes it a complex concept for empirical and legal purposes (Singleton & Singleton, 2010; Power, 2013; Wells D. J., 2018). A plethora of multidisciplinary fraud definitions requires ongoing engagement to obtain a deeper grasp of the issue.

Fraud is a costly phenomenon for all organisations. However, they are not the only victims of fraud; national economies are also impacted (Albrecht W. S. et al., 2012; Gullkvista & Jokipii, 2013). The advent of COVID-19 in 2020 had a substantial economic effect, requiring the governments to take drastic measures to mitigate the virus's spread (Debbage & Timms, 2020). The fact that the changing and adapting environment arising from these measures provides more opportunities for fraudsters, coupled with the fact that businesses in financial difficulties are more likely to commit fraud, makes it possible and justifiable for fraudulent activity to increase in the future (Debbage & Timms, 2020; Karpoff, 2020). More fraud research will be beneficial to the global economy in order to prevent further economic instability.

Over the last decade, there has been a substantial amount of academic research on fraud, especially on Financial Statement fraud (Simon et al., 1996). Even though researchers have been studying fraud for many years, it remains a major issue. Indeed, the Association of Certified Fraud Examiners (ACFE) stated in the Report to the Nations on Occupational Fraud and Abuse 2020, one of the most highly regarded publications which covers the global fraud phenomenon, that between January 2018 and September 2019, 2504 cases of fraud were reported in 125 countries, resulting in losses of over USD 3.6 billion, being the Financial Statement fraud category the larger contributor with the most reduced number of occurrences (ACFE, 2020). As per the literature, fraud is still a recurring problem for businesses globally, costing billions of dollars in losses year after year (Gullkvista & Jokipii, 2013).

Some of the fraud literature includes the study of fraud occurrences in which academics focused on specific well-known financial scandals or a series of minor occurrences in a specific country over time. Case studies regarding fraud help to bridge the gap between literature and real-life industry by reflecting on the nature of fraud, its repercussions, auditor accountability, and what reforms must be implemented (Hogan et al., 2008; Cooper et al., 2013; Power, 2013).

It also allows the detection of patterns, which aid in the identification of potential frauds, hence preventing and reducing future fraud.

These patterns are known as fraud risk factors or, more commonly, red flags. Accounting standards, such as the Statement on Auditing Standards (SAS) 99 and the International Standard on Auditing (ISA) 240, provide a checklist of fraud risk factors that auditors should consider while conducting a fraud risk assessment. Because most research focuses on the characteristics of the fraudster, academic literature on fraud risk factors is limited (Davis & Pesch, 2013; Power, 2013). One of the topics explored is the implications of including these fraud risk factors in accounting standards. However, the majority of them are out of date, focusing on SAS 82, which was issued before SAS 99 (Glover et al., 2003, Apostolou et al., 2001, Wilks and Zimbelman, 2004). As a result, there is a gap regarding whether fraud risk factors are effective in detecting fraud, and whether the ISA 240 is, and has become, more effective with its numerous updates. This gap is what motivated this research. Moreover, because fraud risk factors are the most common problem that auditors face, it is critical to assess not only if they are effective, but also if the audit profession should change its approach to fraud risk (Boritz et al., 2015; Rezaee, 2004).

This study focuses on Wirecard, a German FinTech company that was able to surpass the market capitalisation of several big German banks in around fifteen years. Its expansion was accompanied by repeated allegations of accounting irregularities, misleading financial reporting practices and money laundering (McCrum, 2020a). Many of these allegations were first made by the Financial Times newspaper, which began investigating Wirecard in 2015, resulting in a conflict between the newspaper and the company that involved many prosecutions and even threats and intimidation (McCrum, 2020c). In 2020, after serious allegations of accounting irregularities published by the Financial Times newspaper, KPMG was hired to conduct a special audit. However, the audit firm found some obstacles to verify Wirecard's accounts. Wirecard disclosed it could not justify EUR 1,9 billion after delaying the release of its 2019 Annual Report. This confirmed the long list of accusations of accounting irregularities and Financial Statement fraud, putting Wirecard at the core of an international financial scandal. On June 22, 2020, Munich police launched a criminal investigation after Wirecard had acknowledged, for the first time, the accounting fraud. On June 25, 2020, Wirecard declared bankruptcy (McCrum, 2020a). Even though it is still just a fraud accusation, it is already regarded as one of Europe's largest frauds, making this case worth investigating.

Notwithstanding the fact that the Wirecard case prosecution is still developing in German courts, the numerous allegations of fraud overlooked by the auditors as well as the lack of

extensive research in the literature, make its analysis noteworthy. More importantly, this case can uncover new fraud risk factors, contributing to the easing of early identification of similar schemes in the future.

By and large, the ultimate objective of this dissertation is to verify whether an outsider, using the ISA 240, a fraud detection standard applied by auditors, would reach different conclusions. As a result, the research question driving this study is: were the red flags included in ISA 240 sufficient to indicate potential Financial Statement fraud in the Wirecard case? To answer this question, this research is based on the findings of Murcia and Borba (2007), who developed a framework for detecting the risk of fraud in Financial Statements that comprised forty-five red flags obtained from six distinct data sources, grouped into six clusters. A case study approach and longitudinal analysis were performed, allowing an investigation from the time the first allegations of fraud were made until the audit company issued its last opinion on the Wirecard's 2018 Annual Report.

Additionally, this research allowed a contribution and extension to the fraud literature by reflecting on the efficacy of the ISA 240 as well as where there should be a change in the audit profession regarding the practical use of red flags methodology related to Financial Statements fraud. On the other hand, the utilisation of six distinct data sources in Murcia and Borba's (2007) framework enabled a correlation with ISA 240, determining whether it needs to be updated.

This research is divided into five chapters: the literature review, the methodology, the context of the Wirecard case, the analysis of the relationships between red flags and the Wirecard case, and finally, the conclusions and future research issues. The literature review covers the theoretical context relevant to this investigation, and it serves as the scientific foundations for the understanding of all subsequent chapters, comprehending the history and theories about fraud as well as the conceptual developments. This chapter also goes into detail on the Murcia and Borba's (2007) study. The methodology chapter describes the scientific approach taken to address the problem under study, the steps taken, the timeline adopted, the data sources, the data collection procedures, and the analysis process. Context of the Wirecard Case Chapter alludes to the case's contextualisation and delves into the background of Wirecard, describing its evolution from an almost bankrupt company to a complex and successful one, its products, mission and global expansion, as well as the company's collapse in 2020. The analysis of Murcia and Borba's (2007) red flags model and the Wirecard case is presented in the conclusion chapter.



## Literature Review

### 2.1. Fraud

In the first decennium of the 21st century, numerous cases of fraud emerged. Uncommon are the individuals in the business world who have not read about the Enron case in America or the Parmalat case in Europe. The rise of these financial scandals has cast doubt on corporate governance, financial reporting and auditing, prompting investigations into the underlying causes and long-term effects of these events (Knechel, 2007). While the most notable and researched fraud cases have occurred in America and Europe, fraud can appear in any nation and at any time (Jones, 2011; Driel, 2019).

It is worth noting that fraud differs by industry, with certain industries being more vulnerable than others (Beasley et al., 2000). According to ACFE (2020), the banking and financial services industry is the most common victim, with a median loss of USD 100.000. The nature of fraud also differs by industry; for example, technological companies commonly overstate revenues, whereas financial services companies are more susceptible to asset fraud and theft.

The term fraud has several definitions. However, since the ISA 240 is critical to this investigation, its definition is the one considered. As indicated by this regulation, fraud is defined as “an intentional act by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage” (IAASB, 2009).

The ACFE to distinguish and layout fraud schemes developed the Occupational Fraud and Abuse Classification System, usually known as the Fraud Tree, grouping fraud schemes by categories and subcategories (Singleton & Singleton, 2010; Wells D. J., 2018). This system is extremely useful because it enables awareness of the critical and fundamental characteristics of each type of fraud, which are necessary not only to design and implement effective and successful internal controls while managing fraud risk but also to design and perform prosperous fraud audit (Wells D. J., 2018; ACFE, 2020).

Annex A shows the three categories: Corruption, Misappropriation of Assets and Financial Statement fraud (ACFE, n.d.). According to ACFE (2020), Misappropriation of Assets schemes are undeniably the most common, but they are the least harmful. By contrast, Financial Statement fraud schemes are the least common, with just ten per cent of cases, yet they cause

the most damage. The last type of fraud is the most relevant for this research, not only because it is allegedly claimed to have been perpetrated by Wirecard, the company under study, but also because the most notorious cases of fraud fall under this category of fraud (Stamler et al., 2014; Amiram et al., 2018).

## **2.2. Financial Statement Fraud**

Primarily, it is critical to understand that Financial Statements should be prepared accurately and provide a fair representation of the company's financial position based on generally accepted accounting standards (Albrecht et al., 2012). Moreover, Financial Statements arose to help users make safe, well-founded, and intelligent decisions. Each item has distinctive importance for each user, as this depends on the type of decision they want to make (Rezaee Z., 2005; Abad et al., 2020).

The auditors are responsible for expressing an opinion on the Financial Statements' accuracy. An unqualified opinion guarantees that the auditor has no reservations about the Financial Statements' as prepared and presented. Instead, a modified opinion may be issued: either qualified and adverse or a disclaimer of opinion (Johnstone et al., 2014).

The Financial Statements are occasionally prepared in ways that intentionally misstate the financial position and performance of an organisation, resulting in Financial Statement fraud (Albrecht et al., 2012). This form of fraud involves the intentional distortion of accounting records, the falsification of transactions, the omission of pertinent information or the incorrect application of accounting principles to mislead its users (Knapp & Knapp, 2001; ACFE, 2003; Rezaee Z., 2005). Such schemes are designed to deceive, especially the investors and creditors, in order to secure more advantageous funding or to avoid debt obligations (Rezaee Z., 2005; Tutino & Merlo, 2019). Financial Statement fraud has attracted extensive coverage from the public, press, investors and regulators over the last few years due to the failures of major organisations, making knowledge and awareness about these schemes more widespread (Rezaee Z., 2005; Stamler et al., 2014).

This type of fraud seems almost always to be perpetrated by the management of corporations (Singleton & Singleton, 2010; Albrecht et al., 2012). Most of the time, the fraudster is either the Chief Executive Officer (CEO) or the Chief Financial Officer (CFO), which seeks to benefit the entire organisation rather than immediate personal gain (Singleton & Singleton, 2010; Stamler et al., 2014). Stamler, et al. (2014) refute this idea by pointing out that, while there will be no direct personal benefits for the management, there will be indirect gains due to the existence of a clear correlation between management survival and

organisational performance; in other words, organisational success translates into management success.

Brennan and McGrath (2007) investigated fourteen companies for the publication of fraudulent Financial Statements and discovered that recording fake sales, inflating revenues, was the most common form of this category of fraud. Sales were forged by eight of the fourteen companies. They also listed other methods used, such as entering into no-profit sales agreements, side sales agreements, offsetting profits against losses not previously reported, and manipulating lease agreements.

Additionally, the same authors in the same study, identified several general organisational factors perceived as possible contributors to Financial Statement fraud, such as “a weak control environment, rapid growth, inadequate or inconsistent profitability, management placing undue emphasis on meeting earnings forecasts and ownership status” (Brennan & McGrath, 2007). Rezaee Z. (2005), on the other hand, examined the most enigmatic cases of Financial Statement Fraud and identified the factors that contributed to the fraud, such as “the lack of vigilant oversight functions, arrogant and greedy management, the improper business conducts by top executives, ineffective audit functions, lax regulations, inadequate and less transparent financial disclosures, and inattentive shareholders”.

Another factor that contributes to the preparation of fraudulent Financial Statements is the presence of judgment in accounting standards, which allows ambiguity and subjectivity (Brennan & McGrath, 2007). This ambiguity, for example, leads to the creative use of information by individuals, in such a way that in some cases, what started as just creative accounting practice, ended up being a fraud (Brennan & McGrath, 2007; Jones, 2011). As a result of this lack of well-defined criteria, managers have the ability to explore, experiment and make decisions that can be used in a pioneering and insatiable way to accomplish their financial goals (Brennan & McGrath, 2007).

On the other hand, managers can use “judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers”, occurring not creative accounting, but earnings management since it aims solely at results (Healy & Wahlen, 1999). This term, like fraud, lacks a generic definition in the literature, with the most common definition being the one mentioned previously (Diri, 2018). Companies can manipulate Financial Statements by either managing earnings or committing fraud. The distinction is whether any accounting standards are violated (Perols & Lougee, 2011; Diri, 2018). Simply put, since it entails a breach of accounting

principles, fraud is seen as highly aggressive in contrast to earnings management (Walker, 2013). However, firms that manipulate Financial Statements over multiple years, become increasingly likely to use fraud rather than earnings management to manipulate Financial Statements (Perols & Lougee, 2011). This knowledge is relevant not only because this term is often mistaken with fraud, but also because many of the most infamous cases of fraud, such as Enron, WorldCom and Parmalat, involved earnings management (Diri, 2018).

Financial Statement fraud is a significant problem that must be addressed very seriously because its recurrent occurrence poses several concerns, including “the effectiveness corporate governance, integrity and ethical conducts of top executives particularly when CEOs and CFOs are being indicted of cooking the books, adequacy and effectiveness of internal controls, reliability of financial reports, quality of audits, and veracity of stock markets” (Rezaee Z., 2005). In addition to these concerns, this type of fraud has a negative impact on shareholder trust, accounting systems trust, the company existence, its reputation, its market value and its ability to achieve its goals (Brennan & McGrath, 2007; Hogan et al., 2008; Albrecht et al., 2012; Stamler et al., 2014). Despite these adverse consequences, many jurisdictions lack a statutory crime of Financial Statement Fraud, meaning that fraudsters are often accused of burglary (Brennan & McGrath, 2007).

### **2.3. Notorious cases of Financial Statement Fraud**

Giroux (2008) compiled and analysed a list of twenty-first-century fraud cases. One of the findings was that, as a result of deregulation, the energy and telecommunications sectors were the two most prevalent industries of fraud companies. Enron, an energy company, and WorldCom, a telecommunication company, were the largest fraud scandals in American history, therefore it is worth reviewing them.

Enron engaged in sophisticated fraud involving complex financial instruments (Giroux, 2008). This company grew from a small energy company to one of the largest United States companies, being regarded as one of the most innovative companies in the United States, with a market capitalization of USD 70 billion and a stock price of more than USD 90 at its peak (Unerman, 2004). One of the most significant impediments to this company's growth was its massive overall debt. As a result, Enron formed Special Purpose Entities (SPE) to keep debt off the books, progressing from legitimate to dubious SPEs (Giroux, 2008; Jones M., 2011). Enron grew in size and complexity. In December 2001, the company declared bankruptcy resulting in a USD 618 million loss during the third quarter of 2001 (Singleton & Singleton, 2010). Enron's fraud included off-balance sheet liabilities, fabricated revenue, and misreported cash flow.



Furthermore, this company had large executive compensation packages, a CFO who enriched himself through related-party partnerships and secret side deals, a bad company culture, auditors who relied solely on the information given by management, a lack of internal control, undisclosed subsidiaries, and a political system that worked in Enron's favour, with people who raised concerns about the company being penalized (Giroux, 2008; Jones M., 2011). Enron arose from the merger of two companies, and Arthur and Andersen have audited the company ever since, never reporting any problems (Jones M., 2011).

Even though WorldCom, had a much higher cost than Enron, it used an unsophisticated scheme of capitalizing operating expenses (Giroux, 2008; Singleton & Singleton, 2010; Jones M., 2011). On July 22, 2002, just a few months after the Enron fraud, the company declared bankruptcy after discovering nearly USD 4 billion in accounting irregularities (Giroux, 2008; Jones M., 2011). Goodwill and other intangible assets accounted for a significant portion of assets, while cash had a low value (Giroux, 2008). This goodwill represented significant acquisitions, but there were no assurances that it had not been overvalued due to the company overpaying acquired companies. In this case, Arthur and Andersen was also the auditor, but they were fired, and a new auditor, KPMG, was hired.

Both cases were quite different but shared similarities, as do almost all fraud cases. Both were leaders in their industry, had the same auditor, the fraud occurred in a short time, the motive to commit fraud was the same, significant sums of debt incurred by purchasing other businesses, and there was a lack of an antifraud tone at the top (Singleton & Singleton, 2010; Jones M., 2011). The fraud cases never end, but Enron and WorldCom paved the way for more researchers to become interested in this subject.

#### **2.4. Theories about fraud**

Fraud is problematic and has been explored, debated, and examined from a few distinct viewpoints and in connection with many different practices (Cooper et al., 2013). Accordingly, several theories have emerged that provide a unique perspective on fraud, distinguishing it from other forms of financial crime (Dorminey et al., 2012).

Following a rigorous investigation, Donald R. Cressey published in his book, entitled *Other People's Money: A Study in the Social Psychology of Embezzlement*, a theory called The Fraud Triangle (Lokanan, 2015). This theory is one of the strongest and widely accepted fraud theories and offers a model that assists the anti-fraud community in highlighting the variables that drive someone to commit fraud (Dorminey et al., 2012; Huang et al., 2017; Wells D. J., 2018).

Cressey theorised that the simultaneous presence of three elements, namely pressure, opportunity, and rationalisation, increase the possibility of fraudulent behaviour (Huang et al., 2017).

The pressure to commit fraud, also known as incentive or motivation, is the outcome of pressing factors such as compliance with analysts' predictions, which leads to a particular behaviour (Hogan et al., 2008; Huang et al., 2017). Albeit not all of us are willing to commit crimes, when we are under pressure, whether it is financial or personal, our likelihood of committing fraud increases (Tutino & Merlo, 2019). Furthermore, the individual's inability to communicate financial issues acts as a motivation to violate the law to solve the problem (Lokanan, 2015).

In the case of opportunity, this refers to circumstances that make it conceivable to commit fraud, like inadequate governance or weaknesses in internal controls (Hogan et al., 2008; Boyle et al., 2015; Huang et al., 2017). Internal control systems are a vital component of every business performance (Johnstone et al., 2014). Organisations develop internal control systems to ensure high-quality financial reporting and risk management (Altamuro & Beatty, 2010; Lämsiluoto et al., 2016). Internal control systems that are well-designed improve loan-loss provision validity, earning persistence and cash-flow predictability, enable improved operating efficiency, more analysts coverage and can prevent fraud (Asare & Wright, 2004; Altamuro & Beatty, 2010; Clinton et al., 2014). Simply put, the benefits include ensuring that the organisation meets its goals, increasing its value, and protecting it from unforeseen events such as fraud. The managers design, implement and maintain effective internal control systems over financial reporting, and these are subject to external auditing, which provides an opinion on these systems. The auditor must understand the company's internal controls to anticipate the types of material misstatements (Johnstone et al., 2014).

Finally, those engaged with fraudulent financial reporting are conventionally in a position to rationalise fraudulent acts in accordance with their code of ethics; in other words, rationalisation is a mechanism by which the fraudster determines in his mind that the conduct he engages does not constitute an unlawful act (Lokanan, 2015). It is also interesting to note that the greater the opportunity or the pressure, the less rationalisation is required to commit fraud. On the other hand, when it is easier for a fraudster to rationalise the offence of his dishonesty, less opportunity and pressure are needed to motivate fraud (Albrecht et al., 2004).

Even though Cressey introduced The Fraud Triangle to describe embezzlement, prosecutors and regulators have applied it to Financial Statement Fraud, using it as a framework for auditing standards and guidelines (Trompeter et al., 2013; Boyle et al., 2015). It is crucial

to examine this theory since, in ISA 240, it serves as a basis for understanding fraudulent behaviour. Moreover, much of the support this theory receives comes from regulators, who argue that investigators reviewing Financial Statements should not only quantify the pressure, but also assess the opportunity to commit fraud, with reference to weak internal controls, and verify the existence of rationalisation to justify fraud, always bearing in mind that rationalisations are generally unobservable (Albrecht et al., 2004; Lokanan, 2015).

In addition to regulatory support, researchers likewise embraced this theory, demonstrating the presence of fraud triangle conditions in businesses where fraud schemes have been perpetrated (Bell & Carcello, 2000; Hogan et al., 2008). Many researchers, such as LaSalle (2007), also demonstrate that the use of The Fraud Triangle can lead to better risk assessment.

Despite numerous theories, corporate fraud remains a persistent worldwide concern (Gullkvista & Jokipii, 2013). As per Power (2013), in recent decades, investigators and the general public have relatively neglected the investigation of fraud and the risk of fraud. Be that as it may, given the emergence of multiple fraud cases and a large number of losses by companies, this behaviour is shifting (Ball, 2009; Davis & Pesch, 2013). Power (2013) claims that the terms fraud risk and fraud are distinct and clarifies the distinction by arguing that the risk of fraud is a possibility that can and must be managed and fraud is a destructive occurrence, a reality, a fact. Fraud research focuses primarily on the fraudster's mind and character, making fraud risk a relatively new category (Singleton & Singleton, 2010; Davis & Pesch, 2013; Power, 2013). A restricted focus on individual or organisational behaviours lacks the sociology of the organisation, which can have a significant effect on the effectiveness of fraud prevention mechanisms (Davis & Pesch, 2013).

## **2.5. Auditors and Fraud**

The auditor's fraud duties have expanded because of the financial controversies involving fraud, making the role of audit in the prevention and detection of fraud a significant area of accounting investigation (Hogan et al., 2008; Cooper et al., 2013).

The auditing profession has evolved quickly and dramatically in recent years (Knechel, 2007). Until the twentieth century, the primary aim of auditing was to detect fraud, but new demands and pressures arose to modify that objective (Chandler et al., 1993; Power, 1997; Power, 2013). One of the pressing factors was the implementation of the concept that Financial Statements should be a fair representation of the company's performance and position, which weakened the essential connection between fraud detection and financial reporting objectives (Power, 2013). The idea that auditing should be risk-based also emerged, creating an in-depth

reflection on auditing procedures and methodologies (Knechel, 2007; Robson et al., 2007). In addition to these new concepts, the occurrence of several fraud cases due to audit errors raised questions about confidence in the audit function and made it clear that the audit profession needed to revamp (Rezaee Z., 2004; Jones, 2011; Power, 2013).

As a consequence of these pressures, the financial audit became risk-based, leading to the transition of responsibility for fraud prevention and detection from auditors to managers, who are now liable for ensuring that accounting and internal control processes are correctly implemented and executed (Koornhof, 2000; Robson et al., 2007; Power, 2013). This fact that "the primary responsibility for the prevention and detection of fraud rests with both those charged with governance of the entity and management", is assumed and protected by ISA 240 (IAASB, 2009).

The ISA 240 enhances that "an auditor conducting an audit in accordance with ISAs is responsible for obtaining reasonable assurance that the Financial Statements taken as a whole are free from material misstatement, whether caused by fraud or error" (IAASB, 2009). In other words, despite the fact that detecting fraud in Financial Statements has been one of the focal points from the beginning of the audit profession, auditors do not bear primary responsibility for it. Instead, they must provide reasonable assurance that the Financial Statements are not materially misstated due to fraud, following a risk-based audit approach that involves identifying and assessing the risks of material misstatement (Rezaee Z., 2004; Carpenter, 2007; IAASB, 2009; Power, 2013; Simon et al., 2018).

The literature discusses the conduct of auditors against fraud. Some authors believe that the manner in which auditors make fraud judgments are restricted (Hackenbrack, 1992; Hoffman & Patton, 1997; Asare & Wright, 2004; Wilks & Zimbleman, 2004). This information is substantial in light of the fact that the judgments are a factor that contributes to the recognition of auditing functions as a value-creating service (Rezaee Z., 2004). Furthermore, other authors add that auditors find difficulties identifying fraud (Pincus, 1989; Knapp & Knapp, 2001). In fact, international concern about the rise of Financial Statement Fraud is growing, as detecting and preventing it remains a complex problem, being the main challenge inherent in this type of fraud has to do with the arduousness for auditors to detect it, since the fraudsters, who are often the managers, take efficacious measures to mask the irregularities from the auditors, investors and other interested parties (Pincus, 1989; Koornhof, 2000; Knapp & Knapp, 2001). The Report to the Nations 2020 reflects these challenges, stating that only 4% of the overall cases were initially discovered by external auditors (ACFE, 2020).

Krambia-Kapardis (2002) gives diverse reasons about why auditors have difficulty detecting fraud, including an absence of knowledge of fraud and the conflicts that emerge when the auditors have to investigate the upper management, who are responsible for selecting the audit firm. Besides, if the auditors detect fraud, they will face a lengthy procedural course, making auditors reluctant. Apart from these reasons, many believed that auditors hesitate to detect fraud since audit clients are unlikely to pay for an audit that will uncover the majority of wrongdoing (Rezaee Z., 2004). Given the auditor's problems, there is a clear need to improve audit procedures or approaches more specifically focused on fraud detection (Knapp & Knapp, 2001).

## **2.6. Fraud Risk Factors**

When it comes to fraud, there is not a single effective solution. However, some measures can help minimize its risk and improve the chances of preventing or detecting it in a timely manner (Stamler et al., 2014). Regulators, therefore, prescribe the use of fraud risk factors to combat fraud (Gullkvista & Jokipii, 2013). With external pressure, the International Auditing and Assurance Standards Board (IAASB) reviewed and included an updated set of fraud risk factors consistent with the fraud triangle in ISA 240 (Gullkvista & Jokipii, 2013; Boyle et al., 2015). Usually, fraud risk factors are called red flags (Gullkvista & Jokipii, 2013).

Red flags are an early warning system, which involves the use of a checklist of fraud indicators, used by auditors to assess the probability of fraud in Financial Statements and are seen as a mean to manage audit risk and flag potential fraud or error (Koornhof, 2000; Krambia-Kapardis, 2002). It is essential to realize that the red flags do not indicate the presence of fraud but reflect the circumstances associated with it, i.e. they are clues for alerting the auditor to the possibility of fraudulent activity (Krambia-Kapardis, 2002). The ISA 240 defines the red flags as “events or conditions that indicate an incentive or pressure to commit fraud or provide an opportunity to commit fraud” (IAASB, 2009).

The literature explores the auditors' conduct toward fraud risk factors. Many studies point out that auditors can identify fraud risk factors, but it is unclear whether they can incorporate this knowledge in an audit plan (Boritz et al., 2015). According to Knapp and Knapp (2001), providing explicit fraud risk assessment guidance to auditors enhances the efficacy of the fraud assessments by making the auditor aware of the problem and encouraging him to begin searching for evidence to support the likelihood of fraud. Finally, Zimbelman (1997) discovered that auditors who evaluate the risk of fraud pay greater attention to its effects than auditors who do not make clear assessments.

The importance of red flags is a subject already explored by some authors. One of the first authors to examine the efficacy of red flags was Pincus (1989), which explained that this approach had a limited precision, i.e. reduced effectiveness in detecting and preventing the risk of fraud. There are several authors who, while acknowledging some drawbacks such as the lack of perfect correlation between the red flags and fraud and the fact that they limit the auditor's vision, arguing that the red flags are useful because they increase the possibility of fraud detection, increase the auditor's sensitivity to the possibility of fraud and increase consistency among auditors (Krambia-Kapardis, 2002; Krambia-Kapardis et al., 2010). In summary, the preliminary investigation into red flags offers contradictory evidence of the reliability and utility of using such techniques to predict or identify fraud in Financial Statements (Mock & Turner, 2005).

Murcia and Borba (2007) conducted a research that established a red flag framework with the aim of contributing to the audit area, particularly the auditing process. After conducting extensive research from an assortment of sources, these authors compiled a list of red flags related to Financial Statement Fraud. Murcia and Borba (2007) selected six data sources: American Institute of Certified Public Accountants (2002), Conselho Federal de Contabilidade (1999), Albrecht and Romney (1986), Eining, et al. (1997), Bell and Carcello (2000) and Wells J. (2005). From these studies, a total of 266 red flags were collected. However, using the criterion of only selecting red flags referenced by at least two sources, the authors lessen the sample to a total of 45 red flags. To establish the framework, these red flags were grouped into six clusters: internal structure or environment, sector/industry, management, financial situation, accounting reports and auditing services. This organisation make it simpler for those intrigued to comprehend and visualize the red flags.

Fraud is typically detected either by chance or when an acquisition or insolvency occurs as a result of the financial difficulties encountered by the company (Koornhof, 2000). Almost all fraud cases contained multiple fraud indicators before they were detected, which, if addressed when they were first discovered, might have saved millions of dollars in losses (Stamler et al., 2014).

## CHAPTER 3

# Methodology

To conduct scientific research, which is an organized and methodical procedure, an issue statement has to be established (Stake, 1995; Merriam, 2009). The declarative issue statement in this research is whether the red flags included in ISA 240 sufficient to indicate potential Financial Statement fraud in the Wirecard case. To address this issue, a qualitative research design was selected since it allows the analysis of the nature of a social phenomenon (Saldaña, 2011).

In qualitative research, various approaches describe regular or problematic occurrences (Denzin & Lincoln, 2018). In particular, the case study method enables the researcher to develop a detailed understanding of the case by combining existing theoretical knowledge with new empirical insights (Creswell & Creswell, 2018). As per Schwandt and Gates (2018), “a case is an instance, incident or unit of something and can be anything” such as a person, an organisation, an occurrence, an activity, or a procedure. When a case is of extremely special interest, a researcher has limited influence over the real-life case, knowledge about the case is scarce and poorly defined, or the case has not attracted the academic’s attention, the case study method appears as one of the best options to explore the phenomenon (Stake, 1975; Yin, 2018; Aino & Törnroos, 2005).

Contingent upon the investigation’s aim, case studies may present various features requiring adequate study methods (Yin, 2018). The Wirecard case study is explanatory in nature since it uses existing literature to interpret what is observed, seeks to provide a complete explanation of a phenomenon, and has as its primary objective ascertaining how events occur and which of them can influence specific outcomes (Hancock & Algozzine, 2006).

The framework developed by Murcia and Borba (2007) is used as the theoretical foundation for this investigation. This framework consisted of forty-five red flags obtained from six separate data sources, grouped into six clusters, to detect the risk of fraud in Financial Statements. One of the studies used by Murcia and Borba (2007) was SAS 99, which is analogous to ISA 240, allowing a reflection on the Wirecard case study’s research question. Furthermore, it provides for a discussion on whether ISA 240 is effective, whether the audit profession needs to change regarding the consideration and application of fraud risks factors and since Murcia and Borba (2007) used distinctive data sources, it allows for further discussion on the possible actualization of ISA 240.

The use of this framework compelled the development of a knowledge base in the early stages, by researching the academic journals present in the Academic Journal Quality Guide 2018, which ranks journals based on the quality and impact of the research, ensuring the quality of the sources. The focus was on fraud, including major fraud cases such as Enron and WorldCom, and fraud risk factors, resulting in a better understanding of the conceptual foundations of the Financial Statement fraud phenomenon. In addition, Murcia and Borba's (2007) research is described in greater depth in the Literature Review chapter. In the second phase, a Wirecard investigation was required. The aim was to learn about the company's history, growth, products and ambitions, as well as the factors that led to its collapse. This stage relied heavily on the Wirecard website as well as on international highly regarded specialized newspapers such as the Financial Times since it played a crucial role insofar as it investigated Wirecard since 2015.

With both stages completed, the following step was to apply Murcia and Borba's (2007) study and gather the necessary data to validate the list of red flags therein considered. The sources used for this stage were the Wirecard's website, Annual company Reports, and other documents provided by Wirecard's website, Annual Reports issued by competitors of Wirecard, and media articles from multiple sources. The analysis of the company's Annual Reports covered a ten-year span of time from 2008, the first year where there were suspicions of fraud, until 2018, when Ernst and Young, the audit firm, issued its last opinion on Wirecard's 2018 Annual Report. This allowed a longitudinal study and analysis approach to the case study.

The relevant data and information regarding the identification of red flags present in Wirecard's published documents and external sources were then analysed. In order to provide readers with easily understandable information, the information was simplified by explaining the terms before proceeding with the analysis. This can be seen in the analysis chapter, where clarification of the accounting concepts such as Working Capital, Compound Growth Rate, and Trade Receivables was provided before analysing the company's data.

Consequently, the data was organised, then compressed, and cross-checked, leading to the identification of what further research was required. The utilization of numerous data sources channels, combined with efficient data collection and organisation, was crucial to increase the quality and credibility of the research (Yin, 2018).

The study's final phase was to connect and verify the data and information for each of the forty-five red flags in the Murcia and Borba's (2007) study by developing detailed fact narratives of the observed phenomena. Since eight of the forty-five red flags could not be considered due to a lack of data and information, only thirty-seven red flags were analysed in



detail. This analysis process aided in concluding how far each of the thirty-seven red flags signed possible fraud.

Some of the information gathered did not provide a clear validation of the red flag in four of the thirty-seven red flags. In these cases, more indirect information was used. This approach resulted in the identification of brand-new fraud risk factors. For example, the information gathered could not validate that the company did not present a policy of punishing dishonest acts. However, it led to the conclusion that the company did not make the company's Code of Conduct available to the public, a practice widely used among its competitors. This raised a brand-new red flag related to the company's concern about disclosing all relevant public data.

In two of the thirty-seven red flags, the information gathered not only validated the red flag but also generated a brand-new one. For example, after research, the red flag linked to the fact that the executives repeatedly try to justify the use of accounting procedures considered improper was validated. However, some indirect information on this subject was obtained. The company consistently justified the questions raised by the Financial Times or the short-sellers, but it also intimidated them, raising a new red flag relating to the fact that the company, alleged of having committed fraud, was also alleged of having fought back by intimidating anyone who dares to raise concerns or suspicions.

In total, six brand-new red flags were identified. They are considered brand-new since they were neither included in Murcia and Borba's (2007) study nor ISA 240. The new red flags obtained are: the company appears to be unconcerned about reporting all relevant public data, the company exhibits creative practices or unusual mergers; the company, alleged of having committed fraud, is or has been accused of intimidating anyone who raised concerns or suspicions; the company's working capital value fluctuates unusually over time; the company's audit firm or the audit firm of its subsidiaries is in a conflict of interest; and the value of the audit fees collected by the audit firm from the company are significant or have increased significantly over the years. These six new red flags revealed critical importance and were therefore incorporated in this study.



## Context of the Wirecard Case

### 4.1. Background

The origins of Wirecard AG date back to 1999 when it was founded in Germany, more precisely in Munich (McCrum, 2020a). Its foundation was supported by venture capital at the final stages of the dot-com bubble, a speculative bubble that occurred roughly between 1995 and 2000, which marked a strong growth in the shares of emerging Internet-based information and communication technology firms (Panko, 2008; McCrum, 2020a). In 2000, this bubble busted, and while it did not immediately impact the dot-com companies, it had a devastating effect on investors (Panko, 2008; McCrum, 2015a). As a result, most of these companies collapsed within a few months due to the lack of funding needed to expand (Panko, 2008).

Many argue that the real beginning of Wirecard took place in 2002 when the company almost collapsed but was recapitalized with the help of capital provided by Markus Braun, an Austrian technology investor, a digital entrepreneur and a former KPMG consultant (McCrum, 2015a; McCrum, 2020a). Braun joined the company as Chief Technology Officer and Chief Executive Officer and redirected the business to internet payment services (Browne, 2020). During this time, Wirecard focused on market segments that were unwelcome in most financial institutions, such as online gambling and adult entertainment, which resulted in a negative image for the company (Alderman & Schuetze, 2020).

Three years later, Wirecard joined the Frankfurt Stock Exchange (FSE) through a reverse takeover with InfoGenie, a listed call centre group (Browne, 2020). The company's name changed from InfoGenie Europe AG to Wire Card AG. In June 2006, upon entry into the commercial register, the name changed to Wirecard AG (Wirecard, 2009, p. 120).

The listed German companies must comply with the requirements of the Federal Financial Supervisory Authority (BaFin) which has the primary objective of ensuring the proper functioning, stability and integrity of the German financial system and whose primary responsibility is to ensure investor confidence in it (BaFin, 2020a; BaFin, 2020b).

In 2006, Braun acquired XCOM in order to open a Visa and Mastercard credit card issuing banking division called Wirecard Bank AG (Alderman & Schuetze, 2020; McCrum, 2020a). McCrum (2020a) points out that this uncommon merger between banking and non-banking operations makes it harder to compare accounts with peers, encouraging investors to rely on adjusted versions of the company's Financial Statements.

Although the name Wirecard was little known, this did not deter the business from rising. Braun embarked on an aggressive international expansion, launching an Asia-Pacific subsidiary in Singapore and reaching the United States market by purchasing the prepaid card services division of Citigroup. In the long term, Wirecard gained a reputation and had become one of Germany's leading technology companies and the largest FinTech company in Germany (Browne, 2020).

In 2018, the company became a member of the Deutscher Aktien Index, also known as the DAX 30, founded in 1988 to represent the top 30 companies listed on the FSE with the highest capitalization and liquidity (Deutsche Borse Group, n.d.). The shares of Wirecard AG replaced the shares of Commerzbank AG in the DAX, on 24 September 2018 (Deutsche Börse, 2018). This step was significant in light of the fact that numerous companies have grown and become more globalized because of their membership in this prestigious and acknowledged index.

As a result of a series of accounting controversies involving Wirecard, the company filed for insolvency in June 2020, becoming the first DAX member to collapse (Alderman & Schuetze, 2020; McCrum et al., 2020). One of the new rules announced by this index was the automatic exclusion of bankrupt companies that were still members. As a consequence, the Wirecard membership in the DAX ended in August 2020 (Alderman & Schuetze, 2020). One interesting fact was that Markus Braun was planning his most daring idea, "Project Panther", one year earlier. Braun essentially hired McKinsey and Company to assist him in putting together a plan to acquire Deutsche Bank. According to Storbeck (2020a), these "deal offered the prospect of a miraculous exit from the massive fraud Wirecard had been operating".

#### **4.2. Wirecard Services, Mission and Global Expansion**

Wirecard provided a wide range of innovative value-added services for digital payments to both enterprise and consumers clients (Wirecard, n.d.). This company has played a major role in the payment industry as a ground-breaking service provider in the field of electronic payment processors.

In Europe, Wirecard was an acquiring business being an intermediary between the consumer, the bank and the merchant. The business model was designed to allow customers and merchants to conclude transactions using secure payment processes (Wirecard, 2019a, p. 31). If payment is made online, specific credit or debit card details are transferred and collected by Wirecard. After that, the company is responsible for checking, settling and processing the whole transaction, receiving the money for the transaction from the issuing bank of the credit or debit card, tracking the transaction through its systems and ensuring that the money ends up

in the account of the merchant (Davies, 2020). Electronic money continuously enters and exits, which enabled Wirecard to collect cash and store it shortly before paying the merchants, keeping a small part of this amount as a commission. Outside of Europe, Wirecard acted as a payment processor (McCrum, 2015a).

The global group offered local support to its international and global customers and partners through regional websites for technology, services and sales located all over the globe (Wirecard, 2019a, p. 32). This global outreach involved Europe, Asia, Africa, Australia and North and South America (Wirecard, n.d.). The major markets in Europe were Germany, France, Great Britain, Ireland, Austria and Romania. Additionally, Wirecard had five key locations that worked as headquarters, such as Aschheim for Europe, Singapore for Asia, São Paulo for Latin America, Conshohocken for North America and Dubai for Africa/Middle East (Wirecard, 2019a, p. 32).

In brief, this company vowed to deliver revolutionary and innovative technology and flexible customizable services for cashless payments, enabling it to expand significantly faster than any other company in its market (Wirecard, n.d.). Furthermore, because it was a Dax member company, a FinTech company, an international company and a public company, it generated a great deal of interest.

### **4.3. Constitution of Wirecard**

The significance of corporate governance systems has increased as a result of flaws discovered in many accounting scandals. The transformation of economies has catalysed the evolution of board structures. There are currently two types of structures. The choice of the board structure depends especially on the legislation or custom of the country. As a German public limited company, Wirecard is constitutionally obligated to use the practice of the two-tier board structure, including a Supervisory Board and a Management Board (Belot et al., 2014). The last one is accountable for managing the company's operations. The Supervisory Board is responsible for appointing, supervising and advising the Management Board (Belot et al., 2014; Raval, 2020). In addition, the Supervisory Board monitors the effectiveness of the internal control system (ESMA, 2020).

### **4.4. Collapse of Wirecard**

The first suspicion of fraud in Wirecard emerged in 2008. Markus Straub, the head of a German shareholder organisation that claims to protect and defend shareholders, published a post in a

financial newsletter claiming balance sheet irregularities (McCrum, 2020a). At this point, Ernst and Young, one of the largest auditing companies in the world, was assigned to conduct a special audit, which showed no irregularities (Alderman & Schuetze, 2020). Ernst and Young quickly became Wirecard's Chief Auditor, replacing RP Richter, the company's previous audit firm (McCrum, 2020a).

Between 2011 and 2014, Wirecard collected half a billion euros from its investors and decided to buy "obscure payment companies" in Asia in a series of bizarre deals (McCrum, 2015a; McCrum, 2020a). With these acquisitions, the company was able to attract more investors and increase the share price (Alderman & Schuetze, 2020).

Wirecard's quick expansion and questionable financial numbers prompted Financial Times investigative journalist Dan McCrum to look deeper into the company (McCrum, 2020a). In 2015, the renowned newspaper began publishing the series entitled: House of Wirecard. Concerns regarding the group's accounting contradictions, as well as a EUR 250 million balance sheet deficit, were highlighted in this series (McCrum, 2015a). J Capital Research, a short seller, reported in the same year that Wirecard's Asia operations were significantly smaller than claimed by the company (McCrum, 2020a).

An Indian payment firm, for which Wirecard paid eight times the previous selling price, was one of the acquisitions that posed the most concerns. This was Wirecard's largest transaction, with a total payment of EUR 340 million (Alderman & Schuetze, 2020). In 2016, an Ernst and Young employee expressed concerns about the highly questionable transactions engaged by Wirecard in overpaying the deal in India, a conflict of interest between Wirecard's senior management and the seller company of the same deal, inflation in the Indian companies and an attempt to bribe an Ernst and Young employee (Storbeck, 2020). In the same year, an anonymous short seller, with the pseudonym Zatarra, released a file containing allegations against Wirecard related to money laundering (Alderman & Schuetze, 2020). Wirecard denied all the accusations, and BaFin, investigated Zatarra and other short-sellers, alleging market manipulation (Auchard et al., 2016).

In 2017, underrated by the negative coverage, the share price of Wirecard doubled after a clean audit by Ernst and Young (McCrum, 2020a).

The Financial Times, in March 2018, followed up on allegations from a whistleblower in the Wirecard Singapore office, who had questions about fraudulent money transfers to India by third parties under a "round-tripping" scheme. The company suppressed this narrative. In 2019, this newspaper decided to publish the Singapore story with Wirecard retaliating, claiming that

it was untrue, which led McCrum and the Financial Times to be investigated by BaFin for market manipulation (McCrum, 2020a).

In response to multiple allegations, Wirecard explained that they received a high commission from those third parties who operated in Asia, where Wirecard did not have their own business license (Alderman & Schuetze, 2020). In exchange for Wirecard bringing them business, these companies predominantly based in Dubai, Philippines and Singapore, paid a commission. The company claimed that the cash from the commissions was not flowing into its accounts; instead, the funds were going to special accounts known as escrow accounts, which have a trustee who oversees them.

Under investors pressure, Wirecard appointed KPMG to conduct a special audit to clear the company's name of any wrongdoing. KPMG requested Braun and other senior Wirecard to see the original documents from the OCBC bank Singapore. After two months, Jan Marsalek, the CFO, told KPMG that Wirecard had moved the bank accounts to another trustee in the Philippines. KPMG (2020) declared that the records on the escrow accounts were inadequate and could not obtain the original bank records to prove that the EUR 1,9 billion were genuine.

Wirecard announced, in June of 2020, that EUR 1,9 billion in cash was missing (McCrum & Storbeck, 2020). There was a clear breakdown of the internal controls. “Cash and Cash equivalents” was the largest item in the 2018 balance sheet, which should have pressured the internal control role and responsibility to ensure the accuracy of this value (Wirecard, 2019a).

Ernst and Young concluded that Wirecard carried out “an elaborate and sophisticated fraud” (Drozdiak et al., 2020). On 17 June 2020, the audit firm announced that its long-delayed Annual Report and audit would not be released due to the missing EUR 1,9 billion (Alderman & Schuetze, 2020). Following this announcement, the share price fell nearly 70%, Moody’s downgraded the company, Markus Braun resigned and was later arrested for false accounting and market manipulation, and the firm filed for insolvency (CNBC, 2020; Kowsmann, 2020).

It is noticeable that, as further allegations of Financial Statement fraud have surfaced throughout the years, a trend has emerged. Firstly, Wirecard has vigorously refuted all allegations of malpractice. Secondly, as the German regulators investigated, they turned their attention on the accusers instead of looking at the claims against Wirecard (Fairless et al., 2020). Analysts, regulators and auditors were reluctant to listen to legitimate questions about how the FinTech made money, making many people believe that Wirecard was seen as a rare domestic tech champion who needed to be protected and any attack was an affront to Germany and its financial sector (Bryant, 2020).





## Relationship between Red Flags and Wirecard

### 5.1. “Structure and Environment” Cluster

#### 5.1.1. The company’s organisational structure is overly complex, involving various bodies or lines of authority.

The Wirecard group consisted of several subsidiaries which carried out the entire operating business (Wirecard, 2009, p. 71; Wirecard, 2015, p. 49). As per its 2018 Annual Report, Wirecard's organisational structure “reflects the interconnection of technology and financial services” (Wirecard, 2019a, p. 33). It is critical to emphasize that this structure additionally impacts the exchange of information within the group (Wirecard, 2019a).



Figure 5.1 - Organisation chart Wirecard Group in 2018.

(Font: Own Elaboration. Based on data from Wirecard 2018 Annual Report)

Wirecard AG was the parent company of the Wirecard Group. As indicated in the same report, the parent was accountable for strategic corporate planning, merger and acquiring activities, strategic alliances, business development, corporate risk management, corporate communications, investors relations, among others (Wirecard, 2019a, p. 33).

The subsidiaries' responsibilities depended on their specialisation. The technology-oriented subsidiaries of Munich, Kosice, São Paulo, Chennai, and Dubai were responsible for the "operation and modular development of the platform" (Wirecard, 2019a, p. 33). On the contrary, it was the responsibility of subsidiaries specialised in financial services to "hold the licenses for banking services, money transfers or e-money, as well as the memberships of global credit card companies, such as Visa, Mastercard and other credit card companies, and also providers of alternative payment processes" (Wirecard, 2019a, p. 33). They were furthermore responsible "for the areas of merchant compliance, risk management and underwriting" (Wirecard, 2019a, p. 33). Lastly, the Leipzig-based subsidiary was responsible for providing internal call centre and communication services and selling these services to Wirecard's clients (Wirecard, 2019a, p. 34).

Figure 5.1 depicts the complex networks that existed in 2018 between Wirecard AG and its subsidiaries. That year, Wirecard AG controlled seven companies, which in turn, controlled other companies. Through direct and indirect control, the company consolidated 54 subsidiaries.

Annexe B demonstrate how complex this group had become. In 2008, the company fully consolidated a total of 16 subsidiaries, a figure that tripled during the following ten years. It is interesting to note that, until 2018, Wirecard globalised in a gigantic way, starting with Europe as the focal location and eventually expanding to all five continents.

### **5.1.2. The company has an inadequate internal control system.**

Corporate internal controls are one of the first lines of defence against fraud. As stated in the Report to The Nations 2020, the lack of internal controls has led to one-third of fraud, as unprotected companies become more vulnerable to this type of crime (ACFE, 2020).

The auditor shall monitor the internal control system (Raval, 2020). Only the Supervisory Board is notified of the vulnerabilities in these systems since it is liable for ensuring their effectiveness (Wirecard, 2019a, pp. 96 , 225). Consequently, no information is available. Nonetheless, in the Supervisory Report of 2018, both the Supervisory Board and the auditor agreed that further effort was needed to strengthen the control systems of Wirecard (Wirecard, 2019a, p. 13).

Payment processors lean to portray themselves as technology companies, focusing solely on technology and system risks, underestimating the operational, compliance and reputational risks (Pell, 2020). Wirecard is an example of this. Until 2019, the company did not have a Risk

and Compliance Committee, which serves as a supervisory body, assessing and controlling the risk attitude of the company and its future risk strategy (Wirecard, 2019c).

The German Corporate Governance Code recommends that the Supervisory Board set up an Audit Committee, with the chairman of that committee not being the Supervisory Board's chairman (DCGK Government Commission, 2019). Notwithstanding, Wirecard only established an Audit Committee in 2019, and the chairman of this committee was the chairman of the Supervisory Board (Wirecard, 2019c, p. 9). The financial reporting process, the audit process, the company's internal control system, and compliance with laws and regulations are all overseen by an Audit Committee, which makes it fundamental and vital to an organisation (CFA Institute, n.d.).

Wirecard defended their decision, claiming that no committees were necessary due to the Supervisory Board's small size (Wirecard, 2018a, p. 12). The absence of these two committees suggests that the Supervisory Board neglected to manage the risks of Wirecard. One peculiar fact was that, despite the tremendous growth, in the period 2008 to 2018, the Supervisory Board remained nearly with a similar number of members, differing from three to five.

The facts referenced before indicate that Wirecard had inadequate internal control systems that perhaps prompted fraud opportunities.

### **5.1.3. The company has accounts at various banks or constantly changes banks.**

In the Annual Reports from 2008 to 2018, Wirecard did not identify the banks it worked with. A standard audit procedure is to require a rundown of all bank accounts, including the bank's name, the account number, and the authorized signers, to verify the balances on the balance sheet (IAASB, 2009). This process is presently being rearranged by the headway of technologies that permit accessing data in real-time (Harris, 2017). The Financial Times published an article alleging that between 2016 to 2018, Ernst and Young had not sought crucial accounting information from the Singapore bank called OCBC. The OCBC bank was where Wirecard reported it had EUR 1 billion in cash. Rather than verifying, "Ernst and Young relied on documents and screenshots provided by a third-party trustee and Wirecard itself" (Storbeck et al., 2020). Every auditor must conduct circularization procedures to independently confirm cash balances directly with the banking institution, especially when there are rumours and uncertainty about the company's business (IAASB, 2009).

#### **5.1.4. The company does not present a policy of punishing dishonest acts.**

The Group Non-Financial Report that appeared unprecedented in 2017 expresses that the Management Board did not tolerate any unethical or illegal behaviour and requested that the employees of Wirecard act responsibly and in compliance with the law. Wirecard's principles and values were set in a Code of Conduct, which employees could access on the Intranet at all times (Wirecard, 2018b, p. 5). In this report, the subject "Code of Conduct" was addressed more thoroughly. According to the 2018 Compliance Management System Report, the internal policies were part of the Wirecard Code of Conduct. It likewise stated that the internal policies were related to "rules on data protection, market abuse law and representation rights", and anti-corruption (Wirecard, 2018c, p. 3). Wirecard claimed that these policies provided an action framework for all workers and aimed to educate them on compliance issues such as antitrust law, data protection and money laundering (Wirecard, 2018c, p. 3). The Code of Conduct was not, nevertheless, available. Contrasted with Wirecard competitors, such as Visa and PayPal, this is uncommon since they provide their Code to the public.

The Code had probably included policies against unethical behaviour. Since the Code was inaccessible, it was impossible to ensure the presence of such policies. This information reveals not only a lack of transparency but also a lack of concern, raising a brand-new red flag: the company appears to be unconcerned about reporting all relevant public data.

#### **5.1.5. In the past, the company already had problems related to the publication of Financial Statements.**

In accordance with the Annual Report of 2018, Wirecard should provide the consolidated Financial Statements and the group management report within 90 days (Wirecard, 2019a, p. 15). Nonetheless, the legal regulations in 2018 had contrasting requirements. It required that the publication of consolidated Financial Statements and the group management report should be published within four months after the end of a fiscal year and the publication of the six-monthly reports within three months after the end of the period under review. As regards the regulations of the Frankfurt Stock Exchange, the "quarterly reports should be provided to the management of the stock exchange within two months after the end of the period under review" (Wirecard, 2019a, p. 15). Wirecard stated that it followed the previous legal periods "since the Management Board considers this time regime appropriate" (Wirecard, 2019a, p. 15). As shown in Table 5.1, the company has consistently published the quarterly reports and the annual reports in specific months, making it conceivable to conclude that Wirecard never had problems with publication deadlines.

Wirecard in 2008, 2015 and 2016, was accused of irregularities in the Financial Statements (McCrum & Palma, 2019a). Regardless, Wirecard always received an unqualified opinion over the years, as demonstrated in Table 5.1. Notwithstanding, in 2009, 2010 and 2018, the auditor added “Emphasis of matter paragraph”. In the first two years mentioned, the emphasis was related to the action raised by an investor association, related to the Financial Statements of 2007 (Wirecard, 2010, p. 210; Wirecard, 2011, p. 225). In 2018, the auditor highlighted the allegations made by a whistleblower in Singapore (Wirecard, 2019a, p. 218). The auditor’s findings did not allow him to express a qualified opinion in those years.

**Table 5.1-** The type of opinion and the date.

	Type of Opinion	Q1 Report	Q2 Report	Q3 Report	Annual Report
2008	Unqualified Opinion	May 2008	August 2008	November 2008	April 2009
2009	Unqualified Opinion with emphasis	May 2009	August 2009	November 2009	April 2010
2010	Unqualified Opinion with emphasis	May 2010	August 2010	November 2010	April 2011
2011	Unqualified Opinion	May 2011	August 2011	November 2011	April 2012
2012	Unqualified Opinion	May 2012	August 2012	November 2012	April 2013
2013	Unqualified Opinion	May 2013	August 2013	November 2013	April 2014
2014	Unqualified Opinion	May 2014	August 2014	November 2014	April 2015
2015	Unqualified Opinion	May 2015	August 2015	November 2015	April 2016
2016	Unqualified Opinion	May 2016	August 2016	November 2016	April 2017
2017	Unqualified Opinion	May 2017	August 2017	November 2017	April 2018
2018	Unqualified Opinion with emphasis	May 2018	August 2018	November 2018	April 2019

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

Wirecard AG has never had a problem with the publication of its Financial Statements, although the equivalent cannot be said for its subsidiaries. The auditors of a Wirecard’s Singapore subsidiary E-Credit Plus Pte. Ltd., renamed Wirecard Asia Pte. Ltd., issued a qualified opinion on June 15, 2012, citing the high level of uncollected cash based on its reported license fee income and license fee receivables (Wirecard Asia Pte. Ltd., 2011; McCrum, 2015b; Wiwanto & Council, 2020). In 2010, the same auditors expressed to the same company a qualified opinion because they “could not ascertain the validity of the gateway fee” from a subsidiary named Infotop Singapore Pte. Ltd. (E-Credit Plus Pte. Ltd., 2010). In 2017, the auditors of another subsidiary of Wirecard, named Hermes, provided a qualified opinion for the 2017 accounts claiming lack of transparency (MCA-Mathematik, 2019). This information represents a warning sign since a qualified opinion indicates problems with the company.

**5.1.6. Communication and implementation of ethical and moral values are not done by management and/or the ethical and moral values are considered inadequate.**

Data on moral and ethical values are generally included in the Code of Conduct. The Code was unavailable, which, as previously stated, is unusual when compared to its competition and

serves as a warning sign. In the 2017 Group Non-Financial Report, details indicated that the Management Board had set its values on the Code (Wirecard, 2018b). To clarify, the Management Board was responsible for defining and implementing the values. However, because of the inaccessibility, it cannot be determined if the moral and ethical values were adequate or not.

#### **5.1.7. There is a conflict of interest or dispute between shareholders and management.**

In a letter sent to the audit firm's Germany headquarters in May 2016, an Ernst and Young employee expressed concerns about Wirecard. One source of concern was that a Wirecard manager had a direct or indirect stake in Emerging Markets Investment Fund (EMIF) 1A, the firm that sold Hermes I Tickets to Wirecard and octopod its investment (Storbeck, 2020b). To put it another way, this manager seems to have prioritized his own interests over the interests of the shareholders.

Another instance of a conflict of interest occurred in 2017, when Wirecard's CEO, Markus Braun, pledged nearly half of his stakes as collateral for a loan. This margin loan was disclosed in Wirecard filings in December 2017, but the lender was not named. The lender was later identified as Deutsche Bank by the Financial Times (Storbeck et al., 2019). Markus Braun had an incentive to manipulate earnings in order to increase the stock price. Furthermore, with the same goal in mind, he had the opportunity to initiate a share buyback program, which reduces the number of outstanding shares because the company reinvests in itself (Wiwanto & Council, 2020). As a consequence, the Earnings per Share (EPS) rises, giving the impression that the company is getting financially healthier. However, EPS is expected to rise when the company's earnings rise. The stock price increases in the short term, but many investors will face losses in the long term because the company's valuation has not increased. In conclusion, Braun had incentives to raise the stock price in the short term to satisfy the terms of the margin loan rather than raising it to maximize shareholder wealth.

#### **5.1.8. The company presents serious difficulties in satisfying the requirements for listing on exchanges (or from regulators).**

The regulators' requirements were unsuitable for Wirecard's company. Navaretti et al. (2020), in the document requested by the European Parliament's Committee on Economic and Monetary Affairs, did not indicate any difficulties that Wirecard could not fulfil, although they drew attention to the type of regulation that Wirecard had. As a result of its classification, Wirecard AG and Wirecard Bank, a subsidiary of the company, were under different regulatory

and supervisory regimes. A non-financial technology company, as Wirecard AG, has distinct and much lighter requirements than banks. For instance, BaFin did not supervise Wirecard AG directly. BaFin only had exclusive access to Wirecard Bank operations, “resulting in an incomplete image of the company’s operations” (Navaretti et al., 2020). Moreover, “the regulation and supervision of payment services offered by the subsidiaries of Wirecard AG was in place” (Navaretti et al., 2020)

Concerning the exchange requirements, it is prominent to remember that Wirecard had a reverse takeover with InfoGenie. This is not common and is broadly criticised for allowing the acquiring entity to avoid “scrutiny of an initial public offering”, which is why Wirecard has gone down this path (McCrum, 2020a). This reverse takeover in the Wirecard case raises a new red flag: the company exhibits creative practices or unusual mergers.

### **5.1.9. The company is dominated by a small group of people.**

Annex C1, comprehends the structure of Wirecard shareholders with more than 3% voting rights in 2018. The acquisition and sale of Wirecard AG shares and related financial instruments are required to be disclosed by members of the Wirecard AG Board Management and Supervisory Board. In 2018, the company’s CEO, Markus Braun, was the company’s biggest single shareholder holding 7,05% of Wirecard’s shares (Wirecard, 2019a, p. 19; Davies, 2020). The main percentage corresponds to the Freefloat, which is characterized as the “number of shares in a company that are owned by many different shareholders and can be traded freely in the capital market” (Deutsche Borse Group, n.d.). The four listed companies presented in Annex C1, are part of the Freefloat. Annex C2, indicates the composition of the shareholder structure by type of ownership. As can be seen, a wide range of companies owns Wirecard shares, with the Investment Advisor holding the largest percentage.

Wirecard was a large corporation with a market capitalization of billions, dominated by a significant number of people and intuitions, including banks, hedge funds, insurance companies and others.

## **5.2. “Sector/Industry” Cluster**

### **5.2.1. The sector/industry in which the company operates is in decline, with bankruptcies increasing.**

“Wirecard plays a part in the payment industry” (Wirecard, 2019a, p. 31). Briefly, Wirecard is a financial technology company, usually named FinTech company, that plays a role in the

payments industry. PwC (2016) defines FinTech as “a dynamic segment at the intersection of the financial services and technology sectors where technology-focused start-ups and new market entrants innovate the products and services currently provided by the traditional financial services industry”. As indicated by McKinsey and Company (2020), one of the main FinTech products is digital payments. Over the last decade, financial institutions have faced critical challenges such as the financial crisis, regulatory reform, low profitability, and the deterioration of public trust (Fung et al., 2020). None of the events alluded above broke the tremendous growth of the payment industry, during the period analysed. Indeed, dissimilar to numerous different industries that in the financial crisis collapsed, the payment industry developed. Gelis and Woods (2014) emphasize that the FinTechs expansion was due to the lack of trust with the banks in the post-crisis era, the lending given by banks was insufficient after the crisis, there was a shift in the relationship between the people and the money and the banking industry resisted to change.

Annex D1, provided by McKinsey and Company (2019), demonstrates that the payment industry has expanded worldwide. The Asia-Pacific market was the one with the highest growth. According to KPMG (2019), the amount of global investment in FinTechs doubled in 2018, reaching USD 111.8 billion with 2196 deals. Europe contributed to this value with USD 34.2 billion and 536 deals (KPMG, 2019). Annex D2, shows that this investment does not have a steady growth presenting some unpredictability, yet in four years the value has gone from USD 18.9 billion to USD 111.8 billion.

In essence, Wirecard belonged to an industry that has evolved, influenced, and changed the financial sector and continues to do so. The business was part of an industry that, while being somewhat volatile, was not in decline.

### **5.2.2. The company has a significant investment in a product line or sector that is subject to rapid innovations and changes.**

Wirecard’s core business was organised into three focus industries: Consumer Goods, Digital Goods and Travel and Mobility (Wirecard, 2019a, p. 39). The first sector is consciously facing changes in technology, customer demands and economic uncertainty (Kelly et al., 2018; Deloitte, 2020). The subsequent sector is a technology-based sector that, according to Bhattacharjee et al. (2011), is continually innovating and developing, in light of the fact that, to thrive, it must adapt its business models and strategies to exploit technology-enabled opportunities. In the Travel and Mobility sector, new trends and developments are always emerging (Fishman et al., 2020).



Wirecard segments were: Payment Processing and Risk Management, Acquiring and Issuing, and Call Center and Communication Services (Wirecard, 2019a, p. 35). These segments have been in constant innovation due to new payment methods, mergers and acquisitions, and technologies. Wirecard sought to predict potential trends and moved forward with innovation as part of its strategy (Wirecard, 2019a, p. 44).

The financial industry has undergone several waves of technological innovation (Boot et al., 2020). Hence, Wirecard's business was inextricably linked to technology, and as a result, it was susceptible to innovation and change, as technology never ceases to evolve. In the 2018 Annual Report, Wirecard reinforced this idea by saying: "significant growth and a high level of innovation have also been forecast for the payment industry in the coming years" (Wirecard, 2019a, p. 86).

### **5.2.3. The sector/industry in which the company operates is highly competitive or the market is saturated, generating declining profits.**

The worldwide payments industry is highly competitive, innovative and rapidly evolving. Annex E1, from McKinsey and Company (2017), shows that Wirecard had a range of competitors such as Visa, Mastercard, PayPal, Global Payments, Square, Ayden, and others. Many of the biggest payment companies are higher in market capitalization than the leading banks. According to McKinsey and Company (2017), Wirecard and Adyen had gained momentum and had been close to the leaders. As shown in Annex E2, Wirecard's market capitalization in 2018 was minimally higher than that of Deutsch Bank and twice that of Commerzbank.

KPMG asserted that in 2018 "in Germany, there was some concern regarding the potential saturation of FinTech, particularly in areas like payments" (KPMG, 2019). Annex E3, displays the variety of companies included in the Fintech German World in May 2018. Investors were more selective and prudent in their investments, investing merely in companies with the highest sales potential. This reality confirms the potential saturation. In its 2018 Annual Report, Wirecard acknowledged the multiple competitors by listing a risk called "Risks arising from intensified competition" (Wirecard, 2019a, p. 101).

By and large, it can be inferred that both markets, worldwide and Germany, were beginning to become saturated. Nevertheless, by the time that Wirecard was in the market, there was no forecast of declining profits, quite the opposite. Wirecard was getting more and more coverage and was getting bigger, overtaking its competitors.

**5.3. “Management” Cluster**

**5.3.1. A large part of executive compensation is tied to operating profits, financial profits or share price.**

The “Remuneration Report” appeared for the first time in 2010. Table 5.2 frames the compensation components of the Management Board in 2010 and 2012. The Supervisory Board updated the compensation structure in 2012, changing the criteria for variable compensation. Until December 2011, “this remuneration was based on the Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) of the group and the criterion of making essential contributions to the company’s sustained development” (Wirecard, 2013, p. 77). As demonstrated in Table 5.2, this base changed to Wirecard AG’s share price. It is significant to highlight that the Management Board could receive performance-related remuneration in 2012, such as an “ extraordinary bonus for sustained particularly extraordinary performance by the Management Board, a special bonus for retirement benefits (Burkhard Ley only) and a special bonus in the event of a change of control for the benefit of members of the Management Board and employees”, if certain conditions were fulfilled (Wirecard, 2013, p. 77). This last compensation was obtained without any conditions in 2010 (Wirecard, 2010, p. 74).

**Table 5.2 - Compensation scheme 2010 and 2012.**

2010	2012
Fixed annual remuneration	Fixed annual remuneration
Annual bonus linked to the Group's earnings target	Annual bonus calculated based on Wirecard AG's share price performance
Long-term variable remuneration for essential contributions to the sustainable development of the company decided by the Supervisory Board according to its equitable discretion	Long-term variable remuneration linked to the multi-year performance of Wirecard AG's share price
Contribution toward retirement benefits	Fixed amount as a contribution toward retirement benefits
Share-based remuneration based on participation in the employee stock option program	-
Special bonus program in the event of a change of control for the benefit of members of the board management and employees	-

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

This scheme, which had been in place since 2012, was modified on January 1, 2018. The new remuneration scheme focused on “the central financial performance indicator EBTIDA” and the “development of Wirecard AG’s shareholder returns” (Wirecard, 2019a, p. 51). Annexe F illustrates the compensation scheme of 2018 in a more ordered way.

Members of the Supervisory Board received fixed and variable compensation (Wirecard, 2011, p. 79). In 2010, variable compensation relied upon the company's performance, geared to the measure of consolidated EBIT. The compensation framework was reconsidered and adjusted in the 2016 fiscal year. The point of this amendment was to dispose of the variable remuneration (Wirecard, 2017, p. 25).

To summarize, the Management Board compensation tied with operating profits, financial profits or share price had a median portion of 35%, as can be seen in Table 5.3 and the number of such compensations in the Supervisory Board, was more modest, reaching 25%, as shown in Table 5.4. Both values are lower than 50% which permits to conclude that the large part of the compensation was not thig with performance factors.

**Table 5.3 - Compensation of the Management Board.**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Non-Performance	1120,6	1996,5	1745	2942	2952	2958	4059	4053	3031	5380
Performance	750	879,2	900	1700	1700	1700	1701	3800	1122	2884
Total	1870,6	2875,7	2645	4642	4652	4658	5760	7853	4153	8264
%	40%	31%	34%	37%	37%	36%	30%	48%	27%	35%
Average	<b>35%</b>									

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

**Table 5.4 - Compensation of the Supervisory Board.1**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Non-Performance	366,2	415,4	414	461	443	447	451	896	1031	1015
Performance	191,6	139,5	158	221	225	356	512	0	0	0
Total	557,8	554,9	572	682	668	803	963	896	1031	1015
%	34%	25%	28%	32%	34%	44%	53%	0%	0%	0%
Average	<b>25%</b>									

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

### **5.3.2. The executives have excessive interests in maintaining or increasing the share price and/or reporting a rising profit trend.**

Since 2012, the compensation of the Management Board has been linked to share price, as recently stated. As a result, an impetus and motivation for executives to retain or raise share profits emerged. Besides that, both the Management Board and the Supervisory Board received EBTIDA-related incentives, indicating a motivation to disclose an upward trend in profits. Furthermore, as stated in 5.1.7., Markus Braun had an excessive interest in increasing Wirecard's share price to meet the margin loan requirements. Wirecard built a reputation as a fast-growing FinTech firm, which prompted investors to have high expectations. As a consequence, the need for an upward trend in profit earnings was affected.

### **5.3.3. Management is dishonest or unethical, with some executives being of “doubtful” character.**

A short seller, identified as Zatarra, published a report which found evidence that some of the Wirecard executives were involved in money laundering, a process that transforms dirty money into clean money (Zatarra Research and Investigations, 2016).

Rüdiger Trautmann, who became Wirecard Chief Operating Officer (COO) and a member of the Management Board in 2005, was the first executive mentioned by Zatarra. The short seller claimed that Trautmann had incorporated numerous undisclosed companies. One of these was indeed associated with companies and individuals that laundered money (Zatarra Research and Investigations, 2016). Wire Card UK Limited, registered at an address in County Durham, was one of the companies that had no public disclosure indicating that it was a subsidiary of Wirecard AG. The company’s secretary was Bournemouth Limited, which was the secretary of a few related gaming companies, including Bluetool Limited. This last company was involved in a case of money laundering in 2010 (Zatarra Research and Investigations, 2016).

In 2007, Trautmann established another undisclosed company in Switzerland with an individual called Jürg Paul Suter, that was at the centre of an investigation into money laundering and embezzlement in Switzerland (Zatarra Research and Investigations, 2016).

Trautmann left Wirecard for personal reasons in 2010, just a short time before the United States Secret Service investigation involving Wirecard began (Wirecard, 2011, p. 21; Zatarra Research and Investigations, 2016). A curious fact is that Trautmann kept on signing Wirecard subsidiary filings ten months after its official departure. He equally continued to sign filings for companies registered in the same building as Wirecard UK & Ireland’s office three years after his former exit (Zatarra Research and Investigations, 2016).

He became an officer of a company called Krores. Interestingly, this company registered in the same building as Wirecard UK and Ireland. He likewise became an officer of two other companies, both enrolled in the same building as Wirecard UK and Ireland. Knöchelmann, the Chief Executive Officer of Wirecard Payment Solutions, also used this subsidiary, using its address in his filings for the Interactive Gaming Council in Canada. Curiously, he was the co-founder and owner of Krores, where Trautmann became an officer. In 2016, Knöchelmann admitted to being part of a large-scale fraud scheme involving the use of false transaction codes to conceal online payments for gambling, pharmaceuticals, and adult entertainment (Zatarra Research and Investigations, 2016).

Before joining Wirecard, Burkhard Ley was the CFO of Kirch New Media AG, one of Germany's most infamous corporate failures. Various deficiencies in corporate governance

were discovered, like the inappropriateness of disclosures. He left Kirch New Media AG in 2000, before its insolvency (Zatarra Research and Investigations, 2016).

Jan Marsalek began working for Wirecard in 2000 as an IT project manager (Henning & Kammel, 2020). Supposedly, he was employed because he comprehended mobile phone technology. Even though he had no degree, his technical knowledge caught the interest of Wirecard management (Holzem, 2021). It was Marsalek's responsibility to make Wirecard quickly bigger by flying around the world and opening subsidiaries (Jones et al., 2020). With just a few sightings Marsalek remained a phantom. He has never attended a press conference, has no LinkedIn profile, and only a few official photos of him exist (Holzem, 2021).

Since 2015, Libya had been a focal point of Marsalek's world beyond Wirecard. According to the Financial Times, he had secretive projects that took him across the Middle East, regularly into conflict zones. For the last ten years, Libya's war kept all, except the most adventurous western investors and boldest politicians, away (Jones et al., 2020).

Marsalek proclaimed classified documents about the use of a Russian chemical weapon in the United Kingdom, as he bragged links to intelligence services to delight London traders. The Financial Times had looked into the documents that included the formula for Novichok, the world's deadliest nerve agent. Marsalek regularly visited Russia in 2004, when the Wirecard business was associated with gambling and adult entertainment (Murphy et al., 2020). Jan's involvement with Russia increased after he was promoted to the Management Board as COO in 2010 (Wirecard, 2011, p. 21; Hearst, 2020).

In brief, Trautmann had various dubious arrangements and connections, Burkhard left a company weeks earlier its insolvency due to fraud and Jan Marsalek was linked to odd information. On balance, Wirecard had executives of dubious nature.

#### **5.3.4. The majority of executives are young and inexperienced.**

The data about the careers of the executives of the Management Board and the Supervisory Board was primarily gathered from Wirecard and LinkedIn, with assistance from other sources when these did not provide information, and it is presented in Annex G. The majority of the executives had prior experience in at least one of these areas: finance, banking, and technology. Concurring with some news, Jan Marsalek joined Wirecard at the age of 20 with no degree. It tends to be presumed that he was perhaps the youngest and the most inexperienced. Notwithstanding, some news revealed that at only 19 years old he founded an e-commerce software company that refutes this previous idea. Before Wirecard AG, long-term Supervisory Directors such as Matthias Wulf and Alfons Henseler did not hold positions on the Management

Board and were not Supervisory Directors of a listed company, making them inexperienced at the outset. Even though they are not the majority, their important roles elevate the value of this information validating the red flag.

**5.3.5. There is excessive pressure on the executives to meet the targets set for them by the board of directors, such as sales and profitability.**

A growing business like Wirecard is constantly under pressure to meet earnings expectations. As stated before, the compensation of the executives was linked to performance targets such as EBITDA and share price performance, which created pressure to meet the targets, not only to receive this bonus but to meet or overcome the expectations of the shareholders.

**5.3.6. The executives have a propensity to make decisions involving exaggerated risks and/or show a tendency to try to "beat the system".**

Burkhard Ley, Wirecard's Financial Director, requested that analysts relied on his version of cash flow every three months rather than the official version that complied with all the International Financial Reporting Standards requirements (McCrum, 2015c). To put it plainly, this information suggests that at least one of the executives of Wirecard was endeavouring to "beat the system".

**5.3.7. There is a high turnover of executives.**

Table 5.5 shows that in the Management Board, the turnover of the executives was not high. Throughout the study era, the CEO was always Markus Braun, an Austrian tech investor and digital entrepreneur. On the other hand, the CFO changed in 2018, becoming Alexander Von Knoop, that worked with Wirecard since 2005 and was a member of the Management Board of Wirecard Bank AG since 2014 (Wirecard, 2018b, p. 13; Bloomberg, n.d.). He took the place of Burkhard Ley, who retired after his contract expired on December 31, 2017 (Wirecard, 2018b, p. 13). The COO also changed, becoming Jan Marsalek, an Austrian manager, instead of Rüdiger Trautmann that "officially" left Wirecard on January 31, 2010, for personal reasons (Wirecard, 2010, p. 66; Zatarra Research and Investigations, 2016).

**Table 5.5** - Constitution of the Management Board and the Supervisory Board between 2008 and 2018.

	Management Board			Supervisory Board		
	CEO	CFO	COO	Chairman	Deputy Chairman	Member
2008	Markus Braun	Burkhard Ley	Rudiger Trautmann	Wulf Matthias	Alfons Henseler	Paul Bauer-Schlichtegroll
2009	Markus Braun	Burkhard Ley	Rudiger Trautmann	Wulf Matthias	Alfons Henseler	Stefan Klestill
2010	Markus Braun	Burkhard Ley	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill
2011	Markus Braun	Burkhard Ley	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill
2012	Markus Braun	Burkhard Ley	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill
2013	Markus Braun	Burkhard Ley	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill
2014	Markus Braun	Burkhard Ley	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill
2015	Markus Braun	Burkhard Ley	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill
2016	Markus Braun	Burkhard Ley	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill, Tina Kleingarn, Vuyiswa
2017	Markus Braun	Burkhard Ley	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill, Tina Kleingarn, Vuyiswa
2018	Markus Braun	Alexander von Knoop	Jan Marsalek	Wulf Matthias	Alfons Henseler	Stefan Klestill, Anastasia Vuyiswa, Susana

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

It is additionally essential to emphasize that in 2018 a new position was created in the Management Board. On January 1, 2018, Susanne Steidl joined this board as a Chief Product Officer (CPO), being liable for the operation and technological development of the core products of the Wirecard group (Yahoo! Finance, 2017).

As far as the Supervisory Board is concerned, the turnover of the executives was likewise not high. The chairman, in the time frame analysed, was always Wulf Mathias, an old retired career banker with a good Austrian connection. He only resigned in January 2020. Alfons W. Henseler, the Deputy Chairman, was also a career banker and only quitted in January 2020 for personal reasons. Paul Bauer-Schlichtegroll resigned from his role as a member of the Supervisory Board on October 31, 2009 (Wirecard, 2009, p. 66). Stefan Klestil, an Austrian FinTech specialist, was appointed by the court as his successor. He became a member of the Supervisory Board on December 10, 2009. In 2016 new members entered the Supervisory Board as a part of the expansion of this board, becoming five members. Tina Kleingarn resigned on December 31, 2017, alleging a lack of transparency as the reason for her departure. Two members were elected to join, namely Anastassia Lauterbach and Susana Quintana-Plaza.

### **5.3.8. The executives repeatedly try to justify the use of accounting procedures considered improper.**

Investors and analysts raised concerns about the group's Financial Statements in 2008, 2015 and 2016 (McCrum & Palma, 2019a). In addition, several short-sellers and whistleblowers shared their concerns. A senior officer of a German investor association claimed balance-sheet inconsistencies in 2008 (McCrum, 2020a). In 2012, John Hempton questioned Wirecard's Indonesian partners (Financial Review, 2020). In 2016, Zatarra investigated Wirecard's possible links to money laundering as well as the lack of anti-money laundering controls

(McCrum, 2016). Even the Financial Times was intrigued by potential discrepancies in Wirecard deals and adjustments. Wirecard's strategy in dealing with these allegations was to constantly deny them. At times, Markus Braun or other executives provided clarification, while at others, they accused the authors of market manipulation and claimed that the concerns were entirely unfounded (McCrum & Palma, 2019a; McCrum & Palma, 2019b; McCrum, 2020c).

It is interesting to note that Wirecard claimed that those who raised questions about the company's accounting practices did not understand Wirecard's business model, which was indeed complex and opaque (ESMA, 2020). Wirecard, on the other hand, never made much of an attempt to explain it.

It is also believed that Wirecard used intimidation techniques against journalists and other research organisations who accused the company of accounting irregularities (McCrum, 2020c). J Capital Research, one of the short-sellers, took a step back after being hacked and getting threats of kidnapping (Maley, 2020). Similarly, McCrum was subjected to "furious online abuse, hacking, electronic eavesdropping, physical surveillance" (McCrum, 2020c). Intimidation contradicts the need for transparency, raising a new red flag: the company, alleged of having committed fraud, is or has been accused of intimidating anyone who voiced concerns or suspicions.

## **5.4. "Financial Situation" Cluster**

### **5.4.1. The company's profitability is not in line with the average in the sector.**

The profitability of Wirecard was determined using return ratios, which quantify the ability of the company to generate returns for its shareholders. Bloomberg calculated the entirety values of Return on Assets (ROA) and Return on Equity (ROE) in Tables 5.6, 5.7, 5.8 and 5.9.

There was no information on the sector's average ROA and ROE. Alternatively, based on Annex E1, the three largest market capitalization companies were selected, namely Visa Inc., Mastercard Inc. and American Express Co., to conduct a comparative analysis.

In the first place, despite the fact the year 2008 appears in Tables 5.6, 5.7, 5.8 and 5.9, it will not be considered in the analysis because it was an abnormal year for all four companies, with atypical values. A simple comparison of Wirecard and its competitors yields little detail. When comparing sole, the years 2009 and 2018, Wirecard was the only company whose ROA value did not improve. With regards to ROE, both Wirecard and Mastercard Inc. presented a decline. Nonetheless, Wirecard had a more prominent decrease.



Table 5.10 arose due to a shortage of comparable data, and it represents the average of ROA and ROE of the three competitors. In the same way, owing to its atypical character, the year 2008 will be excluded. As far as the ROA is concerned, Wirecard's value has consistently been below average over the years. Notwithstanding, the maximum that Wirecard was below the ROA average was about 9 per cent, which is not a significant value. Additionally, the ROE values were slightly lower than the average, with a disparity of around 15 per cent, which is more significant than the difference in ROA. The 9 per cent ROA and 15 per cent ROE difference do not address a critical contrast with the sector estimations, suggesting that the profitability of Wirecard was in line with the profitability of its sector.

**Table 5.6 - Return Ratios Wirecard.**

Wirecard											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ROA	10,34%	9,47%	9,90%	9,74%	7,99%	6,47%	6,30%	5,79%	8,31%	6,39%	6,69%
ROE	18,41%	20,07%	19,40%	16,90%	14,55%	11,88%	11,41%	10,60%	14,96%	11,38%	12,23%

(Font: Bloomberg)

**Table 5.7 - Return Ratios Visa Inc.**

Visa Inc.											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ROA	4,08%	7,00%	9,03%	10,71%	5,73%	13,11%	14,59%	16,06%	11,49%	10,15%	15,02%
ROE	8,11%	10,60%	12,46%	-	-	18,29%	20,06%	22,11%	16,05%	14,05%	21,21%

(Font: Bloomberg)

**Table 5.8 - Return Mastercard Inc.**

Mastercard Inc.											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ROA	-3,99%	20,98%	22,64%	19,52%	23,83%	23,34%	24,46%	24,12%	23,24%	19,57%	25,37%
ROE	-6,96%	54,62%	43,01%	34,53%	42,99%	43,19%	46,18%	43,69%	40,88%	36,67%	52,69%

(Font: Bloomberg)

**Table 5.9 - Return Ratios American Express Co.**

American Express Co											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ROA	1,88%	1,70%	2,98%	3,29%	2,92%	3,50%	3,77%	3,22%	3,36%	1,62%	3,74%
ROE	3,27%	2,84%	5,23%	5,85%	5,47%	6,66%	7,27%	6,63%	7,33%	3,65%	8,59%

(Font: Bloomberg)

**Table 5.10 - Average of the Return Ratios of the three main competitors.**

Average											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ROA	0,66%	9,89%	11,55%	11,17%	10,83%	13,32%	14,27%	14,47%	12,70%	10,45%	14,71%
ROE	1,47%	22,69%	20,23%	20,19%	24,23%	22,71%	24,50%	24,14%	21,42%	18,12%	27,50%

(Font: Bloomberg)

#### **5.4.2. The company is undergoing rapid expansion.**

The overall culture at Wirecard appeared to have focused on growth (Pell, 2020). Markus Braun, as mentioned already, bet on an aggressive internationalization and as demonstrated in Cluster 1, the number of subsidiaries across the world expanded tremendously.

In 2008, the first year covered in this study, there were 442 employees, of whose 114 were part-time. Ten years later, there were 5154 employees, of whose 317 were part-time (Wirecard, 2009, p. 2) . Annex H1 illustrates this increment.

Wirecard announced in its 2008 Annual Report that more than 10 000 merchants had processed more than EUR 8 billion in payments, making Wirecard one of the leading companies (Wirecard, 2009, p. 10). In 2018, the transaction volume was EUR 125 billion, and Wirecard had 279 000 merchants (Wirecard, 2009, p. 8). The increase of sales revenues can be seen in Annex H2. In essence, Wirecard had an enormous growth and, consequently, started to characterize itself as "one of the fastest-growing financial commerce platforms" (Wirecard, 2019b).

The market capitalization increased as well, rising from EUR 420 million to EUR 16,41 billion, as shown in Annex H3 (Wirecard, 2009, p. 20; Wirecard, 2019a, p. 26). The company surpassed Commerzbank, the second-biggest German listed bank, in the DAX in 2018, becoming officially one of the 30 most valuable companies listed on the FSE (Storbeck & McCrum, 2018; Pell, 2020). The Wirecard's share price had a step upward trajectory until September 2018. The market price was 191 EUR at the beginning of August 2018 (McCrum, 2020a).

In a nutshell, Wirecard has undergone a rapid expansion. The company grew particularly fast, being faster in the period of 2016 and 2018, according to the graphics presented in Annex H.

#### **5.4.3. There is a need to raise funds through loans or by issuing shares, bonds or debentures.**

As per Wirecard's 2008 Annual Report, "the Treasury Management responsible for the Group as a whole ensures timely availability of liquidity for all corporate divisions to avoid taking out loans and paying interest falling due on borrowed funds" (Wirecard, 2009, p. 65).

Table 5.11 uncovers that the value of loans granted by Commercial Banks had increased substantially, expressing a need to raise funds. The Compound Annual Growth Rate for this period is 66 per cent, which implies that if loans had grown at the same growth rate, that value would be 66 per cent every year during the investigation timeframe. Larger companies use loans

to leverage their development, and as examined in Cluster 1, to expand, Wirecard acquired numerous companies.

**Table 5.11 2-** Loans granted by the Commercial Banks to Wirecard between 2008 to 2018.

Loans granted by Commercial Banks	
2008	9 000 000,00 €
2009	5 500 000,00 €
2010	22 001 000,00 €
2011	86 024 000,00 €
2012	94 970 000,00 €
2013	233 051 000,00 €
2014	98 359 000,00 €
2015	370 725 000,00 €
2016	594 541 000,00 €
2017	1 066 404 000,00 €
2018	1 466 100 000,00 €

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

**Table 5.12 -** Number of shares issued by Wirecard in the period 2008 to 2018.

Number of shares issued	
2008	101.803.139
2009	101.803.140
2010	101.803.141
2011	101.803.142
2012	112.192.000
2013	112.192.241
2014	123.490.586
2015	123.566.000
2016	123.565.586
2017	123.566.000
2018	123.565.586

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

Issuing shares is another fund-raising instrument. As can be observed in Table 5.12, the number of shares increased by around 10 million in 2012. The 2012 Annual Report asserted that this increase rose the capital by EUR 140 million. In the same year, the Supervisory Board authorized the Board of Management to increase the capital stock by June 25, 2017, on one or several occasions to a limit of 30 million shares (Wirecard, 2013, p. 64). In 2014, the number of shares issued also increased by approximately 11 million (Wirecard, 2015, p. 18). This data indicates that there was a need to issue shares.

#### **5.4.4. The company has a high level of doubtful receivables.**

Wirecard's revenues had steadily increased by one-fifth a year from 2009 to 2014. However, trade receivables, which arise as a result of business sales, had grown faster, rising by more than 33 per cent in the same period. This is a piece of important information because when

receivables are growing faster than sales, it could well be an indication of cover-up underlying issues (McCrum, 2015c).

In 2019, Financial Times released a further update on receivables. The companies which owed money to Wirecard in the second quarter of 2017 were listed in Table 17 presented in Annex I. Firstly, Goomo, Skilworth and Pakfin values remained the same. This information could indicate that there was no interaction with these three clients in those three months. Secondly, the investigation of the companies prompted the disclosure of questionable facts. For instance, as expressed by the Financial Times, CAL was an Israel Credit Card organisation that in 2016 settled criminal accusations related to fraudulent processing of payments for adult entertainment and gambling sites between 2006 and 2009 (McCrum, 2019b).

Wirecard had a high level of doubtful receivables, not only because trade receivables grew faster than revenues, suggesting underlying problems, but also because the businesses that owed money to Wirecard were dubious.

**5.4.5. The company’s working capital is not considered sufficient to finance its operations.**

Working Capital can be positive, neutral, or negative. In the case of Wirecard, as can be seen in Table 5.13, the values were predominantly positive.

**Table 5.13** - Working Capital of Wirecard between 2008 and 2018.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Working Capital</b>	33,53	-9,77	143,36	23,15	41,31	54,07	18,51	56,99	2,18	104,45

(Font: Bloomberg)

Positive is frequently associated with something good. Yet in Working Capital it is not the most beneficial. A positive position occurs when a company’s current assets surpass the current liabilities. Simply put, positive Working Capital means that the company can satisfy its short-term liabilities, which is an indicator of a company’s financial strength. Notwithstanding, when there is a lot of Working Capital, for example, if the current assets are more than twice the amount of current liabilities, this can imply that the company is not efficient during the time spent transforming assets into revenues.

In Wirecard, the Working Capital figure fluctuated throughout the time. However, it was more positive, demonstrating that the financial resources met the overall short-term liabilities. In a word, the company’s Working Capital was sufficient to finance Wirecard operations. Even

though this particular red flag was not validated, the information gathered raises a new red flag: the company's working capital value fluctuates unusually overtime.

#### **5.4.6. The company's inventories are increasing abnormally.**

Inventory management is fundamental for the success of companies since it addresses a significant investment in Working Capital (Blinder & Maccini, 1991). A firm can have an abnormally high inventory (higher than expected) or an abnormally low inventory (lower than expected). There was no information on the expected values. It is worth noting that inventory is relevant in accounting because it pertains to the company's results. Yet, to Wirecard, it only corresponded to merchandise such as terminals and debit cards. Annex J exhibits a notorious spike between 2016 and 2017, which may suggest that the company did not sell its merchandise. However, the main business of Wirecard is to get commissions through the payment process, so this information has less importance for the investigation.

#### **5.4.7. There are internal and/or external questions that trigger doubts about the company's continued operation.**

Dan McCrum, a Financial Times investigator, had extensively investigated Wirecard, raising questions about the assets on the company's accounts. According to McCrum (2015e), if a clear explanation is not given, the risk of overstating revenue and profits is high. He acknowledges the possibility of a EUR 250 million hole in Wirecard's accounts, which was equal to the company's profits from 2012 to 2014. Furthermore, J Capital reported in 2015 that it "found little evidence that Wirecard has any volume of business" (McCrum, 2015f), putting the company's growth and the valuation of the intangible assets listed in the accounts into doubt. In other words, McCrum (2015f) and J Capital questioned the company's profitability, raising serious questions about the assumption of going concern.

#### **5.4.8. The company is participating in transactions considered relevant (significant), such as a large acquisition, sale or joint venture.**

To continue its expansion, Wirecard sought organic growth, raising EUR 500 million from its shareholders (Wirecard, 2019a, p. 10; McCrum, 2020a). In 2005, acquired a call centre group (McCrum, 2020a). After a year, bought XCOM and renamed it Wirecard Bank. Trans Infotech was purchased for EUR 21 million in 2012 (Wirecard, 2013, p. 89). The following year purchased PT Aprisma Indonesia for EUR 73 million (Wirecard, 2014, p. 90).

Wirecard's largest acquisition occurred in 2015 when the company paid EUR 340 million for an Indian company (McCrum, 2018). With such a high purchase price, there were several questions. An Ernst and Young employee warned about this potentially suspicious deal in 2016. He claimed that Wirecard was overpaying it (Storbeck, 2020b).

Hermes I Tickets, a subsidiary of the Great India Retail Group was a small enterprise with a limited payment business, that became available for purchase in 2014. In the same year, James O'Sullivan, an individual associated with a shell company in Mauritius named EMIF 1A, set up a meeting between Marsalek and the Hermes co-founders to discuss its purchase by Wirecard as well as some other assets of the GI Retail Group. However, they were unable to reach an agreement and Hermes could not find another buyer in the following months. Surprisingly, in September 2015, Hermes was sold to EMIF 1A for EUR 37 million (MCA-Mathematik, 2019; McCrum, 2019d). Even more surprisingly, Wirecard then bought Hermes from EMIF 1A for EUR 230 million cash plus EUR 110 million in earn-outs, making EMIF 1A octopod its investment in just a few weeks (McCrum, 2018; MCA-Mathematik, 2019).

The deal revealed that Wirecard had not acquired one business; instead, Wirecard had acquired three companies: Hermes I Tickets Private Limited, GI Philippines Corp and Star Global Currency Exchange Private Limited. In theory, Wirecard spent EUR 230 million on a package: EUR 37 million for Hermes I Tickets, EUR 14 million for GI Technology, leaving EUR 179 million for Star Global. However, Wirecard invested only EUR 1.3 million in Star Global, making approximately EUR 178 million disappear (Boyd, 2018). Oddly, in Wirecard's November 2015 presentation describing the Indian acquisition, Star Global was not mentioned (McCrum, 2018). This negotiation can be seen more simply in Annex K.

Wirecard had been part of large acquisitions that were relevant for the business. Boyd (2018) referred to the company as a "roll-up" since it was founded largely by the acquisition of smaller businesses that provided similar services or goods. It is also worth noting that acquired roll-ups often use the revenue to mask larger organic growth problems (Boyd, 2018).

#### **5.4.9. The company is highly dependent on a single product, customer or supplier.**

According to McCrum (2019a) and the spreadsheet set out in Annex L1, Wirecard depended uniquely on three partner companies that contributed with half of the sales and more than 90 per cent of the profits in 2016 and early 2017. As can be seen from in the same annexe, these three partners were: Al Alam Solutions based in Dubai, PayEasy Solutions based in the Philippines and Senjo based in Singapore.

As for the customers, while Wirecard claimed to serve 33 000 large and medium-sized merchants and 170 000 small businesses in 2017, McCrum (2020b) revealed that there was proof that only 100 customers accounted for more than half of Wirecard sales. This information can be found in Annex L2. Based on an internal company spreadsheet, it can be inferred that Wirecard relied on a small number of customers for the bulk of its overall sales.

Although Wirecard did not focus solely on a single customer or partner, considering the size of Wirecard, the number of partners and customers who contributed substantially to the business was small.

## **5.5. “Accounting Reports” Cluster**

### **5.5.1. There are a significant number of operations carried out with entities of unknown origin or whose business culture or climate raises suspicions.**

Wirecard had numerous allegations about suspicious transactions with questionable companies or with doubtful individuals.

In March of 2016, Shanmugaratnam, who had various connections to Wirecard, was accused of falsifying letters (Palma et al., 2020). The three charges say that in 2016 he falsely stated that there was EUR 47 million, EUR 66.4 million and EUR 30 million held by Citadelle in three escrow accounts. One year later, the charge against Shanmugaratnam asserted that he had wrongly claimed that Citadelle Corporate Services held a sum of EUR 177.5 million in an escrow account (Reuters, 2020). Citadelle was additionally firmly linked to James O’Sullivan, the man associated with EMIF 1A (MCA-Mathematik, 2020). James O’Sullivan was a low-profile person. Except for filings in a series of Isle of Man-based shell companies, a well-known tax haven, his name is difficult to track down on the web or in legal records (Boyd, 2019). Interestingly, Shanmugaratnam also worked as a director in Senjo Group from September 2015 to November 2016 and was present at the Indian acquisition (Palma et al., 2020). James O’Sullivan was also a member of the Senjo Group (Boyd, 2019). It is imperative to recollect that Senjo was one of the three partner businesses that at one point represented practically the entirety of reported profits (McCrum, 2019a).

Wirecard was used to process payments by CenturionBet, a gaming company headquartered in Malta, accused by Italian courts in May 2017 of being used by organised criminals to transfer money out of the country. The organised criminals referred were the ’Ndrangheta mafia, one of Italy’s and Europe’s most powerful mafia organisations. Although

revenues from CenturionBet accounted for just a slight fraction of Wirecard's global operations, it was sufficient to question the business of Wirecard (Johnson & McCrum, 2020).

Internal documents examined by the Financial Times led to the conclusion that Wirecard also processed payments for another major Maltese gambling company linked to money laundering by organised crime organisations. Wirecard most likely had no idea that these businesses were involved in money laundering; however, a former Wirecard employee told the Financial Times that the German FinTech conducted a compliance review after rumours of the second company's mafia links emerged. This company passed this inspection based on "assurances provided" (Johnson & McCrum, 2020).

In 2015, McCrum (2015b) questioned whether Ashazi Services, "one of the dormant companies leading back to E-Credit Plus Singapore, the first business purchased in Wirecard's long Asian acquisition spree", was a legitimate company. In this article, the Financial Times reported that Ashazi Services (UK) Limited was a dormant entity since dissolved. An Isle of Man company controlled by accountants based in the Channel Islands owned Ashazi (McCrum, 2015b). According to PwC (2019), the Channel Islands and the Isle of Man are tax havens. Moreover, McCrum (2015b) stated that Ashazi relocated from place to place in the Gulf Kingdom. In addition, several concerns about the company's owner arise. The alleged owner and managing director of Ashazi, Nasreen Sururi, claimed to be a well-known and respectable businesswoman in Bahrain. On her Linked-In profile, she identified herself as a TV presenter and actress. In 2012, she had a company, but it was linked to the events industry.

In 2016 and 2017, Wirecard had a subsidiary, CardSystems, that was based in one of Dubai's so-called Creative Clusters, which are regulated by Free Zone Regulations.

To sum up, Wirecard had operations with individuals and entities that raised suspicious.

### **5.5.2. The assets, liabilities, revenues and expenses are based on estimates that involve judgements or uncertainties that are hard to corroborate.**

In the notes of the Annual Report 2010, Wirecard assumes an advance payment of EUR 13 million explaining that it was "made for a customer portfolio which was essentially responsible for the increase in this balance sheet line item" (Wirecard, 2011, p. 172). However, in the Annual Report of 2011, the EUR 13 million appeared as a reclassification, passing from advance payments to customer relationships (Wirecard, 2012, p. 234). The company told the Financial Times that the value that appeared in 2010 for the first time, was part of a deal announced 14 months later in December 2011, namely the acquisition of the payment group Systems@Work that have a purchase price of EUR 34 million in cash plus EUR 13 million



future earn-outs. Wirecard justified this advance payment to secure exclusive rights to negotiate (McCrum, 2015a).

In another acquisition, namely the acquisition of Trans Infotech Pte. Ltd., the company also made an advance payment of around EUR 17 million, being the total purchase price of EUR 21.1 million (Wirecard, 2013, p. 89). In 2013, the same happened. In the acquisition of PT Aprisma Indonesia, Wirecard paid EUR 26 million in advance payment of the EUR 73 million (Wirecard, 2014, p. 90).

Since this information is unusual for several reasons, it raises concerns. First, until the following year, Wirecard did not sign any contracts or take control of the Systems@Work assets. Second, it is odd paying such a large amount at signing, when you do not have control of the assets. In most cases, advance payment is just about 5% of the overall price, not almost half of the total price.

Additionally, it is worth noting that since the company began its acquisitions in Asia, intangible assets had been growing. As shown in Table 5.14, the value of Goodwill increased from 2008 to 2018, with a growth rate of 682 per cent over the same period, suggesting a high growth. Another analysis was performed on the proportion of goodwill in the total assets. If the percentage is high, it is a red flag because it indicates that the business assets are heavily supported by goodwill, which is a risk since goodwill can result from overpriced deals. The table shows that almost all of the values were greater than 10%, with the lowest percentage being 10% and the highest percentage being 21%.

**Table 5.14** - Wirecard's Goodwill from 2008 to 2018.

	Goodwill	% of Goodwill in the total of assets
2008	90 289 025,39 €	21%
2009	90 289 025,39 €	17%
2010	101 339 875,98 €	18%
2011	127 585 000,00 €	18%
2012	142 149 000,00 €	13%
2013	145 795 000,00 €	10%
2014	218 202 000,00 €	11%
2015	489 301 000,00 €	17%
2016	534 892 000,00 €	15%
2017	675 800 000,00 €	15%
2018	705 900 000,00 €	12%

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

The fact that the goodwill has grown at an abnormally fast rate, combined with the fact that the proportion of goodwill in the total of assets was greater than 10% almost every year, increases the possibility that goodwill is overvalued.

### **5.5.3. There are a significant number of transactions with related parties, or with companies not audited or audited by other independent auditing firms.**

Wirecard had transactions with third parties. A portion of these parties was audited by Ernst and Young, the same audit firm as Wirecard AG, while others were audited by different audit firms, namely KPMG, BDO, Deloitte and local audit firms.

Ernst and Young missed all the money laundering, but, for example, KPMG overlooked the India deal while being the auditor of EMIF 1A. KPMG seems to have played a dual role in the Wirecard scandal, serving as the auditor of the seller of Wirecard's major acquisition and serving as the auditor of the special audit required by Wirecard (KPMG, 2020; Stoberck & McCrum, 2020). KPMG did not acknowledge this detail in their special audit report (KPMG, 2020). Surprisingly, KPMG also played a third role as an advisory to EMIF 1A on that same Indian deal. EMIF 1A asked KPMG to realize "vendor due diligence" and a "fact book" outlining financial details of the operations of the deal's target. Even more surprisingly, one of the KPMG employees liable for these tasks, went to work at Goomo, a company controlled by EMIF 1A, six months later (Stoberck & McCrum, 2020).

This information is significant not only because it shows that Ernst and Young were not the only ones who overlooked signs of fraud, but also because it raises a new red flag: the company's audit firm or the audit firm of its subsidiaries is in a conflict of interest.

### **5.5.4. There are inadequate records, incomplete files, excessive adjustments in the accounts and unrecorded transactions.**

The structure of some Wirecard transactions was viewed as uncommon. Questions were raised about the purchases of portfolios of customer relationships only divulged in Singapore filings and a few disparities were found in Wirecard's consolidated accounts (McCrum, 2015a).

Many allegations came to light regarding the accuracy of Al Alam's profits and sales. As previously stated, Al Alam played a significant role in the Wirecard profits. As an illustration, in 2017, Al Alam handled approximately EUR 46 million in payments per month on behalf of Wirecard for Cymix Prepaid, an Irish prepaid card company, which had already been dissolved in 2012. Another example was a company named CCBill, which sent Al Alam EUR 24 million in dollars, yen and euro in monthly payments. However, the COO of CCBill revealed that the company had no ties with Al Alam. Finally, CardSystems, a Wirecard subsidiary, registered EUR 2 million in payments from a business named Gaming Network Solutions in 2017. However, the founder and chief executive also revealed that the connection with Wirecard ended on June 30, 2016 (McCrum, 2019c).

McCrum (2019c) furthermore claimed that, in the books of Wirecard, there were defunct entities including Bank de Binary, Molotok, a Russian company, and Piku, a coupon business from Japan.

The above shows, that inadequate records and unrecorded transactions existed in Wirecard. The Financial Times thoroughly investigated this matter, publishing several articles which confirm that, in addition to inadequate records and unrecorded transactions, there were dubious adjustments (McCrum, 2015c; McCrum, 2015d).

**5.5.5. There are a significant number of overly complex transactions, especially at the end of an accounting period, that raise questions about their essence and form.**

Examining the Annual Reports from 2008 to 2018, it is clear that several complex transactions, including acquisitions, occurred at the end of each year. According to McCrum and Palma (2019a) approximately “EUR 37 million appeared to have been moved in and out of Wirecard subsidiaries and external businesses, across seven sets of complex transactions, flagged as suspicious”.

A whistleblower in Wirecard’s Singapore office claimed in early 2018 that the firm was defrauding investors via a round-tripping scheme. A round-tripping scheme is described as “a fraudulent accounting technique where money is returned after being transferred to different companies or locations, thereby giving an impression that the transactions are legitimate business conducted with suppliers and customers” (Wiwanto & Council, 2020). In practical terms, according to McCrum and Palma (2019b), “a lump of money would leave the bank Wirecard owns in Germany, show its face on the balance sheet of a dormant subsidiary in Hong Kong, depart to sit momentarily in the books of an external “customer”, then travel back to Wirecard in India, where it would look to local auditors like legitimate business revenue”. More precisely, money seems to have been routed from Wirecard business in Hong Kong and Singapore to Hermes I Tickets and GI Technology via external companies. In fact, a EUR 2 million capital increase was arranged for Wirecard Hong Kong, paid from an outside company named Inventures in March 2018. Edo Kurniawan, who was responsible for the payments group’s accounting in the Asia-Pacific region, “mentioned that this money would be further transferred from Inventures to Hermes to GI Technology, to pay its overdraft” (McCrum & Palma, 2019a).

Furthermore, MCA-Mathematik (2019) draws attention to the fact “that some of the proceeds paid to EMIF appear to have flowed back to Hermes through multiple software deals

– transactions that look like revenue round-tripping on the part of Wirecard and EMIF”. Annexe M contains a list of these transactions.

Since the economic substance of the transaction is more relevant than its legality, these schemes violated the accounting principle of substance over form. The aim was to inflate revenues to demonstrate Wirecard’s growth while misleading investors.

## **5.6. “Auditing” Cluster**

### **5.6.1. The executives have a domineering behaviour toward the auditors, trying to influence the scope of the audit or choice of the people involved in the auditing service.**

As referred previously, one of Ernst and Young’s employees raised concerns about Wirecard in 2016. The whistleblower claimed that a Wirecard manager offered to an Ernst and Young employee a “personal compensation” if he consented to approve manipulated sales numbers. Ernst and Young replaced its local team of auditors in India. Yet, the allegation of endeavoured bribery was not investigated (Storbeck, 2020b).

### **5.6.2. The company constantly changes its auditing firm.**

At first, a Munich firm called RP Richter was the auditor of Wirecard. In 2009 Ernst and Young stepped into reaudit the Financial Statements of 2007 after allegations of inconsistencies in the Annual Report (Wirecard, 2010, p. 94). This information is significant in view of the fact that, while the primary function of the auditor is not to detect fraud, Ernst and Young were called upon to investigate a potential fraud under a forensic accounting capacity. Likewise, it is critical to note that the auditor's report did not appear in the Annual Report in 2011, 2012 and 2013. It is additionally intriguing to observe that the audit reports were short, around 1-2 pages, aside from 2017 and 2018, where the audit report unexpectedly went over more than eight pages. In these last two years, the auditors added the basis for the opinions, key audit matters in the audit of the consolidated Financial Statements, the responsibilities of the supervisory board, the management board and the auditor. This change was due to the audit reform by the European Union (Russ, 2017).

Interestingly, both long-term Ernst and Young partners, Broschulat and Bauer, were no longer members of the Wirecard audit team in 2016, the year in which Third-Party Acquiring was first mentioned in the Annual Reports of Wirecard. Dahmen, who signed between 2016 and 2018, is still a partner at Ernst and Young, and Loetscher left shortly after signing the 2017

Annual Report. Budde, who signed the audit opinion in the 2018 Annual Report, has been a 33-year Ernst and Young partner. In short, all of Ernst and Young's partners had extensive experience in the audit area.

Altogether, Wirecard only changed the audit firm once and the audit partners did not have a high turnover rate during the timeframe analysed.

**Table 5.15** - Audit companies and the auditors of Wirecard.

	Audit Company	1. Signature	2. Signature	Number of pages
2008	RP Richter	Rolanf Weigl	Ulrich Burkhardt	2
2009	RP Richter and E&Y	Stahl and Broschulat	Cost and Bauer	2
2010	RP Richter and E&Y	Stahl and Broschulat	Cost and Bauer	2
2011	E&Y	-	-	-
2012	E&Y	-	-	-
2013	E&Y	-	-	-
2014	E&Y	Broschulat	Bauer	2
2015	E&Y	Broschulat	Loetscher	2
2016	E&Y	Dahmen	Loetscher	2
2017	E&Y	Dahmen	Loetscher	11
2018	E&Y	Budde	Dahmen	9

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

### **5.6.3. The company is a new client of auditing service.**

The German Commercial Code regulates, among other things, the audit's purpose and scope, as well as the audit opinion and report. Only small companies that meet certain criteria are excluded from auditing, according to the code (IFAC, 2019). As a result, Wirecard accounts should be audited by an independent auditor annually (Seibt & Kulenkamp, 2020). Between 2008 and 2018, the company has consistently been a client of auditing services. Wirecard acquired auditing services from RP Richter in 2008 and afterwards changed to Ernst and Young, as previously mentioned. The company only has the Annual Reports on its website between 2002 and 2018. With the documents available, it is possible to confirm that Wirecard had been audited annually since 2002.

It is also interesting to observe in the Annual Reports, that in total Ernst and Young received from 2009 to 2018, EUR 9.6 million in fees. Solely in 2018, Ernst and Young received EUR 2.3 million in fees (Wirecard, 2019a, p. 216). The major growth was in the year 2015 in which the fee arises from EUR 549 000 to EUR 1.042 million, reaching a growth rate of approximately 90 per cent (Wirecard, 2016, p. 258). These large Wirecard payments to Ernst and Young create the impression that audit companies are led stringent in order to retain the client, resulting in a new red flag: the audit fees collected by the audit firm from the company are significant or have increased significantly over the years.



## Conclusion

### 6.1. Conclusion and Results

It is important to remember that red flags are signs that alert the auditors or any analyst to the possibility of fraudulent activity (Krambia-Kapardis, 2002). This investigation sought to ascertain whether there were sufficient red flags in ISA 240 that indicate the possibility of fraud in Wirecard in the years preceding the fraud's discovery. For this, information from documents, such as Wirecard's Annual Reports, and other sources, such as Financial Times newspaper, were examined and linked to the red flags listed in Murcia and Borba's (2007) study.

The list of Murcia and Borba's (2007) red flags, included a total of forty-five red flags. The information available for the Wirecard case allowed the analysis of thirty-seven red flags. Of that total, twenty-four sign potential fraud in Wirecard. These were related with the complex structure of Wirecard, the inadequacy of internal controls, problems related to the publication of Financial Statements, conflict of interests between shareholders and management, rapid product line and sector innovations, highly competitive market, excessive interest of executives in maintaining or increasing the share price and report a rising profit trend, executives with doubtful character, managers who were hired for a high-level position but had no prior expertise in that area, the pressure on the executives to meet targets, executives who tried to "beat the system", justifications about the use of improper accounting procedures repeatedly given by the executives, the rapid expansion of Wirecard, the high need to raise funds, doubtful receivables, external questions that trigger doubts about the company's continued operation, the company's large acquisitions, a small number of clients and partners, operations made with entities whose climate raises concerns, accounting judgements which are hard to corroborate, number of transactions with companies audited by other independent auditing firms, inadequate records and unrecorded transactions, transactions that violate the substance over form principle and executives who try to influence the scope of the audit.

ISA 240 contained nineteen of the twenty-four red flags, demonstrating that this standard contained sufficient red flags that indicated potential Financial Statement fraud in the Wirecard case. This information also shows that any outsider, analyst or investor could have detected these early warning alarms and incorporate them in their decision-making in the Wirecard case.

As previously mentioned, Murcia and Borba's (2007) framework included fraud risk factors from SAS 99 which is analogous to ISA 240, as well as from other data sources. As a

result, five of the twenty-four red flags were absent in ISA 240. These were associated with the managers appointed to high positions with no experience, rapid expansion, high level of doubtful receivables, high dependency on a single customer or partner and the presence of inadequate records and unrecorded transactions. Some of these red flags are related to the company's financial position and accounting reports, both of which are critical areas in an organisation.

ISA 240 demonstrated its efficacy; nonetheless, the previously mentioned red flags were not included in this standard and were quite significant, as they clearly show problems in the business affecting critical areas of the company. In summary, while ISA 240 was proven effective in the Wirecard case, an actualization to incorporate essential red flags similar to those mentioned previously may make it even more effective.

It is clear in the Wirecard case that auditors neglected the red flags since, as previously mentioned any outsider, analyst or investor could have detected these early warning alarms. This information highlights the need for auditors to adjust their approach to fraud risk assessment to detect fraud at an early stage, particularly because the market has lost trust in auditors as a result of several cases of fraud, largely due to the lack of knowledge about how to integrate fraud risk factors into an audit plan (Boritz et al., 2015; Rezaee Z., 2004). This case also attracted attention to the high levels of fees that the auditors obtained from the company, which might be one of the reasons why auditors turned a blind eye to signs of possible fraud.

The Wirecard fraud case shares some similarities with other well-known cases, such as WorldCom and especially with Enron. The company acquired several companies and had a high level of goodwill, raising concerns about whether the company overpaid in these acquisitions. Like Enron, Wirecard was a complex company that had exponential growth, a greedy CFO and undisclosed subsidiaries. Furthermore, consequences emerged for those who raised concerns, because Wirecard, like Enron, was shielded by the political system. One of the similarities between the three fraud cases was the fraud's motivation: to demonstrate to investors an exponential growth. Additionally, though Wirecard was not in the energy or telecommunication industries, it did operate in a sector with regulatory flaws, similar to Enron and WorldCom. Because the FinTech sector is new and innovative, it has opened up uncharted territory for supervisors and regulators, introducing vulnerabilities such as incorrect classification, as seen in the Wirecard case. Even though FinTech offers identical services as traditional banks, it distinguishes itself by employing technology to improve service efficiency. As a result, Wirecard was classified as a technological rather than a financial services company, being subject to much lighter regulatory and supervisory regimes, resulting in gaps in



supervision. These vulnerabilities provide opportunities to the fraudsters, resulting in a need to address a new regulatory framework for the financial industry.

Focusing solely on Wirecard, this case drew attention to flaws in the regulatory system, not only the one for the FinTech sector but also the German Code of Corporate Governance. As referred by Driel (2019), the new industries and technologies, like FinTech companies, revealed the importance of innovation in fraud. Innovation is uncertain and can easily lead to dubious financial practices. Besides, this case also brought six brand-new red flags that can be introduced in ISA 240 such as: the company appears to be unconcerned about reporting all relevant public data, the company exhibits creative practices or unusual mergers, the company alleged of having committed fraud, is or has been accused of intimidating anyone who voiced concerns or suspicions, the company's working capital value fluctuates unusually over time, the company's audit firm or the audit firm of its subsidiaries is in a conflict of interest and the value of the audit fees collected by the audit firm from the company are significant or have increased significantly over the years.

## **6.2. Limitations**

As previously stated, the ultimate goal of this dissertation is to verify whether an outsider, using ISA 240, the fraud detection standard applied by auditors, reaches different conclusions. However, there are drawbacks to the information available to an outsider in relation to auditors. In particular, an outsider can only analyse the financial information made available by Wirecard, while auditors have access to both public and internal protected documents as well as direct access and communication with the organisation's officials and staff.

Another limitation is related to the lack of clarity about whether the auditors confirmed the presence of red flags, whether they verified and concluded it was not a red flag, or whether they verified, concluded it was a red flag and overlooked it, leaving only the assumption that negligence occurred.

Furthermore, when reading the red flag related to the company's accounts at various banks or the constant change of banks, the information presented is from 2020 and relates to the fact that the auditors did not obtain the banking information directly from the bank, which is a significant lack of oversight on the part of the auditors. If data on the audit procedures had been available, it would have helped understand what the auditors did, which may have exposed additional flaws in the auditors' analysis of red flags in the Wirecard company.

### **6.3. Future Investigation**

In order to identify common red flags, it would be of great interest for future investigations to conduct a comparative review of the various fraud cases, particularly the more notorious ones. Another potential line of research stems from the fact that the vast majority of fraud cases are the product of auditor errors. The aim would be to understand why auditors, even in similar cases, still make mistakes.

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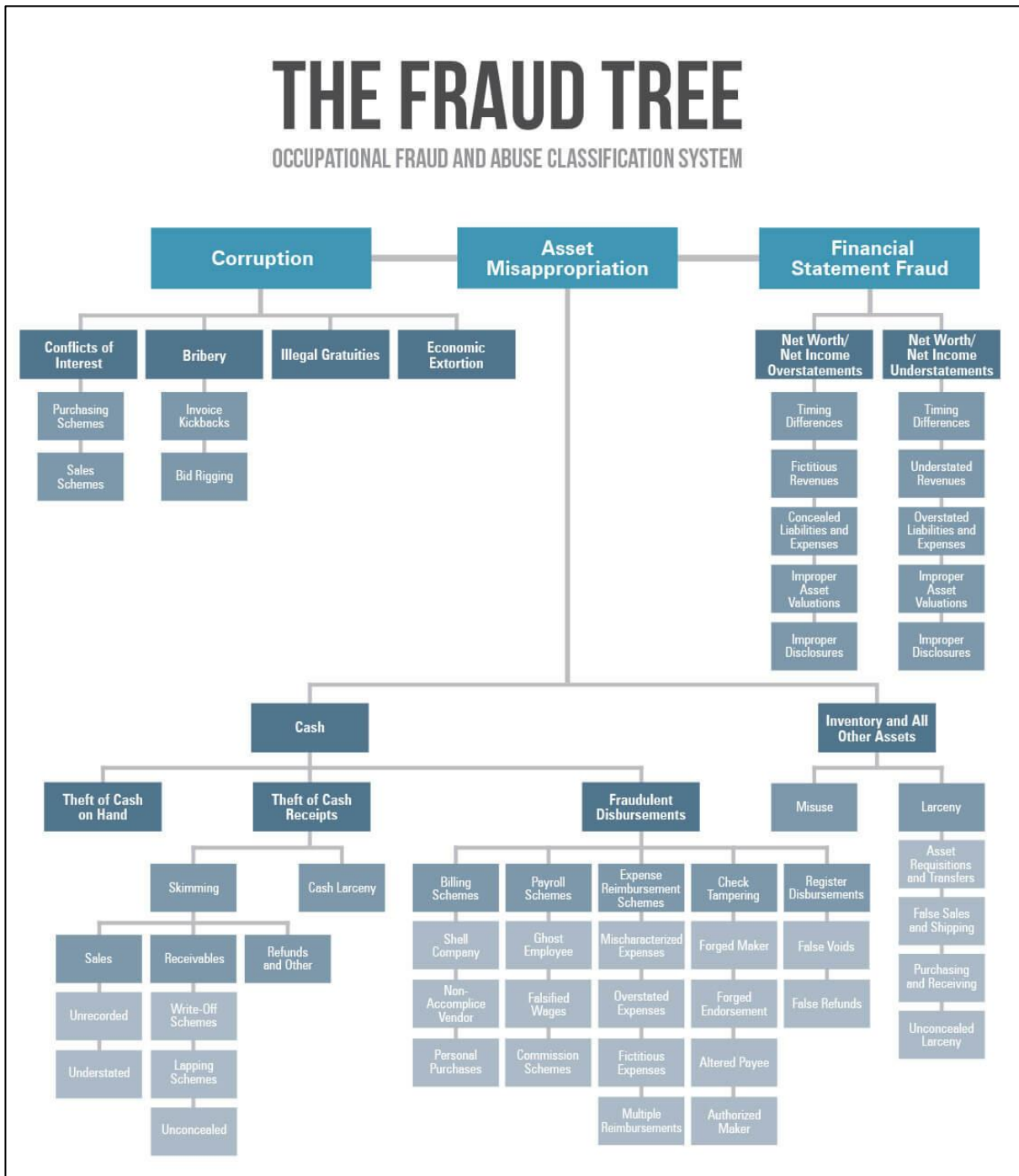
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# Annexes

## ANNEXE A – The Fraud Tree

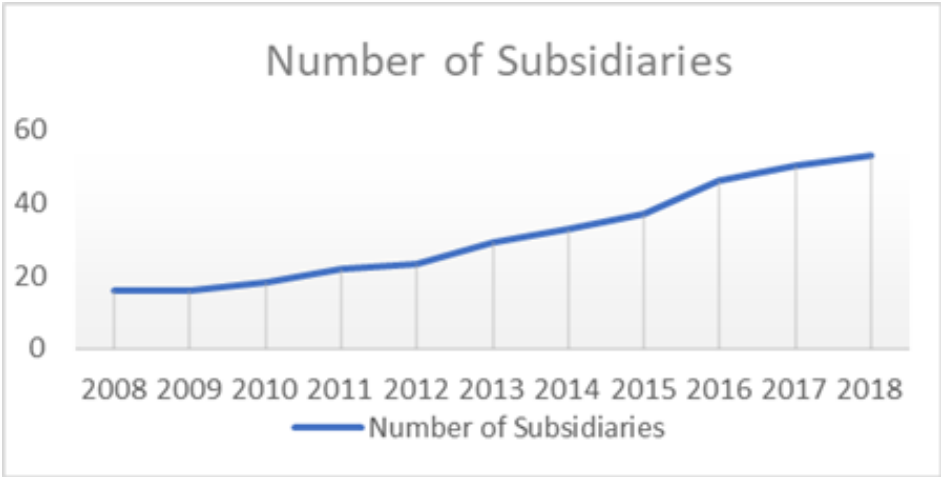


(Font: (ACFE, n.d.))

ANNEXE B – Evolution of the number of subsidiaries

	Number of Consolidated Subsidiaries	Africa	Asia	Europe	America	Oceania
2008	16	0	1	15	0	0
2009	16	0	1	15	0	0
2010	18	0	5	13	0	0
2011	22	0	9	13	0	0
2012	23	0	10	13	0	0
2013	29	0	16	13	0	0
2014	33	2	16	13	0	2
2015	37	2	18	12	3	2
2016	46	2	19	18	5	2
2017	50	3	19	21	4	3
2018	53	4	18	24	4	3

(Font: Own Elaboration. Based on data from Wirecard Annual Reports)



(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

## ANNEXE C

### C1: Shareholder structure in 2018

2018
7,05% MB Beteiligungsgesellschaft mbH
92,95% Freefloat
6,7% BlackRock Inc (US)
5,1% Jupiter Asset Management Ltd (UK)
4,93% Citigroup Inc (US)
3% Artisan Partners Asset Management Inc (US)

(Font: Wirecard 2018 Annual Report)

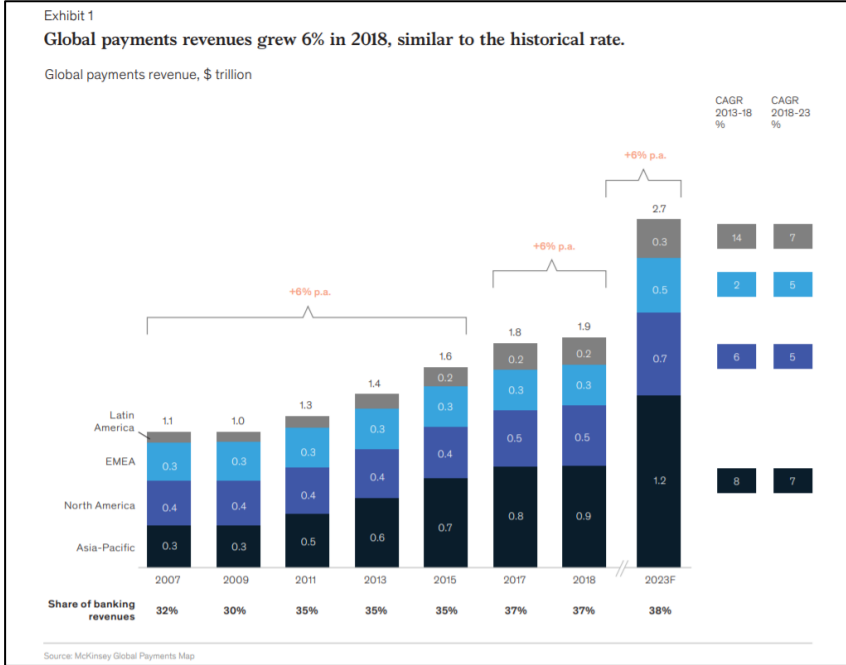
### C2: Ownership type in 2018

	30/12/2018
Investment Advisor	84,73%
Bank	0,17%
Holding Company	7,73%
Sovereign Wealth Fund	1,41%
Pension Fund	1,09%
Insurance Company	0,49%
Other	3,32%
Hedge Fund Manager	0,06%

(Font: Bloomberg)

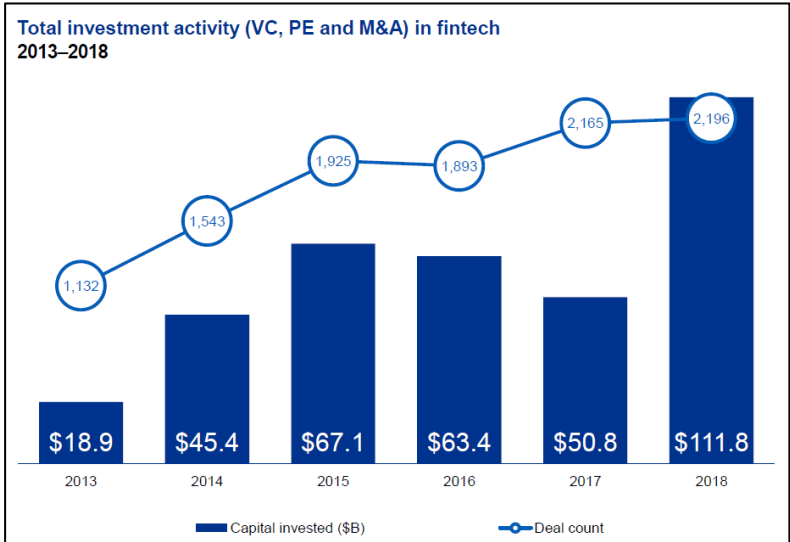
ANNEXE D

D1: Global Payments Revenue



(Font: (McKinsey & Company, 2019))

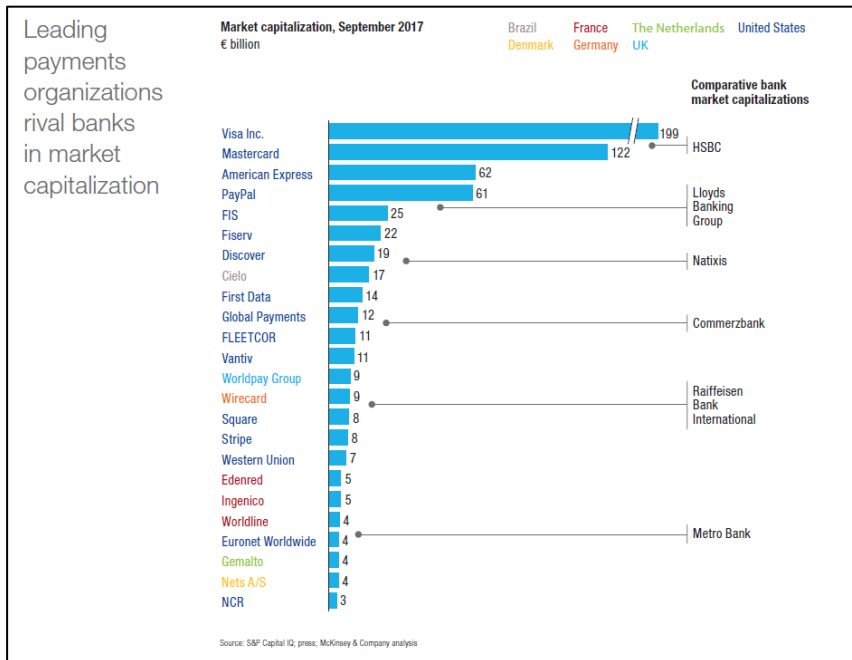
D2: Total investment activity



(Font: (KPMG, 2019))

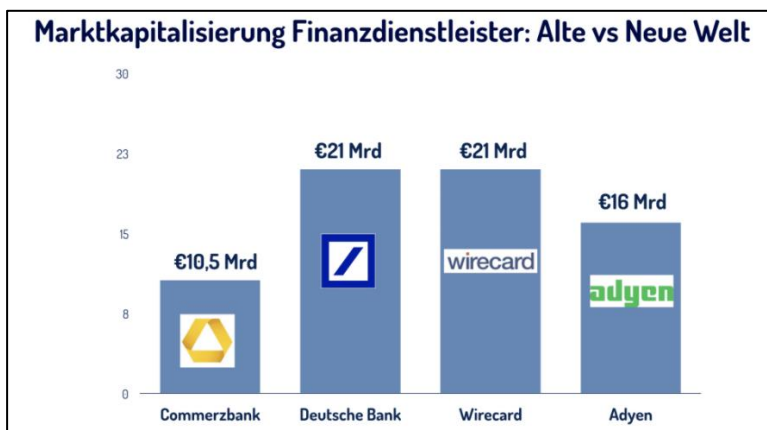
# ANNEXE E

## E1: Market Capitalization in 2017



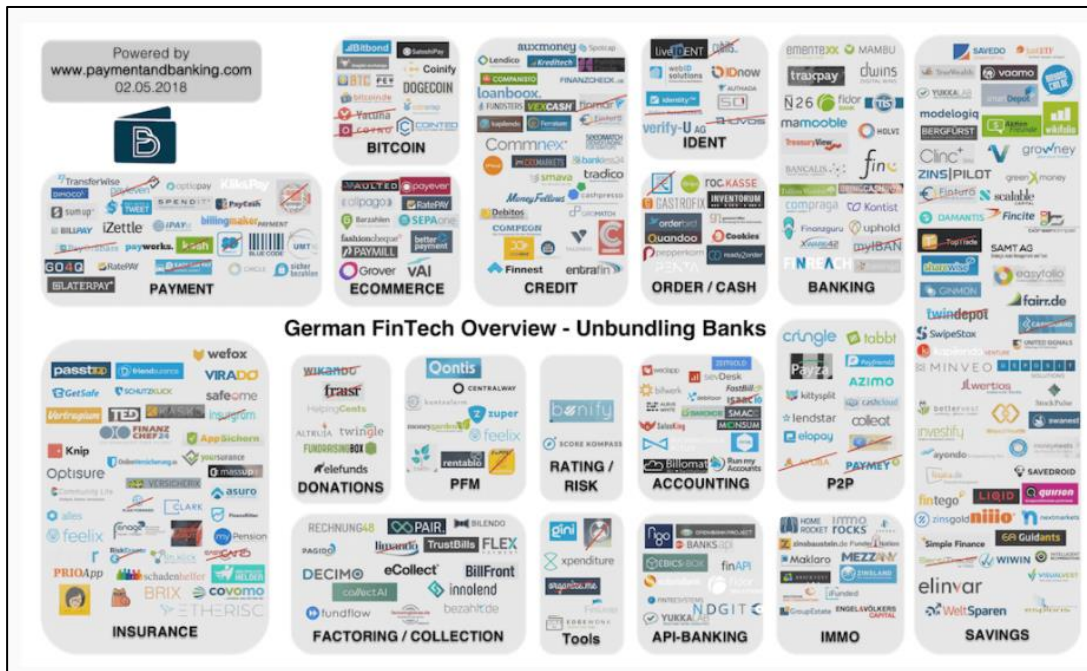
(Font: (McKinsey & Company, 2017))

## E2: Market Capitalization in Germany in 2018



(Font: Börsenbewertung)

### E3: German FinTech overview in 2018



(Font: Payment and Banking)

ANNEXE F – Compensation Scheme 2018



(Font: Wirecard 2018 Annual Report)

## **1. Management Board:**

### Markus Braun (LinkedIn):

1989-1995 – Degree in Social and Economic Sciences, Technische Universität Wien

1995-1996 – Research Assistant, University of Vienna

1996-2000 – Doctorate in Social and Economic Sciences, University of Vienna

1995-1998 – Senior Consultant, Contrast Management-Consulting

1998-2001 – eStrategy Project Manager, KPMG

2002-June 2020 – CEO/CTO, Wirecard AG

### Burkhard Ley (Finance-magazin.de and topionetworks)

1982-1988 – Bank Clerk at Stadt-Sparkasse Solingen (Bank)

1988-2000 – Corporate Banking and Corporate Finance in Sal. Oppenheim (Bank)

2000-2001 – Chief Financial Officer of Kirch New Media

2001-2005 – Worked as Independent Consultant for corporate clients, investment fund and private equity as well as in the area of Corporate Finance (focus on Merger and Acquisitions and Equity Capital Markets)

2006-31 December 2017 – Chief Financial Officer of Wirecard

### Alexander Von Knoop (Wirecard and Finance-magazin.de):

2000 - Business Administration, University of California Berkeley Ext

2001-2005 – Investment Management Associate at PricewaterhouseCoopers AG, Frankfurt am Main and Munich

2005-2014 - Internal Revisor at Wirecard Bank AG, Munich

Since January 2014 - present - Member of the Management Board, Wirecard Bank AG, Munich

Since January 2018 - present - Managing Director Wirecard Acquiring & Issuing GmbH, Munich and Chief Operational Officer, Wirecard AG, Munich

### Jan Marsalek (Crunchbase)

2000-2001 – Project Manager at Wirecard AG

2001-2002 – Manager IT at Wirecard AG



2002-2009 – Vice President, Technology and Product Development; Managing Director of group subsidiaries

Since Feb 2010 – Chief Operating Officer at Wirecard AG

Rüdiger Trautman (LinkedIn):

Entrepreneur, Inatec Payment AG

Since 2010 – CEO of PowerCash21

## **2. Supervisory Board:**

Wulf Mathias (Wirecard):

1965–1972 - Studies in Business Administration (MBA), Universities Frankfurt, Munich and Würzburg

1972–1974 - Studies in Economics, University Mainz

1970-1972 – Member of the Supervisory Board WIBAY GmbH, Frankfurt, Germany

1972-1974 – Management Trainee at Chase Manhattan Bank N.A., Frankfurt, Germany/New York, USA

1975-1979 – Director, Corporate Finance and Credit Officer at Chase Manhattan Bank N.A., Munich/Germany

1979-1980 – COO (Special Project for Porsche Family) at Porsche Design, Salzburg, Austria

1980–1984 - Chase Bank AG, Frankfurt, Germany. Director, Munich: Branch Manager | Frankfurt: Corp. Finance and Credit, Division Manager Automotive and Aerospace

1984–1991 - Branch Manager and Executive Director for Southern Germany at Sal. Oppenheim jr. & Cie. KGaA, Frankfurt, Germany.

1991–2001 - Executive Director, Group Division Manager Private Banking, numerous Group Board Memberships at Sal. Oppenheim jr. & Cie. KGaA, Cologne, Germany.

2001–2011 - Member of the Executive Board, Private Investment Office at Credit Suisse (Deutschland) AG, Frankfurt, Germany.

2011–2013 - Managing Director at Bank J. Safra Sarasin (Deutschland) AG, Frankfurt, Germany

2014–2016 - Senior Advisor at M. M. Warburg & Co, Frankfurt, Germany

2008 – 2020 - Member of the Supervisory Board, Wirecard AG

Alfons W. Henseler (Wirecard):

Experience in the banking and financial services

Held a variety of positions at Society Générale de Banque and Deutsche Bank

Independent Management consultant since 1980s – clients as MasterCard International,

Deutsche Telekom and Volkswagen Financial Services

Deputy Chairman of the Supervisory Board of Wirecard Bank

Supervisory Board of Diamos AG, Sulzbach

Paul Bauer – no information

Stefan Klestil (Wirecard and LinkedIn):

1986-1992 – MBA at Wirtschftuniversitat Wien

1988-1992 – Founder of Uniforce Junior Enterprise Vienna

1992-1994 – Master’s in International Affairs at Columbia University, School of International and Public Affairs

1994-1994 – Trainee at European Commission

1994-1994 – Summer Analyst at Salomon Brothers

2000-2001 – Director of Corporate Development at TD Ameritrade

1995-2005 – Principal at A.T. Kearney

2005-2006 – Partner at Roland Berger Strategy Consultants

2006-2009 – President Central and Southern Europe at First Data Corporation

2009-2013 – Operating Partner at Advent International

2014-2016 – Member of the Board of Directors

2015-2016 – Mentor at Techstars

2013-2019 – Advisory Board at Payworks

2012-2019 – Chairman of the Board of iyzico

Since 2008 – Owner and Managing Director of Belview Partners GmbH

Since 2013 – Advisory Board Member at N26

Since 2014 – General Partner and Head of FinTech at Speedinvest

Since 2015 – Investor at Curve

Since 2016 – Investor and Advisory Board at Billie

Since 2016 – Board Observer at wefox

Since 2017 – Advisory Board at FinCompare GmbH

Since 2018 – Investor at FairMoney

Since 2018 – Investor at Open Financial Technologies

Since 2018 – Investor at Tide  
Since 2019 – Investor and Advisory board member at ready2order  
Since 2019 – Investor at ShopUp  
Since 2019 – Investor at Bitpanda  
Since 2019 – Board Observer at Luko  
Since 2020 – Investor at BukuKas  
Since 2020 – Investor at Wayflyer  
Since 2020 – Investor at +Simple  
Since 2020 – Investor and Board observer at Prime  
Since 2009 member of the board of Wirecard AG

Tina Kleingarn (Wirecard and LinkedIn):

1995-2000 – Master of Business Administration, Mannheim University  
2001-2004 – Goldman Sachs, Frankfurt Germany – Analyst Investment Banking Division  
2004-2005 – Goldman Sachs, Tokyo, Japan – Associate Investment Banking Division  
2005-2006 – Goldman Sachs, Frankfurt, Germany – Associate Investment Banking Division  
2006-2009 – Barclays Bank, Frankfurt, Germany – Vice President Investment Banking Division  
2009-2012 – Barclays Bank, Frankfurt, Germany – Director Investment Banking Division  
2013 – Westend Corporate Finance, Frankfurt, Germany – M&A and IPO Advice, Founder and Partner  
2016-2017 – Member of the Supervisory Board at Wirecard AG  
Since 2013 – Partner at Westend Corporate Finance  
Since 2018 – Member of the Supervisory Board at Deutsche Wohnen Gruppe

Vuyiswa V. M’Cwabeni (Wirecard and LinkedIn):

1998-2001 – Bachelor of Arts, Honors in Business Administration (HBA) – Richard Ivey School of Business, University of Western Ontario, Canada  
2001-2002 — Business Analyst, Customer and Channel Solution Group at Arthur Andersen LLP, Toronto, Canada  
2002-2004 – Consultant, Pricing Strategy Team at the Advantage Group, Toronto, Canada  
2005-2006 – Master of Business Administration (MBA) – WHU – Otto Beisheim School of Management, Vallendar, Germany  
2007-2011 — Senior Manager, Corporate Strategy Group at SAP, Walldorf, Germany

2012-2014 – Senior Director, Strategy Projects and Operations (COO) at SAP, Walldorf, Germany

2014-2018 – Chief Product Strategist, Chief of Staff for Executive Board Members, Products and Innovation at SAP, Walldorf Germany

2016-2020 – Non-Executive Director of Wirecard AG

2019-2020 – SVP Technology and Innovation Strategist at SAP SE, Walldorf, Germany

Anastassia Lauterbach (Wirecard):

1994 – Graduated in linguistics and Slavic studies from the Lomonosov University in Moscow, Russia

1997 – Dr Phil and M.A. in psychology and linguistics from the University of Bonn, Germany

1997–2001 Münchener Rückversicherungs-Gesellschaft AG, München, Germany Senior Underwriter Casualty

2001–2003 McKinsey & Company Senior Associate

2003–2006 Daimler Chrysler Financial Services Head of Business Transformations, Strategy EMEA Regions

2006–2009 T-Mobile International, Bonn, Germany Executive Vice President Strategy

2009–2011 Deutsche Telekom AG, Bonn, Germany Divisional Director for Technology and Innovation

2011–2013 Qualcomm Incorporated, San Diego, USA Senior Vice President Europe

Since 2013 CEO and Founder of Lauterbach Consulting and Venturing GmbH (Ltd.) (1AU-Venture 1au-ventures.com), Bonn, Germany and London, UK

Susana Quintana-Plaza (Wirecard):

1997 Master of Science in aerospace technology at the University of Washington, Seattle, USA

2006 Master's in Business Administration (MBA) at the Harvard Business School, Boston, USA

1998–2004 Boeing Commercial Airplane Group, Seattle, USA Last position as Product Marketing Team Leader

2006–2008 Booz Allen Hamilton, London, UK Associate

2008–2009 GE Energy, Bracknell, UK Experience Commercial Leadership Program

2009–2011 E.ON Climate & Renewables (EC&R) GmbH, Düsseldorf, Germany Strategy and Business Development Manager

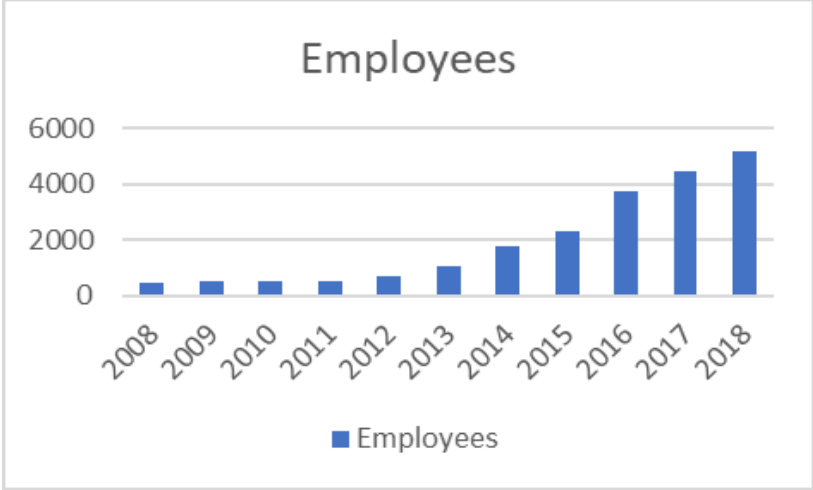
2011–2016 E.ON. SE, Düsseldorf, Germany Last position as Senior Vice-President of Technology and Innovation (T&I)

2016–2018 Next47 London, UK (venture capital firm of Siemens AG founded in 2016 with headquarters in Palo Alto, USA, and several subsidiaries worldwide) Partner

Since 2019 Galp Energia, SGPS, S.A., Lisbon, Portugal COO

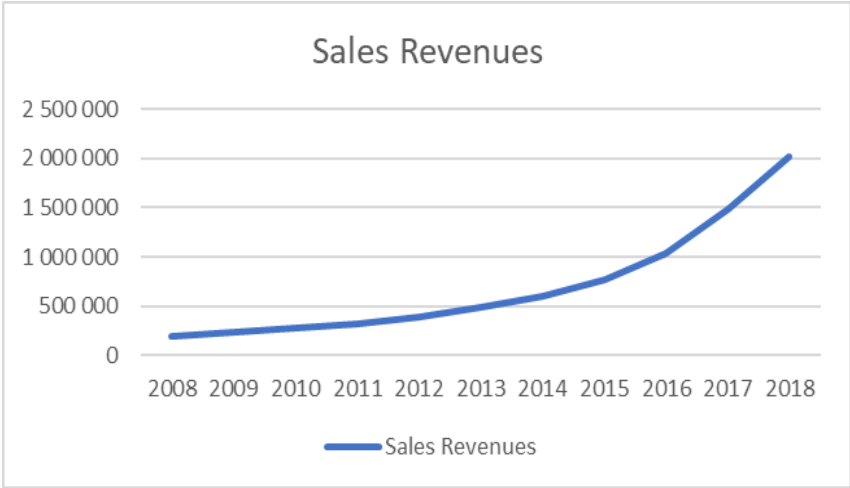
ANNEXE H

H1: Number of employees of Wirecard between 2008 and 2018



(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

H2: Sales of Wirecard between 2008 and 2018



(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

H3: Market capitalization of Wirecard from 2008 to 2018

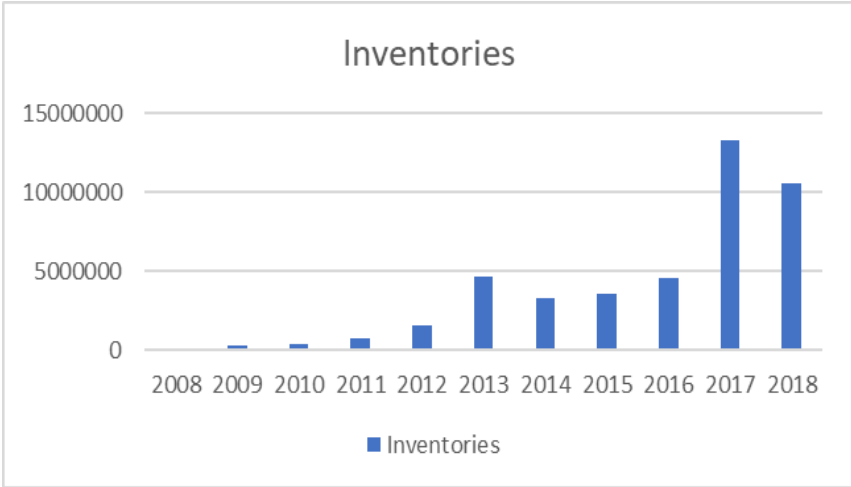


(Font: Own Elaboration. Based on data from Wirecard Annual Reports)



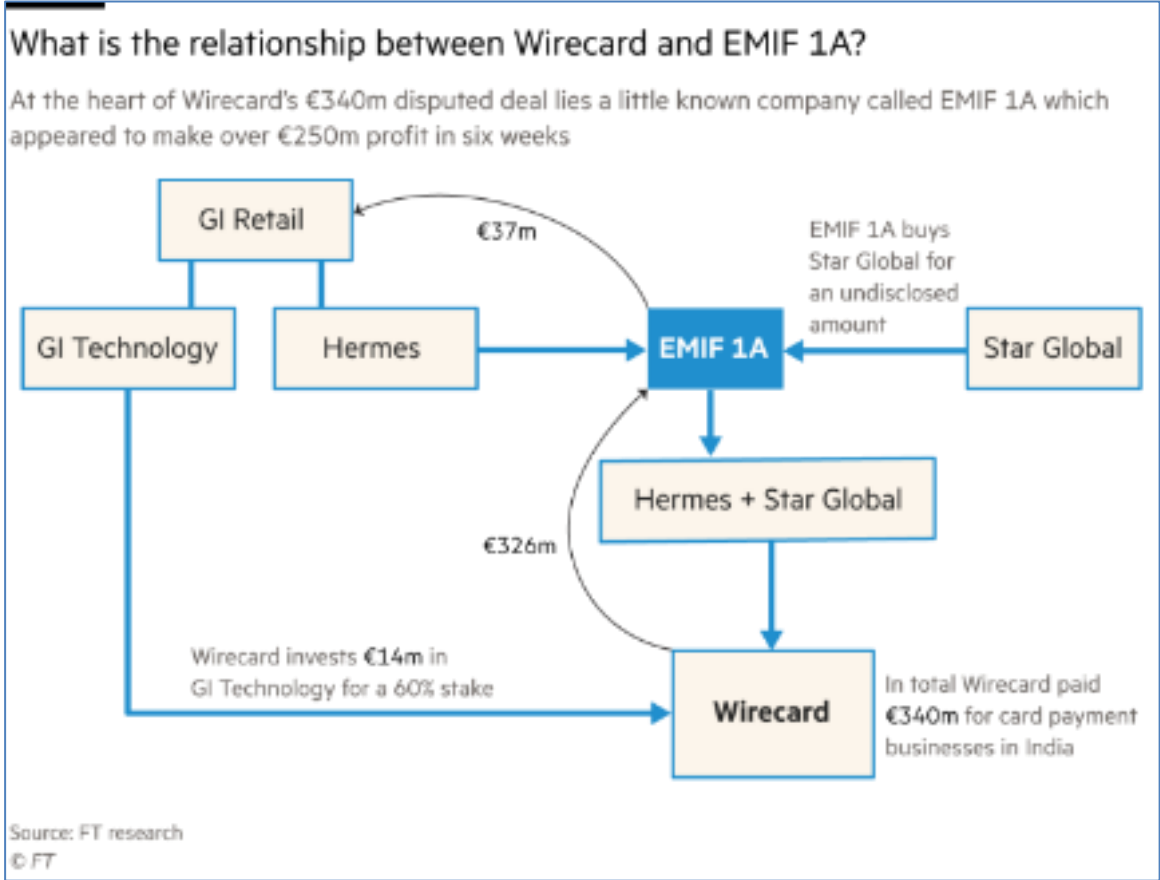


ANNEXE J – Inventories



(Font: Own Elaboration. Based on data from Wirecard Annual Reports)

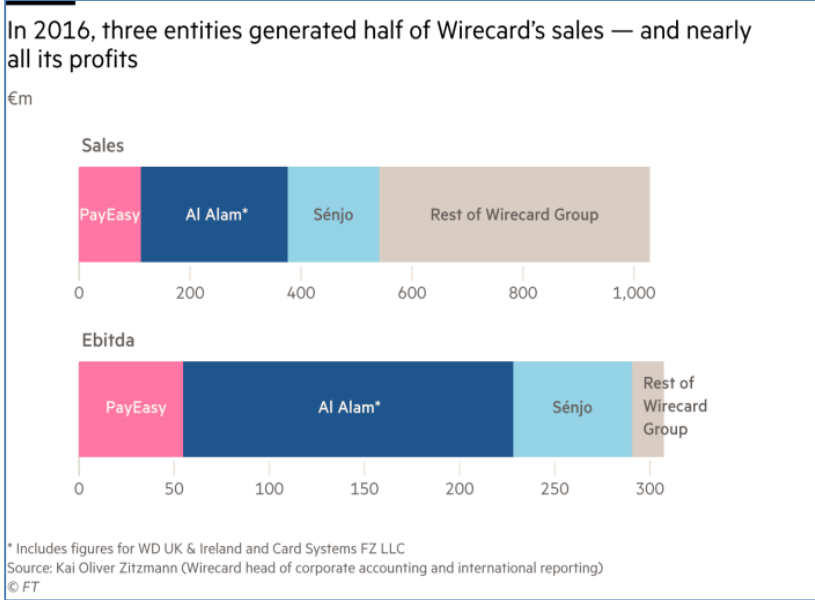
ANNEXE K – Wirecard Indian deal



(Font: (McCrum, 2019d))

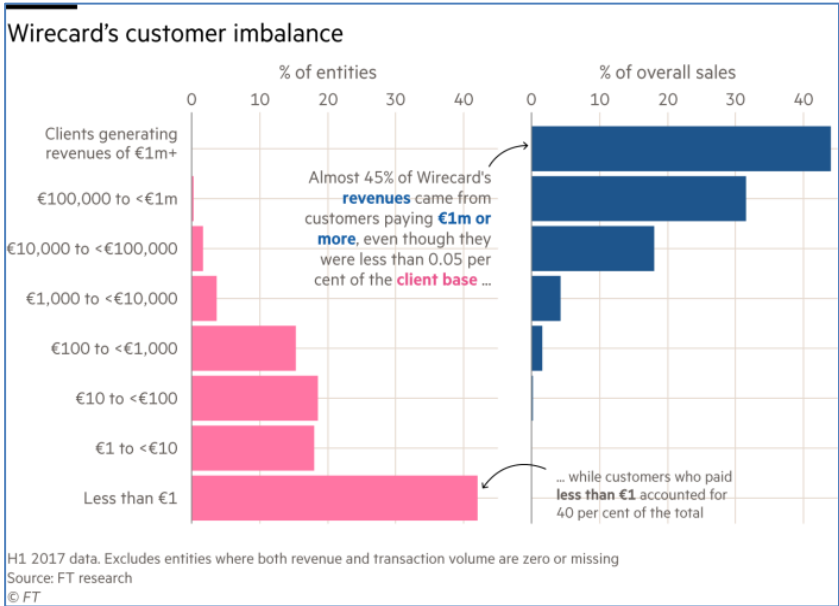
ANNEXE L

L1: Partners of Wirecard



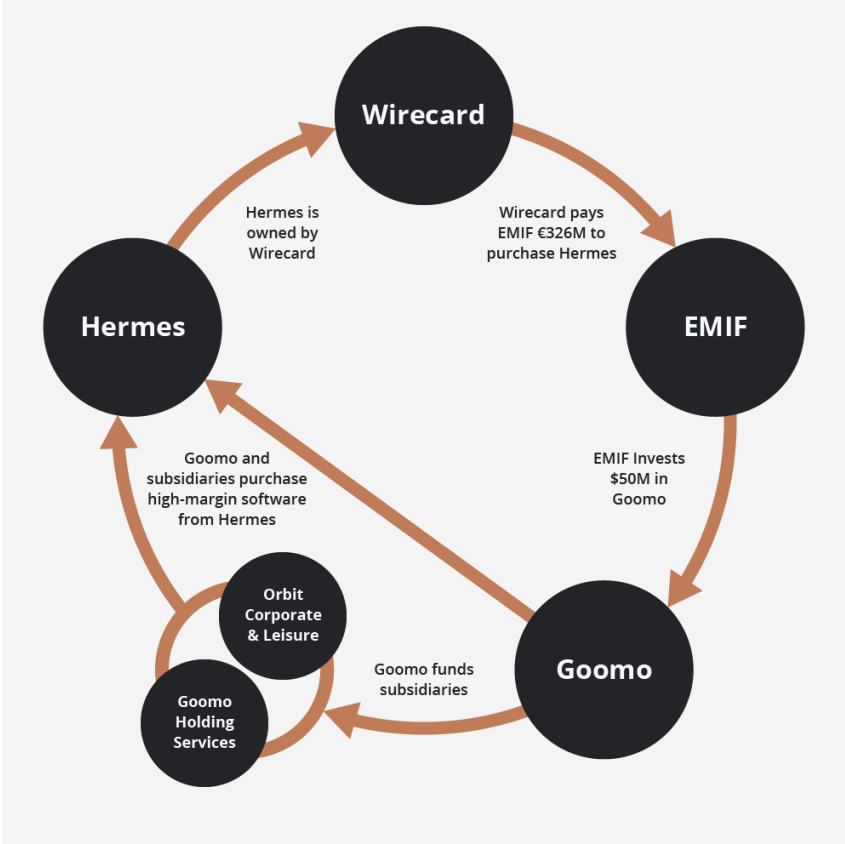
(Font: (McCrum, 2019a))

L2: Wirecard customers in 2017



(Font: (McCrum, 2020b))

ANNEXE M – Indian deal



(Font: (MCA-Mathematik, 2019))