REVES - Revista Relações Sociais, Vol. 07 N. 01 (2024)

https://periodicos.ufv.br/reves

eISSN: 2595-4490



REVES - Revista Relações Sociais (eISSN 2595-4490)

The Parmalat Scandal: An Analysis of Financial Deception and Its Implications for Global Business

O Escândalo da Parmalat: Uma Análise da Fraude Financeira e Suas Implicações para o Comércio Internacional

Edgar Manuel Cambaza

ORCID: https://orcid.org/0000-0002-0592-7812

Faculdade de Ciências de Saúde, Universidade Aberta ISCED (UnISCED),

Mozambique

E-mail: ecambaza@unisced.edu.mz

Article Info:

Article history: Received 2023-11-20

Accepted 2024-01-20

Available online 2024-01-23

doi: 10.18540/revesvl7iss1pp18165





Abstract. The Parmalat scandal, often compared to Europe's Enron case, highlights one of the biggest financial frauds in global business history. Revealed in 2003, the case exposed an astonishing €14 billion deficit in the company's accounts, resulting from fraud, mismanagement, and oversight failures. This case study delves into the complexities of the Parmalat scandal, exploring its causes, impacts, and lessons for global businesses. It examines inadequate corporate governance, strategic missteps, auditing failures, and ethical violations, highlighting the importance of maintaining an ethical and transparent corporate culture. The role of auditing is emphasized, pointing out deficiencies in both internal and external audits, and the need for stricter controls and a whistleblowing culture. Parmalat's strategic decisions are scrutinized to understand how they contributed to the company's decline. The problematic relationship between majority and minority shareholders is discussed, revealing internal conflicts. The response to the scandal included a push for better corporate governance standards, regulatory reforms, and the adoption of more robust governance models. The importance of an ethical corporate culture, financial transparency, and the empowerment of whistleblowers are underscored as essential for preventing future frauds. The Parmalat case serves as a warning of the need for transparent and ethical practices in business, reinforcing that profitability should not override ethical considerations. This study provides a blueprint for companies to avoid similar pitfalls, highlighting corporate governance, business ethics, and oversight as pillars for trust and economic stability.

Palavras-chave: Corporate Governance; Parmalat Scandal; Business Trust; Corporate Culture.

Resumo. O escândalo Parmalat, frequentemente comparado ao caso Enron na Europa, destaca uma das maiores fraudes financeiras na história dos negócios globais. Revelado em 2003, o caso expôs um déficit impressionante de €14 bilhões nas contas da empresa, resultado de fraude, má gestão e falhas de supervisão. Este estudo de caso aprofunda-se nas complexidades do escândalo Parmalat, explorando suas causas, impactos e lições para negócios globais. Analisa-se a governança corporativa inadequada, escolhas estratégicas errôneas, falhas de auditoria e violações éticas, destaçando a importância de sustentar uma cultura corporativa ética e transparente. O papel da auditoria é enfatizado, destacando deficiências tanto nas auditorias internas quanto externas, e a necessidade de controles mais rígidos e uma cultura de denúncia. As decisões estratégicas da Parmalat são examinadas para entender como contribuíram para o declínio da empresa. A problemática relação entre acionistas majoritários e minoritários é discutida, revelando conflitos internos. A reação ao escândalo incluiu uma pressão por melhores padrões de governança corporativa, reformas regulatórias e a adoção de modelos de governança mais robustos. A importância de uma cultura corporativa ética, a transparência financeira e o empoderamento de denunciantes são sublinhados como fundamentais para prevenir futuras fraudes. O caso Parmalat serve como um alerta para a necessidade de práticas transparentes e éticas nos negócios, reforcando que a lucratividade não deve superar considerações éticas. Este estudo oferece um roteiro para empresas evitarem armadilhas semelhantes, destacando a governança corporativa, a ética nos negócios e a fiscalização como pilares para a confiança e a estabilidade econômica.

Palavras-chaves: Governança Corporativa; Escândalo da Parmalat; Confiança Empresarial; Cultura Corporativa.

1. Introdução

The Parmalat scandal, which emerged in 2003, remains one of the most significant financial deceptions in global business history. At its core, the Parmalat case revealed an astonishing €14 billion hole in its accounts due to fraud, mismanagement, and lack of oversight, making it Europe's version of the notorious Enron debacle (Storelli, 2005). As such, the Parmalat scandal is a cautionary tale highlighting the consequences of governance failures, strategic blunders, and compromised auditing roles.

Understanding the Parmalat case in global business is vital to recognizing the pitfalls and repercussions of lapses in corporate governance and ethical decision-making. Schwartz (2013) underscored the significance of sustaining an ethical corporate culture, emphasizing that financial transparency and business governance are cornerstones for business survival and trust-building. Indeed, Melis (2005) queried whether Parmalat's downfall was specifically an Italian corporate governance anomaly or if its lessons had broad implications. When juxtaposed against other corporate scandals like Enron, it is evident that deceptive practices, irrespective of geography, can undermine economic stability (Dibra, 2016).

Auditing is pivotal in ensuring that corporate accounts reflect genuine financial health. However, the Parmalat scandal highlighted glaring lapses in internal and external auditing processes (Alabede, 2012; Christopher, 2019). Such failures emphasized the need for more stringent controls, deeper scrutiny, and the fostering of a whistleblowing culture (Mavrommati, 2005) to identify and rectify such deceptions

promptly.

In strategic decision-making, it is imperative to comprehend how Parmalat's choices may have driven its performance and eventual decline (Dess *et al.*, 1997). Furthermore, the agency problem, emphasizing the conflict between controlling and minority shareholders, accentuated the company's underlying issues (Buchanan and Yang, 2005).

This case study aims to delve deep into the intricacies of the Parmalat scandal, explain its genesis, unravel its impact, and extrapolate lessons for global businesses. Through a detailed exploration of its corporate governance, strategic choices, auditing failures, and ethical breaches, this study provides a blueprint for businesses to safeguard against similar pitfalls in the future.

2. Problem Statement

Parmalat, often called the "Dairy Giant," was an Italian multinational food-processing company that gained prominence as a producer of dairy products, particularly milk. By the early 2000s, the company had expanded its operations globally and was considered one of Italy's leading food companies. Its products could be found on supermarket shelves across continents, making it a household name in many parts of the world (Di Staso, 2004).

Despite its international success and recognition, Parmalat's financial status was a ticking time bomb waiting to explode. The company reported consistent profits and a healthy balance sheet for years, misleading stakeholders about its financial condition. Investigations later revealed that Parmalat had fabricated its financial statements, hiding losses and inflating assets to several billion euros. This financial deception was not a result of sudden miscalculations but a series of calculated moves, manipulations, and misleading representations that spanned over a decade. The intricate web of deceit encompassed a range of deceptive practices, from fictitious bank accounts to phantom transactions (Melis and Melis, 2004; Dibra, 2016).

Such misleading financial reporting practices, as evidenced in Parmalat's case, are typically characterized by various financial indicators pointing to potential fraudulent activity (Grove and Basilico, 2008). Furthermore, Parmalat's strategic decisions, influenced partly by the desires of controlling shareholders, possibly exacerbated the firm's vulnerability to financial deception (Dess *et al.*, 1997; Buchanan and Yang, 2005).

The veil of deceit started unraveling in December 2003 when Parmalat defaulted on a bond payment, leading to increased scrutiny of its accounts. The tip of the iceberg was the discovery that a bank account, supposedly containing nearly €4 billion, did not exist. It soon became evident that Parmalat's debt was much higher than reported.

The revelation of this deception sent shockwaves throughout Italy and the international business community. The implications of this scandal were vast and varied:

- Financial markets: Parmalat's stock plummeted, and its bonds became worthless overnight, causing massive losses for investors (D'orio, 2005);
- Trust issues: the scandal severely undermined the trust in corporate governance systems, particularly in Italy, leading to concerns about how unique Parmalat's case was to the Italian corporate landscape (Melis, 2005);
- Role of auditors and internal controls: the fact that such a massive deception went undetected for years raised serious questions about the role of external

auditors and the efficacy of internal controls (Alabede, 2012; Christopher, 2019);

- Impact on stakeholders: employees, suppliers, and other stakeholders faced significant uncertainties and potential losses;
- Repercussions on corporate governance: the scandal underscored the importance of robust corporate governance and the dire consequences of its failure, necessitating a reevaluation of corporate governance structures both in Italy and globally (Mueller, 2006; Schwartz, 2013).

The Parmalat scandal is a grim reminder of the potential consequences of lax corporate governance, unchecked shareholder power, and the absence of practical auditing and internal controls. Addressing these issues is paramount to preventing such incidents and restoring corporate sector faith.

3. Literature Review

3.1 Corporate Governance Failures and the Parmalat Scandal

The Parmalat scandal is a quintessential example of corporate governance failures in recent history. Melis (2005) explores whether Parmalat's downfall was solely due to the peculiarities inherent to the Italian corporate governance system. Upon juxtaposing Parmalat's governance structure with other Italian firms, the research highlights a nuanced understanding of various stakeholders' role in perpetuating fraud. Similarly, Di Staso (2004) provides an in-depth chronological analysis of Parmalat's evolution, emphasizing the involvement of various stakeholders in the debacle.

Moreover, drawing parallels between two significant scandals, Dibra (2016) offers a comparative study between Enron and Parmalat. This research underscores the paramount significance of corporate governance in ensuring economic stability and accentuates the deceptive practices that marred both cases. As Storelli (2005) suggested, comparing the two companies provides insights into the commonalities of large-scale financial frauds.

In discussing agency conflicts, Buchanan and Yang (2005) navigated the rocky relationship between controlling and minority shareholders using Parmalat as their primary case study. Their findings suggest that unchecked power of controlling shareholders and inadequate regulatory oversight can catalyze monumental corporate failures.

An essential aspect of the Parmalat case lies in the accounting and auditing failures that abetted its fall. Melis and Melis (2004) and Castro and Cano (2004) meticulously analyze these failures, emphasizing the implications of unsound financial reporting and auditing practices. The Italian auditing landscape, both before and after the scandal, is comprehensively discussed by Cameran (2007), shedding light on the specific context in which the Parmalat scandal unraveled.

Dagnino *et al.* (2013) presented a unique angle to the Parmalat discussion by evaluating the scandal through corporate social irresponsibility, suggesting broader implications for the business world. After the scandal, Bava and Devalle (2012) assessed the restructured Parmalat corporate governance model, shedding light on its effectiveness and potential as a replicable model for other organizations.

3.2 Broader Context of Financial Scandals and Implications on Global Business Trust

The implications of financial scandals, such as Parmalat, go beyond the immediate stakeholders. Such failures chip away at the very trust that underpins global business transactions. D'orio (2005) delves into the aftermath of the Parmalat scandal, specifically regarding investor trust, and stresses the importance of sound corporate governance in rebuilding it.

Schwartz (2013), discussing the importance of fostering an ethical corporate culture, underscores the pivotal role of financial transparency. An organization's ethical standing is intimately tied to its governance structures, as suggested by Mueller (2006), who links robust corporate governance with superior company performance.

A pivotal element in preventing such scandals is the role of external and internal auditors. Alabede (2012) discusses the significant role of external auditors in corporate governance, their compromises, and challenges. On the other hand, Christopher (2019) critiques the failures of internal auditing mechanisms, suggesting a shift in focus to address monitoring gaps.

Companies' strategic choices can often set them on a path that leads to prosperity or ruin. Dess *et al.* (1997) delve into the link between entrepreneurial strategy-making and firm performance, providing insights into how strategic choices, or the lack thereof, might have precipitated Parmalat's downfall.

Finally, the importance of whistleblowers cannot be stressed enough. Mavrommati (2005) articulates the dynamics between gatekeepers, corporate culture, and whistleblowers. A firm whistleblower policy can serve as an early warning system, potentially averting large-scale corporate disasters.

3.2 Broader Context of Financial Scandals and Implications on Global Business Trust

As exemplified by the Parmalat scandal, corporate governance failures have profound implications for businesses, stakeholders, and the broader economy. It is paramount for companies to internalize the lessons from such debacles, ensuring that ethical standards, transparent financial reporting, and robust internal and external monitoring mechanisms are firmly in place. The literature vividly illustrates the intricate web of factors that can culminate in a corporate disaster and underscores the importance of vigilance in all spheres of corporate functioning.

4. Case Elements

4.1 Identification and Analysis of the Root Cause

Parmalat's internal management was pivotal in orchestrating one of the largest financial frauds in history. A critical exploration by Melis (2005) probed whether Parmalat's downfall could be exclusively attributed to the peculiarities of the Italian corporate governance system. It highlighted the company's flawed strategic choices that might have significantly influenced its performance and subsequent downfall (Dess *et al.*, 1997). In particular, unchecked shareholder power, primarily from controlling shareholders, became vital (Buchanan and Yang, 2005).

External entities, including banks and auditors, either failed to notice or were complicit in the deception. The role of external auditors in financial scandals is well-documented (Alabede, 2012), with the audit environment in Italy facing scrutiny after the Parmalat case (Cameran, 2007). Auditing failures were evident in the Parmalat

scandal, emphasizing the need for a more vigilant and rigorous internal audit process (Christopher, 2019).

The corporate culture at Parmalat played a crucial role in nurturing the environment where financial deception could thrive. Schwartz (2013) highlights the core elements of developing and sustaining an ethical corporate culture. However, Parmalat is severely deficient in these elements, compromising financial transparency. Furthermore, the dynamics between gatekeepers of information, corporate culture, and whistleblowers were fraught, suggesting an environment where illicit practices were perhaps overlooked or even facilitated (Mavrommati, 2005).

4.2 How the Deception Was Maintained for a Long Time

The complexity and magnitude of Parmalat's deception are rooted in internal strategic failures and external complicity. Firstly, there was a significant lapse in maintaining a 'true and fair view' in accounting, leading to compromised financial reporting (Melis and Melis, 2004). This was exacerbated by the company's strategic decisions, which affected its performance and allowed deceptive practices to flourish (Dess *et al.*, 1997).

Externally, auditors played a dual role: they failed to identify discrepancies, and in some instances, they might have been complicit in sustaining the fraudulent practices (Cameran, 2007; Alabede, 2012). Dibra (2016) underscores that similar corporate governance failures characterized Parmalat and Enron, emphasizing that effective corporate governance is vital for economic stability.

The environment in which Parmalat operated was another significant factor. As Melis (2005) suggests, there is a possibility that the Parmalat case was influenced by unique regional aspects of Italy's corporate culture. This regional influence, combined with internal mismanagement and external negligence, created a perfect storm, allowing the deception to remain concealed for an extended period.

5. Recommended Action Plan

5.1 Potential Alternatives

Parmalat's situation required a:

- More robust internal audit mechanisms: Christopher (2019) highlighted audit failures associated with the Parmalat case, emphasizing that robust internal audit systems can effectively prevent financial deceit;
- Stricter regulatory oversight: the Parmalat scandal showcased the importance of rigorous regulatory oversight, especially in countries with unique corporate governance systems like Italy (Melis, 2005);
- More transparent corporate governance: Schwartz (2013) emphasized the critical role of ethical theories and business governance in ensuring financial transparency. Additionally, a more transparent corporate governance system can boost investor trust and establish ethical corporate cultures (D'orio, 2005; Schwartz, 2013).

5.2 Best Alternative

Stricter regulatory oversight is the most impactful alternative. As discussed by Melis (2005), Parmalat's downfall may have roots in the peculiarities of the Italian corporate governance system. Enhancing regulatory oversight will ensure that

companies operate under a stringent framework that can prevent deceptive practices. Melis (2005) added that the Parmalat case demonstrated the disastrous consequences of weak oversight. Considering Parmalat's extensive financial deception, Grove and Basilico (2008) also highlighted that effective financial reporting detection requires a combination of critical ratios and corporate governance factors.

5.3 High-Level Action Plan

The implementation steps for the proposed action plan begin with a review of current regulations, focusing on evaluating the existing frameworks governing financial reporting and corporate governance. This is followed by engaging experts who can identify gaps in the current system and suggest tighter regulatory controls. Based on these inputs, comprehensive regulatory guidelines are drafted. The next phase involves stakeholder engagement, where companies, shareholders, and the public provide feedback on these guidelines. Finally, the revised guidelines are officially implemented and communicated to all relevant entities.

Addressing potential challenges and strategizing is crucial. One challenge is that companies might resist stricter regulations, viewing them as burdensome. It is vital to demonstrate the long-term benefits of these regulations, particularly in terms of investor trust and economic stability, as D'orio (2005) noted. Implementing stricter regulations could also demand more resources; therefore, allocating these resources efficiently and considering partnerships with international bodies is essential. Additionally, ensuring compliance from every company can be challenging, making developing robust monitoring systems and penalties for non-compliance critical.

The expected outcomes and benefits of these implementations are significant. Improved investor trust is anticipated, as strict regulations can restore confidence in the financial system (D'orio, 2005). Furthermore, adopting ethical corporate cultures is encouraged, as (Schwartz, 2013) commented, promoting ethical business practices. Lastly, economic stability is a crucial expected outcome. A robust regulatory system can prevent massive financial scandals and ensure stability in the economic landscape, as argued (Dibra, 2016).

6. Case Solution

The Parmalat scandal, often likened to Europe's Enron, exposed the vulnerability and inadequacy of corporate governance mechanisms, especially in Italy (Melis, 2005). The immediate fallout was a catastrophic loss of investor trust, as D'orio (2005) described, who emphasized the role of corporate governance in retaining and regaining that trust. The direct involvement of controlling shareholders, as Buchanan and Yang (2005) found, exacerbated the crisis, revealing conflicts between these stakeholders and their minority counterparts.

The Parmalat debacle had ripple effects across the global business ecosystem. Alabede (2012) emphasized the role of external auditors in corporate governance, raising questions about their objectivity and effectiveness. Christopher (2019) pointed out internal audit failures, revealing monitoring gaps and suggesting reevaluating the audit function. Corporate governance became a focal point, and as Dibra (2016) found in a comparison between Enron and Parmalat, robust governance mechanisms are vital for economic stability.

One of the key lessons from the Parmalat scandal is the need for greater transparency. Schwartz (2013) underlined the importance of developing an ethical corporate culture, emphasizing the core elements that promote financial transparency

and uphold business governance. Grove and Basilico (2008) highlighted the significance of detecting fraudulent financial reporting through key ratios and integrating corporate governance factors.

Whistleblowing emerged as a pivotal mechanism in uncovering corporate wrongdoings, with Mavrommati (2005) underscoring the dynamics of gatekeepers, corporate culture, and whistleblowers. The Parmalat scandal illuminated the necessity for employees to safely report concerns and the crucial role of gatekeepers in facilitating this process.

Post-Parmalat, there was a concerted push for improved corporate governance standards. Mueller (2006) directly correlated strong corporate governance and economic performance, suggesting that robust governance mechanisms can bolster company success.

Bava and Devalle (2012) examined Parmalat's revamped corporate governance model post-scandal, pointing to the potential of adopting such structures to prevent similar future downfalls. Governments and global agencies were called upon to tighten regulations, especially concerning auditing. As Cameran's work (date not specified) on Italy's auditing landscape suggests, the Parmalat scandal was a watershed moment that changed the regulatory environment in Italy. Furthermore, Melis and Melis (2004) delved into the specific accounting and governance mechanisms that failed in the Parmalat case, serving as a cautionary tale for companies worldwide. The scandal underlined the need for an accurate and fair view of accounting, as discussed by (Melis, 2005).

7. Conclusion

The Parmalat scandal, termed "Europe's Enron," revealed massive corporate fraud within an Italian dairy company, resulting from financial irregularities, undisclosed debts, and fabricated transactions. This deception had widespread implications, challenging the credibility of global financial systems and highlighting weaknesses in corporate governance. This breach of trust necessitated urgent reforms, emphasizing the importance of auditors, internal controls, and whistleblowers. Proposed preventive measures include enhanced financial transparency, a strengthened role for auditors, fostering ethical corporate cultures, empowering whistleblowers, and instating robust corporate governance. The scandal underscores the vital role of ethics in global business. Prioritizing profitability should not come at the expense of ethical considerations. Business leaders shape organizational ethics, and high moral standards ensure sustainable profitability. The Parmalat case is a potent reminder of the devastating consequences of sidelining ethics, emphasizing the need for businesses to adopt transparent and ethical practices to sustain trust and positive contributions to the global community.

Referências

ALABEDE, J. The role, compromise and problems of the external auditor in corporate governance. **Research Journal of Finance and Accounting,** v. 3, n. 9, 2012. Available at: < https://core.ac.uk/download/pdf/234629366.pdf >.

BAVA, F.; DEVALLE, A. Is the "new" Parmalat model of corporate governance a best practice in Italy? **Procedia Economics and Finance**, v. 2, p. 81-90, 2012. ISSN 2212-5671. Available at:

8

- https://www.sciencedirect.com/science/article/pii/S2212567112000676/pdf?md5 =411c66d0975b034da3947c59ae747fbb&pid=1-s2.0-S2212567112000676-main.pdf& valck=1 >.
- BUCHANAN, B.; YANG, T. The benefits and costs of controlling shareholders: the rise and fall of Parmalat. **Research in International Business and Finance,** v. 19, n. 1, p. 27-52, 2005. ISSN 02755319.
- CAMERAN, M. Auditing in Italy: The development of a highly-regulated setting before and after the Parmalat case. In: (Ed.). **Auditing, Trust and Governance**: Routledge, 2007. p.162-185.
- CHRISTOPHER, J. The failure of internal audit: monitoring gaps and a case for a new focus. **Journal of Management Inquiry,** v. 28, n. 4, p. 472-483, 2019. ISSN 1056-4926.
- D'ORIO, G. Investors trust after Parmalat scandal: the role of corporate governance. **Corporate Ownership and Control,** v. 2, n. 2, p. 102-107, 2005. Available at: http://www.ecostat.unical.it/dorio/File%20PDF/paper%20parmalat%20corp%20 own%20contr.pdf >.
- DAGNINO, G. B.; MINÀ, A.; PICONE, P. M. The hubris hypothesis of corporate social irresponsibility: evidence from the Parmalat case. In: AMANN, W. e STACHOWICZ-STANUSCH, A. (Ed.). Integrity in Organizations: Building the Foundations for Humanistic Management. London: Palgrave Macmillan UK, 2013. p.576-601. ISBN 978-1-137-28035-0.
- DESS, G. G.; LUMPKIN, G. T.; COVIN, J. G. Entrepreneurial strategy making and firm performance: Tests of contingency and configurational models. **Strategic Management Journal**, v. 18, n. 9, p. 677-695, 1997. ISSN 0143-2095.
- DI STASO, M. II caso Parmalat. **Archivio CERADI, Agosto,** v. 169, 2004. Available at: < https://rb.gy/tji10>.
- DIBRA, R. Corporate governance failure: The case of Enron and Parmalat. **European Scientific Journal**, v. 12, n. 16, 2016. ISSN 1857-7881.
- GROVE, H.; BASILICO, E. Fraudulent financial reporting detection: Key ratios plus corporate governance factors. **International Studies of Management & Organization,** v. 38, n. 3, p. 10-42, 2008. ISSN 0020-8825.
- MAVROMMATI, S. The dynamics of gatekeepers, corporate culture and whistle blowers. **Corp. Governance L. Rev.,** v. 1, p. 385, 2005. Available at: < https://heinonline.org/HOL/LandingPage?handle=hein.journals/crpgvrn1&div=21 &id=&page= >.
- MELIS, A. Corporate governance failures: to what extent is Parmalat a particularly Italian case? **Corporate Governance: An International Review,** v. 13, n. 4, p. 478-488, 2005. ISSN 0964-8410. Available at: <

- https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=ab9e89f6517af88f976c4b250f8214ecfda99ada>.
- MELIS, G.; MELIS, A. Financial reporting, corporate governance and Parmalat. Was it a financial reporting failure? **Corporate Governance and Parmalat. Was it a Financial Reporting Failure**, 2004. Available at: < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=556575 >. Accessed on: 27 October 2023.
- MUELLER, D. C. Corporate governance and economic performance. **International Review of Applied Economics**, v. 20, n. 5, p. 623-643, 2006. ISSN 0269-2171.
- SCHWARTZ, M. S. Developing and sustaining an ethical corporate culture: The core elements. **Business Horizons**, v. 56, n. 1, p. 39-50, 2013. ISSN 0007-6813.
- STORELLI, C. Corporate governance failures is Parmalat Europe's Enron. **Colum. Bus. L. Rev.**, p. 765, 2005. Available at: < https://heinonline.org/HOL/LandingPage?handle=hein.journals/colb2005&div=3 https://heinonline.org/HOL/LandingPage?handle=hein.journals/colb2005&div=3 https://heinonline.org/HOL/LandingPage?handle=hein.journals/colb2005&div=3 https://heinonline.org/HOL/LandingPage?handle=hein.journals/colb2005&div=3 https://heinonline.org/HOL/LandingPage?handle=hein.journals/colb2005&div=3