

Beyond Objective Coverage: Perceived Protection and Moral Hazard: An Integrative Narrative Review

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ABSTRACT

Moral hazard is one of the most fundamental concepts in agency theory and the economics of asymmetric information, yet the literature on it is scattered across research traditions that rarely intersect. Some studies are inductive and contextual, examining the causes and mitigation strategies of moral hazard separately in fields such as banking, deposit insurance, health, agriculture and corporate governance. Others are deductive and measurement-oriented, beginning from classical agency-theory constructs to build quantitative proxies that are comparable across sectors. This article provides an integrated literature review that surveys and synthesizes findings from both traditions, with a specific focus on recent empirical evidence (2024–2026) across five sectors: banking, deposit insurance, health, agriculture and environmental governance. The review distinguishes objective coverage, understood as observable features of a protection or insurance arrangement, from perceived protection, understood as the agent's subjective assessment of the extent to which adverse consequences are likely to be absorbed by another party. These constructs are conceptually related but should not be treated as equivalent. The review finds that although the contextual causes of moral hazard vary by sector, one common theme consistently emerges from the literature: the behavioural effect of a protection mechanism cannot be understood solely from its objective coverage, as governance, payout design, premium structure, external oversight and agent characteristics may influence how protection is translated into behavioural responses. However, the reviewed studies do not directly establish perceived protection as a mediator between objective coverage and moral-hazard behaviour. Instead, perceived protection is identified as a potentially important explanatory construct and research gap requiring direct empirical measurement and appropriate research designs. This article also discusses policy and practical implications, the limitations of existing studies and proposes a future research agenda for empirically examining the role of perceived protection in moral-hazard behaviour.

Keywords: moral hazard; agency theory; literature review; perceived protection; risk governance; asymmetric information

INTRODUCTION

Moral hazard refers to a change in the behaviour of one party (the agent) that is detrimental to another party (the principal) after a contract has been concluded, typically because the agent's actions are difficult to monitor or because the agent does not bear the full cost of their own decisions (Holmström 1979). This concept is rooted in insurance economics (Arrow 1963; Pauly 1968) before being extended into one of the main pillars of modern agency theory (Jensen & Meckling 1976; Holmström 1979) and the economics of asymmetric information more broadly (Rothschild & Stiglitz 1976; Akerlof 1970).

Moral hazard should be distinguished from adverse selection because the two represent different mechanisms arising from information asymmetry. Moral hazard concerns behavioural responses after a protection or insurance arrangement is obtained, whereas adverse selection concerns differences in underlying risk that influence participation or the selection of insurance plans. Evidence from health insurance demonstrates that observed differences in utilization across insurance plans may reflect both mechanisms, making this distinction important when interpreting insurance-related behavioural outcomes (Einav & Finkelstein 2018; Powell & Goldman 2021).

This phenomenon remains highly relevant in contemporary financial and governance policy discourse. For example, proposals to raise the deposit insurance coverage limit for United States financial institutions to as much as US\$10 million for certain accounts have sparked policy debate over the extent to which such an expansion of coverage could weaken market discipline and encourage excessive risk-taking by banking institutions (Oosthuizen & Zalla 2024; Ghosh & Magotra 2025). Likewise, in the health sector, the increasingly widespread availability of medical insurance in many developing countries raises questions about the extent to which such coverage encourages excessive use of health services (Wu & Xu 2026). In the agriculture and environmental sectors, the design of insurance instruments and ESG incentives faces a similar tension between providing protection and maintaining behavioural discipline (Kanchai et al. 2024; Chen et al. 2026; Chaigneau & Sahuguet 2025).

A further conceptual issue concerns the distinction between objective coverage and perceived protection. In this review, objective coverage refers to observable characteristics of a protection arrangement, such as coverage limits, reimbursement rules, deductibles, exclusions, premium structures, payout conditions or other contractual and institutional provisions. Perceived protection refers to the agent's subjective assessment that financial, operational or other adverse consequences are likely to be absorbed wholly or partly by another party. Objective coverage and perceived protection are therefore related but distinct constructs.

This distinction is important because objective coverage alone does not establish moral hazard. In health insurance, for example, observed differences in healthcare utilization may reflect both insurance-induced behavioural responses and differences in the risk characteristics of individuals selecting different levels of coverage (Einav & Finkelstein 2018; Powell & Goldman 2021). Therefore, an association between coverage and behaviour should not automatically be interpreted as evidence that perceived protection is the mechanism connecting the two.

Although the importance of this phenomenon is not in dispute, the existing literature on moral hazard generally falls into two methodological traditions that rarely intersect. The first tradition is inductive and contextual: it examines various empirical fields separately (banking, agriculture, health, corporate) and extracts causes and solutions specific to each context (Mohd Ali et al. 2024). The second tradition is deductive and measurement-oriented: it starts from classical agency-theory constructs (Jensen & Meckling 1976; Holmström 1979) and attempts to build quantitative proxies that are comparable across sectors (Ali & Ali 2025). Both traditions contribute different pieces of the knowledge jigsaw, yet studies that explicitly survey and compare findings across both traditions, particularly using the most recent empirical evidence, remain relatively limited.

The objectives of this review article are therefore threefold: (i) to survey the theoretical foundations of moral hazard from classical agency theory through to contemporary developments; (ii) to synthesize recent empirical evidence (2024–2026) on moral hazard across five major sectors: banking, deposit insurance, health, agriculture and environmental governance; and (iii) to identify the common theme emerging from this literature, particularly the role of perceived protection as a factor linking diverse contextual causes to observable moral-hazard behaviour and to propose directions for future research. Importantly, this review does not empirically test perceived protection as a mediator, moderator or independent predictor. Instead, it examines the extent to which the reviewed literature provides a conceptual basis for treating perceived protection as a construct for future empirical investigation.

This article does not aim to propose a new conceptual model; instead, it focuses on systematically organizing, comparing and synthesizing existing findings so as to serve as a concise reference for researchers, regulators and policy practitioners.

REVIEW METHODOLOGY

This review adopts an integrative narrative review approach, which is appropriate for the purpose of surveying and synthesizing literature from different methodological traditions and across multiple applied sectors, rather than the strict systematic-review approach that is typically confined to a single, narrow research question. The primary sources for this review comprise foundational theoretical studies on moral hazard (such as Arrow 1963; Pauly 1968; Jensen & Meckling 1976; Holmström 1979; Rothschild & Stiglitz 1976) as well as recent empirical studies published between 2024 and 2026 in peer-reviewed journals and institutional publications across five

applied sectors: banking, deposit insurance, health, agriculture and environmental/ESG governance.

The study-selection criteria focused on three aspects: (i) studies that explicitly examine or test the phenomenon of moral hazard or related behaviour (for example, excessive risk-taking, reduced effort, insufficient monitoring); (ii) studies that use empirical data or quasi-experimental analysis, rather than purely conceptual argument; and (iii) studies representing a range of sectors so that cross-context comparison can be made. A thematic approach was used to analyse the findings: studies were first grouped by sector, then re-analysed across sectors to identify recurring patterns and themes. This approach is consistent with recommended methodologies for integrative reviews in fields with multidisciplinary literature spanning multiple applied contexts (Mohd Ali et al. 2024).

The unit of analysis in this review is the published literature rather than individual respondents, firms or institutions. No original survey, experiment, administrative dataset or respondent sample is analysed in this article. The five sectors represent comparative contexts within the literature reviewed rather than a single empirical population. Accordingly, the present review does not estimate causal effects or statistically test a mediation or moderation model.

It should be acknowledged that this narrative approach has limitations relative to a formal systematic review: it does not involve a comprehensive database search following a PRISMA-type protocol and study selection is partly based on judgements of thematic relevance. Nevertheless, for the purpose of surveying common themes across different traditions and sectors, an integrative narrative approach is considered more suitable than a systematic review with a narrower scope.

THEORETICAL FOUNDATIONS OF MORAL HAZARD

A. From Insurance to Agency Theory

The concept of moral hazard originally developed in insurance economics, when Arrow (1963) showed that the existence of health insurance could alter the behaviour of medical-service consumption because the marginal cost borne by the individual is reduced. Pauly (1968) refined this argument by asserting that moral hazard is not immoral or fraudulent behaviour, but rather a rational individual response to a change in the marginal price of risk when part of the cost is shifted to another party through an insurance mechanism. This perspective is important because it positions moral hazard as a phenomenon of incentive structure rather than a personal moral failing, a foundational assumption that remains relevant in contemporary studies.

Rothschild and Stiglitz (1976) extended this discussion to the context of asymmetric information in insurance markets generally, showing how the existence of different risk types that cannot be distinguished by insurers can affect market equilibrium. This work, together with Akerlof (1970) on markets with asymmetric information, laid the broader foundation of information economics that subsequently became the backdrop for the development of agency theory.

B. Distinguishing Moral Hazard from Adverse Selection

Moral hazard and adverse selection represent related but distinct problems arising from information asymmetry. Moral hazard concerns changes in behaviour after the insurance or protection arrangement is in place, whereas adverse selection concerns differences in underlying risk that influence participation or plan choice. In private health insurance, empirical evidence shows that a substantial proportion of differences in medical spending across plans can be attributable to adverse selection, demonstrating why insurance-related utilization should not automatically be interpreted as moral hazard (Powell & Goldman 2021).

This distinction is particularly important for the present review because higher utilization, higher claims or increased risk-taking cannot automatically be classified as moral hazard. Such outcomes may also reflect differences in health status, baseline risk, risk preferences or the characteristics of agents selecting more comprehensive protection. Future empirical research on perceived protection should therefore measure relevant pre-existing characteristics and distinguish behavioural responses to protection from selection into protection arrangements.

C. Classical Agency Theory

Classical agency theory argues that the separation of ownership and control gives rise to monitoring costs, bonding expenditures and residual losses (Jensen & Meckling 1976). Holmström (1979) extended this argument by showing that imperfect signals force incentive contracts to trade off risk-sharing against agent effort, a tension known as the standard moral hazard model. Holmström's formulation remains the foundational reference for almost all contemporary moral-hazard studies because it precisely captures the structure of the problem (imperfect monitoring, risk allocation and incentives) in a way that can be formalized mathematically.

However, as will be shown in Sections IV and V, this structural formulation does not fully explain why institutions or individuals with similar contract structures and coverage exhibit markedly different levels of moral-hazard behaviour, a question that recent empirical literature attempts to answer by emphasizing moderating factors such as governance, policy-design transparency and agent demographic characteristics.

D. Two Contemporary Traditions: Contextual Systematic Reviews versus Cross-Sector Indices

Beyond the classical theoretical foundations above, two contemporary bodies of work merit specific mention because each, in its own way, attempts to address the fragmentation of the moral-hazard literature noted in Section I. Mohd Ali et al. (2024) conducted a systematic review of moral-hazard behaviours and mitigation strategies, organizing findings from various applied fields into a taxonomy of causes and solutions. The strength of this approach lies in its contextual depth (each cause is elaborated according to the specific characteristics of the relevant sector), but its weakness is that this taxonomy does not offer a unifying causal mechanism explaining why apparently unrelated causes produce similarly structured behaviour.

Ali and Ali (2025), by contrast, take the opposite approach: they propose a cross-sector Moral Hazard Index, a quantitative proxy built from classical agency-theory constructs so that numerical comparisons can be made across different institutions or sectors. This approach offers a comparability that contextual reviews lack, but like any composite index, it risks flattening the sectoral diversity of mechanisms revealed by the studies in Section IV into a single score, without explaining the underlying process that generates that score.

This review argues that both traditions are in fact complementary when read together with recent sectoral empirical evidence: the contextual taxonomy of Mohd Ali et al. (2024) identifies what the causes are, the index approach of Ali and Ali (2025) offers a way to measure the outputs, while the perceived-protection theme discussed in Section V offers a candidate explanation for why the two are connected.

SECTORAL REVIEW OF EMPIRICAL EVIDENCE

A. Banking

In the banking sector, moral-hazard issues are often associated with “too big to fail” assumptions and the effect of the financial safety net on institutional risk-taking behaviour. Li et al. (2025) examined the relationship between implicit moral hazard, corporate governance and bank lending behaviour, finding that high regional loan concentration signals moral hazard and that governance characteristics influence this relationship. This finding is important because it shows that protection mechanisms alone do not necessarily produce identical behavioural outcomes across institutions.

B. Deposit Insurance

Deposit insurance is one of the classic examples of a financial protection mechanism that can potentially give rise to moral hazard, because it reduces depositors' incentive to monitor the stability of the institutions where they hold their funds, thereby potentially weakening market discipline. Oosthuizen and Zalla (2024) show, using a structural model of deposit insurance funding, that risk-adjusted premiums can reduce moral hazard while allowing policymakers to increase coverage. Ghosh and Magotra (2025) examined the administrative structure of deposit insurance schemes across 40 economies and found that this institutional structure influences deposit-growth dynamics, suggesting that the design of insurance schemes also matters. Shoukry (2024) demonstrated quasi-experimentally that risk-based premiums can provide incentives for banks to reduce moral-hazard-related

distortions.

C. Health

In the health sector, moral hazard is often studied in the context of medical insurance and excessive use of health services following insurance coverage. Wu and Xu (2026) estimated adverse selection and moral hazard in China's Urban and Rural Resident Basic Medical Insurance scheme using a semi-parametric estimation approach. Their study used 32,822 observations from 31 provinces and explicitly separated adverse selection from moral hazard through a counterfactual framework. This empirical design reinforces the importance of distinguishing selection effects from behavioural responses when evaluating insurance-related utilization.

Einav and Finkelstein (2018) further demonstrate that credible empirical designs, including randomized and quasi-experimental approaches, are important for identifying moral hazard in health insurance. Their review shows that individuals generally consume more healthcare when their out-of-pocket price is lower, while also emphasizing the importance of understanding the empirical design through which such effects are identified.

D. Agriculture

In the agriculture sector, crop insurance is an important instrument for managing climate risk, yet the design of traditional indemnity-based insurance has long been associated with moral-hazard and adverse-selection concerns. Recent work on index insurance emphasizes that using objective weather or climate data rather than self-reported losses can reduce moral-hazard incentives, while also creating basis-risk concerns when index-based payouts do not correspond closely to actual individual losses (Mazviona & Solvsten 2025).

E. Environmental Governance and ESG

In the context of environmental governance, moral-hazard issues also arise in the design of environmental liability insurance and ESG-based executive compensation incentives. Chen et al. (2026) examined the effect of pollution liability insurance in China on firms' ESG performance using a quasi-experimental design, finding that such insurance improved firms' ESG performance when the policy design incorporated strong external oversight. Chaigneau and Sahuguet (2025) modelled executive compensation contracts that incorporate environmental and social performance measures, showing that managers may strategically respond to performance measures and that incentive design therefore requires careful consideration of measurement and gaming effects.

A COMMON THEME ACROSS SECTORS: OBJECTIVE COVERAGE AND PERCEIVED PROTECTION

When the five sectoral literatures are compared, a common analytical distinction becomes important: objective coverage refers to the formal and observable characteristics of the protection mechanism, whereas perceived protection refers to the agent's subjective assessment of how strongly the consequences of adverse outcomes are likely to be absorbed by another party.

Objective coverage may include coverage limits, reimbursement rates, deductibles, exclusions, premium structures, payout conditions, guarantees and other contractual or institutional characteristics. Perceived protection, in contrast, cannot be inferred automatically from these formal characteristics because it concerns the agent's subjective assessment or expectation regarding the extent of protection.

The concept of perceived protection is related to the incentive logic underlying moral hazard described by Pauly (1968), but the present review does not claim that Pauly (1968) directly measured perceived protection as a distinct psychological construct. Rather, the concept is developed here as a synthesis of the behavioural logic implicit in the reviewed literature.

None of the five sectoral studies reviewed in this article directly measures perceived protection using a dedicated and validated measurement instrument. Therefore, the current evidence does not establish perceived protection as an empirically confirmed mediator. Instead, it identifies perceived protection as a potential explanatory construct that warrants direct empirical investigation. The conceptual relationship can be expressed as follows:

Objective Coverage/Protection Arrangement → Perceived Protection → Moral Hazard Related Behaviour

However, this sequence is presented as a research proposition rather than an empirically established causal pathway. Perceived protection may alternatively operate as a moderator or independent predictor depending on the theoretical model and empirical context. The present review therefore does not impose a single statistical role on perceived protection.

If perceived protection is examined as a mediator, the research design must establish a theoretically defensible temporal ordering and address relevant confounding factors. MacKinnon et al. (2012) emphasize the importance of research design and theoretical specification when investigating mediation, while Stuart et al. (2021) highlight the problems that arise when temporal ordering and confounding assumptions are not adequately addressed.

Future studies should therefore distinguish between: (i) objective coverage measured from actual policy or contractual characteristics; (ii) perceived protection measured through a validated instrument; and (iii) observable moral-hazard-related outcomes appropriate to the specific sector. Depending on context, such outcomes may include healthcare utilization, claims frequency, preventive behaviour, risk-taking or other clearly defined behavioural indicators.

Relevant confounding characteristics should also be considered, including age, income, health status, prior claims, baseline risk, financial literacy, risk tolerance and previous insurance experience, depending on the empirical setting.

Longitudinal, panel, quasi-experimental or experimental designs would provide stronger evidence for the proposed mechanism than a single cross-sectional survey because they can provide stronger evidence regarding temporal ordering and behavioural change. This is particularly important if future research seeks to test perceived protection as a mediator.

TABLE I

SUMMARY OF THEMES AND EMPIRICAL EVIDENCE BY SECTOR

Sector	Main Contextual Cause	Objective Protection / Coverage	Moderating Factor Identified	Evidence Status of Perceived Protection
Banking	Implicit guarantees / “too big to fail”	Implicit institutional protection	Institutional governance quality (Li et al. 2025)	Not directly measured
Deposit Insurance	Coverage-limit structure and scheme administration	Coverage limits; premium structure; scheme design	Scheme administrative structure; risk-based premium structure (Oosthuizen & Zalla 2024; Ghosh & Magotra 2025; Shoukry 2024)	Not directly measured
Health	Medical insurance coverage	Insurance generosity and cost-sharing arrangements	Agent characteristics and selection effects (Wu & Xu 2026; Powell & Goldman 2021)	Not directly measured
Agriculture	Insurance payout mechanism design	Index-based versus indemnity-based payout	Objective index versus self-reported loss (Mazviona & Solvsten 2025)	Not directly measured

Environment / ESG	Liability insurance coverage; incentive contract design	Insurance and contractual incentive arrangements	External oversight; incentive measurement and gaming (Chen et al. 2026; Chaigneau & Sahuguet 2025)	Not directly measured
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Note: The table distinguishes objective protection characteristics from perceived protection. Perceived protection is identified as a research construct but is not directly measured in the studies reviewed.

DISCUSSION

This review shows that although the moral-hazard literature is scattered across various sectors and methodological traditions, there is greater explanatory value when these findings are synthesized together rather than read separately by sector. Apparent discrepancies between studies can be understood as differences in institutional design, governance, incentive structures and agent characteristics, rather than as evidence that perceived protection has already been established as the causal mechanism.

Cross-sectoral comparison further reveals that effective moral-hazard mitigation strategies tend to maintain a direct link between the action or risk taken by the agent and the cost they themselves bear, whether through risk-based premiums in deposit insurance (Shoukry 2024), objective index-based payouts in agricultural insurance (Mazviona & Solvsten 2025) or external oversight in ESG incentives (Chen et al. 2026).

However, this review also reveals that existing studies remain relatively focused on the mechanical effect of objective coverage and structural moderating factors on measurable behavioural outcomes, rather than directly examining the underlying subjective perception of protection. This represents a measurement and identification gap rather than evidence that perceived protection has already been established as a mediator.

Future research should determine empirically whether perceived protection functions as a mediator, moderator or independent predictor. These alternatives imply different theoretical mechanisms and therefore require different empirical specifications (MacKinnon et al. 2012).

Another observation arising from the cross-sectoral synthesis is the diversity of the units of analysis used by the surveyed studies: some studies analyse at the institutional level, while others analyse at the individual or firm level. This diversity means that the relevant explanatory and control variables may differ across contexts. Consequently, a future perceived-protection instrument should be developed with consideration of the unit of analysis and sector-specific meaning of protection.

POLICY AND PRACTICAL IMPLICATIONS

For financial regulators, this review suggests that the effectiveness of policy interventions, such as changes to deposit insurance coverage, should be assessed not merely in terms of nominal coverage, but also with regard to incentive structures, premium design and institutional governance (Oosthuizen & Zalla 2024; Ghosh & Magotra 2025).

For designers of agricultural and environmental insurance policy, this literature review supports the consideration of payout mechanisms based on objective benchmarks rather than solely self-reported losses, although basis-risk considerations must also be balanced (Mazviona & Solvsten 2025).

For corporate boards and financial institutions, the findings regarding governance and incentive design support continued attention to monitoring, transparency and appropriate incentive structures (Li et al. 2025; Chaigneau & Sahuguet 2025).

However, policy implications concerning perceived protection should be interpreted cautiously because perceived protection has not yet been directly measured in the reviewed studies. Policy makers should therefore avoid assuming that changes in objective coverage will automatically produce corresponding changes in perceived protection or moral-hazard behaviour. Future policy evaluations should examine whether agents

understand the actual limits and conditions of protection and whether their perceptions correspond with formal protection arrangements.

LIMITATIONS OF THE REVIEW

This review has several limitations that should be taken into account. First, it adopts an integrative narrative review approach rather than a formal systematic review following a protocol such as PRISMA, so that study selection is partly based on judgements of thematic relevance rather than a comprehensive database search; this means there may be other relevant studies that were not included. Second, the focus on recent empirical evidence (2024–2026) means that this review does not comprehensively survey the entire moral-hazard literature over the past several decades, although foundational theoretical references are included for context.

Third, the concept of perceived protection identified as a common theme across sectors has not been directly measured in the principal sectoral studies reviewed. Consequently, conclusions regarding its role as a potential link between objective protection and moral-hazard behaviour remain a conceptual synthesis rather than direct empirical confirmation.

Fourth, the reviewed studies differ in units of analysis, outcome measures, countries, institutional settings and empirical designs. Therefore, the findings should not be interpreted as directly comparable effect estimates across sectors.

Fifth, because the present article is a narrative review rather than an empirical mediation study, it cannot establish temporal ordering or causal mediation between objective coverage, perceived protection and moral-hazard behaviour. Future empirical studies will be required to test these relationships using appropriate research designs (MacKinnon et al. 2012; Stuart et al. 2021).

CONCLUSION

This review article surveys and synthesizes the moral-hazard literature across two methodological traditions, namely inductive-contextual and deductive-measurement-oriented, and across five major applied sectors: banking, deposit insurance, health, agriculture and environmental governance. The main finding of this review is that, although the contextual causes of moral hazard vary by sector, the behavioural effect of protection mechanisms depends not merely on objective coverage but also on institutional design, governance, payout mechanisms, external oversight and agent characteristics.

The review identifies perceived protection as a potentially important subjective construct that may help explain how objective protection arrangements are translated into behavioural responses. However, perceived protection should not be presented as an empirically established “missing link” because the studies reviewed do not directly measure the construct or establish its causal role.

Objective coverage and perceived protection should therefore be treated as conceptually distinct constructs. Similarly, observed behavioural outcomes should not automatically be interpreted as moral hazard without considering adverse selection, baseline risk and other relevant characteristics (Einav & Finkelstein 2018; Powell & Goldman 2021).

This theme is related to the incentive logic underlying moral hazard since Pauly (1968), but the principal contribution of this review is to identify the absence of direct measurement of perceived protection as a research gap and to propose a more precise empirical agenda for future research.

By synthesizing classical agency-theory foundations together with recent cross-sectoral empirical evidence, this review offers an integrated reference to help researchers, regulators and policy practitioners understand moral hazard more coherently. Future studies should develop and validate direct measures of perceived protection and empirically determine whether it operates as a mediator, moderator or independent predictor. Such studies should incorporate objective measures of coverage, clearly operationalized behavioural outcomes, relevant confounders and research designs capable of addressing temporal ordering and causal identification (MacKinnon et al. 2012; Stuart et al. 2021).

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest associated with this publication.

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