Journal of the History of Economic Thought,
Volume 46, Number 3, September 2024

PROBABILITY, PRUDENCE, DANGER: THOMAS AQUINAS ON THE BUILDING OF THE LEXICON OF RISK

BY
PIERRE JANUARD

The Latin terms commonly used to signify "risk" are absent from Thomas Aquinas's economic writings. Instead, Aquinas offers a lexicon of probability, prudence*, and* danger*. This ternary lexicon brings with it a triple universalization of risk: first, a universalization through* activity*, including the activity of analysis considered as part of economic activity; second, a universalization through the* agents*, since everyone—the observer, the co-contractors, the prince, and the population—is affected by the risk; and, third, a partial universalization of its* definition*, since the lexicon indicates a risk that is not yet restricted by calculation, as the modern notion is, although some distinctions are already made by Aquinas. However, the lexicon describes only a risk of loss and does not take into account chance of gain.*

I. INTRODUCTION

In terms of their scope, contribution, and influence on posterity, those of Thomas Aquinas's works that carry an economic significance count among the most important of his time.[1] Although the questions on commercial fraud and usury in the *Summa*

Pierre Januard: PHARE, Université Paris 1 Panthéon-Sorbonne, Maison des Sciences Économiques, Paris, France. The author would like to warmly thank André Lapidus, Nathalie Sigot, Nadeera Rajapakse, the members of PHARE research team, and the two anonymous referees for their helpful remarks and suggestions on a previous version of this paper. E-mail: pierre.januard@univ-paris1.fr

[1] Without further clarification, the references are to Aquinas's texts. References to medieval texts are given in their specific traditional format. Some titles are abbreviated: the *Summa theologiae* is noted "*S. T.*"; the *Commentary on the Sentences* is noted "*In Sent.*"; *Quodlibetal Questions* are noted "*Quodl.*" The *Commentary on the Sentences* is articulated in books (given in Roman numerals), distinctions (d.), questions (q.), and articles (a.). Articles usually contain objections (obj.), a *sed contra*—on the contrary—(s. c.), giving the key of the article, the *respondeo* (resp.), which is the main part of the article, and giving the author's thesis, and the responses to each objection (ad). The *Summa theologiae*, *De malo*, and *Quodlibetal Questions* do not contain distinctions. The *Summa theologiae* is organized in four parts: the first part (Ia), the first half of the second part (Ia IIae), the second half of the second part (IIa IIae)—where economic issues are found—and the third part

ISSN 1053-8372 print; ISSN 1469-9656 online/24/03000421-442
doi:10.1017/S1053837223000238

theologiae are the best known, economic issues such as usury, the activity of merchants, exchange, the just price, and money are addressed in early works, such as the *Commentary on the Sentences* (1254–1256), *De emptione et venditione ad tempus* (1262), or *De regno* (c. 1265); and then in the mature works (1268 to 1273), such as the *Letter to the Duchess of Brabant* (*Ad Brabantiam*), *Quodlibetal Questions*, *Disputed Questions De malo,* or the commentaries on Aristotle's *Politics (Politicorum)*, and *Nicomachean Ethics (Ethicorum).*[2] However, no text was specifically dedicated to the question of risk, that question with which the contemporary economist is chiefly occupied. The literature, mainly dedicated to usury and just price,[3] deals with risk only incidentally. Moreover, its lexical field has only a tenuous presence in Aquinas's economic writings. The terms usually associated with the notion of risk are not to be found.[4] One might thus believe that Aquinas was describing a risk-free universe.

On the contrary, however, a reading of Aquinas's often ignored early works, and noting their resonances with the *Summa theologiae*, allows us to highlight the presence of the vocabulary of risk under three related lexical fields: *probability*, *prudence,* and *danger.* The presence of this ternary lexicon not only testifies to the fact that the medieval economy was indeed risky, but also that Aquinas gave an account of this risk, not by writing a synthetic definition of it but rather by adopting an approach that is both broad and precise, and expressed through a plurality of lexical fields. The texts in which these three lexical fields appear manifest a coherence that is ensured by justice, which is in turn expressed by the licitness of the action taken to manage a situation of probability, with prudence, in the treatment of a danger.

Admittedly, the lexicon of *probability*, *prudence,* and *danger* appears only on rare occasions and mostly in the early economic writings. However, the lexicon is structural, and its significance extends beyond its explicit uses. The presentation of situations involving risk is not limited to the explicit expression of risk through a specific vocabulary. The expression of risk is sometimes more rhetorical and narrative than

(IIIa). *De regno*, *Ethicorum*, and *Politicorum* contain parts and chapters. Small letters like *De emptione* and *Ad Brabantiam* contain only chapters.

[2] Aquinas is mainly concerned with activities that he unifies in the *Summa theologiae* under the heading of "voluntary exchanges" (*S. T.*, IIa IIae, q. 77, prol.): exchange and loan (Januard 2022d). He thus deals with usury (*In III Sent.*, d. 37, a. 6; *De emptione*; *Ad Brabantiam*; *De malo*, q. 13, a. 4; *III Quodl.*, q. 7, a. 2; *S. T.*, IIa IIae, q. 78), the activity of the merchant, exchange, and just price (*In IV Sent.,* d. 16, q. 4, a. 2, qc. 3; *De regno*, II, 7 [II, 3]; *II Quodl.*, q. 5, a. 2; *Ethicorum*, V, 9; *S. T.*, IIa IIae, q. 77). The monetary issue is also addressed through usury or, briefly, in itself (*Politicorum*, I, 7–8).

[3] It is therefore worth mentioning O'Brien ([1920] 2001); Tawney ([1926] 1948); Dempsey (1935); McLaughlin (1939; 1940); De Roover (1953; 1958; 1971); Schumpeter ([1954] 2006); Noonan (1957); Baldwin (1959); Hollander (1965); Mélitz (1971); Worland (1977); Lapidus (1986; 1987; 1991; 1992; 1994; 2021); Langholm (1984; 1992; 1998; 2003); Hamouda and Price (1997); Gomez Camacho (1998); Friedman (1980); Munro (2003); Sivéry (2004); De-Juan and Monsalve (2006); Franks (2009); Rajapakse (2010); Koehn and Wilbratte (2012); Ege (2014); Monsalve (2014a; 2014b); Chaplygina and Lapidus (2016; 2022); Dellemotte (2017); Sturn (2017); Hirschfeld (2018); Santori (2019; 2020; 2021); Koehler (2020); Januard (2021; 2022a; 2022b; 2022c).

[4] The nouns *alea* (chance, luck) and *fortuna* (luck, fortune), and the verbs *angustio* (to trouble, worry) or *inquieto* (to worry) and their derived forms are absent in these works. The appearance of certain terms could be misleading. This is the case with *dubium* (doubt), which is present only in the negative form "*non est dubium"* (there is no doubt) to underline the absence of doubt that the situation described is usurious (*De emptione*, I, II, and III).

lexical. This is the case, for example, for the risk of usury or the unfairness of the forward price in the *De emptione* (Januard 2022a) or of the licitness of the activity of merchants in the *Commentary on the Sentences* (Januard 2022b). However, the ternary lexicon of probability, prudence and danger, which characterizes the Thomasian work, provides an explicit framework for the definition and analysis of risk that allows us to address all situations where risk is present, even if implicitly.

Moreover, Aquinas's use of the lexicons of probability, prudence, and danger not only indicates that he takes risk into consideration but also manifests a *universalization* of this risk through *activities*, *agents,* and *definition.* Indeed, if we today consider that risk, in its current meaning, corresponds to a random variable, i.e., a function going from states of the world to a set of consequences, we see, on the one hand, that whereas the formalization of this function and the calculation of probabilities remain absent from Aquinas's work, the situations that would be described today in terms of a random variable do exist. On the other hand, we note that Aquinas's use of the lexicon of probability, prudence, and danger shows the existence of a risk for all economic *activities* (namely analysis, sales, and loans), for all *agents* (namely the seller, the buyer, the lender, the borrower, the prince, and the population), and that it universalizes the *definition* of risk, whereas later developments in the calculation of probabilities will make restrictive distinctions. In fact, Aquinas was situated upstream of the calculus of probabilities and the conception of probability as a "degree of certainty" set down by Jacob Bernoulli in 1713 in chapter IV of the *Ars conjectandi* precisely in order to address the need to measure risk within economic activity. He was not yet bound by either the analytical framework specified by Andrej Kolmogorov's axiomatization (1933) or by the distinction between risk and uncertainty (Knight 1921; Savage 1954). Aquinas thus focused on the basics of risk. There is risk where there is a set of possible consequences, since, following Aristotle's *Posterior Analytics*, probability is not, as for Bernoulli, a degree of certainty. On the contrary, it is distinguished from certainty: the possible or the probable is not certain, each belonging to different orders of knowledge. This universalization of the definition of risk must be qualified, however, because the Thomasian lexicon refers only to the risk of loss, without dealing with the risk of gain. Gain is presumed to be known and limited: we note, on the one hand, that the lexicon of risk is almost never used positively and, on the other hand, that licit gain must be moderate (*lucrum moderatum*) and that prices are framed by the *duplus* rule derived from the principles of Roman law (*S. T.*, IIa IIae, q. 77, a. 1, ad 1, and a. 4, resp.; Januard 2022b, pp. 75–84). One could view the limitation of gains and the framing of the price as an opportunity of gain for the co-contractor, but Aquinas always presents this limitation on the side of the agent who finds himself limited, thus as reducing the chance of gain. The challenge for Aquinas was to guard against the risk of loss in a manner consistent with the virtue of justice.

The lexicon of *probability* is introduced by the expression "*satis probabilis"* (rather/enough probable) (*In III Sent.*, d. 37, a. 6) in the *Commentary on the Sentences*, Aquinas's first text of economic significance. In this great early work he evaluated the arguments of the authorities against usury and pronounced on the traditional view of lending as a *mutuum*, a transfer of property (Januard 2021). A set of elements relating to *In III Sent.*, d. 37, a. 6, to Aquinas's use of the term *probabilis*, and to the notion of probability before the advent of the calculus of probabilities five centuries later, leads us to consider here the expression of a doubt. There is a risk about the correctness of the understanding of the operation, which is probable and not certain. The lack of certainty concerning the justification of the prohibition of usury entails risks for the moral and legal reputation of the lender, and has repercussions on all related activities and their agents: borrowers, buyers, and sellers forward (*De emptione*), as well as the prince and the population, according to the use that can be made of the taxes levied on usurious gains (*Ad Brabantiam*). In addition, Aquinas introduced the notion of the *aestimatio,* which is understood as an approximation that is made when agents try to find the just price on the market (*De emptione*, I; *S. T.*, IIa IIae, q. 77, a. 1, ad 1). Thus, there is not only a qualitative risk of analysis but also a quantitative risk of calculation. The innovative character of Aquinas's approach can be highlighted here, as he mentions, in these early writings, the risk of error in the analysis and in the calculation, which would in a sense correspond today to the risk of error on the part of the economist, who may misunderstand economic mechanisms or miscalculate. Economic activity is a world of people making decisions, acting upon them, and sometimes making mistakes: the moralist or the economist can be wrong when analyzing operations and agents. Although they are honest and want to exchange at the just price, they can make mistakes. To get around the impossibility of knowing the agent's intention, which remains hidden, Aquinas develops an objective analysis of the transaction and its justice by focusing on the visible conditions of the exchange, such as the price, rather than on the subjective intention of the agents. However, the human dimension of economic activity, complete with its risk of error, remains. This human aspect leads to another manifestation of probability. One must add the notion of fraud (*fraus* and *fraudulentia*), not so much in the secrecy of its intentionality as for its objective consequences. Commercial fraud does not constitute an archetypal expression of risk, but it is a probability risk. Indeed, there is a possibility that the co-contractor could behave in a manner contrary to justice and that this could result in damage to the agent (Januard 2022b, pp. 69–70). Fraud is first mentioned in the *Commentary on the Sentences* in relation to professional commercial activity (*In IV Sent.*, d. 16, q. 4, a. 2, qc. 3), before being discussed in a more general way in the *Summa theologiae* in relation to any exchange activity and to any buyer or seller (*S. T.*, IIa IIae, q. 77).

The lexicon of *prudence* appears in the *De emptione et venditione ad tempus*, a short early letter in which Aquinas was dealing with forward selling (O'Rahilly 1928; Dondaine 1979; Januard 2022a; 2022c). Aquinas distinguished between expenses that the merchant may licitly include in the price and those that he may not. These illicit expenses are incurred when a merchant borrows to develop his business and, more generally, they refer to the expenses of the merchant made imprudently, namely "without precaution" and "unwisely" (*De emptione*, III). Aquinas thus differentiated between two stages within the exercise of prudence: an absence of negligence and, then, good management. Although Thomasian prudence is a virtue, it can be compared with the contemporary understanding of imprudence as an increase in the risk of loss (Kimball 1990). Thomasian imprudence affects both trade and lending, since it is manifested in purchases made with a view to sale, although the ultimate imprudent expenditure is the taking out of a loan.

The lexicon of *danger* (Januard 2022b) first appears through the term *discrimen*, which can mean "critical point of danger," as employed in the more economic part of *De regno*, his political treatise that lies between his early and later works. Aquinas uses the term in the phrase "various dangers of the ways" (*diversa viarum discrimina*), in the context of a consideration of the transport risks incurred by merchants (*De regno*, II, 7 [II, 3]). The economic questions of the *Summa theologiae*, for their part, mention danger four times in the form of the term *periculum* (danger). The first is the risk of transport, which can justify an increase in price (*S. T.*, IIa IIae, q. 77, a. 4, ad 2), thus affecting seller and buyer. Then there is the risk incurred by the buyer of a dangerous good (*S. T.*, IIa IIae, q. 77, a. 3, resp. and ad 3) and the resulting constraints on the seller. The notion of danger is essential to the Thomasian understanding of economic activity since it serves to distinguish between the loan as *mutuum*, which is a transfer of property where the lender does not incur any risk and therefore cannot claim any gain, and the model of *societas*, which is more akin to an acquisition of a shareholding (*S. T.*, IIa IIae, q. 78, a. 2, ad 5). Moreover, *De malo* put the treatment of danger into perspective by placing it in the moral framework of the exercise of the virtues, since one cannot sin or incite to sin in order to avoid a danger, but a poor person can borrow out of necessity by taking advantage of the malice of one who is already a usurer (*De malo*, q. 13, a. 4, ad 19).

To show how the use of the lexicons of probability, prudence, and danger manifest a universalization of risk to all activities and economic agents and, in a partial way, to the definition of risk itself, I elaborate on Aquinas's use of each term. I first emphasize the importance of probability for the understanding of analytical risk and for the understanding of usury-related activities, which could be money lending but also forward selling and the use of the tax levied on usury gains. Probability also finds an operational expression through the notion of fraud (section II). I then highlight the introduction of the notion of prudence through his discussion of the imprudence of merchants. This treatment of imprudence manifests the sophistication and the comprehensive nature of the Thomasian notion of risk, since it is situated at two stages of behavior, consonant with the contemporary conception of imprudence as an increase in the risk of loss, and affecting both trade and lending through the imprudent behavior of the merchant who borrows (section III). I show how the lexicon of danger allows us not only to describe the transport risk incurred by the merchant or the life-threatening risk of the buyer when he buys a dangerous good but above all to propose a distinction, admittedly still relatively brief and allusive, between lending and equity investment. The notion of risk, translated here by the assumption of danger, thus proves to be structural for Aquinas's typologization of the different economic activities (section IV). The lexical analysis of risk can thus be cross-referenced with the activities, agents, and definition of risk, to highlight how this lexicon manifests the universalization of risk.

II. THE PROBABLE IS NOT CERTAIN

The first lexical field of risk is that of probability, which first affects the analysis of the interest loan. The possibility of the moralist misunderstanding this operation entails the moral and legal risk for the lender of being considered a usurer, i.e., the author of an illicit operation. This risk is extended to all agents in Aquinas's works, notably through the forward sale, where both buyers and sellers may find themselves in a situation of usury. Second, probability intervenes in the quantitative determination of the justice of the exchange, through the lexicon of estimation, which indicates that it is possible that the exchange will be unjust. Last, probability marks the behavior of the agents through the lexicon of fraud, thus making the co-contractor incur a risk of damage.

The lexicon of probability explicitly appears in the expression "*satis probabilis*" (rather probable), occurring in Aquinas's first economic text, the article on usury in the *Commentary on the Sentences* (in *In III Sent.*, d. 37, a. 6, resp.), to characterize the validity of the authorities' position, namely the *mutuum* approach to lending derived from Roman law. The term *probable* is to be understood here in the sense in which it was used before the advent of the calculus of probabilities. Jacob Bernoulli defined probability in 1713 in his *Ars conjectandi* as a "degree of certainty" (*gradus certitudinis*) (IV, 1, p. 211; and IV, 4, p. 225), and this is the meaning it subsequently took on in economic matters (Bréban and Lapidus 2019, p. 158). For Aquinas, and more broadly for Middle Ages thinkers, on the contrary, the probable was opposed to the certain. Knowledge was either apodictic (universal and absolute truth) by way of demonstration, or persuasive, through a set of opinions and arguments (Daston 1988, pp. 37–38). This resulted from a distinction in nature between the certain and the probable (Byrne 1968; Daston 1988; Hacking 2006), a distinction in which the notion of faith, *fides*—developed by Aquinas (*S. T.*, IIa IIae, q. 2, a. 1, resp.) to describe a form of assent to an existent "something" but which is non-evident and whose knowledge therefore belongs to the probable—is inserted (Wirth 1983, pp. 21–22). Aquinas presented the two distinct ways of reasoning, apodictic and persuasive, at the beginning of his commentary on Aristotle's *Posterior Analytics* (*In Post.*, I, 1, l. 65–74). He thus took up the distinction made by Aristotle, for whom the plausible or probable characterizes "not what is always, but what is often" (Aristotle, *Rhetoric*, II, 1402b20–21; see also I, 1357a24–35). Thus, even if probable knowledge were always true in practice, it could never be considered certain because it would be argumentative and not demonstrative. There is therefore no quantitative bridge between two qualitatively different kinds of knowledge. This quantitative irreducibility of a qualitative distinction has a wide resonance in Aquinas's economic thought. Qualitative criteria (such as the existence of a licit contract or the observance of holidays) and quantitative criteria (a fair, non-fraudulent price) of the justice of exchange appear as non-substitutable. Indeed, a modulation of the price cannot compensate for the non-respect of the other criteria (*In IV Sent.*, d. 16, q. 4, a. 2, qc. 3).

Aquinas did not introduce a quantification of risk, but he determined the situations that were to be judged risky by appeal to its lexicon. Risk corresponds to what would be defined today as a random variable, i.e., a function, going from states of the world to a set of consequences. Without being the object of a calculation, the probable situations described by Aquinas do indeed present such a random variable. Moreover, the expression "*probabilis*" came to designate the existence of a risk in its broadest sense, upstream of the two subsequent ways of specification. On the one hand, the Thomasian risk was not enclosed in Bernoulli's probability calculus (1713), or later in its axiomatization by Kolmogorov (1933). Aquinas's approach was more fundamental, in the sense of addressing the notional foundation of risk, because it was an approach based on designation, not calculation. On the other hand, the Thomasian definition of risk was more universal because it was not subject to the later distinctions between risk and uncertainty (Knight 1921) or the distinction of subjective probabilities within uncertainty (Savage 1954). Aquinas's approach was objective, aiming to name a situation, whereas contemporary distinctions result from a subjective approach focusing on the observer's ability to account for it. In this respect, the lexical introduction of probability in Aquinas's first economic text is universal because it is not subject to the restrictions imposed by its calculation.

Since the probable and the certain belonged to two different orders of knowledge, there remained a risk that the argument advanced by the authorities to condemn usury was erroneous. The existence of this risk of understanding the activity is supported by a number of elements, and even suggests that it is an expression of Aquinas's doubt in *In III Sent.*, d. 37, a. 6, resp. about the validity of the argument of his predecessors: thus we may remark on the addition of *satis* (enough, rather, almost), whose connotation is ambivalent since the adverb can evoke both sufficiency (Quicherat 1893, p. 999), particularly as a prefix (Gardin-Dumesnil 1788, p. 560), and incompleteness (Blaise 1954, p. 740; 1975, p. 820; Ernout and Meillet 2001, p. 596); the anonymous and general designation of the authors of the argument by the broad formulas "all say in a general way," "others give another reason"; and the juxtaposition of three arguments against usury, whereas for Aquinas a decisive argument usually dispensed with the need to give others.

The first explicit risk, introduced by the lexicon of probability, is therefore a risk of analysis and understanding of economic activity. It is not a question of calculating this risk through numerical probabilities but of naming it, i.e., of noting the existence of what we can now consider a random variable, irrespective of the knowledge that allows its formalization and calculation. This risk affects lending at interest and its stakeholders, since a misunderstanding of this activity would affect the analyst's reputation (here, the moralist) were it detected and, were it not, would affect the moral and legal reputation of the lender, and cause lender and borrower financial damage by depriving them of a transaction that could benefit them. The risk is presented here negatively: it is a risk of misunderstanding, which entails a risk of damage for the agents. From its initial lexical introduction through probability, risk is a risk of loss and not a chance of gain.

The consequences of a risk of analysis arising from the probability, and not the certainty, of the argument against usury extended beyond the lender and the borrower. First, the *Letter to the Duchess of Brabant*, written in 1271 for Margaret of Constantinople (1202–1280), Countess of Flanders and Hainaut, who wondered what to do with usurers, shows that the understanding of loans concerned the whole of society by involving a risk of a change in the pattern of social redistribution. Usury being a sin, the prince is not able to keep the taxes, fines, or donations that come from usury, since these sums are seen as coming from illegally earned income. Aquinas wrote that these goods must be returned to the people from whom they had been extorted, be put to pious use, or be used for the common utility of the land or to meet any necessity or utility (*Ad Brabantiam*, I). A risk of error in the understanding of usury, and thus in its moral characterization, entailed, on the one hand, a risk of the morality of the prince, who may fall into a usurious situation, and, on the other hand, a risk of financial damage for the prince (who would be unjustly deprived of the resources of the tax, in case of unjustified redistribution), for the people who have suffered from extortion (if they are not identified and reimbursed), or for the whole society (since redistribution was not certain). It should be added that the consequence of this lack of certainty is itself not certain, since the articulation between restitution and redistribution (Shatzmiller [1990] 2000, p. 88; Dejoux 2014, p. 863) varies depending on the authors. Whereas Gregory IX (1234) took a position that foreshadowed that of Aquinas—a requirement to give the extorted funds back to the aggrieved persons or their heirs or to give to the poor (*Decretales*, l. 5,

t. 19, c. 5)—Robert of Courçon, at the beginning of the thirteenth century, did not deal with the hypothesis of social and charitable redistribution (*De usura*, p. 22), and around twenty years later William of Auxerre stressed that the prince cannot show mercy with this amount that comes from iniquity, and can only give it back to its proper owner (*Summa aurea*, III, XLVIII, c. 1, q. 1, l. 154–159).

First, the risk of analysis with its political and social consequences that is raised explicitly by the use of *probabilis* in relation to usury can also be applied implicitly, by a rhetorical and non-lexical expression, to the activity of merchants. In the *Commentary on the Sentences*, Aquinas relied, in his *sed contra*, on the sinful nature of the activity as raised by Gregory VII (Gregory VII, *Concilium Romanum*, V, col. 801, B-C) after most of the Fathers of the Church (O'Brien [1920] 2001, pp. 79–80; Koehler 2020, p. 362), and taken up by Gratian around 1140 (*Decretum*, II, causa 33, q. 3 De poenitentia, d. 5, c. 6) and then by Peter Lombard around 1150 (*IV Sent.*, d. 16, c. 3). However, in his *respondeo* (*In IV Sent.*, d. 16, q. 4, a. 2, qc. 3, resp.) he relaxed the position to the point of implicitly contradicting Gregory, as Albert the Great had done (*In IV Sent.*, d. 16, a. 46, resp. ad q. 1). The social consequence of the risk of analyzing the activity of merchants was a risk of supply (*In IV Sent.*, d. 16, q. 4, a. 2, qc. 3, obj. 1; *De regno*, II, 7 [II, 3]; see Baldwin 1959, pp. 64–65; Dupuy 1992, pp. 38–41), although in his commentary on *Nicomachean Ethics,* Aquinas did not mention this as a consequence of the cessation of the activity of merchants (*Ethicorum*, V, 9), unlike Aristotle (*Nicomachean Ethics*, V, 8, 1132b31–1133a19) and especially Albert (*Ethicorum*, V, II, 9), who had strongly insisted on that point (Hamouda and Price 1997, p. 195).

Second, the risk of analytical error that appears with the use of "*satis probabilis*" does not only concern the grounds for prohibiting usury but also what usury is. Aquinas did not focus on the social evils of usury, as did the Church Fathers (enslavement of the poor), but rather on the nature of lending at interest. This ontological uncertainty was reflected in the related transactions and their agents. Thus, in *De emptione*, Aquinas responded to the request of his Dominican fellow friar James of Viterbo to determine the situations of usury that may arise among merchants through forward selling. He began by eliminating the case of intentional usurious fraud (*De emptione*, I) in order to distinguish situations in which usury can occur while prescinding from any questions regarding its intentionality or its consequences. This shows that the usurious character of transactions must be qualified according to one's understanding of usury, which is probable but not certain. Moreover, in *De emptione*, it was the usurious situation that established the link between value and just price: selling one's goods for more than the just price because of expectation (*propter expectationem*) is usurious (*De emptione*, I), and there was usury when one sold cloths for more than they were worth (*plus quam valeant*) (*De emptione*, II). Of course, here it was not usury but rather the adequacy between price and value that determined the just price. The determination of the just price in *De emptione* was therefore not affected by the lack of certainty about usury in *In III Sent.*, d 37, a. 6. However, if charging a surplus due to time were to become licit, this would force a revision of the view that the commodity is sold for more than the just price. The content, and thus the very definition of the just price, would therefore be changed.

Moreover, probability affects trade and lending, albeit implicitly, since the related situations are marked by possible or probable consequences and not certain ones. This is the case of the evolution of the market (*S. T.*, IIa IIae, q. 77, a. 3, ad 4). This is also the case of damage in money loans, which may occur or not, and of the understanding of the licitness of their compensation through extrinsic titles:[5] the possibility of a delay in repayment, and of a compensation, called *poena conventionalis,* that Aquinas sees as licit (*De malo*, q. 13, a. 4, ad 14); the possibility of the emergence of damage for the lender because of the deprivation of the sum lent, and its compensation (*damnum emergens*), judged licit by Aquinas, and in the same place in the *Summa theologiae* the possibility of a loss of profit for the lender, who could have used the sum more profitably, and the possibility of licitly receiving compensation (*lucrum cessans*), which Aquinas refuses (*S. T.*, IIa IIae, q. 78, a. 2, ad 1). The medieval debates on extrinsic titles show that the risk of error of analysis for the moralist exists, and constitutes a risk of damage (non-compensation for delay, loss, or loss of profit) for the lender. This risk could be considered positive (a new chance of gain) if the starting point were a situation in which extrinsic titles were prohibited and the evolution of the debates led to a new possibility, albeit not certain, that compensation could appear in a legal manner. It is especially the case for *lucrum cessans,* which consists in compensating a risk of lesser gain with a certain gain and is mainly practiced by merchants. This hypothesis may be qualified in two ways: on the one hand, extrinsic titles have existed since Roman law. The Thomasian era provides an expansion of the doctrine for *poena conventionalis* and *damnum emergens*, but *lucrum cessans* is still forbidden by Aquinas. It would therefore be excessive to consider that the risk entailed by the analytical debate on the nature and legality of these titles would be an opportunity to gain by opening up a new possibility. On the other hand, the chance of gain would in fact only be a chance of compensation for a lesser gain, a kind of minimization of the risk of loss, not really a chance of a new net gain.

What is more, the notion of probability leads us to consider whether the lexical universalization of risk to all agents can be shown from a single example: usury, whose understanding was qualified as probable but not certain in *In III Sent.*, d. 37, a. 6, and which damages the analyst's reputation, can in turn affect all agents in the course of a forward sale transaction: the seller-lender, if he increases the price because of time, but also the buyer-borrower, if she demands a reduction in the just price for early payment (*De emptione*). Through forward selling, the moral and legal risk relating to having a usurious reputation that weighed on the lender as a result of the probable and uncertain understanding of a monetary loan is extended to all agents.

Probability then introduces risk at a second level. It is not only a question of determining the justice of a transaction according to its qualitative understanding but also of achieving a quantitatively just transaction. A lexicon related to that of probability was used by Aquinas to deal with both usury and the just price: the lexicon of estimation understood as an approximation. In the case of forward sales, there was usury on the part of the buyer when, by paying earlier, he "buys cloths cheaper than the just estimate" (*justa aestimatione*) (*De emptione*, I). This estimate is an approximation that involves imprecision (De Roover 1958, p. 624; Sturn 2017, p. 660; Koehler 2020, p. 359), since Aquinas stated in the *Summa theologiae* that the just price was not determined with precision (*non est*

[5] On the compensatory dimension of extrinsic titles that would minimize a risk, see McLaughlin (1939, pp. 125–147); du Passage (1946, col. 2361, 2364); Noonan (1957, pp. 105–132); Mélitz (1971, pp. 475, 484–485); Lapidus (1987, pp. 1103–1108; 1991; 1992, pp. 47–49; 2021); Wyffels (1991, p. 853); Langholm (1998, pp. 74–76); Munro (2003, pp. 511–512); Franks (2009, pp. 70–83); Rajapakse (2010, pp. 212–219); Todeschini (2012, p. 128); Burke (2014, pp. 111–113); Ege (2014, p. 403); Monsalve (2014b, pp. 231–232); Chaplygina and Lapidus (2016, pp. 35–37; 2022); Januard (2021, pp. 607, 628–629).

punctualiter determinatum) but by an estimate (*in quadam aestimatione*) that justified "a slight increase or decrease" (*modica additivo vel minutio*) in the price, which did not seem to affect the equality of justice, but which may give rise to compensation if the damage was significant (*S. T.*, IIa IIae, q. 77, a. 1, ad 1). The error in estimation can come from a qualitative misunderstanding of what the just price can incorporate, like in the lists of the merchant expenses that are licitly recoverable in the price and the illicit ones that Aquinas discussed in *De emptione*, III, but also from a quantitative misjudgment (miscalculation) of the just price. Thus, alongside the risk of understanding, translated as "*probabilis"* (and also partly as "*aestimatio"*), there is a risk of calculation, translated as "*aestimatio.*" This calculation risk, like the risk of misunderstanding, is a risk of damage and not of gain, since the reference situation is compliance with the just price and the estimate reflects a risk of deviation from this ideal situation.

Probability intervenes at a third level, which relates to the behavior of agents. One must also include in the lexical field of probability the terms expressing fraud. Although they do not express probability, they still designate an eminent situation where this probability is expressed and of which it is constitutive, fraud being uncertain. Fraud undergoes two changes from the *Commentary on the Sentences* to the *Summa theologiae.* On the one hand, whereas it appeared to deal with the activity of professional merchants in *In IV Sent.*, d. 16, q. 4, a. 2, qc. 3, it is extended to all types of commercial exchange and to all agents, here buyers and sellers, in *S. T.*, IIa IIae, q. 77. On the other hand, there is a lexical evolution since, in addition to *fraus*, Aquinas uses *fraudulentia* in q. 77, which reinforces the structural dimension of fraud by insisting on habit or recidivism and the proximity with theft (for the lexical analysis, see *S. T.*, IIa IIae, q. 56, a. 2, ad 3; and Gardin-Dumesnil 1788, p. 301; Barrault and Grégoire 1853, p. 634; Bréal and Bailly 1918, p. 105; Blaise 1954, p. 364; Blaise 1975, p. 401; Ernout and Meillet 2001, p. 252, Januard 2022d, pp. 597–598). Fraud thus becomes an important expression of a probability within economic activity. Moreover, the evolution of the lexicon and the situations of fraud participate in the progressive lexical universalization of risk in Thomasian work. Fraud is a universal risk of damage resulting from the probable malice or deception of the co-contractor.

Thus, a study of the vocabulary of probability shows that Aquinas laid down the epistemological foundations of the analyst's judgment, a judgment that is both qualitative (understanding of the nature of the transaction and of the exchange ratio) and quantitative (estimation of the fair level of the exchange ratio), whether the analyst is a medieval moralist or a contemporary economist. The first risk to be named, the risk of analytical error, is also the most important, since it directly or indirectly affects all economic activity and its agents. Probability also structures the course of the transaction through the notion of fraud, which entails a risk for the agents due to the behavior of their co-contractor. In these various aspects, probability describes a risk of deviation from the situation of justice, and thus a risk of damage for the agents.

III. A TWO-TIERED IMPRUDENCE

The second lexical field Aquinas uses to designate risk is that of prudence. Risk is more precisely expressed negatively, in terms of imprudence, where deviation from the prudent course is prejudicial. In *De emptione*, III, Aquinas denounces merchants who make expenditures (*expensas*) through imprudence, i.e., "*incaute*" (without precaution) and "*imprudenter*" (unwisely). These expenditures can be linked to risks, since they give rise to a plurality of possible consequences depending on the conditions in terms of price and quantity that prevail at the time of sale.

Thomasian prudence is a virtue, a good *habitus* (*In III Sent.*, d. 33, q. 2; *S. T.*, IIa IIae, q. 47 to 56; see Daubercies 1990).[6] It therefore cannot at first sight be equated with an economic perspective that insists on the process and results of a calculation (Yuengert 2012, pp. 57, 74–75; Hirschfeld 2018, p. 179). However, imprudence as here described by Aquinas consists of an increase in the risk of loss, which can be visualized by a leftward spread of the curve representing the probability density function (negative skewness), thus joining the contemporary notion of prudence in the sense of Miles S. Kimball (1990).

Although the redundancy does take on a rhetorical aspect, the two adverbs, while having a fairly close common usage, designate different stages of this imprudence. On the one hand, *incaute* is the privative adverb derived from *cautio*, precaution, the action of taking care. It is opposed as an antonym to *caute* and more broadly to derivatives of *cauco*, to be on guard, to watch over, as well as to the adverb *secure*, which derives from *cura*, care, whose antonym is *incuria*, negligence. *Secure* means secure, which also means without worrying, quietly, but specifically in situations where such thoughtlessness is justified (Gardin-Dumesnil 1788, p. 544; Quicherat 1893, p. 528; Blaise 1954, p. 421; 1975, p. 465; Ernout and Meillet 2001, pp. 107, 159). *Incaute* thus refers here to an expense incurred through lack of attention. On the other hand, *imprudenter* is the privative adverb derived from *prudentia*, foresight, skill, wisdom. It therefore means "by ignorance, who does not know, without reflection, without knowing the future, without being able to foresee" (Gardin-Dumesnil 1788, p. 544; Quicherat 1893, p. 524; Ernout and Meillet 2001, p. 541). Here, it refers to an ill-advised expenditure, resulting from a bad forecast. Merchants thus incurred a risk either through negligence or mismanagement, and, for Aquinas, they were not entitled to pass this on in the price and so make the customer bear it.

In *De emptione*, III, Aquinas applies the notion of prudence to both lending and trading, since the archetypal illicit expenditure is borrowing, but this prohibition on passing on the expenditure in the price was extended to all imprudent expenditure. The phrase "in a similar [*simili*] manner" may lead to the text being read either as a juxtaposition of two types of illicit expenditure (borrowing and imprudent expenditure) or as a generalization of illicit expenditure to all forms of imprudence. This latter hypothesis seems better, because the description of the merchant's borrowing implicitly underlines his imprudence. Thus, imprudence can be seen as affecting trade—since the merchant buys imprudently—but also lending—since he borrows imprudently.

[6] Prudence and justice, as cardinal virtues, are related; see Baldwin (1959, p. 59); Bartell (1962, p. 338); Langholm (2003, p. 86); Hirschfeld (2018, p. 106); Rajapakse (2010, p. 250). Prudence has the particular feature of being the intellectual virtue that unfolds the moral virtues (Dierksmeier and Celano 2012, pp. 254–255; Conrad and Hunter 2020, p. 99), and of being the virtue by which a man governs and orders things to their proper final end (*S. T.*, IIa IIae, q. 50, a. 1; Bartell 1962, p. 342; Dubrulle 2016, pp. 45–48; Hirschfeld 2018, pp. 106–107).

The lexical formalization of prudence in the early work *De emptione* provided Aquinas with an implicit framework for analysis, which he used in his later writings. In the *Summa theologiae*, Aquinas implicitly took up the notion of prudence both by restricting it in terms of its object and by expanding it in terms of its agents. In fact, when he mentions the three types of defects (error in the goods, in their quantity, or in their quality), Aquinas affirms the need for the seller or the buyer to inform his co-contractor if he has information about defects, but he does not expand upon the need to inform himself in his own interest (*S. T.*, IIa IIae, q. 77, a. 2, resp.). However, Aquinas then stresses the responsibility of the seller and the buyer, from which we can deduce that they must not be negligent and that they must have foresight, unlike the imprudent merchant who acts "*incaute et imprudenter*" in *De emptione*, III. Indeed, the seller must not reveal the visible defects of the good in order to prevent the buyer from demanding a higher discount than is legitimate, and the buyer must check the condition of the good he is buying (*S. T.*, IIa IIae, q. 77, a. 3, resp.). We thus find here the idea of the ancient adage "*caveat emptor*" (the buyer must be careful) or "*emptor debet esse curiosus*" (the buyer must be curious). *De emptione* focused only on newly wealthy merchants (Le Goff [2010] 2019, pp. 121–231), who were increasingly coming to exercise economic and social domination (Le Goff [1956] 2001, pp. 41–67), and who were suspected of practicing usury dressed up as commerce (McLaughlin 1940; De Roover 1953, pp. 28–29; Ege 2014, p. 392; Feller 2020, pp. 59–61). The *Summa theologiae*, ten years later, expanded this view. Thus, Aquinas also pointed to the need for prudence on the part of the ultimate buyer, and for prudence on the part of the seller insofar as he may be harmed by the buyer. The notion of prudence is thus extended to any exchange activity, beyond the activity of the professional merchant with strong bargaining power and good information.

The notion of prudence, introduced lexically in a brief manner in the short early work *De emptione*, is decisive because it constitutes the criterion of licitly spending, and thus of the just price, since imprudent spending cannot be licitly incorporated into the price. Prudence, presented explicitly in *De emptione*, then implicitly structures Aquinas's treatment of economic activity in his later works. For instance, as we have seen in *S. T.*, IIa IIae, q. 77, a. 3, despite the absence of the term, this notion ensures the just price in the situation where the good has a defect. Prudence in Aquinas's works therefore provides a broad framework for a transaction to be fairly priced.

IV. DANGER: AN EXPLICIT RISK OF LOSS

The third lexical field is that of danger, introduced through the terms *discrimen* (critical point of danger) in *De regno* and, later, *periculum* (danger) in the *Summa theologiae.* This third lexical field marks a new development: the first lexical field, that of probability, could express a risk of gain or loss, and it is only Aquinas's use that specifies it negatively. The second, that of prudence, is expressed more directly as a risk of loss through the negative form of imprudence. The underlying concept, however, that of prudence, is positive. The lexicon of danger is exclusively and explicitly negative.

The term *discrimen*, whose primary meaning is "separation," also takes on the meaning of "danger" (Quicherat 1893, p. 334), as a synonym of *periculum* (Gardin-Dumesnil 1788, p. 232), "critical point of danger" (Blaise 1954, p. 279), or, in the Middle Ages, simply "damage, loss" (Blaise 1975, p. 311). In *De regno*, II, 7 (II, 3), where he first dealt with the activity of merchants, this term was used by Aquinas in the expression "*diversa viarum discrimina"* (various dangers of the ways) to describe the difficulties of supply. The lexicon of danger thus first expresses a risk of transport. This risk remains plural and general, as the Thomasian formula shows, but it concerns transport. The two lexical expressions of risk in the course of the operation were linked: prudence and danger. Indeed, imprudence characterizes illicit expenditure, whereas danger characterizes the licit expenditure *par excellence* given as an example in *De emptione*, III, the expenditure of transport, which constitutes the merchant's own activity (Baldwin 1959, pp. 65, 77; Hollander 1965, pp. 627, 630, 632). Transport is notoriously risky (Spicq 1935, pp. 349–354; Franks 2009, p. 82; Dellemotte 2017, p. 38) and costly (Sturn 2017, p. 650), even though during the Middle Ages the development of carriage transport across the Alps and the securing of sea and land routes brought down this cost (Persson 2014, p. 253).

The term *periculum* first appears in a generic sense. Aquinas uses it in his *objectio* to present a thesis that consists in justifying a higher price in case of great need on the part of the buyer, in particular to avoid a danger (*ad periculum evitendum*) (*S. T.*, IIa IIae, q. 77, a. 1, obj. 3). Aquinas did not include this argument in his solution. However, through this *objectio* we can here see the need to guard against danger. Nothing is said about the certain or merely possible character of this danger, but in the latter case it would be a question of anticipating a risk in order to prevent it occurring or mitigate its consequences. To guard against a danger would then consist in limiting the risk of loss, thus adopting a prudent attitude, in the sense of *De emptione*, III, and Kimball (1990). Here again we see the lexical coherence between prudence and danger.

Periculum appears in a commercial context on two occasions: once to warn of the risk incurred by the buyer, and another to indicate the risk incurred by the merchant.

On the one hand, "it is always illicit to give someone an occasion of danger or damage" (*occasionem periculi vel damni*). If there is imminent danger (*periculum immineret*), the seller must inform the buyer (*S. T.*, IIa IIae, q. 77, a. 3, ad 3). In the *respondeo*, Aquinas had explained this *periculum*: there is a danger if this defect makes the use of the goods "difficult or noxious" (*impeditus vel noxius*). This is the case with a lame horse, a house that threatens to collapse, or spoiled food. If the defects are hidden, the seller must reveal them. On the other hand, if the defect is obvious, as in the case of the one-eyed horse, a reduction in price is sufficient without communicating further information (*S. T.*, IIa IIae, q. 77, a. 3, resp.). This text, which illustrates the implicit use that is made of prudence after its explicit introduction in *De emptione*, indicates that prudence consists in treating the occurrence of a danger "with precaution" and "wisely" (in contrast to the expenditure made *incaute* and *imprudenter* of *De emptione*, III). Again, we note the lexical consistency between Aquinas's various expressions of risk. Moreover, by linking the notion of danger to that of lack of information, Aquinas here shows another aspect of the coherence of his lexicon to express risk. There is a probability that the good may have a defect, even if this defect is not known and the agents are not aware of it. It can be seen here that the danger arises from the probability, in the sense of a possibility, that the property may be damaged and that the agent's behavior is fraudulent by not providing the required information if she knows it. Thus, the situation of the sale of a defective object presents a complete articulation of the lexicon of risk through probability (of the defect), prudence (of the agents not to increase the risk of loss), and danger (the dangerousness of the good).

On the other hand, the only legitimate danger that Aquinas recognizes for the merchant is that of transport (*De emptione*, III; and *S. T.*, IIa IIae, q. 77, a. 4, ad 2). In

De emptione, III, transport is mentioned as an expense (*expensa*), whereas it appears as a risk (*periculum*) ten years later in the *Summa theologiae.* In this mutation can be seen the conjunction of two phenomena. First, the conception of transport had evolved. In *De emptione*, although he considers a long-distance journey, from Italy to the Lagny fair near Paris, this was a case of overland transport, no doubt individually managed, which is essentially an operation of physical displacement, rendered by the expression "*in portatione pannorum,"* literally the expenses "in the carrying of cloths." Ten years later, Aquinas no longer refers to an expense but to "a danger [or risk, *periculum*] to which someone is exposed [*exponit*] by transferring from one place to another [*transferando rem de loco ad locum*]" (*S. T.*, IIa IIae, q. 77, a. 4, ad 2). The emphasis is more on the distance and the movement of travel than on the physical work of transportation. This, then, was a more conceptual approach to transport. Transport acquired a new status and became an economic activity in its own right, carried out by professionals whose task was to transport a good from one place to another, under the threat, expressed by the noun *periculum*, of theft or shipwreck. Transport is one of the two reasons, along with the improvement of the good by the craftsman, that justify selling a good for more than it was purchased. We thus find here, as with the use of the term *discrimen* in *De regno*, II, 7 (II, 3), a coherence between prudence and danger rendered through the notion of licitness. Transport is the ultimate licit expense, and can be included in the price. It is opposed to imprudent expenditure and does not lead to an increase in the risk of loss; the danger, i.e., the risk of theft or shipwreck, is included in the price in addition to the expenditure that is strictly on transport.

If transport is a licit risk, its financing must also be licit. Through the risk it entails, the question of transport thus leads to the question of the type of investment. Then, through the *periculum*, risk is affirmed as the criterion of licitness of the investment, since the danger must be borne by the owner (*S. T.*, IIa IIae, q. 78, a. 2, ad 5). It is not surprising that the *periculum* appears in the *Summa theologiae* on the occasion of the treatment of transport and the modalities of investment. Maritime transport is the first place where the professionalization of a risky transport requires a risky investment and where the distinction between loan and equity investment is not primarily a choice between formal modalities of financing, one licit, the other not, but rather weaves a link between the assumption of a risk and the possibility of a gain. The risk Aquinas evoked in the *Summa theologiae* through the example of transport was the financial risk of the investor, whereas the risk that can be understood in *De emptione*, III, as lying behind the expression "expenses," was still partly that incumbent on any commercial operation of purchase and resale in time and space.

Aquinas thus encouraged *societas*, a model for licit financing, whereas lending as *mutuum* was prohibited since the investor thereby transferred ownership and risk to the borrower (Spicq 1935, pp. 349–351). The debate on Aquinas's promotion of the *societas* model remains open (Januard 2022c, pp. 247–249). Does he emphasize the need for financing, even if it means implementing "escape attempts" (Ege 2014, pp. 392, 400–403) to circumvent the prohibition of financing by borrowing strictly formulated by the *Naviganti* decree of 1234 (Gregory IX, *Decretales*, l. 5, t. 19, c. 19)? Or does he deliberately emphasize the method of financing, even before its necessity? The notions of risk and ownership would thus allow him to base his analysis on the formal distinction between loan and equity (Chaplygina and Lapidus 2016, p. 37; 2022). This latter assumption would seem to be more in line with *De emptione*, III, where Aquinas is very harsh on borrowing merchants. However, it is worth noting that the recognition of the need to finance transport, which is gradually perceived as a risk rather than an expense, was reinforced in the ten years between *De emptione* and the *Summa theologiae.* It is thus possible to propose the hypothesis of a middle way that underpins Aquinas's apology for *societas*: this risk must be financed, but this financing must be licit. The possibility of a gain for the investor can be justified only by his assuming the risk of loss, i.e., by ownership, and thus by an equity stake and not by a loan. From this it follows that a parallel can therefore be drawn between the assumption of danger, which constitutes the criterion of licitness of the operation (*S. T.*, IIa IIae, q. 78, a. 2, ad 5), and prudence, which constitutes the criterion of licitness of expenditure (*De emptione*, III).

Danger must be avoided, which is consistent with prudence, but only within the limits of sinlessness. The management of risk is therefore part of a moral framework: one cannot sin or incite another to sin in order to avoid danger (*periculum*), but one can make use of the malice of the other (*De malo*, q. 13, a. 4, ad 19), which was the situation of the borrower who borrows out of necessity. This example recalls the framework in which Aquinas situated his analysis. Aquinas treated risk in the context of the virtue of justice, which governs voluntary exchanges such as trade and lending. Probability, prudence, and danger thus form a coherent lexicon ordered by the notion of justice, which translates into licitness, as shown by the question of transportation or the defect of the good.

This moral rootedness has a consequence for the very definition of risk with which Aquinas is concerned. Only the prejudicial dimension of risk is taken into consideration, not the risk for gain. On the one hand, gain is limited. Not only must the gain of merchants be a "moderate gain" (*lucrum moderatum*) (*S. T.*, IIa IIae, q. 77, a. 4, resp.), but just price is governed by two principles of Roman law, taken up by medieval canonists: *laesio enormis* (enormous damage) protects the seller, originally the heir to a piece of land. The sale price may not be less than half the purchase price and the affected abused seller may claim compensation;[7] *turpe lucrum* (dishonest gain) protects the buyer by limiting the sale price to twice the purchase price.[8] Together, these two principles form the general rule of *duplus*, which limits the magnitude of licit gain to which the merchant, and more broadly any person who trades, is entitled. The prescription of a merchant activity "without fraud" (*sine fraude*) in *In IV Sent.*, d. 16, q. 4, a. 2, qc. 3 implicitly expresses this limit of gain, while the *Summa theologiae* more explicitly transcribes this limitation: "The law obliges to make restitution, for example if someone has been deceived by more than half the just price" (*deceptius ultra dimidiam justi pretii quantitatem*) (*S. T.*, IIa IIae, q. 77, a. 1, ad 1). The gain is thus presented only under the aspect of its limitation, never as a risk, i.e., never in such a way that we could transcribe it today as a random variable, namely a function going from a set, to the set of states of the world, to a set of consequences, which here would be beneficial.

In addition, Aquinas does not mention a positive chance of gain. The risk of merchants, when licit, is a danger, as in the case of transport. When it is illicit, the risk is an imprudence: the expenditure they would make in borrowing to develop their

[7] "The seller deceived [*deceptus*] of more than half of the just price [*ultra dimidiam iusti pretii*] may demand the thing to be returned to him and the price received to be restored [*pretium acceptum restituatur*] or the just price received be completed [*suppleatur*]" (Gregory IX, *Decretales*, l. 3, t. 17, c. 6). Also see Justinian, *Codex*, IV, 44, 2.

[8] To practice *turpe lucrum* is "to procure a measure of wheat for two denarii and to keep it until it is sold for four, six or more" (*de duobus denariis comparat modium unum et servat usque dum vendatur denariis quatuor, aut sex, aut amplius*) (Gratian, *Decretum*, II, causa 14, q. 4, c. 9).

business would be imprudent (negative skewness) and not a case of risk attraction with a symmetrical widening, in gain and loss, of the probability density curve. The usurer's risk is presented as a damage to social and moral reputation, but in the course of lending, the gain is not presented as a positive risk, since it seems to be foreseen, and the loss does not seem to be a risk, since there is no absolute default of payment. The borrower's gain is presented negatively, as he shifts a risk of damage due to poverty and necessity to a risk of damage (even if a lesser one) due to the loan. The Thomasian lexicon thus evokes a universalization of risk, since all agents are concerned, but this risk is restricted to a risk of loss and damage. On the one hand, danger and imprudence are sources of loss (and even of life-threatening damage in case of danger), danger being a morally neutral term but rather used by Aquinas to describe licit risks, while imprudence describes an illicit risk. On the other hand, the notion of probability potentially evokes both gain and loss, but the context in which Aquinas employs it shows that the lack of certainty described in *In III Sent.*, d. 37, a. 6 entails damage for all agents. Thus, while Aquinas universalized the application of risk to all activities and all agents, this universalization remained partial as to its definition, since this definition certainly benefited from an absence of restriction imposed by the establishment of the calculus of probabilities, but it tended to be reduced to the risk of loss.

V. CONCLUDING REMARKS: A TRIPLE UNIVERSALIZATION OF RISK

The use of *probability*, *prudence,* and *danger* and their associated terms suggests a double typology of the risk lexicon: external or internal to the exchange, and objective (coming from the good) or subjective (coming from the agents). *Probability*, when it concerns the error of analysis, is external to the exchange and subjective because it comes from the moralist or the economist; when it concerns the estimation of the justice of the exchange, it is internal to the exchange and subjective because it is implemented by the agents, just as when it concerns fraud. *Prudence* appears as an internal subjective source of risk since it is practiced by agents within the exchange itself. *Danger* can be seen as an external objective source of risk, when it is the transport risk, also described by *discrimen*, or as an internal objective source of risk, when it comes from a dangerous object. Risk universalization can be noticed through the lexicon that these typologies reflect, since all combinations exist: external/subjective (*probabilis*); internal/subjective (*aestimatio*, *fraus*, *incaute*, *imprudenter*); external/objective (*periculum* and *discrimen* on transport); and internal/objective (*periculum* on goods).

Moreover, the lexicon shows Aquinas's triple universalization of risk: a universalization of activities, of agents, and, partially, a universalization of its definition (see Table 1). The lexicon of probability, which, through the adverb *probabilis*, first describes a risk of analysis affecting the co-contractors of the loan (*In III Sent.*, d. 37, a. 6) and thus the whole population, based on how the tax levied on usurious gains (*Ad Brabantiam*), can be used, then impacts trade and its co-contractors through the notion of estimation (*De emptione*, I) and fraud (*In IV Sent.*, d. 16, q. 4, a. 2, qc. 3; *S. T.*, IIa IIae, q. 77). The lexicon of prudence (*incaute* and *imprudenter*) describes the risk that affects trade activity and its shareholders (*De emptione*, III), depending on the

Table 1. Lexical Universalization of Risk to Activities, Agents, and Definitions

Universalization of Risk through the Activities and Agents			
	Probability	Prudence	Danger
Analysis *Analyst*	*In III Sent.*, d. 37, a. 6		*S. T.*, IIa IIae, q. 77, a. 1, obj. 3 *S. T.*, IIa IIae, q. 78, a. 2, ad 5
Trade *Seller and buyer*	*De emptione*, I (*In III Sent.*, d. 37, a. 6) *In IV Sent.*, d. 16, q. 4, a. 2, qc. 3 *S. T.*, IIa IIae, q. 77	*De emptione*, III (*S. T.*, IIa IIae, q. 77, a. 2, resp.) (*S. T.*, IIa IIae, q. 77, a. 3, resp.)	*De regno*, II, 7 (II, 3) *S. T.*, IIa IIae, q. 77, a. 1, obj. 3 *S. T.*, IIa IIae, q. 77, a. 3, ad 3 *S. T.*, IIa IIae, q. 77, a. 4, ad 2
Loan *Lender and borrower*	(*In III Sent.*, d. 37, a. 6)	*De emptione*, III	*S. T.*, IIa IIae, q. 78, a. 2, ad 5 *De malo*, q. 13, a. 4, ad 19
Tax *Prince Population*	(*Ad Brabantiam*)		
Partial Universalization of Risk through Its Definition			
Probabilities	*In III Sent.*, d. 37, a. 6		
Prudence		*De emptione*, III	*S. T.*, IIa IIae, q. 77, a. 3, ad 3 *De malo*, q. 13, a. 4, ad 19
Risk of loss	*In III Sent.*, d. 37, a. 6	*De emptione*, III	*De regno*, II, 7 (II, 3) *S. T.*, IIa IIae, q. 77, a. 1, obj. 3 *S. T.*, IIa IIae, q. 77, a. 3, ad 3 *S. T.*, IIa IIae, q. 77, a. 4, ad 2 *S. T.*, IIa IIae, q. 78, a. 2, ad 5 *De malo*, q. 13, a. 4, ad 19

behavior of the seller. The necessity of prudence, on the side of the buyer this time, is also implied in order to inform oneself about any exchange of goods (*S. T.*, IIa IIae, q. 77, a. 2, resp.), and particularly in case of the exchange of a defective or dangerous good (*S. T.*, IIa IIae, q. 77, a. 3, resp.). The lexicon of danger describes with *discrimen* the risk of transport weighing on long-distance trade and thus on merchants and more widely on the population through supply (*De regno*, II, 7 [II, 3]). It then describes with *periculum* the risk weighing on trade activity and more particularly on the buyer of a defective or dangerous good (*S. T.*, IIa IIae, q. 77, a. 3, ad 3), and the risk of transport affecting the merchant (*S. T.*, IIa IIae, q. 77, a. 4, ad 2). It also describes, with the same term *periculum*, the risk that weighs on trade and whose assumption conditions the financing of the activity by *societas* and not by loans. Thus all activities and agents, through trade and loans, are affected by *periculum* (*S. T.*, IIa IIae, q. 78, a. 2, ad 5). The term *periculum* also describes the way in which exchange reduces the danger through the acquisition of a good (*S. T.*, IIa IIae, q. 77, a. 1, obj. 3) or through borrowing in case of necessity (*De malo*, q. 13, a. 4, ad 19). Economic activity in its plurality thus reduces the risk for the buyer and the borrower.

The lexical diversity of the expression of risk also brings a universalization of its definition, laying the foundations that will later allow us to arrive at its contemporary definition, through the notion of probability, which is differentiated from certainty; through the notion of prudence, which through imprudence describes an increased risk of loss; and through danger, which describes a risk of loss or damage. This universalization is only partial, since risk is not or hardly understood as a chance of gain but rather as a possibility of loss.

We can thus conclude this lexical study by summarizing the triple universalization it reveals. First, there is a universalization of the three economic *activities*: analysis, which runs throughout Aquinas's work from his very first writings on usury, as it has consequences for the legal and moral reputation of the agents and their activities and for their gains; then lending and commercial exchange; and finally taxation and redistribution, since the use of taxes is conditioned by the understanding of usury and its gains.

We then note a universalization of risk to all the *agents* involved in these operations: the moralist or analyst, the buyer, the seller, the lender, the borrower, but also the prince and the whole society. We can add the extension of risk to the whole population with the emergence, through usury, of a risk on taxes and their use, and, in a way that is more rhetorical than lexical, through a risk of supply as concerns commercial exchange.

Finally, there is a partial universalization of the *definition* of risk, which can be summarized in three points. First, the lexicon used offers a broad and fundamental view of risk by focusing on its identification and not, as will be the case after the introduction of the probability calculus, on its calculation, which will see probability as a degree of certainty. Later elaborations on the probability calculus led to a reduction of the notion of risk to its quantitative assessment. In this way, we move away from the ancient and medieval principle that what is possible or probable is not certain, a principle that underpins the notion of risk, since there is risk when there is a set of possible consequences. Second, Aquinas's notion of prudence, while it refers to a virtue and not to a calculation, is found in the contemporary notion that sees imprudence as an increase in the risk of loss, which is represented by a negative skewness on the probability density curve. Although its calculation and graphic representation are still absent, the tacit conceptual distinction between risk attraction and imprudence was already present, testifying to a deepening of the notion of risk that would have to wait more than 700 years to be taken up and formalized. Finally, the universalization is only partial, because the Thomasian approach includes a strong restriction of the notion of risk to its prejudicial dimension. Indeed, the lexicon evokes only a risk of loss: this is lexically the case for danger and imprudence, and rhetorically the case for probability. The term can evoke a possibility of loss or gain, but its use to describe a risk of error in the analysis of a transaction considered illicit evokes only a prejudicial situation. The notion of chance of gain thus seems to be absent from the Thomasian analysis in economic matters. The moral framework of the virtue of justice in which the analysis of risk was situated explains this limitation to the risk of loss for two reasons: on the one hand, gain was limited and certain; and, on the other hand, the issue, for Aquinas, was to guard against the risk of loss in a manner consistent with virtue.

COMPETING INTERESTS

The author declares no competing interests exist.

REFERENCES

Primary Sources

Albert the Great. 1893–1894. *In librum sententiarum*. Edited by Borgnet. Volumes 25–30. Paris: Vivès.
Aristotle. 1903. *Ethica Nicomachea*. Revised edition, edited by Franciscus Susemihl and Otto Apelt. Leipzig: Teubner.
———. 1970. *L'Éthique de Nicomaque.* Introduction, translation, and commentary by René Antoine Gauthier and Jean Yves Jolif. Volumes 1 and 2. Louvain: Publications universitaires / Paris: Béatrice-Nauwelaerts.
———. 2002. *Rhétorique*. Livre II. Paris: Les belles lettres.
———. 2003. *Rhétorique*. Livre I. Paris: Les belles lettres.
Bernoulli, Jacob. 1713. *Ars conjectandi*. Basilae Impensis Thurnisiorum fratrum.
Corpus Juris Canonici. 1661. Lyon: Laurent Anisson.
Corpus Juris Civilis. 1803. Metz/Paris: Behmer et Mamort—Rondonneau.
Gregory VII. 1853. *Concilium Romanum V*. In *Patrologiae cursus completus*, series Latina. Volume 148. Paris: J.-P. Migne.
———. 1916. *Libri IV sententiarum*. Volumes 1 and 2. Claras Aquas: Typis Collegii S. Bonaventurae, Quaracchi.
Robert of Courçon. 1902. *De usura*. Edited by Georges Lefèvre. Lille: Travaux et mémoires de l'Université de Lille.
Thomas Aquinas. 1895. *Summa theologiae*, IIa IIae, qq. 1–51. Edited by Leonina, no.8. Rome: Typographia polyglotta S. C. de Propaganda Fide.
———. 1897. *Summa theologiae*, IIa IIae, qq. 52–122. Edited by Leonina, no. 9. Rome: Typographia polyglotta S. C. de Propaganda Fide.
———. 1929–1947. *Scriptum super Sententiis.* Four volumes. Paris: P. Lethielleux.
———. 1969. *Sententia libri Ethicorum.* Edited by Leonina, no. 47. Rome: Commissio Leonina.
———. 1971. *Sententia libri Politicorum.* Edited by Leonina, no. 48. Rome: Commissio Leonina.
———. 1974. *Expositio super Isaiam ad litteram.* Edited by Leonina, no. 28. Rome: Santa Sabina.
———. 1979. *Opuscula III.* Edited by Leonina, no. 42. Rome: Commission Leonina.
———. 1982. *Quaestiones disputatae de malo.* Edited by Leonina, no. 23. Paris/Rome: Commissio Leonina—J. Vrin.
———. 1989. *Expositio libri posteriorum*. Edited by Leonina, no. 1*2. Paris/Rome: Commissio Leonina—J. Vrin.
———. 1996. *Quaestiones de quolibet.* Edited by Leonina, no. 25.2. Paris/Rome: Commissio Leonina—ed. du Cerf.
William of Auxerre. 1980-1987. Summa aurea. Paris/Grottaferrata: ed. du Centre national de la recherche scientifique—Editiones Collegii S. Bonaventurae ad Claras Aquas.

Other Sources

Baldwin, John W. 1959. "The Medieval Theories of the Just Price." *Transactions of the American Philosophical Society* 49 (4): 1–92.
Barrault, Émile, and Ernest Grégoire. 1853. *Traité des synonymes de la langue latine*. Paris: Librairie Hachette et Cie.

Bartell, Ernest. 1962. "Value, Price, and St. Thomas." *The Thomist* 25 (3): 325–381.
Blaise, Albert. 1954. *Dictionnaire latin-français des auteurs chrétiens*. Strasbourg: ed. Le latin chrétien.
———. 1975. *Lexicon latinitatis Medii Aevi*. Turnhout: Brepols.
Bréal, Michel, and Anatole Bailly. 1918. *Dictionnaire étymologique latin*. Paris: Librairie Hachette et Cie.
Bréban, Laurie, and André Lapidus. 2019. "Adam Smith on Lotteries: An Interpretation and Formal Restatement." *European Journal of the History of Economic Thought* 26 (1): 157–197.
Burke, Joseph A. 2014. "The Scholastic Analysis of ZIRP: Justice, Usury, and the Zero Interest Rate Policy." *Journal of Markets & Morality* 17 (1): 105–124.
Byrne, Edmund. 1968. *Probability and Opinion: A Study in the Medieval Presuppositions of Post-Medieval Theories of Probability*. The Hague: Martinus Nijhoff.
Chaplygina, Irina, and André Lapidus. 2016. "Economic Thought in Scholasticism: Some Landmarks on Price and Interest." In Gilbert Faccarello and Heinz D. Kurz, eds., *Handbook on the History of Economic Analysis*. Volume II. Cheltenham (UK) and Northampton (USA): Edward Elgar, pp. 20–42.
———. 2022. "Theorizing Interest: How Did It All Begin? Some Landmarks on the Prohibition of Usury in Scholastic Economic Thought." In Iwo Amelung and Bertram Schefold, eds., *European and Chinese Histories of Economic Thought*. London: Routledge, pp. 93–105.
Conrad, Richard, and Peter Hunter. 2020. "Why Aquinas Would Agree that Human Economic Behaviour is Largely Predictable." In Peter Róna and László Zsolnai, eds., *Agency and Causal Explanation in Economics*. Virtues and Economics, Number 5. Cham: Springer, pp. 93–113.
Daston, Lorraine. 1988. *Classical Probability in the Enlightenment*. Princeton: Princeton University Press.
Daubercies, Pierre. 1990. "Prudence." In *Catholicisme*. Volume 13. Paris: Letouzé et Ané, col. 158–171.
De Roover, Raymond. 1953. *L'évolution de la lettre de change*. Paris: Librairie Armand Colin.
———. 1958. "The Concept of the Just Price: Theory and Economic Policy." *Journal of Economic History* 18 (4): 418–434.
———. 1971. *La Pensée économique des scolastiques*. Montréal/Paris: Vrin.
De-Juan, Oscar, and Fabio Monsalve. 2006. "Morally Ruled Behaviour: The Neglected Contribution of Scholasticism." *European Journal of the History of Economic Thought* 13 (1): 99–112.
Dejoux, Marie. 2014. "Gouvernement et pénitence, les enquêtes de réparation des usures juives de Louis IX (1247–1270)." *Annales. Histoire, sciences sociales* 69 (4): 849–874.
Dellemotte, Jean. 2017. *Histoire des idées économiques*. Paris: Dunod.
Dempsey, Bernard W. 1935. "Just Price in a Functional Economy." *American Economic Review* 25 (4): 471–486.
Dierksmeier, Claus, and Anthony Celano. 2012. "Thomas Aquinas on Justice as a Global Virtue in Business." *Business Ethics Quarterly* 22 (2): 247–272.
Dondaine, Hyacinthe-François. 1979. "Préface." In Thomas d'Aquin, *De emptione et venditione ad tempus, Opuscula III*. Edited by Leonina. Volume 42. Rome: Commissio Leonina, pp. 381–390.
Dubrulle, Luc. 2016. "Héritiers d'une conceptualité, le jugement prudentiel chez Thomas d'Aquin." *Transversalités* 136: 45–54.
Dupuy, Claude. 1992, "De la monnaie publique à la monnaie privée au bas Moyen Âge (XIIIe et XIVe siècles)." *Genèses* 8: 25–59.
Ege, Ragip. 2014. "La question de l'interdiction de l'intérêt dans l'histoire européenne." *Revue économique* 65 (2): 391–419.
Ernout, Alfred, and Antoine Meillet. 2001. *Dictionnaire étymologique de la langue latine*. Fourth edition, revised. Paris: Klincksieck.
Feller, Laurent. 2020. "Les écritures de l'économie au Moyen Âge." *Revue historique* 693: 25–65.
Franks, Christopher A. 2009. *He Became Poor*. Cambridge: William B. Eerdmans Publishing Company.
Friedman, David. 1980. "In Defense of Thomas Aquinas and the Just Price." *History of Political Economy* 12 (2): 234–242.
Gardin-Dumesnil, Jean-Baptiste. 1788. *Synonymes latins*. Paris: Nyon le jeune.
Gomez Camacho, Francisco. 1998. "Later Scholastics: Spanish Economic Thought in the XVIth and XVIIth Centuries." In Todd Lowry and Robert Gordon, eds., *Ancient and Medieval Economic Ideas and Concepts of Social Justice*. Leiden: Brill, pp. 503–561.

Hacking, Ian. 2006. *The Emergence of Probability*. Second edition. Cambridge: Cambridge University Press.

Hamouda, Omar, and Betsey Price. 1997. "The Justice of the Just Price." *European Journal of the History of Economic Thought* 4 (2): 191–216.

Hirschfeld, Mary L. 2018. *Aquinas and the Market*. Cambridge: Harvard University Press.

Hollander, Samuel. 1965. "On the Interpretation of the Just Price." *Kyklos* 18: 615–634.

Januard, Pierre. 2021. "Analysis Risk and Commercial Risk: The First Treatment of Usury in Thomas Aquinas's *Commentary on the Sentences*." *European Journal of the History of Economic Thought* 28 (4): 599–634.

———. 2022a. "Risky Exchanges: Price and Justice in Thomas Aquinas's *De emptione et venditione ad tempus*." *European Journal of the History of Economic Thought* 29 (4): 729–769.

———. 2022b. "Risks on Trade: The Activity of the Merchant in Thomas Aquinas's *Commentary on the Sentences*." *History of Economic Ideas* 30 (1): 47–98.

———. 2022c. "Licit and Illicit Risks in Thomas Aquinas's *De emptione et venditione ad tempus*." *Œconomia* 12 (2): 233–271.

———. 2022d. "De l'*œconomia* à l'échange volontaire: la délimitation de l'activité économique chez Thomas d'Aquin." *Revue des sciences philosophiques et théologiques* 106 (4): 567–609.

Kimball, Miles S. 1990. "Precautionary Saving in the Small and in the Large." *Econometrica* 58 (1): 53–73.

Knight, Frank H. 1921. *Risk, Uncertainty and Profit*. Boston/New York: Houghton Mifflin Company.

Koehler, Benedikt. 2020. "Thomas Aquinas on the Conduct of Sales." *Economic Affairs* 40: 358–366.

Koehn, Daryl, and Barry Wilbratte. 2012. "In Defense of a Thomistic Concept of the Just Price." *Business Ethics Quarterly* 22 (3): 501–526.

Kolmogorov, Andrej. 1933. *Grundbegriffe der Wahrscheinlichkeitsrechnung*. Berlin: Verlag von Julius Springer.

Langholm, Odd. 1984. *The Aristotelian Analysis of Usury*. Bergen and Oslo: Universitersforlaget AS.

———. 1992. *Economics in the Medieval Schools. Wealth, Exchange, Value, Money and Usury According to the Paris Theological Tradition, 1200–1350.* Studien und Texte zur Geistesgeschichte des Mittelalters, 29. Leiden: Brill.

———. 1998. *The Legacy of Scholasticism in Economic Thought, Antecedents of Choice and Power*. Cambridge: Cambridge University Press.

———. 2003. *The Merchant in the Confessional*. Leiden: Brill.

Lapidus, André. 1986. *Le détour de valeur*. Paris: Economica.

———. 1987. "La propriété de la monnaie: doctrine de l'usure et théorie de l'intérêt." *Revue économique* 38 (6): 1095–1109.

———. 1991. "Information and Risk in the Medieval Doctrine of Usury during the Thirteenth Century." In William Barber, ed., *Perspectives on the History of Economic Thought*. Volume 5. London: Edward Elgar, pp. 23–38.

———. 1992. "Une introduction à la pensée économique médiévale." In Alain Béraud and Gilbert Faccarello, eds., *Nouvelle histoire de la pensée économique*. Volume 1. Paris: La Découverte, pp. 24–70.

———. 1994. "Norm, Virtue and Information: Individual Behaviour and the Just Price in Thomas Aquinas' *Summa theologica*." *European Journal of the History of Economic Thought* 1 (3): 435–473.

———. 2021. "Le prêt à intérêt face à la religion et au droit imbrication et séparation aux premiers moments d'une histoire longue." In Laurie Bréban, Séverine Denieul, and Élise Sultan, eds., *La science des moeurs: de la conception à l'expérimentation*. Paris: Garnier, pp. 87–116.

Le Goff, Jacques. [1956] 2001. *Marchands et banquiers du Moyen Âge*. Paris: Presses universitaires de France.

———. [2010] 2019. *Le Moyen Âge et l'argent, essai d'anthropologie historique*. Paris: Perrin.

McLaughlin, Terence P. 1939. "The Teaching of the Canonists on Usury (1)." *Mediaeval studies* 1: 81–147.

———. 1940. "The Teaching of the Canonists on Usury (2)." *Mediaeval studies* 2: 1–22.

Mélitz, Jacques. 1971. "Some Further Reassessment of the Scholastic Doctrine of Usury." *Kyklos* 24: 473–492.

Monsalve, Fabio. 2014a. "Scholastic Just Price Versus Current Market Price: Is it Merely a Matter of Labelling?" *European Journal of the History of Economic Thought* 21 (1): 4–20.

———. 2014b. "Late Spanish Doctors on Usury, and the Evolving Scholastic Tradition." *Journal of the History of Economic Thought* 36 (2): 215–235.

Munro, John H. 2003. "The Medieval Origins of the Financial Revolution: Usury, *Rentes*, and Negotiability." *International History Review* 25 (3): 505–562.

Noonan, John Thomas. 1957. *The Scholastic Analysis of Usury*. Cambridge: Harvard University Press.

O'Brien, George. [1920] 2001. *An Essay on the Mediaeval Economic Teaching*. Kitchener: Batoche Books.

O'Rahilly, Alfred. 1928. "Notes on St. Thomas III—St. Thomas on Credit." *Irish Ecclesiastical Record*, 5th series 31: 159–168.

Passage (du), Henri. 1946. "Usure." *Dictionnaire de théologie catholique*. Volume 15. Paris: Letouzey et Ané, col. 2316–2390.

Persson, Karl Gunnar. 2014. "Markets and Coercion in Medieval Europe." In Larry Neal and Jeffrey G. Williamson, eds., *The Cambridge History of Capitalism*. Volume 1, *The Rise of Capitalism: From Ancient Origins to 1848.* Cambridge: Cambridge University Press, pp. 225–266.

Quicherat, Louis. 1893. *Thesaurus poeticus linguae latinae*. Paris: Librairie Hachette et Cie.

Rajapakse, Nadeera. 2010. "L'intérêt: le juste prix de la monnaie." Thèse soutenue pour le doctorat en sciences économiques. Université Paris 1 Panthéon-Sorbonne, Paris.

Santori, Paolo. 2019. "Was Aquinas a 'Universal Economist?'" *History of Economics Review* 72 (1): 79–91.

———. 2020. "*Donum*, Exchange and Common Good in Aquinas: The Dawn of Civil Economy." *European Journal of the History of Economic Thought* 27 (3): 276–297.

———. 2021. *Thomas Aquinas and the Civil Economy Tradition*. Abingdon/New York: Routledge.

Savage, Leonard J. 1954. *The Foundation of Statistics*. New York: Wiley.

Schumpeter, Joseph A. [1954] 2006. *History of Economic Analysis*. London: Routledge.

Shatzmiller, Joseph. [1990] 2000. *Shylock revu et corrigé. Les juifs, les chrétiens et le prêt d'argent dans la société médiévale*. Paris: Les belles lettres.

Sivéry, Gérard. 2004. "La notion économique de l'usure selon saint Thomas d'Aquin." *Revue du Nord* 2004 (4): 697–708.

Spicq, Ceslas. 1935. "Appendice I: notes explicatives." In Thomas Aquinas, *Somme théologique*, Traité de la Justice. Volume 3. Paris: Éditions de la Revue des Jeunes, pp. 257–358.

Sturn, Richard. 2017. "Agency, Exchange, and Power in Scholastic Thought." *European Journal of the History of Economic Thought* 24 (4): 640–669.

Tawney, Richard Henry. [1926] 1948. *Religion and the Rise of Capitalism*. London: John Murray.

Todeschini, Giacomo. 2012. "Usury in Christian Middle Ages, A Reconsideration of the Historiographical Tradition (1949–2010)." In Francesco Ammannati, ed., *Religione e istituzioni religiose nell'economia europea, 1000–1800*. Florence: Firenze University Press, pp. 119–130.

Wirth, Jean. 1983. "La naissance du concept de croyance." *Bibliothèque d'Humanisme et Renaissance* 45 (1): 7–58.

Worland, Stephen T. 1977. "*Justum Pretium*, One More Round in an 'Endless Series.'" *History of Political Economy* 9 (4): 504–521.

Wyffels, Carlos. 1991. "L'usure en Flandre au XIIIè siècle." *Revue belge de philologie et d'histoire* 69 (4): 853–871.

Yuengert, Andrew M. 2012. *Approximating Prudence*. New York: Palgrave Macmillan.