

Amsterdam:
Sovereignty and Legal Agency
of a 17th-Century Commercial City



Edited by

Dave De ruyscher & Janne E. Nijman

Series Editors:

C.H. (Remco) van Rhee, Dirk Heirbaut, M.C. Mirow & Michelle McKinley

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Cover illustration: View of the city of Amsterdam with Neptune and Artemis, the latter referring to the image of the Capitoline Wolf with Romulus and Remus (c. 1700) – Municipal Archives Amsterdam, *Tekeningen en prenten*, 010097005158.

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Acknowledgments

The idea for this volume was conceived before the Covid pandemic, during conversations in the context of the workshop series “*Recht in Amsterdam en in de Republiek, 17e eeuw*”. These inspiring sessions, which brought together legal historians and lawyers from Dutch and Belgian universities, made us realize once more how seventeenth-century Amsterdam is neglected as an object of research in (international) legal history. We issued a call for papers “Law and Governance of a Global City: 17th-Century Amsterdam” and selected papers for a first seminar. Covid delayed the process. We have been fortunate to have gathered together a group of dedicated authors, and we are all the more thankful that they pulled through with us. Ultimately, we managed to discuss our papers at a workshop held in Amsterdam on 24 and 25 September 2020, and at a follow-up workshop, organized in Amsterdam on 9 and 10 December 2022. We are grateful to the teams of the T.M.C. Asser Instituut and the Amsterdam Center for International Law – Ellyssia van der Werf – for their work to organize and facilitate these workshops. The discussions contributed to the quality of the chapters in this volume, and we are indebted to all the researchers who took the time to participate. John Eyck checked the language of this volume.

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We hope that this volume will spark more research on the legal history of seventeenth-century Amsterdam.

Dave De ruysscher/Janne E. Nijman
Tilburg-Brussels/Amsterdam-Geneva

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Innovating Market Exchange: The Amsterdam Bourse as a Blueprint for Modern Derivative Markets

Johannes W. Flume

It is in this trading-house that virtually the whole world is negotiated. Besides German merchants from upper and lower Germany, one might find Poles, Hungarians, Walloons, French [...] and, indeed, occasionally even Indians, and all manner of other foreign peoples. Here, one speaks of the purchase and value of goods, of exchanging merchant goods, of loading and unloading of ships, and of changing and counter-changing. Indeed, here one experiences the status of all kingdoms and countries of the world and, no less, what is most remarkable in these [countries]. (Filips von Zesen, *Beschreibung der Stadt Amsterdam*, Amsterdam, 1664, 301)

1 Right in the Heart of the City¹

The Amsterdam Exchange rises majestically above the Amstel, right in the heart of the city. From the south, through the *Beurssluis*, smaller vessels with lowered masts were able to pass beneath the building via the *Damsluis*, before reaching the *Damrak* and the Fish Market on Dam Square located to the north.² The *Oude Beurs* was not located directly on the Dam but was somewhat

¹ Unless otherwise stated, all translations are by the author.

² According to Johannes C. Breen, ships were not permitted to berth in front of the *Beurssluis* either during the day or at night without permission from the lock keeper (J.C. Breen, "Topografische geschiedenis van den Dam te Amsterdam", *Jaarboek van het Genootschap Amstelodamum* 7 (1909), 99–196, here 148). The passage is later said to have been barred by a beam, both during trading hours as well as at night, after an arson attack on the city centre was thwarted in 1622. The stonemason's apprentice Balthazar Paul, from a village near Namur, was bribed by the Spanish general Ambrogio Spinola (1569–1630) to carry out an arson attack on central buildings in the centre of Amsterdam – including the old city hall and the East India House – after the end of the twelve-year armistice (*Twaalfjarig Stand of Treves* [1609–1621]). Scheltema assumes that the attack must also have been aimed at the Exchange (P. Scheltema, *De Beurs van Amsterdam*, Amsterdam, 1846, 36). Tradition has it that the attempted attack was detected by an orphan boy, which resulted in the government



FIGURE 6.1 Map of Amsterdam (centre page) [detail] (1625), Balthasar Florisz van Berckenrode (1591/2–1645) – Rijksmuseum Amsterdam, RP-P-1892-A-17491D

concealed by a row of houses. One gained access, by way of the *Beurs Steeg* – later renamed *Beurs Straat* – to the two entrances located to the north and south, from which one then entered the Bourse's inner courtyard (Figure 6.1).

granting the children permission to play drums at the Beurs during the first week of the fair, which takes place in September. This practice of drumming at the Exchange (*Beurstrommen*) has survived to this day. Balthazar was sentenced to death by strangulation on the scaffold in front of the city hall; two small bags of gunpowder were hung around his chest and ignited so as to obliterate his features (see Scheltema, *De Beurs van Amsterdam*, 35, note 2, quoting the text of the judgement). By 1675, the *Beurssluis* is said to have been permanently closed (Breen, "Topografische geschiedenis", 148)

With the exception of the bell tower – to the shape and sound of which Filips von Zesen (1619–1689)³ gave particular attention – the Bourse viewed from the outside had a functional, indeed somewhat plain exterior, displaying little decorative embellishment.⁴ That said, it doubtless left a splendid impression on the observer; thanks to its unique construction, it appeared as if enthroned above the water and adjacent buildings.

The building was opened for trade on 1 August 1611, following the laying of the foundation stone on 29 May 1608.⁵ It was cast in the style of the Dutch

3 F. von Zesen, *Beschreibung der Stadt Amsterdam*, Amsterdam, 1664, 320 “Above the same alley / indeed, right above the lower gate towards the Rokin / there is a fine tower / with four clocks / and a bell / which tolls every full and half hour / as well as above / towards the top / fitted with three rows of musical bells / which rise into the air. These chimes / cast by the French bell ringer above / make such a lovely and graceful sound / that passers-by are moved to remain silent / and to listen to these charming artistic chimes / with almost enraptured senses”; according to Georg Galland, the tower is said to have been 43 meters high (*Geschichte der Holländischen Baukunst und Bildnerie im Zeitalter der Renaissance, der nationalen Blüte und des Klassicismus*, Frankfurt am Main, 1890, 184).

4 For a detailed architectural history of the Amsterdam Bourse, see Breen, “Topografische geschiedenis”, 131–217; H. Engel and E. Gramsbergen, “Het eerste beursgebouw en de vorming van het centrum van Amsterdam”, *Over Holland* 3 (2006), 57–88; E. Neurdenburg, *Hen-drick De Keyser: Beeldhouwer en bouwmeester van Amsterdam*, Amsterdam, 1930, 68–70.

5 One riddle that has yet to be fully resolved is the date on which the exchange was officially first opened for trading. The initial details appear to be fairly clear; over the centuries, popular accounts of the city of Amsterdam make reference to an inscription on a black marble slab in gold lettering in the former inner courtyard. The presumably original marble slab is still on display today in the *Beurs van Berlage*, in what is known as the *Keurzaal* of the Corn exchange. The text states:

“Door Godes zeegen is tot gerief der Coopluyden dese Borze gestigt an CIOCVIII den XXIX Meye den Isten steen geleyt ende den ersten Aug CIOCXIII de Iste vergaderinge geweest [By God’s grace, this exchange was erected for the benefit of the merchants, the first stone was laid on 29 May 1608, and the first meeting convened on 1 August 1613.]”

Doubts arise as to the dating when we consider what is probably the first text by Johannes Pontanus (1571–1639) *Rerum et urbis Amstelodamensium historia*, completed in August 1611. There Pontanus explains: “Ad umbilicum et eum, quo nunc conspicitur modum deductum anno, dum haec commentaremur, CIOCXI” (See J. Pontanus, *Rerum et urbis Amstelodamensium historia*, Amsterdam, 1611, 229; see also the Dutch version by Petrus Montanus, *Historische beschrijvinghe der seer wijt beroemde coopstadt*, Amsterdam, 1614, 270 of the same year. The exchange was thus already completed in 1611, by the time Pontanus finalized in August of the same year the manuscript for the book. Why did the Bourse only go into operation in 1613? Johannes Christiaan Breen (1865–1927) was thus the first to argue that the dates of the inscription must be false (Breen, “Topografische geschiedenis”, 211 and following). This is owing to the fact that the ordinances had already been issued to regulate public trading on the exchange. Furthermore, the facilities in the exchange were allegedly rented out as early as 1611. Lastly, he refers to an interesting archival find. According to the notes of Lambert Cornelisz Opsy (1583–1637), construction should have been completed in 1611 and the first exchange or meeting of merchants held there on 1 August 1611 (Breen,

Renaissance, as a so-called *Galerijbeurs* or *Hofhallebörsen*,⁶ closely modelled on the Antwerp Bourse, built by Dominicus van Waghemakere (1460–1542) in 1531, and on London's Royal Exchange I of 1566.

Architecturally, its genealogy may be established simply by referencing architects and master builders. For the London Stock Exchange was built in direct imitation of the Antwerp Exchange by its builder Sir Thomas Gresham,⁷ long-serving financial agent to the English Crown in Antwerp, and the Flemish architect Hans Hendrik van Paesschen (c. 1510–1582), who had been commissioned for the work in London. Furthermore, Hendrick de Keyser (1565–1621) and Cornelis Danckerts (1561–1634) had undertaken advance research visits to London in 1607 as part of their preparations for the projected Amsterdam Exchange.⁸ The former – widely regarded in literature on the topic as the Bourse's chief planner and architect – is thus cited on the engraved plaque of 1609 (see Figure 6.2).⁹

"Topografische geschiedenis", 213). The riddle surrounding the precise date of the inauguration of the Bourse cannot be fully explained. However, it may also be contained in Pontanus's work. Boëtius Adams Bolswert (1585–1633) created the first engraving of the exchange that has come down to us in 1609 – i.e. after the start of construction on 29 May 1608 (Pontanus mentions 28 May) and before the completion of construction (see illustration 14). Curiously, Bolswert placed the tower on the wrong side. In the 1611 edition of Pontanus's book (after page 228), this "mistake" is corrected. However, in the inscription in the bottom left-hand margin, the year 1613 appears for the first time. Is the date 1613 the result of a lapse by the engraver, erroneously included in the aforementioned inscription? Or was the Exchange used only provisionally from 1611 to 1613 before its scheduled official inauguration in 1613? Be that as it may, besides Bolswert's illustrations, we also have several depictions of the Exchange by Claes Janszoon Visscher (1587–1652), produced in 1611 and 1612, showing lively activity in and around the Exchange. These may, of course, have also been fabricated, as was Bolswert's depiction. But more convincing is the assumption that trading on the exchange commenced in 1611.

6 See on the architectural history of the exchange, S.A. Meseure, *Die Architektur der Antwerpener Börse und der europäische Börsenbau im 19. Jahrhundert*, Munich, 1987; N. Pevsner, *A History of Building Types*, Princeton, 1976, 193–195; K.H. Schreyll, *Zur Geschichte der Baugattung Börse*, Berlin, 1963.

7 An impressive painting of Gresham by Anthonis Mor is on exhibition at the Rijksmuseum, <http://hdl.handle.net/10934/RM0001.COLLECT.4638>.

8 Neurdenburg, *Hendrick De Keyser*, 68.

9 The following inscription is cited illustration by Boëtius Adamsz. Bolswert (illustration 15), in the bottom-left corner:

"Benignis. Benevolis. Que. MMAecenatiBus. // NoBiLibus. ATQue. CLaris. AMSTERODAMENSIS POPVLL. // MAGISTRIS. ConSuliBus. PATRIBVS. // Hoc. DE. INGENIO. SVO. EXSCVLPTVM. INGENIVM // Vltro. ATQue. Libere. // Dedit. Dedi. Cavit. Que // HENRICus. DE. CAISAR // OPERVM. APVT. EOS. MOLITIONVMQue. ICONOGNOSTES. // CIVISQue. GRATVS. AC. PERPETVVS."



FIGURE 6.2 This remarkable curiosity is the oldest surviving depiction of the Amsterdam Bourse. It was produced by Boëtius Adamsz. Bolswert (1585–1633) shortly after construction began on 29 May 1608, but prior to completion in 1609; the tower is positioned on the wrong side. In the 1611 edition of Johannes Pontanus, *Rerum et urbis Amstelodamensium historia*, Amsterdam, 1611 (added after page 228), this ‘error’ is rectified.

1.1 The Three Levels

The aforementioned, column-supported edifice, constructed over the water, facilitated a uniquely functional design across three levels. Situated at the lowermost level and adjacent to the wharves there were ten retail stalls along

“In Honour of the Benevolent and Gracious Patrons, // The Noble and Illustrious Magistrates, Mayors and Elders of the People of Amsterdam, // Bestowed, dedicated and inspired of his own talent // His own accord and of his own free will // Hendrick de Keyser, // Draughtsman of these buildings and fortifications // and eternally indebted citizen.”

(The transcription and translation into German was kindly undertaken by Gottfried Eugen Kreuzer (Salzburg)).



FIGURE 6.3 Byrsa Amsterodamensis (1612) by Claes Janszoon Visscher (1587–1652)

each of the lengthy eastern and western walls (Figure 6.2), together with a total of six additional stalls located on the gable ends of the building.¹⁰

Exposed to the open air, the Bourse's inner courtyard was located on the intermediate principal level; elevated several metres above the quays, its design took in considerably more decorative embellishments.¹¹ The building's rectangular atrium, unroofed and surrounded by an open arcade, rested on forty Doric columns. That section of the courtyard, exposed to the arcade, encompassed two elevated squares in the northern section, the vantage point of which afforded a superior overview of the activity below. The upper level, embellished with decorative, Ionic-inspired pilasters, alternated with blind recesses, which – in contrast to London's Royal Exchange – were free of sculptural adornments. The stonework was throughout rendered in blue Arduin, while the walls were finished in red brick. A flight of steps running adjacent to the bell tower led to the third level, housing some one-hundred commercial

10 Pontanus, *Amstelodamensium historia*, 229; O. Dapper, *Historische Beschryving der Stadt Amsterdam*, Amsterdam, 1663, 453, and Breen, "Topografische geschiedenis", 148.

11 See also Galland, *Geschichte der Holländischen Baukunst*, 187.

cassen (stalls), which some consider the prototype of the shopping 'arcade' or mall.¹²

1.2 Minor Expansions

As Henk Engel and Esther Gramsbergen¹³ have shown, in terms of urban planning, the construction of the Amsterdam Bourse of 1611 marks a decisive step in the urbanization and transformation of Amsterdam's city centre at the onset of the seventeenth century. The period beginning some fifty years prior to the erection of the city hall on Dam Square witnessed the emergence of a central trading hub, which remained in operation for over two centuries between 1611 and 1838, before being demolished in 1838 due to deterioration. Objections to the modest size of the Bourse were voiced from the outset, however, and in 1668, three years after the Stadhuis was completed, plans were drawn up for its expansion.¹⁴ The scale of the original building, dating from 1611, comprised a surface area of 200 by 124 feet (61 × 38 metres) and included a total of 42 columns.¹⁵ The building's length was subsequently extended towards the south by 230 feet or 70 metres, whilst the arcade was extended by a total of 46 columns.¹⁶ This expansion entailed the dismantling of the bell tower, since the upper part of the old tower – the spire – was secured to a plateau fastened directly atop the pediment of the new roof.¹⁷ The newly erected southern end

12 On the *cassen*, see Cl. Lesger, *Shopping Spaces and the Urban Landscape in Early Modern Amsterdam, 1550–1850* (Amsterdam, 2020). The first floor of the Antwerp Exchange was the site of the so-called *Schilderspand* from 1540, a collection of over one-hundred sales galleries where the first modern European art market was established (see F. Vermeylen, "Marketing Paintings in the Sixteenth-Century Antwerp: Demand for Art and the Role of the Panden" in P. Stabel e.a. (eds.), *International Trade in the Low Countries (14th–16th Centuries): Merchants, Organisations, Infrastructure*, Leuven, 2000, 193–213; L. Guicciardini, *Descrittione di tutti i Paesi Bassi*, Antwerp, 1567, 99, speaks of "*Panto delle dipinture*"). On the galleries of the Royal Exchange London, see K. Morrison, *English Shops and Shopping: An Architectural History*, New Haven, 2004, 32 and following. On the idea of the passage: J.F. Geist, *Passagen: Ein Bautyp des 19. Jahrhunderts*, Munich, 1996.

13 H. Engel and E. Gramsbergen, "Het eerste beursgebouw", *Over Holland* 3 (2006), 73 and following.

14 Scheltema, *De Beurs van Amsterdam*, 40.

15 Breen, "Topografische geschiedenis", 148; Pontanus, *Amstelodamensium historia*, 229 makes reference to 40 pillars.

16 Scheltema, *De Beurs van Amsterdam*, 41; Zesen, *Beschreibung der Stadt Amsterdam*, 300.

17 Galland, *Geschichte der Holländischen Baukunst*, 472 and following.



FIGURE 6.4 Frederick de Wit, *De binnenplaats van de beurs te Amsterdam* (c. 1690) (after the renovation work of 1668)

now featured the city's coat of arms and a statue of Mercury by Bartholomeus Eggers (1637–1692) (Figure 6.4).¹⁸

The sources from which Eggers drew inspiration for the sculpture remains a matter of conjecture. Though purely speculative, he may well have read Joost van den Vondel's (1587–1679) thought-provoking lines, penned in 1655 to mark the inauguration of the city hall.¹⁹ Lines 435 and following of the 1,377-verse

18 On Eggers, see Galland, *Geschichte der Holländischen Baukunst*, 357 and following; an illustrative depiction of the sculpture also appears in Scheltema, *De Beurs van Amsterdam*, after page 42.

19 For more on this subject S. Bussels e.a., "Far more to wonder, than to fathom completely": one hundred poems devoted to the town hall" in S. Bussels e.a. (eds.), *The Amsterdam Town Hall in Words and Images: Constructing Wonders*, London, 2022; S. Bussels, "The Wondrous Town Hall of Amsterdam: Laudatory Poems on the Impact of Art and Architecture" in G. Alexander e.a. (eds.), *The Places of Early Modern Criticism*, Oxford, 2021, 158 and following.

poem *Inwydinge van't Stadhuis t'Amsterdam* (Inauguration of the city hall in Amsterdam) also touch on the exchange and trading.²⁰

The Bourse, where the Amstel discharges from five stone arches, shoots its water arrows, which are fired with full force when the water recedes, and catches its breath in the IJ. The neighbourhood receives the sounds from either side. And all the foreigners, having come from all quarters and now assembled there at noon, infuse the whole place with life.

This is where Mercury, feted and adulated, baton-sticked and wing-heeled is worshipped. Here the merchant's mind fumes and toils, choked full with frights, hulls, opportunities to meet a bill, coinage, and with the Bourse's clamour of profit and loss. All grab what they may, insuring his cash and his packages against shipwreck and damages; arranging goods, possessions and person on masts, and on wrecks. While fickle Fortuna, unblinking, casts into the melee all the riches of the world.²¹

In the immediate vicinity of the Dam is also the "*wandelstreeck*" along which the "*Amsterdamsche Heeren*" (Amsterdam gentlemen), "*Wethouderen en Raet*" (Mayor and Members of the Council), concerned about the government, engage in lofty discussion.²² Meanwhile, merchants exchange intelligence while reports come in on various vessels:

Here the merchant harkens to the rumours from the sea, draws forth documents, grasps the purport of letters dispatched from all quarters. One moment the market slumps, before recovering in the next. Here, one ship is stranded, while some distance away, another is docked following a battle with Turkey that torched the Corsair vessels, or ventured to far-off Tunis.²³

20 A poem has also come down to us: "Aen de Beurs van Amsterdam", also by Vondel and published in 1643, with illustrations by Salomon Jacobsz Savery (1594–1683). However, the lines in the *Inwydinghe* provide a more instructive account of everyday trading life.

21 J. van den Vondel, "Inwydinge Van Het Stadhuis t'Amsterdam" in L. Simons e.a. (eds.), *De werken van Vondel, Deel 5, 1645–1656*, https://www.dbnl.org/tekst/vond001dewe05_01/vond001dewe05_01_0208.php, lines 437–453.

22 Vondel, "Inwydinge", line 489.

23 Vondel, "Inwydinge", lines 489–495.

1.3 Financial Innovation

So far, this discussion has turned solely on the central incorporation of the Bourse within the urban hub of Amsterdam and less on its prominence as an institution in the economic life of the Netherlands and Europe. That Amsterdam stands out as *the* central European market of the seventeenth century is well known and well documented. The meteoric rise of the city and the Netherlands as a whole was concomitant with the Dutch Revolt of 1568. The religious wars fought between the Catholic South and the Protestant North led to the exodus of Protestant merchants from Antwerp, and to their relocation north to Amsterdam, circumstances that set in motion the development which eventually saw the former's economic decline.²⁴ Favourably located as a shipping centre, Amsterdam firmly established itself as Europe's central commodities, financial and capital market.²⁵ It was here, at the Amsterdam Exchange, that the modern liquid commodity and stock market was first established and referred to as such,²⁶ and is, to be sure, considered the birthplace of European futures and options trading.²⁷ The prices of 350 goods were listed weekly, each

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- 24 O.C. Gelderblom, *Cities of Commerce, The Institutional Foundations of International Trade in the Low Countries, 1250–1650*, Princeton, 2013, 32–41; Id., “From Antwerp to Amsterdam: The Contribution of Merchants from the Southern Netherlands to the Commercial Expansion of Amsterdam (c. 1540–1609)”, *Review (Fernand Braudel Center)* 26/3 (2003), 247–282.
- 25 See V. Barbour, *Capitalism in Amsterdam in the Seventeenth Century*, Ann Arbor, 1950, 11 and following, and 18 and following; Ch. Wilson, *Anglo-Dutch Commerce & Finance in the Eighteenth Century*, Cambridge, 1941, 3 and following; J.I. Israel, *Dutch Primacy in World Trade, 1585–1740*, Oxford, 1989; M. North, *Das goldene Zeitalter: Kunst und Kommerz in der niederländischen Malerei des 17. Jahrhunderts*, Cologne, 2001, 19 and following.
- 26 Among the extensive literature on the subject, see Barbour, *Capitalism in Amsterdam*, 74 and following; S.G. Binnerts, “Amsterdamer Effektenbörse” in M. Palyi and P. Quittner (eds.), *Handwörterbuch des Bankwesens*, Berlin, 1933, 37–40; R. Ehrenberg, “Die Amsterdamer Aktienspekulation im 17. Jahrhundert”, *Jahrbuch für Nationalökonomie und Statistik* 58 (1892), 809–826; J.I. Israel, “The Amsterdam Stock Exchange and the English Revolution of 1688”, *Tijdschrift voor Geschiedenis* 103 (1990), 412–440; Lesger, *The Rise of the Amsterdam Market and Information Exchange*; L. Petram, *The World's First Stock Exchange*, New York, 2014; Wilson, *Anglo-Dutch Commerce*, 79 and following; L. Samuel, *Die Effektenspekulation im 17. und 18. Jahrhundert*, Berlin, 1924; M.F.J. Smith, *Tyd-affaires in Effecten aan de Amsterdamsche Beurs*, The Hague, 1919.
- 27 See Gelderblom and Jonker, “Amsterdam as the Cradle”; E.P. Stringham, “The extralegal development of securities trading in seventeenth-century Amsterdam”, *The Quarterly Review of Economics and Finance* 43/2 (2003), 321–344; exceptionally informative on this subject is E.L. Jacobson, *Termijnhandel in Goederen*, Rotterdam, 1889 (a German translation was published by F. Stapff, *Terminhandel in Waaren*, Rotterdam, 1889).

of which was translated into Italian, French and English.²⁸ The *Vereenigde Oost-Indische Compagnie* (VOC), the *Geoctroyeerde Westindische Compagnie* (WIC), along with the tulip mania or bubble of the 1630s, are well known and much discussed.²⁹ Similarly, the first accounts of the functionality of exchange trading date from this period, such as Joseph de la Vega's famous *Confusion des confusions* (1688), which presents exchange trading in dialogue form, along with a remarkably detailed portrait of the merchant Jean-Pierre Ricard in *Le Negoce d'Amsterdam* (1722) and, finally, Isaac de Pinto's (1717–1787) *Traité de la Circulation et du Crédit* of 1771.

However, to assume that the character and function of the Amsterdam Exchange bears any resemblance to our present-day conception of it would be misleading: it was not a 'stock exchange' and was certainly not 'the world's first stock exchange'. Financial transactions on the Antwerp Exchange were already conducted as early as 1531, as well as on the London Exchange (1566), although to date sources on the subject remain few and far between.³⁰ At the time, specialization in securities and commodities exchange were unknown, having only later emerged over the course of the nineteenth century.³¹ In short, the Amsterdam Bourse was a *Beurs*, namely, a general exchange through which commodity and financial securities were traded in the inner courtyard.

1.4 Market Design and the Revolutionizing of Contract Performance

That said, the Amsterdam exchange remains an important research locus for economic and legal history. A comparative glance at various other prominent trading places across the Mediterranean region, above all, the *fondachi* – not infrequently mistakenly regarded as precursors of exchanges – gives a clear

28 For a more detailed account, see Lesger, *The Rise of the Amsterdam Market*, Ch. 6 (= 214 and following.) (For price listings, see p. 232 and following); J.J. McCusker and C. Gravensteijn. *The Beginnings of Commercial and Financial Journalism: The Commodity Price Currents, Exchange Rate Currents, and Money Currents of Early Modern Europe*, Amsterdam, 1991, 43 and following.

29 On the VOC and WIC, see Israel, *Dutch Primacy*; on the tulip trade, R. Stammler, *Deutsches Rechtsleben im Alten Reich: Lehrreiche Rechtsfälle. I. Band*, Charlottenburg, 1928, Ch. *Die Harlemer Tulpenmanie (1634–1637)* (= p. 211 and following.); A. Goldgar, *Tulipmania: Money, Honor and Knowledge in the Dutch Golden Age*, Chicago, 2007.

30 But see J. Denucé, "De Beurs van Antwerpen", *Antwerpsche Archievenblad* 6 (1931), 81–145; De ruysscher, "Antwerp commercial law in the sixteenth century: a product of the Renaissance?"; De ruysscher, "From Usages of Merchants to Default Rules".

31 J.W. Flume, "Constructing the Stock Exchange. On the Rise and Fall of an Iconic Place of Capitalism", *Rechtsgeschichte – Legal History* 29 (2021), 412–430.

illustration as to why the emergence of exchanges in Northern Europe during the sixteenth and seventeenth centuries brought about a new type of trading venue (see 2.). At the same time, contract law was revolutionized within the exchange through *termijnhandel* (futures trading). The future was unlocked by contract law. Now, not only were trading partners able to negotiate spot contracts (*marché au comptant*, *Baarkauf*; *Handgeschäft*) for the immediate trade of goods for money, but they were also able to conclude futures contracts (*Termin- und Zeitgeschäft*, *marché à terme*, *time contracts*).³² Exchange relationships among sellers and buyers ceased to be static; the future could be priced and fluctuations in market prices hedged.

Futures – bilateral sales contracts for standardized goods for future delivery – were concluded by way of *makelaars* (brokers) commissioned by merchants in the courtyard. Here, one peculiar aspect stands out, which, to the ‘normal’ understanding of private law, is bound to seem downright outrageous: insofar as the process of concluding contracts is handled globally through the so-called *rescontre* system, the fate of all contracts within a certain trading period on the exchange are correlated. At the *rescontredag* (settling date or *Liquidationstag*), the *makelaars* would meet to clear all contracts. A merchant would be obliged to deliver or receive goods, or simply pay cash. Connecting all contracts in a market via the *rescontre* system, however, had a staggering effect: by agreeing to participate in the *rescontre*-clearing, the parties either accepted performing, or receiving performance, by any member of the futures market. Mutual claims were canceled out. If a merchant bought and sold commodities or shares during the same campaign, he would be able to neutralize specific performance by way of cash settlement. Today, this activity is called: closing out a position.

Existing (economic history) literature on the subject accords secondary, inessential importance to the *rescontre* mechanism.³³ Yet there is far more to it than meets the eye, for it constitutes the legal foundation of all derivatives

32 It was only over the course of the twentieth century that the term “futures” became established as a global *terminus technicus* of commodity and financial markets. In the nineteenth century, *Börsentermingeschäfte* (futures) were frequently termed “*Differenzgeschäfte*” in German-speaking countries (on this see J.W. Flume, *Marktaustausch: Grundlegung einer juristisch-ökonomischen Theorie des Austauschverkehrs*, Tübingen, 2019, 231–245). J. Aroni, *Futures*, New Orleans, 1882, is recognized as one of the first English-language works to employ the term ‘futures’; cf. also H.C. Emery, *Speculation on the Stock and Produce Exchange of the United States*, New York, 1896, 32 and following.

33 See for instance Gelderblom and Jonker, “Amsterdam as the Cradle of Modern Futures”, 189, 191; G. Poitras, “From Antwerp to Chicago: The History of Exchange Traded Derivative Security Contracts”, *Revue d'Histoire des Sciences Humaines* 20/1 (2009), 11–50, here 27.

markets. The *rescontre* system, introduced to the Amsterdam Exchange during the seventeenth and eighteenth centuries, is the blueprint for the construction of any modern derivatives market. It also helps us get to the core of one of the greatest myths in economic legal history, namely, the gambling stigma: contrary to the classic notion, one can clearly show that futures contracts are not breeding grounds for illegitimate betting, but for innovating contract performances.

Finally, one caveat is pertinent. Exchange trading, and futures trading in particular, is often portrayed in terms of bans, restrictions and litigation. This approach is justified and provides some interesting insights, but it always runs the risk of presenting a distorted picture of how derivative trading works, since it only describes the ‘malignant’ cases. The focus of the present analysis, however, is to show how exchange trading was legally constructed and operated.

2 Visiting Two (Historical) Marketplaces

We start by visiting two very different seventeenth-century marketplaces, the *Fondaco dei Tedeschi* at Venice and the Amsterdam Bourses, as well as their predecessors at the Antwerp and London Exchanges. As we shall see, both types of venue represent fundamentally different concepts in the organization of trade.

2.1 The *Fondaco Dei Tedeschi* in Venice

Our first site, the *Fondaco dei Tedeschi* in Venice located next to the Rialto Bridge, may still be admired today. Figure 6.5 shows an engraving dating from 1616. Produced by Augsburg draughtsman and engraver *Raphael Custodis*, it gives a fair idea of the stately dimensions of the building, which underwent complete reconstruction by the Republic of Venice following a fire in 1505. The *fondaco* was doubtless an overwhelmingly splendid edifice: The exterior walls were embellished with frescoes by Giorgione and Titian, while the first floor comprised a winter hall furnished with a magnificent fireplace and a summer hall, which housed, among other things, various works by Titian, Palma Vecchio, Paolo Veronese, and others.³⁴

34 For a comprehensive account, see Ph. Braunstein, *Les Allemands à Venise (1380–1520)*, Rome, 2016; W. Heyd, “Das Haus der deutschen Kaufleute in Venedig”, *Historische Zeitschrift* 32 (1874), 193–220; S.P. Oakes, “‘Hieronymo Thodesco’ and the Fondaco dei Tedeschi: A Reappraisal of the Documents and Sources Relating to a German Architect in Early Sixteenth-Century Venice”, *Zeitschrift für Kunstgeschichte* 72/4 (2009), 479–496;



FIGURE 6.5 Raphael Custos, *Domvs Germanorum emporica*, 1616 – Germanisches Nationalmuseum Nuremberg, *Graphische Sammlung*, HB 2300, 1228 (published in: *German History Intersections*, <https://germanhistory-intersections.org/en/migration/ghis:image-151> (last consulted 13 June 2025)).

As far as the operation of this unique building complex is concerned, it is worth starting with the etymology of the word *fondaco*, as it shows us that what we are dealing with here is an institution of commercial law deeply rooted in the historical and cultural roots of the Mediterranean region. The common Latin word *fondaco* derives from the Arabic word فندق (*funduq* [lodging]), itself an adaption of the Greek πανδοχείον (*pandocheion* [hostel]).³⁵ As is well known,

J. Schulz, “Titian at the Fondaco dei Tedeschi”, *The Burlington Magazine* 143/ 1182 (2001), 567–569; H. Simonsfeld, *Der Fondaco dei Tedeschi in Venedig und die deutsch-venetianischen Handelsbeziehungen: Eine historische Skizze*, Stuttgart, 1887; extensively E. Concina, *Fondaci: Architettura, arte e mercatura tra Levante, Venezia e Alemagna*, Venezia, 1997.

35 O.R. Constable, “Reconsidering the Origin of the Funduq”, *Studia Islamica* 92 (2001), 195–196; L. Goldschmidt, “Ursprünge des Mäklerrechts. Insbesondere: Senal”, *Zeitschrift für das Gesamte Handels- und Wirtschaftsrecht* 28 (1882), 115–130, at 124; W. Heyd,

‘Tedeschi’ denotes the ‘Germans’; while merchants from across Central Europe were also granted admission, the Upper German merchants from Regensburg, Nuremberg and Augsburg were said to have been predominant in most of what took place there.³⁶ The *Fondaco dei Tedeschi* thus served as living quarters or hostel for the Germans, or, as it was often referred to in the nineteenth century, the “German purchasing and storage house”.³⁷

As institutions of medieval commercial law located throughout Italy, the *fondachi* were buildings designed to channel and control trade coming in from the East.³⁸ The basic design consisted for the most part of a rectangular compound of buildings set around an inner courtyard, complete with adjoining storage facilities, and accessed via a large gate. In Venice, merchandise was transported by way of barge across the Rio Grande to the *fondaco* landing station on the canal, where it was weighed and registered before being stored in the inner courtyard.³⁹ The inner courtyard housed twenty-five vaulted storage facilities (*volte*), miscellaneous function rooms, some eighty guest rooms, as well as a wine tavern and chapel.⁴⁰ There were also twenty-two shops outside the building that were rented out to Venetians by the government of the city-state.⁴¹ Unlike the *fondachi* of the Arab region,⁴² – or, indeed, the London seat of the Hanseatic League in the steelyard⁴³ – the Germans’ trading and warehousing was not self-administered by foreign merchants, but instead supervised by the Venetian *visdomini*, who also monitored the levying of cus-

Geschichte des Levantehandels im Mittelalter, Zweiter Band, Stuttgart, 1879, 430, note 6; W. Heyd, “Ueber Funda und Fondaco. Zu Diez’ etymol. Wörterbuch der roman. Sprachen. 4. Aufl. 1878”, *Sitzungsberichte der philosophisch-philologischen und historischen Classe der k. b. Akademie der Wissenschaften zu München* (1880), 617–627; U. Israel, “Fondaco” in A. Cordes e.a. (eds.), *Handwörterbuch zur deutschen Rechtsgeschichte, Band 1*, Berlin, 2008, col. 1614; H. Kellenbenz, “Fondaco” in R. Autty (ed.), *Lexikon des Mittelalters, Teilband 4*, Munich, 1989, col. 617.

36 Kellenbenz, “Fondaco”, col. 617; Simonsfeld, *Der Fondaco dei Tedeschi*, 41, 167.

37 Thus, e.g., L. Goldschmidt, *Vermischte Schriften, Band 2*, H.V. Simon (ed.), Berlin, 1901, Ch. Handelsrecht (geschichtliche Entwicklung) (1892) 43 (“Kauf- und Lagerhaus der Deutschen”).

38 See D. Calabi, *The Market and the City, Square, Street and Architecture in Early Modern Europe*, Aldershot, 2004, 187 and following; O.R. Constable, *Housing the Stranger in the Mediterranean World: Lodging, Trade, and Travel in Late Antiquity and the Middle Ages*, Cambridge, 2004; for a concise and informative account: H. Kellenbenz, “Fondaco”, col. 617 and U. Israel, “Fondaco”, col. 1614.

39 Constable, *Housing the Stranger*, 323.

40 See, in reference to the seventeenth century, Simonsfeld, *Der Fondaco dei Tedeschi*, 111 f.

41 Simonsfeld, *Der Fondaco dei Tedeschi*, 111.

42 See Constable, *Housing the Stranger*, 323.

43 On this, A. d’Haenens, *Die Welt der Hanse*, Antwerp, 1984, Ch. Der Stalhof oder Steelyard in London, 189 and following.

toms duties.⁴⁴ The merchants, moreover, were authorized to enter into contracts with Venetian citizens for those commodities⁴⁵ stored in the *fondaco* only through the agency of brokers, the so-called *sensali* (or *Unterkäufer*), who, in some cases, also doubled as interpreters.⁴⁶ As Levin Goldschmidt trenchantly pointed out in his *Universalgeschichte des Handelsrechts*, “[t]he state-appointed broker [...] tended to be a mandatory intermediary in foreign trade.”⁴⁷ It is worth noting that during this period Venetians were forbidden to trade with German merchants outside the city and were barred from travelling north to trade in German cities.⁴⁸

2.2 The *Beursen* at Antwerp (1531), London (1566) and Amsterdam (1611)

Whereas German merchants came and went at the *fondaco*, where merchandise was loaded and unloaded, in the North – as the result of the economic history of the ‘cities of commerce’ (Bruges, Antwerp and Amsterdam)⁴⁹ – the Low Countries witnessed the emergence of a new, centralized type of trading venue, namely, the exchange.⁵⁰ We first learn of what an exchange building is – namely, a new, independent type of building and trading venue – in the first half of the sixteenth century. Thus, inaugurated in 1531 under the aegis of Charles V, the *Nieuwe Beurs Antwerpen* (New Antwerp Exchange) (Figure 6.6.) was to set the standard for subsequent centuries.

The name adopted for this new trading place was *boers*, *beurs*, *byrse*, as was familiar from Bruges. Contrary to a common misunderstanding, it did not refer to an exchange building, but simply to the name of a particular exchange

44 Constable, *Housing the Stranger*, 322 and following; Heyd, “Das Haus der deutschen Kaufleute in Venedig”, 210 and following.

45 For traded goods, see Constable, *Housing the Stranger*, 319 and following; Simonsfeld, *Der Fondaco dei Tedeschi*, 103 and following.

46 On the historical origins of brokerage law (*Maklerrecht*), see Goldschmidt, “Ursprünge des Mäklerrechts”; Simonsfeld, *Der Fondaco dei Tedeschi*, 23 and following.

47 L. Goldschmidt, *Handbuch des Handelsrechts, Erster Band, Geschichtlich-literarische Einleitung und die Grundlehren, Erste Abteilung, Universalgeschichte des Handelsrechts*, 3rd ed., Stuttgart, 1891, 22 (with detailed sources in footnote 18).

48 See Constable, *Housing the Stranger*, 319.

49 Thus, the title of the seminal work by Oscar Gelderblom on the economic history of international trade in the Low Countries from the thirteenth to the seventeenth centuries (*Cities of Commerce: The Institutional Foundations of International Trade in the Low Countries, 1250–1650*, Princeton, 2013).

50 For a detailed account see Flume, *Constructing the Stock Exchange*, 412 and following.; Id., *Marktaustausch*, 21 and following.



FIGURE 6.6 Lodovico Guicciardini, *Descrittione di tutti i Paesi Bassi*, Antwerp, 1567, 100 and following

square. It was located, namely, where the “van der Beurze” family operated three hostels from the thirteenth through to the fifteenth centuries, which can still be seen today.⁵¹ Together with London’s Royal Exchange I (1566), and the Amsterdam Exchange of 1611, this new, revolutionary exchange in Antwerp, is above all noticeable – especially when contrasted with the *Fondaco* – by two striking, highly significant and, at first glance, easily overlooked details that best characterize the building’s function.

The first is that the squares are ‘empty’, that is, absent of goods. In contrast to the *fondachi* or the later Gothic trading halls of Flanders, the Bourse was an enclosed space serving not the on-site purchase or inspection of goods, but the exchange of information and the initiation and conclusion of contracts. The unique structure of this trading area was vividly detailed in Jacques Accarias de Sérionne’s *La Richesse de la Hollande* (1778):

Trade requires activity, and no institution was more effective in the provision of such than a public forum at which merchants and brokers meet daily at a prearranged hour. It is here that the most numerous of contracts are negotiated

51 Flume, “Constructing the Stock Exchange”, 413 and following.

and concluded each day, and where the greatest commercial operations are carried out in the blink of an eye; without meetings, such transactions would proceed only very slowly. Here, at an hour heralded by the peal of bells, the *macklers* receive engagements from merchants, whose word, once given to these *macklers* is irrevocably binding, for whomsoever it may be. The exchanges of Amsterdam and Rotterdam are two large marketplaces to which no merchandise is conveyed, but only where bids and requests for the merchandise in the merchants' warehouses are tendered, and at which only credit and commercial acumen have a place. And it is here, too, where all merchants gather especially useful knowledge for directing the operations of their *comptoir*, for expanding their reputation, for fortifying their credit, for shaping, revising and further expanding their speculations. These are things that draw the merchants to the exchange each day, even if they have no other particular business to transact there. Here is where the rates for bills of exchange for all European countries are adjusted daily, depending on whether a greater or lesser number of bills are requested for each place: this is a commercial operation barely feasible elsewhere, or not without greatest inconvenience, something which, if attempted, would only result in a great deal of delay in trade itself.⁵²

The second essential piece of information in the engraved depictions of the exchanges may be gleaned by looking at the wide variety of garments and headgear – hats, turbans and the like – worn by the merchants gathered in the courtyard (Figure 6.7).

The Bourse was a place instituted for general trading – not imposed by individual groups – where merchants of all nations and origins were able to assemble at specific trading times. The motto of the Antwerp Exchange was entirely in this spirit: *in usum negotiatorum cujuscunque nationis ac linguae* (dedicated to the merchants of all peoples and to all languages). According to the *Ordonnantien van de Beurs* of 1592, amended in 1611, during trading hours – 11 a.m. to 12 a.m. and 6.30 p.m. to 7.30 p.m., access was free, except for children, beggars and those likely to cause a disturbance, who were barred entry during assembly hours.⁵³ The organization of the market within the exchange, how-

52 The translation is based on Jacques Accarias de Sérionne, *Der Reichthum von Holland, oder Untersuchungen über den Ursprung des Handels und der Macht der Holländer; den allmählichen Anwachs ihres Handels und ihrer Schifffahrt, die Ursachen ihrer Fortschritte und ihres Verfalls, und die Mittel, sie wieder empor zu bringen. Erster Band. Aus dem Französischen*, Leipzig, 1778, 590.

53 Scheltema, *De Beurs van Amsterdam*, 45–47. For the discussion on access restrictions to the exchanges during the nineteenth century, see A. Engel and J.W. Flume, "Bullen, Bären – und Lämmer? Auseinandersetzungen um die Börsenfreiheit und die Termin-



FIGURE 6.7 Boëtius Adamsz. Bolswert, *Byrsa Amsterdamensis* (1609), detail of figure 6.2.

ever, did not end here: Within the inner courtyard of the exchange, market organization or market separation was affected by allocating specific places to the various products, but also to traders from different nations. Thus, a plan for the Amsterdam Exchange has been preserved in which the 46 columns dating from the 1668 reconstruction were numbered consecutively, such that each number was assigned to a type of commodity, occupational class or group of people (Figure 6.8.).⁵⁴

De koophandel van Amsterdam (1753) – the merchant’s handbook by Isaac le Long – provides an informative impression of the traded goods and objects and also details the market’s physical divisions.⁵⁵ It also explains

spekulation des ‘unberufenen Publikums’ im 19. Jahrhundert”, *Rechtsgeschichte – Legal History* 28 (2020), 164–181.

54 Similar plans have been preserved for the Royal Exchange II in London (1761) and the Neue Börse Hamburg (1841).

55 Isaac le Long, *De Koophandel Van Amsterdam: Naar Alle Gewesten Des Werelds*, Rotterdam, 1753, 49–51: “Yet, thanks to the good order, orientation is easy, despite all the hustle and bustle. Indeed, the 46 columns that form so many arcades leading up to the perimeter wall are all marked with numbers, from N^o. 1 to 46, to denote the kind of negotiators who are to be found at each pillar. When approaching from the lock side of the Exchange, in the narrow lane, between and around pillars N^o. 2. and 3 one first finds where the noble Jewish people are who trade and exchange all manner of gold and silver ‘minted’ and ‘unminted’. Between N^o. 4 and 5 can be found the tobacco merchants. And at N^o. 6 and 7 the sub-dealers of Suriname, Curaçao, and other places from the West Indies and Sweden. Somewhere around N^{os}. 8, 9, 10, 11 and 12 there are the merchants and mariners who trade with Spain, Italy, Egypt and the Mediterranean, Turkey and the Canary Islands. Roughly at N^{os}. 13, 14, 15 we see the manufacturers of silk fabrics and silk merchants, Greeks, Armenians and Persians. At N^{os}. 16, 17, 18 some brokers (*maakelaars*) trading in hard commodities, and some of the renowned bankers who deal in bills of exchange, as well as merchants in Bilbao, Biscay and Portugal. At pillar N^{os}. 19 and 20 when approaching from the tower side, to the left one finds spice merchants. At the same time, near pillar N^{os}. 28, 29 and 30, the goldsmiths and bond dealers, etc. At N^{os}. 31, 32 there are some more merchants of hard commodities (stationary merchandise), &c. N

how the exchange acted as a “knowledge hub” for disseminating information.⁵⁶

os. 33, 34, 35 are home to the leather merchants, oil merchants, soap boilers, and cashiers. While at N^{os}. 36, 37, 38 we see the wool and cloth merchants, and others who deal with the Spanish Netherlands. At and around N^{os}. 39 and 40 we find the Muscovite and Oriental merchants, the mariners and grain traders. At N^{os}. 41, 42, 43 the resin and train-oil [whale oil] merchants. At N^{os}. 44, 45 and 46 the merchants and mariners, who trade with Denmark, Norway, etc., along with the timber merchants; among these are the several Zardammer (Zaandam) merchants every Monday, Wednesday and Friday. Then, at the centre of the Beurse, when entering via the lock side, at N^o. 1 there are: First, the wine merchants and then the French merchants and mariners. A little further along there are the Bremen and Hamburg merchants and merchants, as well as the bargemen (*Schuytevoerders*). Somewhat beyond these are the paint merchants and druggists followed by the English merchants and mariners, the cotton merchants, linen, cloth and paper traders. And, lastly, we find the confectioners, stockbrokers and Portuguese Jews.”

- 56 Ibid., 51–54: “Public auctions of wine and sales of all other goods are announced on the majority of pillars, as are the ships loaded in various regions of the world, along with other things, as may be read from the advertisements displayed on them. On some of the pillars can be read the following text, which one ought to look out for there: N^o. 1: Wines sales. N^o. 6: Sweden. N^o. 9: Spain. N^o 10: Auctioning of ships. N^o. 12: Italy. N^o. 13: Auctioning of chemicals and paint products. N^o. 15: Bay of Biscay. N^o. 18: Portugal. N^o. 35: Auctioning of chemicals and paint products. N^o 39: Gdansk. N^o 40: Coninxbergen (*Königsberg*). N^o 41: Denmark and the Baltic Sea. N^o 42: Auctioning of ships. N^o 43: Renting of warehouses, attics and cellars. N^o 44: Bergen, Trondheim and the whole of Norway. N^o 45: France. Beneath the arches and along the wall, there are various black, inscribed wooden panels all around, with white letters that read: Between N^{os}. 4 and 5: Tobacco. At N^o. 7: West Indies, Suriname and Curaçao. Between N^{os} 9 and 10: Departure of ships to Cádiz, the entire Mediterranean and Canary Islands. Between N^{os} 12 and 13: Auction of silks and manufactories. Between N^{os}. 15 and 16: Sales of stationary goods. Between N^{os}. 32 and 33: Sales of stationary goods. Between N^{os} 33 and 34: Auctioning of skins. Between N^{os} 35 and 36: Soap boilers and oil storage. Between N^{os} 37 and 38: Auctioning of wool and cloth. At N^o 39: Moscow, Archangelsk and Russia. Between N^o 41 and 42: Greenland. At N^o 42: Riga, Reval, Lübeck, Gdansk and Courland. At N^o 43: Auctioning of wood products. Displayed on every pillar, accordingly numbered, throughout and beneath the arches, and on the walls, are countless slips of paper, each according to the above inscription; containing the auctioning of houses and other immovable goods, ships and all manner of merchandise; as well as notices of the ships currently being loaded, their departure times, their anchorages, the brokers, agents, etc., from whom may be obtained additional information. With the numbers on which only countries and cities are listed, there are, as a rule, those merchants and mariners who trade or sail to those destinations. On both sides of the gallery, one also finds along the wall a great number of noticeboards of persons tendering their services for the provision of clerks for comptoir- and shopkeepers, bookkeepers, housekeepers, maids, gardeners, and all manner of other salaried servants. Since the number of these service suppliers

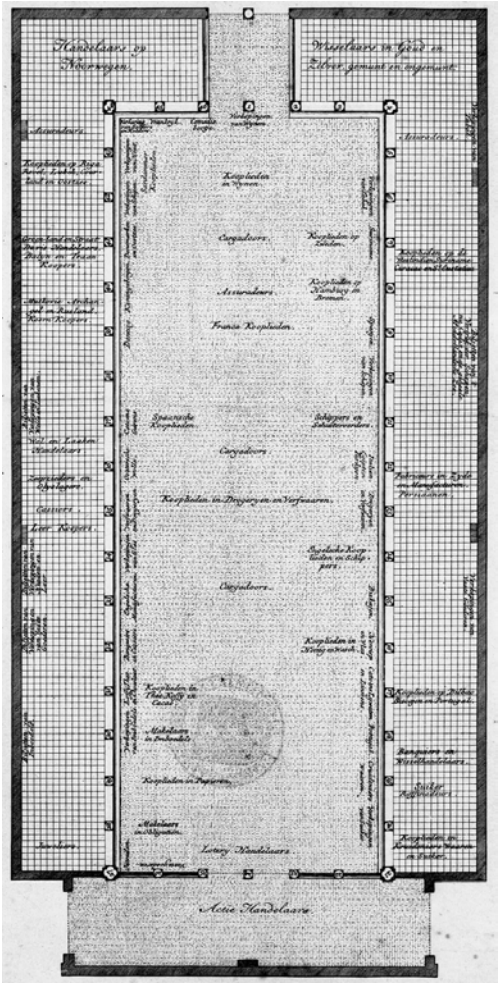


FIGURE 6.8
Anonymous, *Plattegrond van de Beurs van Hendrick de Keyser in Amsterdam* (1801) – Municipal Archives Amsterdam, *Tekeningen en prenten* (inv. 10097), 2627

3 Markets and Market Design

The two distinct types of trading places – Venice, then Antwerp, London and Amsterdam – are not only impressive as sites for observing economic life, but their juxtaposition reveals just how fundamental trading practices within the exchange had an impact on the evolution of private and commercial law.

(*Besteeders*) is continually on the rise, one may clearly infer the increase of commerce in this famous city.

3.1 Weekly Markets and Bazaars

The institutional provision of “*Markt- und Handelspolizei*”⁵⁷ (market and trade police) – which, among other things, were deployed to audit units of measurement and weight, the quality of commodities as well as price control – has been in place since antiquity. Hence the *agoranomoi* (ἀγορανόμοι) in the Athenian *Agora*, as well as the *aediles curules* in Rome, which, according to Theodor Mommsen⁵⁸ were based on the Greek model, oversaw activities in the market.⁵⁹ These represented fascinating early attempts to regulate the market. Nevertheless, from a private law perspective, a weekly market, bazaar or *fondaco* are little short of primitive. In these markets, goods were traded on the spot and cash sales, *Handgeschäfte*, *Barkäufe*, *Handgeschäfte* or *marché a comptant* were executed. Goods are exchanged for nominal cash or other means of payment. Presumably, according to ancient Greek law, ancient common law and the Germanic legal traditions, sales contracts were not understood as consensual, but as real contracts (*Realverträge*).⁶⁰ As Reinhard Zimmermann summarizes: “In all the ancient laws, sale was essentially a market transaction. It was concluded *inter praesentes*, and where conclusion of the contract and execution of the mutual performance (i.e. the transfer of the object of sale and payment of the purchase price) coincided.”⁶¹ Neither party was ever contractually obliged to render performance or to effect payment. The relationship stood or fell on the basis of the actual exchange.

57 The expression employed by Goldschmidt, *Universalgeschichte des Handelsrechts*, 70.

58 Th. Mommsen, *Römisches Staatsrecht*, 2. Band, 1. Abtheilung, 3rd ed., Leipzig, 1887, 497 and following.

59 On the *agoranomoi* and trade on the Agora: A. Bresson, *The Making of the Ancient Greek Economy: Institutions, Markets, and Growth in the City-States*, trans. Steven Randall, Princeton, 2016, 234 and following; E. Jakab, *Praedicere und cavere beim Barkauf: Sachmängel im griechischen und römischen Recht*, Munich, 1997; see also links between *agoranomos* and Islamic *muhtasib*: B.R. Foster, “Agoranomos and Muhtasib”, *Journal of the Economic and Social History of the Orient* 13/2 (1970), 128–144.

60 W.W. Buckland, A.D. McNair and F.H. Lawson, *Roman Law and Common Law*, 2nd ed., Cambridge, 1952, 282; A. Heusler, *Institutionen des Deutschen Privatrechts, Zweiter Band*, Leipzig, 1886, 253; F. Pringsheim, *The Greek Law of Sale*, Weimar, 1950, 86 and following; R. Zimmermann, *The Law of Obligations, Roman Foundations of the Civilian Tradition*, Cape Town, 1990, 237. On the origin of the Roman legal idea of consensual contracts, see F. Pringsheim, “L’origine des contrats consensuels” in *Gesammelte Abhandlungen*, vol. 2, Heidelberg, 1961, 175–193, at 179 and following (also published in *Revue historique de droit français et étranger* 31 (1954) 475–495).

61 Zimmermann, *The Law of Obligations*, 237.

3.2 Exchanges

The exchange is a completely different place. Stripped of the atmosphere evoked by the feel, the aromas, the colours and the merchandise of the bazaars and market halls, it is far more abstract. At first glance, one is faced with the chaotic hustle and bustle of all manner of people from far and wide. A second glance, however, reveals a remarkably organized market structure, which, as epitomized by Max Weber in his economic history of 1919/1920, facilitates the “emancipation of economic action from the momentary situation” (“[die] *Emazipation des wirtschaftlichen Handelns von der Augenblickslage*”).⁶² Here, one may negotiate both the immediate exchange of goods for money and “speculate on future market situations”.⁶³ In the exchange, in contrast to the regular weekly market or bazaar, contracts may be concluded on two different markets: on the spot market and on the forward respectively futures market. Wheat or whale baleen, for instance, may be purchased directly, or contracts may be concluded for delivery in one, two or even six months.

3.2.1 Fundamentals of Spot and Futures Markets

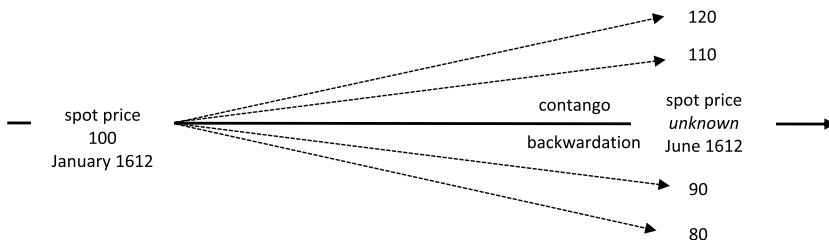
Traders know only the current market price or spot price of a commodity. The future, on the other hand, is impossible for anyone to predict, and natural disasters, wars and epidemics – all issues we are unfortunately facing again today – are apt to lead to price volatility and uncertainty with respect to price trends. Now, however, the risk of market price fluctuations may be addressed and price risk hedged by way of a simple over-the-counter forward market as well as a standardized and exchange-driven futures market. In these markets, the future has a ‘price tag’. Now, commodities no longer have a spot market price only, but also a forward and futures price.

3.2.2 Trading Baleen in the Courtyard of the Exchange

The implications of this crucial financial innovation are best exemplified by way of a straightforward scenario. For the sake of clarity, we shall consider a purely fictional case in which a merchant acquires baleen from the upper jaw of a whale in January 1612; he sells the baleen to manufacturers who then

62 M. Weber, *Wirtschaftsgeschichte, Abriss der universalen Sozial- und Wirtschaftsgeschichte*, Munich, 1924, 5.

63 Weber, *Wirtschaftsgeschichte*, 5.

FIGURE 6.9 Example of *rescontre*

process the baleen into luxury goods such as hats, parasols and so on. Now, let us suppose that the spot price for the immediate purchase of whale baleen in January is 100, whereby, the future spot price for baleen in June 1612 is, of course, given that nobody can predict the future, unknown in January. At the same time, baleen is offered at 110 for delivery in June. There may be very different causes for this pricing: Perhaps traders are well aware that during the summer months ever fewer catchers land in Amsterdam. Prices reflect implicit information as to how the market assesses price developments. Forward or futures prices exceeding or falling below market prices are referred to as *contango* or *backwardation* respectively. Further details should not concern us here.

Let us now further assume that the parties agree on 110 in January for delivery in June. The months go by and show fluctuations in the price for whale baleen. In June, finally, the spot market price for whale baleen is at 120. For our two traders, this means that the baleen must be delivered for 110, even if the market price is 120. In this case, the buyer is protected from any price increase above the purchase price of 100 – he is *hedged*.

Hedging is regularly discussed as a feature of sophisticated financial market instruments. It is also sometimes claimed that hedging requires the combination of two transactions, namely, that a spot-market transaction must be combined with an opposite transaction on the futures market.⁶⁴ But things are much easier. A ‘simple’ hedge requires neither a combination of a large number of transactions nor complex financial instruments. Rather, the sales contract itself is the archetype, the mother of all hedges. Generally speaking,

64 The matter in which it is perpetually stated is misleading: for offsetting price risk (i.e. hedging), one needs to take an opposite position in *another* asset or market, see, for example, Ch. O. Hardy and L.S. Lyon, “The Theory of Hedging”, *Journal of Political Economy* 31/2 (1923), 276–287. It needs no other opposite position in *another* contract to effectuate hedging, because every contract itself addresses the problem of price risk.

every sales contract has an *inbuilt hedge effect*.⁶⁵ While this important effect is hardly ever dealt with in contract law,⁶⁶ it is described, by default, in the context of forwards and (exchange-traded) futures in the economics literature on derivatives.⁶⁷ However, from a contract law perspective, a forward contract is nothing other than a simple sales contract – a contract in which the price is already fixed in the present, but whose execution is postponed to the future. The one feature distinguishing a forward and futures contract from a spot contract is only that in the latter instance, the performance interval is extremely short, albeit that the risk structure remains the same.

3.2.3 The Futures Market of the Amsterdam Exchange during the Seventeenth and Eighteenth Centuries

How did futures trading work on the Amsterdam Exchange, and what provisions were taken to safeguard its functioning? One of the clearest and most remarkable accounts – almost completely overlooked in previous research – was given by Jean-Pierre Ricard in *Le Négoce d'Amsterdam* at the beginning of the eighteenth century. His first, general characterization of futures trading is as follows:

Trades such as these are usually based on vague, fanciful manifestations rather than on realities; generally, very dangerous, they have invariably ruined and reduced many people: the peculiarity of this trade is such that it so jinxes and enthral the minds of those who indulge in it, that they are unable to escape it without having first utterly wrecked themselves. This always arises when war is announced against some country, or when the impending harvest of some commodity in one or the other country has failed; or even when an obstacle prevents the trader from being able to export the goods from the country whence they originate; and, finally, when certain people contrive to think that a certain commodity is set to increase substantially in price by a certain date, and that, accord-

65 Flume, *Marktaustausch*, 121 and following; 257.

66 For one of the very few detailed analyses from a law and economics perspective, see John H. Barton, "The Economic Basis of Damages for Breach of Contract", *The Journal of Legal Studies* 1/2 (1972), 277–304. See also Cl.P. Gillette and S.D. Walt, *Sales Law, Domestic and International*, 3rd ed., New York, 2016, 418 (acknowledging that parties of fixed price contracts care about the allocation of market price fluctuations).

67 See, e.g., R.E. Bailey, *The Economics of Financial Markets*, Cambridge, 2005, 4 and following; J.C. Hull, *Options, futures and other derivatives*, 10th ed., New York, 2017, 25.

ingly, they purchase large quantities thereof with a view to reselling the same only at great profit.⁶⁸

In addition to the shares of the Dutch East India and West India Companies – those of the British East India Company are said to have been excluded from trading – pepper, saltpetre, coffee, cocoa, cochineals, brandy, grain, whale baleen and whale oil were traded as futures (*à terme*).⁶⁹

The contract was concluded by a broker (*makelaar*) who would fill out two pre-printed contract forms, which the parties would then countersign and exchange with each other.⁷⁰

After trade is concluded, the broker fills out two contracts, one of which he has countersigned by the seller and the other by the buyer; he then he exchanges them by returning the one signed by the seller to the buyer and the one signed by the buyer to the seller; such pre-printed contracts are available from book-sellers, and brokers simply have to fill in the names of the buyer and the seller and the list of names, quantities and prices of commodities, and delivery date.⁷¹

68 J.-P. Ricard, *Le Négoce d'Amsterdam* [...], Amsterdam, 1722, 54: "Ces sortes de marchez sont plus souvent sur des apparences vagues & chimeriques que sur des realitez, ils sont en général très-dangereux & ont de tems ruiné & fait manquer beaucoup de monde: ce Commerce a cela de particulier, qu'il enchante & enforcele presque tellement l'Esprit de ceux qui s'y adonnent, qu'ils n'en reviennent que lors qu'ils s'y sont entierement ruinez. Il se fait presque toujours lors qu'il y a des apparences d'une guerre prochaine avec quelque Pays; ou lors que la recolte de quelque marchandise a manqué dans quelque Pays; ou bien lors qu'il y a quelque obstacle qui empêche de pouvoir tirer à droiteure des marchandises du Pays d'où elles viennent; ou bien enfin lors que quelques uns se mettent en tête, que quelque marchandise augmentera considerablement dans certain tems, & qu'ils en achètent de grosses parties, dans le dessein de ne les revendre qu'à un gros profit."

69 Ricard, *Le Négoce d'Amsterdam*, 62; see also J.G. van Dillen, "Termijnhandel te Amsterdam in de 16de en 17de eeuw", *De Economist* 76 (1927), 503–523.

70 For the precise wording of such forms, see Ricard, *Le Négoce d'Amsterdam*, 55 and following.

71 Ricard, *Le Négoce d'Amsterdam*, 55: "Le Marché etant conclu, le Courtier en écrit deux Contracts dont il fait signer l'un au Vendeur & l'autre à l'Acheteur, qu'il échange ensuite en donnant celui que le Vendeur a signé, à l'Acheteur, & celui que l'Acheteur a signé, au Vendeur; ces Contracts se trouvent imprimez chez les Libraires, & les Courtiers n'ont qu'à remplir les vuides du nom de l'Acheteur ou du Vendeur, & du nom, de la quantité & du prix de la marchandise & du tems de la livraison, voici la marchandise dont ils se font."

At the account settlement date or *Rescontredag*,⁷² liquidation was effected by the brokers.⁷³ The usual settlement dates for trading in coffee, according to Ricard, were the first of January, May, July and October.⁷⁴ For such settlements, each broker maintained a *rescontre* book detailing the quantities sold and bought by his client and from whom,⁷⁵ whereby obligations to deliver and to purchase may have resulted.⁷⁶ The lion's share of such transactions, however, was settled by paying the difference. "A great number of parties settle accounts once business has been transacted, one by paying out a surplus to the other: something known as *rescontres ou rencontre les parties*."⁷⁷

The coordination as to how much was to be paid by and to whom for what commodity (delivery, acceptance or paying the difference) was settled by the brokers among themselves. This procedure is outlined in Isaac de Pinto's book, published some fifty years later:

Those concerned with settlement gather around a large table in a hall during one day of the settlement month. Each broker can take on the task of settlement for up to ten to twelve persons, and everything (*Skontrobogen*?) [accounts ledgers] is lined like music paper. – The procedure is thus: Whosoever is entrusted with the settlement declares that someone has sold 1000 pounds to someone else who is ordered to pay for it. The person charged with settling the buyer's transactions issues confirmation of this. Once the buyer himself takes delivery of the securities, everything is settled [...] but since the first buyer may have resold his lot to another, and, in turn, the new buyer to another, and so on in cascade fashion until the buyer or seller locates a closing operation, i.e., an effective or artificially induced acceptance. In settlement, this transfer is called

72 In literature on nineteenth-century stock exchanges, this date is referred to as the *Liquidationstermin*, *settling day*, *account day* or *fin*, cf. C.S. Grünhut, "Die Börsengeschäfte" in W. Endemann (ed.), *Handbuch des deutschen Handels- See- und Wechselrechts, Dritter Band*, Leipzig, 1885, § 279 (= p. 12).

73 Smith, *Tyd-affaires*, 6; see also the brief notes by Gelderblom and Jonker, "Amsterdam as the Cradle of Modern Futures", 202.

74 Ricard, *Le Négoce d'Amsterdam*, 56; see also Isaac de Pinto, *Traité de la circulation et du crédit*, Amsterdam, 1771, 261 and following; Ch. Wilson, *Anglo-Dutch Commerce & Finance in the Eighteenth Century*, Cambridge, 1941, 14.

75 According to Ehrenberg, "Die Amsterdamer Aktienspekulation", 819, there were traders "called '*rescontrantes*', as they assumed as far as possible the task of balancing the parties against one another, and for collecting and paying out the differences (*surpluses*)."

76 For an exemplary calculation, see Ricard, *Le Négoce d'Amsterdam*, 58 and following.

77 Ricard, *Le Négoce d'Amsterdam*, 57 (emphasis as in the original): "*il se fait un nombre incroyable de parties, qui s'amortissent au bout du terme en se payant le surplus les uns aux autres: on appelle cela rescontrer ou rencontrer les parties.*"

marrying seller to buyer in the last instance. Settlement, therefore, runs back and forth like a weaver's shuttle or is a true cycle.⁷⁸

In addition to the highly advanced *rescontre* procedure, settlement between the contracting parties in the trade in spirits is believed to have been effected by the handing over of a note from party to party, known in Dutch as an "*Overwysing*"⁷⁹ (or *Overwijzing*).

As Ricard clarifies towards the end of his remarks, all the details of futures trading described above serve to make comprehensible one of the basic ideas of exchange-based futures trading:

I was somewhat more explicit on this kind of market, for many among those who heard of it seem incapable of grasping how any man dares undertake to buy or sell ten times more than he disposes over, [...] about which he is well aware that he is not in a position either to take delivery of, or to supply; [...].⁸⁰

3.2.4 The Legal Anatomy of Futures Trading

This final remark by Ricard touches the core functionality of futures markets: Having sold whale baleen ten times over, is not a trader obliged to actually deliver whale baleen ten times? How is it possible for a trader, having sold baleen ten times and purchased it ten times over the course of a trading period, to collect his profit or pay a loss on the *rescontredag*, and not actually deliver or take delivery of the goods? Bearing in mind that sales contracts are types of contracts aimed at the actual exchange of goods for money, doesn't all this look somewhat dubious? The answer to all these questions can be found in the ultimate advancement of sales law: All sales agreements transacted at the exchange over a trading period and of the same class of commodity or financial instrument, are linked by the *rescontre* procedure – or, as it was later called, by way of *Skontration* or the *vivrement de partie*.⁸¹ *Skontration* or

78 Pinto, *Traité de la circulation*, 305 and following; the English translation in the main text of this article is based on the German translation by O. Pringsheim, *Die Verwirrung der Verwirrungen: Vier Dialoge über die Börse in Amsterdam*, Breslau, 1919, XVII; see Wilson, *Anglo-Dutch Commerce*, 83.

79 Jacobson, *Terminhandel in Waaren*, 23 and following; Ricard, *Le Negoce d'Amsterdam*, 59.

80 Ricard, *Le Negoce d'Amsterdam*, 59: "Je me suis peu étendu sur ces sortes de marchez, parce que beaucoup de gens, qui en ont souvent entendu parler, m'ont paru ne pas pouvoir comprendre comment un homme ose s'engager d'acheter ou de vendre pour 10 fois plus qu'il n'a vaillant, [...], qu'il fait bien qu'il n'est pas en état de recevoir ni de livrer."

81 Among fundamental works in German literature on the subject, see Grünhut, "Die Börsengeschäfte", § 279 (= p. 12 and following); and prior to this, by the same author, "Das

rescontre amounts to an exchange clearing procedure devised at the Champagne trade fairs during the twelfth and thirteenth centuries.⁸² The objective here is to offset a large number of contracts by reducing the *gross balance* of all outstanding claims and debts to a *net balance*. This amounts to legal practice, facilitating what is today referred to as *close out* or *Glattstellen*. A trader on the exchange may terminate trading by way of a profit or a loss, namely, through offsetting a position. He is no longer bound to actually deliver or accept the object of trade. Where necessary, he must only pay the difference, or else collect a profit.

To better grasp the effects of *Skontration* or the *rescontre* system and the possibility of closing out positions, we should first briefly review the nature of contracts concluded at the Bourse. According to a common characterization in economics literature on the subject, almost all derivatives may be classified as variants of two basic types of contracts: forwards and futures, on the one hand, options on the other.⁸³ This dichotomous classification was already introduced by Jean-Pierre Ricard and Isaac de Pinto, who distinguished the *marché fermé* (time contracts, *Termin- oder Zeitgeschäft*) from the *marché à option* (options).⁸⁴ This distinction also signaled the point of departure for Louis Bachelier's and Vinzenz Bronzin's pioneering work in financial mathematics at the beginning of the twentieth century, who similarly distinguished "*opérations fermes*" or "*feste Geschäfte*" from "*opérations à prime*" or "*Prämiengeschäfte*".⁸⁵ *Marchés fermés* are fixed or unconditional insofar as the mutual contractual obligations are binding and not subject to the exercise

Börsen- und Mäklerrecht und seine Neugestaltung in Oesterreich", *Zeitschrift für das Privat- und öffentliche Recht der Gegenwart* 2 (1875), 535–613, at 590 and following; K. Cosack, *Lehrbuch des Handelsrechts*, 3rd ed., Stuttgart, 1895, § 63 10. (= p. 402 and following); C. Malß, "Ueber Kompensationscourse, Klagbarkeit der s. g. Differenzgeschäfte und rechtliche Natur der Börsenabrechnung", *Zeitschrift für das Gesamte Handels- und Wirtschaftsrecht* 4 (1861), 1–12.

82 L. Börner and J.W. Hatfield, "The Design of Debt-Clearing Markets: Clearinghouse Mechanisms in Preindustrial Europe", *Journal of Political Economy* 125/6 (2017), 1991–2037, prior Leopold Ladenburg, "Die Börsengeschäfte", *Zeitschrift für das Gesamte Handels- und Wirtschaftsrecht* 3 (1860), 439 and following; G. Cohn, "Die Zahlungsgeschäfte" in W. Endemann (ed.), *Handbuch des deutschen Handels- See und Wechselrechts*, Dritter Band, Leipzig, 1885, § 448 (= p. 1056 and following); G. Neuhaus, *Die Skontration, ihre historische Entwicklung, juristische Natur und volkswirtschaftliche Bedeutung*, Dar-es-Salaam, 1892, 5 and following.

83 Bailey, *The Economics of Financial Markets*, 4 and following; Hull, *Options, futures and other derivatives*, 6 and following.

84 Pinto, *Traité de la circulation*, 292 and following; Ricard, *Le Négoce d'Amsterdam*, 52.

85 L. Bachelier, "Théorie de la Spéculation", *Annales scientifiques de l'École Normale Supérieure* 17, 3e série (1900), 22 = M. Davis and A. Etheridge, *Louis Bachelier's Theory of*

of an option. As we have already noted, they also have a symmetrical risk profile (see 3.2.2. above), since the risk of price volatility is shared between buyer and seller.

Forwards and futures are commonly defined as agreements to buy and sell an asset at a certain future date and price. The difference is that forwards are traded over the counter (OTC), while futures are traded on an exchange. This distinction, today, means that a forward is contracted bilaterally; while futures are concluded on the exchange in a star-shaped structure via so-called central clearing parties (CCPs) – the counterparty risk is addressed via margin accounts – whereby contracts are executed via a technically sophisticated system of clearing and settlement.⁸⁶ From a contract law perspective – despite the many refinements in the legal architecture of the financial market, particularly since the nineteenth century – one core idea remains essential: spot, forward and futures are sales contracts. The threefold distinction made in economics literature on the subject, amounts to economic variants of one and the same type of contract, that is, a sales contract. What differs is the time of execution. In a spot transaction, the exchange occurs almost immediately, whereas in the case of forwards and futures, the actual exchange is deferred to the future.

Yet how was it even possible to distinguish between a forward and a futures contract in the Amsterdam Exchange? With respect to content, futures and forwards were indistinguishable. Each variant was aimed at the delivery of goods or financial instruments at a point in the future, and were bilaterally negotiated between the traders in the inner courtyard of the exchange. The primary difference between forwards and exchange-traded futures, however, consisted in whether they were included into the clearing process and were executed at a specifically fixed settlement date, *rescontredag* or *Liquidationstag*.

The main objective of this procedure was to shorten the settlement of all contracts concluded in a given futures market over a trading period by netting the entirety of obligations by all trading participants. We know of two procedures on the Amsterdam Exchange.⁸⁷ The first was a tender or ticket process conducted by the exchange participants themselves (i). This model corresponded to the trading of spirits on the Amsterdam exchange by means

Speculation, Princeton, 118: “Il y a deux sortes d’opérations à terme: Les opérations fermes; Les opérations à prime”; V. Bronzin, *Theorie der Prämienengeschäfte*, Leipzig, 1908, 1.

86 See Flume, *Marktaustausch*, 216 and following; P. Norman, *The Risk Controllers, Central Counterparty Clearing in Globalised Financial Markets*, Chichester, 2011.

87 See also Flume, *Marktaustausch*, 212 and following.

of tender notes (“*Overwijzing*”), as mentioned by Ricard. The liquidation system used by many exchanges was also organized according to this simple procedure and was operative through to the mid-twentieth century. However, futures were also processed by a central office that utilized a far more elaborate accounts-based clearing system (ii). This process was in keeping with the much higher complexity of the *rescontre* procedure, operated by brokers on the Amsterdam Exchange since the seventeenth century (or, later, for instance during the nineteenth century), by so-called liquidation associations (*Liquidationsvereine*) on the Berlin and Vienna Exchanges.⁸⁸

By way of illustrating the significance of clearing and the way the two different procedures work on the exchanges, let us take one further, deliberately simple, example in which four traders (A, B, C and D) trade in whale baleen. All sales contracts are concluded for delivery of baleen at a certain future time X. A sells baleen to B for 100 (contract No. 1). Later, B successfully sells baleen to C for 105 (contract No. 2). The market price subsequently falls, for instance due to the news of good catches – and C determines to sell baleen to D for 98 to obviate his losses that have increased yet further (contract No. 3). D enters into no further transactions. Hence, we have a total of 3 contracts:

A–B to 100 (contract No. 1)

B–C to 105 (contract No. 2)

C–D to 98 (contract No. 3)

Now let’s see how our exemplary mini-futures market is liquidated by the two procedures.

(i) Tendering and Ticketing Procedures

The tendering or ticketing process effects the direct supply of baleen from the first link in the chain (A) to the last link (D).⁸⁹ The system, of which there are different variants, rests on the underlying premise that a tender note (also known as a *filière*, *declaration of tender*, *Kündigungszettel* or *Overwijzing*) is issued at the top of the chain, namely, by the trader (i.e. A) who intends to deliver, before then being passed on from one trader to the next (i.e. from B to

⁸⁸ Flume, *Marktaustausch*, 216.

⁸⁹ For further details, see Jacobson, *Terminhandel in Waaren*, 22 and following; C.J. Fuchs, “Der Waren-Terminhandel, seine Technik und volkswirtschaftliche Bedeutung”, *Schmolers Jahrbuch* 15 (1891), 61 and following; P. Gramse, *Warentermingeschäfte, Andienung und Andienungsschein*, Marburg, 1921, 104 and following; H. Trumpler, “Börsenwesen” in J. Kohler (ed.), *Enzyklopädie der Rechtswissenschaften, Band III*, Berlin, 1913, 215 and following.

TABLE 6.1 Tender or ticket procedure (without liquidation rates)

A	100	B	105	C	98	D
-5		5				
7				-7		
98						-98
= 100		= +5		= -7		baleen

C and from C to D) and before reaching person (D) desiring to receive the goods.⁹⁰ D then requests A to deliver, whereby effective delivery and acceptance results between A and D.

The technical implementation of paying the purchase price and paying the difference is more involved. Initially, it is conceivable that purchase prices are paid in full between the separate links of chain (D 98 → C; C 105 → B; B 100 → A).⁹¹ The disadvantage here is that the total purchase price must be paid by each buyer in the chain, despite the fact that, economically, all that matters to the intermediate links is the settling of profit and loss.

Yet it is also feasible for a commitment to be made whereby, with each indorsement of the tender note, the respective purchasers (B and C) settle their profits or losses with the initial purchaser in the chain (A).⁹² This process is illustrated in the Table 6.1.

The first in the chain (A) must thus settle the difference with all chain members (B and C) who do not intend to purchase. Thus, A must pay B 5 and receives 7 from C. The final member of the chain intending to purchase (D) then pays the (full) purchase price he promised (98) to the supplier and first buyer in the chain (A).

This procedure is complicated, susceptible to error and generally problematic since all market participants are informed of the contract prices of the other transactions; the first in the chain, furthermore, is burdened with settling the difference with each contracting party in the chain. Again, Ricard explains the trade in brandy: “For I have heard a thousand times over how brandy merchants swear not to know when or to whom they should deliver

90 Conversely, the procedure can also be initiated by the last buyer, see Trumpler, “Börsenwesen”, 215.

91 See Fuchs, “Der Waren-Terminhandel”, 62.

92 Thus, the procedure for spirits trading in Ricard, *Le Négoce d'Amsterdam*, 59.

the liquor they have thus sold; indeed, I have witnessed as many as 36 indorsements for a consignment of 25 units of liquor.”⁹³

To tackle these problems, during the second half of the nineteenth century until late into the twentieth century, the exchanges in Austria and Germany used a so-called liquidation price (*Liquidationskurs*, *Kündigungskurs* or *Kündigungspreis*).⁹⁴ Each contractual relationship is then adjusted according to a centrally specified, so-called liquidation rate by calculating the balance. The value of the liquidation rate is determined such that the total settlement amounts payable are kept as low as possible.

(ii) Clearing of Accounts by a Central Body

Account settlement is the most effective form of liquidation on the exchange: In comparison to the other procedures, the *gross stock* of all claims and debts incurred on the futures market, is reduced to the smallest conceivable *net stock*. By the settlement date, all contractual rights and obligations are registered and balanced, for example, by applying the model accounts-based list illustrated below in Table 6.2.⁹⁵

The combined total of all delivery and purchase obligations (each with a value of -1 and +1 respectively), together with payments obligations and receipts must amount to zero: in our sample futures market, the ‘total liquidity’ of the market resulting from the three transactions is 303 (100 + 105 + 98), for three delivery and three purchase obligations – namely, the above-mentioned *gross balance*.

Thus, in our model futures market we have an effective total of only one quantity of baleen to deliver and a total of 105 (98 through D and 7 through C) to be deposited by two parties, whereby there is no requirement to spend a total of 303 in the chain, namely, the net stock. The distribution of the deposited money (100 to A as well as 5 to B) and the allocation of the performance

93 See Ricard, *Le Négoce d'Amsterdam*, 59: (“car j’ai vu pester mille fois des Marchands d’Eau de Vie, pour ne pas savoir quand, ni à qui ils livroient l’Eau e Vie, qu’ils avoient ainsi venduë, & j’ai vu jusques à 36 endossements pour une même partie de 25 Pieces d’Eau de Vie.”); on the interest in confidentiality, see Fuchs, “Der Waren-Terminhandel”, 63 and following.

94 See, for example, A. Bayerdörffer, “Der Kaffee-Terminhandel: Ein Beitrag zur Geschichte der neueren Entwicklung der Börsengeschäfte in Waren”, *Jahrbücher für Nationalökonomie und Statistik* 56 (1891), 641–874, at 646 and following; Fuchs, “Der Waren-Terminhandel”, 64; H. Göppert, *Über das Börsentermingeschäft in Wertpapieren, Erster Band*, Berlin, 1914, 43 and following; O. Pisko, *Lehrbuch des österreichischen Handelsrechts*, Vienna, 1923, § 63 II. (= p. 242 and following).

95 For an example calculation, see Ricard, *Le Négoce d'Amsterdam*, 58 and following. For further illustration, see F. Schmidt, *Liquidation und Prolongation im Effektenhandel: Eine systematische Darstellung ihrer Technik*, Leipzig, 1912, 20 and following.

TABLE 6.2 Basic model of account-based exchange liquidation

A	Delivery	Acceptance	Receipt	Payment
Contract No. 1	-1		+100	
<i>Net total:</i>	-1		+100	
B	Delivery	Acceptance	Receipt	Payment
Contract No. 1		+1		-100
Contract No. 2	-1		+105	
<i>Net total</i>	0		+5	
C	Delivery	Acceptance	Receipt	Payment
Contract No. 2		+1		-105
Contract No. 3	-1		+98	
<i>Net total</i>	0		-7	
D	Delivery	Acceptance	Receipt	Payment
Contract No. 3		+1		-98
<i>Net total</i>	+1		-98	
Overall Balance	3-3=0		303-303=0	

pair (A to D) is then effected by way of *makelaars* or *rescontrantes*, namely, by brokers.

3.2.5 Gambling?

Let us briefly outline the functioning of the Amsterdam futures market: the mandatory incorporation of all futures into the clearing and settlement at the end of the term facilitates the so-called closing-out of positions at the futures exchange. A trader, for example, who purchases a baleen futures contract assumes a so-called long position; should he then sell the same commodity, he assumes a so-called short position, and may thus settle his exposure on the futures market. The trader is not required to purchase and supply a quantity of whale baleen; only the profit or loss between the two transactions is recorded. This mandatory linkage and clearing of all futures contracts estab-

lishes the basis for the crucial functioning of futures markets: *the contract itself becomes the object of trading*, in other words, futures can be traded. Insofar as there is a possibility of closing a position, a trader may then end his exposure economically by way of profit or loss and then transfer the price risk to the next trader entering the market. In such a case, the trader remains – in accordance with the structure of exchange trading through to the beginning of the twentieth century – a contracting party to two futures contracts, which are settled only on *Rescontredag*. His economic commitment, however, is concluded and quantifiable.

The option to close out a position also serves as an explanation as to why very diverse types of players are willing to participate in the market: *hedgers*, aiming to hedge price risks; *speculators*, who seek to maximize profits on the market; and finally *arbitrageurs*, seeking to realize profits without risk by exploiting price differences in different markets. As a whole, all market participants create market liquidity. The vast majority of contracts concluded during the term of a futures contract are settled by calculating a difference as a result of closing out.⁹⁶

In part due to political agitation, in part from sheer misunderstanding and, in part, as a defence tactic in court, one sought from the outset to shed disliked investments, as well as discredit futures markets as the site of gambling bets. For this purpose, it is not possible to retrace the history of interventions and prohibitions against various types of forward and futures trading, which have been known at least since the sixteenth century.⁹⁷ However, it seems helpful to refer to a discussion on German law: the nineteenth-century German legal literature on the subject – yet also in the controversy over the moral policy pertaining to the function and justification of futures speculation – reveals repeated attempts to characterize future markets transactions as so-called *Differenzgeschäfte* (contracts for difference).⁹⁸ The widely held perception was

96 See J.C. Hull, *Options, futures and other derivatives*, 25: “The vast majority of futures contracts do not lead to delivery”; see also, prior to this and as early as nineteenth century: Grünhut, “Die Börsengeschäfte”, § 279 (= p. 14): “The rule is that sales are paralysed by purchases and, conversely, purchases are paralysed by sales; the delivery of the object of purchase and the payment of the purchase price are only an exception.”

97 See for example Dillen, “Termijnhandel”, 506 and following.

98 See A. Engel, “Ist nämlich der ganze Spekulationsverkehr erst einmal in einen krankhaft erregten Zustand hineingerathen...”: Pathologien der Börse im späten 19. Jahrhundert”, *Jahrbuch für Wirtschaftsgeschichte / Economic History Yearbook* 57/2 (2016), 333–365; Flume, *Marktaustausch*, 230 and following; U. Wolter, *Termingeschäftsfähigkeit kraft Information: Eine rechtshistorische, rechtsdogmatische und rechtspolitische Studie über die stillschweigende Entfunktionalisierung des § 764 BGB durch die Börsengesetz-Novelle 1989*, Paderborn, 1991, 21. For France, A. Stanziani, *Rules of Exchange: French Capitalism in*

that only *Differenz- und Börsenspiele* took place on futures markets, which, as a gambling or betting activity, gave rise to no liabilities and from which the general public was to be excluded.⁹⁹ In short, it was the misconception of the legality of paying the difference at the futures markets that led to one of the greatest myths in legal history, namely, to the stigma of gambling.

Prevailing assumptions as to the alleged legal character of futures contracts as contracts of differences, namely, as gambling, stem from a fundamental misunderstanding of how the futures market works. In an organized futures market, as on the Amsterdam exchange, no contracts for difference were entered into, but only sales contracts, all of which were tied by the *rescontre* system or *Börsenliquidation*. In a series of essays on the results of the German Exchange Enquiry Commission of 1896, Max Weber elucidated the correlations in no uncertain terms:

The lamentable fact is that in the field of futures trading one still encounters the most primitive notions as to its nature. Those groups who imagine futures trading to be a wager between two persons on the price of a certain security on a certain day in the future are still widespread. The party betting on a price rise beyond a certain level (*à la hausse*) appears as the buyer, while the party betting on a decline below this level (*à la baisse*) appears as the seller of a certain quantity at that price on the respective date. According to the default of price development, the party who bets wrongly, that is, either – in the case of a fall – the ‘buyer’, or – in the case of a rise – the ‘seller’ pays the difference of the contract price on which the bet is based, and the actual price on the date of contract. To claim that such [difference] bets are mere figments of the imagination and do not exist at all would be rash. Rather, they have existed from time immemorial: in the same way that people bet on the life of the Pope, etc., so also do they bet on the course of prices at the beginning of the formation of prices on the exchange. And they still exist today. Yet – and this is crucial, insofar as they do exist – *they do not exist on the exchange*. Futures trading on the exchange – that legal literature on the subject still all-too frequently employs the absolutely non-technical expression “*Differenzgeschäft*” [“transaction for dif-

Comparative Perspective, Eighteenth to Early Twentieth Centuries, Cambridge, 2012, 247 and following; for the USA: J. Levy, *Freaks of Fortune: The Emerging World of Capitalism and Risk in America*, Cambridge, 2012, 231 and following; R. Kreitner, *Calculating Promises: The Emergence of Modern American Contract Doctrine*, Stanford, 2006, 105 and following; A. Engel, *Risikoökonomie, Ein Geschichte des Börsenterminhandels*, 2021.

99 M. Weber, *Max Weber Gesamtausgabe, Abteilung I Schriften und Reden, Band 5, 1. Halbband, Börsenwesen, Schriften und Reden 1893–1898*, K. Borchardt (ed.), Tübingen, 1999, 25 and following, with further references.

ferences"] is unacceptable – is structured such that it differs considerably from primitive forms of such bets for differences.¹⁰⁰

The opinion that *Differenzgeschäfte* ought to be combatted is, for the most part, a deep-rooted aversion to settling contracts by way of pecuniary interest and in acknowledging only the natural exchange of services to be the legitimate form of the exchange of goods. Accordingly, the exchange of contracts is to be carried out in actual or effective terms by means of the exchange of goods for money: settlement by the calculation of a sum of money is suspect and, in case of doubt, is to be regarded as gambling and betting. Such a primacy of physical exchange does not however exist. The calculation of the differences establishes a new type of contract performance. Contracts can be calculated either on the basis of the actual physical trade of goods for money or by calculating the difference between market and purchase prices. With the latter, the *monetary value of a contract* is calculated. This concept was established both in legal theory and in the early days of financial mathematics in the late nineteenth and early twentieth centuries as the market-price-rule, whereby the relationship between purchase price and market price is determined and thus the risk structure of a sales contract is depicted.¹⁰¹ Its range of application is almost universal: it can be applied not only to the calculation of damages in lieu of pecuniary damages arising from straightforward (bilateral) sales contracts, but also to the entire settlement of futures trading on exchanges, namely, by ascertaining the pecuniary interest of each individual trading transaction in automated (now computerized) calculation operations.¹⁰²

4 The World's First Futures Market?

When were the first futures markets established? Recent American literature on the subject cites the Dojima rice futures market in eighteenth-century Osaka, Japan, while other authors allude to the Amsterdam Exchange at the beginning of the seventeenth century.¹⁰³ Identifying the emergence and on-

100 M. Weber, "Die Ergebnisse der deutschen Börsenenquoten", *Zeitschrift für das Gesamte Handels- und Wirtschaftsrecht* 45 (1896), 100–102 (also in *Max Weber Gesamtausgabe*, vol. 1/5, 494–496 (emphasized as in the original)). See also Idem, "Die Börse II", *Göttinger Arbeiterbibliothek* 2 (1896), 67, 70 (also in *Max Weber Gesamtausgabe*, vol. 1/5, 639, 643).

101 Flume, *Marktaustausch*, 114 and following.

102 Flume, *Marktaustausch* 197 and following, 260 and following.

103 O. Gelderblom and J. Jonker, "Amsterdam as the Cradle of Modern Futures Trading and Options Trading, 1550–1650" in W.N. Goetzmann and K.G. Rouwenhorst (eds.), *The*

going evolution of futures markets can only be meaningfully clarified insofar as it is possible to legally determine the way in which 'simple' market transactions by means of sales contracts differ from those of (organized) futures trading. Answering this question in terms of legal history is somewhat difficult: all forwards and futures were entered into bilaterally – each on the trading floor – and were practically indistinguishable with regard to content. And yet one striking difference turns on the question as to whether or not the sales contracts were included in the *rescontre* procedure on *Rescontredag*, *Liquidationstag*, or settling day. Futures trading is feasible only if all contracts concluded in a special futures market are necessarily linked. As one gleans from Ricard's remarks, traders on the Amsterdam exchange from the seventeenth century onwards were perfectly aware of the distinctions; no trader would have otherwise agreed to "purchase or sell ten times in excess of the amount at his disposal [...] which, as he is perfectly well aware, he is neither in a position to purchase nor to deliver."¹⁰⁴ They were only able to do this insofar as they were confident that all contracts would be settled on *Rescontredag*.

The *rescontre* mechanism forms the legal core of futures markets and thus of today's modern derivatives markets, without which these markets would be inconceivable. The fact that purchase contracts were concluded and cleared by means of *rescontre* or *Skontration* by the first half of the seventeenth century, at the latest, proves that a futures market has existed since then.¹⁰⁵

As a result of the development of futures trading and the constant refinement of market structures, the exchanges functioned as legal innovators. Futures markets have, from the outset, been based on the idea that a large number of the sales contracts concluded in them are fulfilled quasi-automatically by calculating pecuniary interest. If a position is closed out, the pecuniary interest of the party exiting the market is calculated, and the price risk is transferred to the new party entering the market. The development on current futures markets has advanced one step further insofar as futures are now also traded by *cash settlement*, such that all contracts are settled from the outset by calculating pecuniary interest.¹⁰⁶

Origins of Value. The Financial Innovations that Created Modern Capital Markets, Oxford, 2005, 189, 191; M.D. West, "Private Ordering at the World's First Futures Exchange", *Michigan Law Review* 98/8 (2000), 2574–2615.

104 Ricard, *Le Négoce d'Amsterdam*, 59.

105 See also Dillen, "Termijnhandel", 519; M.F.J. Smith, *Tyd-affaires in Effecten aan de Amsterdamsche Beurs*, 6, footnote 1; Wilson, *Anglo-Dutch Commerce*, 14.

106 See also Flume, *Marktaustausch*, 263.

5 Conclusion

Amsterdam stands out as the central European market of the seventeenth century. Centrally located to the south of the city's Dam Square, the *Byrsa Amsterdamensis*, built in 1611, was where the various threads of this commercial metropolis came together. By examining the architectural history of the building along with the economic and legal functioning of this place, one can show why the Amsterdam Exchange can rightly be called the first modern liquid commodity and stock market, how it differed from other prominent trading places of the time, and how the exchange acted as a legal innovator. A closer look at the operation of the exchange, in particular futures trading (*termijnhandel*), reveals how fundamental trading practices within the exchange revolutionized private and commercial law. Now, not only were trading partners able to negotiate spot contracts for the immediate trade of goods for money, but they were also able to conclude futures contracts. In short, the future was unlocked by contract law. This development, in turn, helps us dispel one of the greatest myths in economic legal history, namely, the gambling stigma. Contrary to such classic common notions of exchange trading, one can argue that futures are not breeding grounds for illegitimate betting, but instead innovate contract performances.

This volume examines the sovereignty and autonomy of the city of Amsterdam in the seventeenth century. Amsterdam was part of the institutional landscape of the county of Holland and the Dutch Republic, though its economic power encompassed the globe and elevated its political clout at home. Analyzing aspects of the city's institutions, trade, art, and religion, the papers in this volume shed new light on Amsterdam's history during its Golden Age.

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