

## Trade and Markets in Byzantium

---

DUMBARTON OAKS BYZANTINE SYMPOSIA AND COLLOQUIA

---

*Series Editor*

Margaret Mullett

*Editorial Board*

John Duffy

John Haldon

Ioli Kalavrezou



# Trade and Markets in Byzantium

---

*Edited by*  
CÉCILE MORRISSON

Copyright © 2012 by Dumbarton Oaks Research Library and Collection  
Trustees for Harvard University, Washington, D.C.

All rights reserved.

Printed in the United States of America

19 18 17 16 15 14 12 1 2 3 4 5 6 7

LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION DATA

Trade and markets in Byzantium / edited by Cécile Morrisson.  
p. cm. — (Dumbarton Oaks Byzantine symposia and colloquia)

Includes index.

ISBN 978-0-88402-377-7 (hbk. : alk. paper)

1. Byzantine Empire—Commerce—History.
2. Byzantine Empire—Economic conditions.

I. Morrisson, Cécile.

HF405.T73 2012

381.09495—dc23

2011046482

[www.doaks.org/publications](http://www.doaks.org/publications)

Typeset by Barbara Haines

Cover image: Amphora with Confronted Hybrid Figures, polychrome glazed and incised ceramic.  
Antioch, 13th century. Washington, D.C., Dumbarton Oaks, BZ.1967.8.

---

*To the memory of Angeliki Laiou—  
pathbreaking leader in the study of the Byzantine economy,  
inspiring and irreplaceable friend and colleague*

χαρίς



## CONTENTS

---

*Foreword ix*

Introduction 1  
CÉCILE MORRISSON

### *Late Antiquity and the Early Middle Ages*

ONE • Were Late Roman and Byzantine Economies Market Economies?  
A Comparative Look at Historiography 13  
JEAN-MICHEL CARRIÉ

TWO • Regional and Interregional Exchanges in the Eastern  
Mediterranean during the Early Byzantine Period  
The Evidence of Amphorae 27  
DOMINIQUE PIERI

THREE • Movements and Markets in the First Millennium  
Information, Containers, and Shipwrecks 51  
MICHAEL MCCORMICK

FOUR • Commerce and Exchange in the Seventh and Eighth Centuries  
Regional Trade and the Movement of Goods 99  
JOHN F. HALDON

### *The Middle and Late Byzantine Periods*

FIVE • Regional Networks in the Balkans in the Middle and Late Byzantine Periods 125  
ANGELIKI E. LAIOU<sup>†</sup>

SIX • Regional Networks in Asia Minor during the Middle Byzantine Period,  
Seventh–Eleventh Centuries  
An Approach 147  
JOHANNES KODER

SEVEN • Business as Usual?  
Archaeological Evidence for Byzantine Commercial Enterprise  
at Amorium in the Seventh to Eleventh Centuries 177  
CHRISTOPHER LIGHTFOOT

EIGHT • Byzantine Glazed Ceramics on the Market  
An Approach 193  
DEMETRA PAPANIKOLA-BAKIRTZI

*West and East: Local Exchanges in Neighboring Worlds*

- NINE • Local and Interregional Exchanges in the Lower Po Valley, Eighth–Ninth Centuries 219  
SAURO GELICHI
- TEN • Adriatic Trade Networks in the Twelfth and Early Thirteenth Centuries 235  
ROWAN W. DORIN
- ELEVEN • Annual Fairs, Regional Networks, and Trade Routes in Syria, Sixth–Tenth Centuries 281  
ANDRÉ BINGGELI
- TWELVE • Trade and Economy in Antioch and Cilicia in the Twelfth and Thirteenth Centuries 297  
SCOTT REDFORD
- THIRTEEN • Regional Exchange and the Role of the Shop in Byzantine and Early Islamic Syria-Palestine  
An Archaeological View 311  
ALAN WALMSLEY

*Markets and the Marketplace*

- FOURTEEN • From *polis* to *emporion*?  
Retail and Regulation in the Late Antique City 333  
LUKE LAVAN
- FIFTEEN • Weighing, Measuring, Paying  
Exchanges in the Market and the Marketplace 379  
CÉCILE MORRISSON
- SIXTEEN • Daily Life at the Marketplace in Late Antiquity and Byzantium 399  
BRIGITTE PITARAKIS

*Conclusion*

- SEVENTEEN • Byzantine Trade  
Summary and Prospect 429  
PETER TEMIN

*Abbreviations* 437  
*About the Authors* 441  
*Index* 445



## FOREWORD

---

This book emerged from the 2008 Spring Symposium held at Dumbarton Oaks 2–4 May. For their help in organizing the meeting, blessed by clement weather that enabled participants to fully enjoy all the graces of the gardens, I am most grateful to Polly Evans, Danica Kane, Mario Garcia, and Joe Mills, who looked to its smooth running and recording. My warm thanks to Jan Ziólkowski, Director of Dumbarton Oaks, who hosted and welcomed his first Symposium of Byzantine Studies with his characteristic elegance and openness. My special gratitude to the then Director of Byzantine Studies, Alice-Mary Talbot, who directed so graciously and efficiently this thirteenth and last Symposium of her tenure. I also thank the contributors who have taken time out of their busy schedules to participate in the colloquium, to discuss reciprocally their respective papers, and then to create this book.

After the Symposium, it was decided to include two studies of great relevance to our topic: that of Rowan Dorin, doctoral student of Angeliki Laiou, on Adriatic trade networks in the twelfth and early thirteenth centuries and that of Luke Lavan on retail and regulation in the late antique city.

This is the fourth volume in the series Dumbarton Oaks Byzantine Symposia and Colloquia: it was preceded by *Becoming Byzantine: Children and Childhood in Byzantium*, edited by Alice-Mary Talbot and Arietta Papaconstantinou (2009); *The Old Testament in Byzantium*, edited by Paul Magdalino and Robert Nelson (2010); and *San Marco, Byzantium, and the Myths of Venice*, edited by Henry Maguire and Robert Nelson (2010). Edit-

ing and producing this book proved to be a longer process than some impatient authors would have liked. The result will, I hope, compensate for their regrets. Alice-Mary Talbot and her successor, Margaret Mullett, were instrumental in preparing the papers for publication, and the Director of Publications, Kathy Sparkes, brought her special skills to the quality of illustrations and her stamina to set the book on track. Joel Kalvesmaki scrutinized the manuscript with his usual acumen. Alice Falk copy-edited the mass of papers with great patience. To all, I extend special gratefulness.

Early in the preparation of this publication, the untimely and shocking death of Angeliki Laiou, an immense loss to the whole world of Byzantine studies, stirred particular grief among all participants in the Symposium, speakers and listeners alike. This had been the last occasion on which she met her colleagues in community and delivered a paper, and the last time she attended a symposium at Dumbarton Oaks, the institution and place to which she had devoted such passionate and clear-minded energy during the years of her directorship (1989–98) and well beyond. There was not a hint of her impending illness; her presence was as imposing and her interventions as sharp and appropriate as ever.

It is just and meet that this book be dedicated to her memory as a modest token of our debt to a great historian. Without her pioneering work on the Byzantine economy, the present studies would probably not have been written or assembled.

*Cécile Morrisson*



# Introduction



ALTHOUGH TRADE IS OFTEN FEATURED IN Byzantine archaeological meetings or in those offering a regional perspective, it is rarely the center of them. The symposium that took place in Dumbarton Oaks on 2–4 May 2008 and gave rise to this book was entirely devoted to trade and markets in Byzantium. It was not, however, the first colloquium with Byzantine trade as its main subject. The Oxford conference held at Somerville College on 29 May 1999 (later edited and published by Sean Kingsley and Michael Decker as *Economy and Exchange in the East Mediterranean during Late Antiquity*) may have been the first to set forth down this path—if “late antiquity” is taken as coterminous with “Byzantine”—and to signal the revived attention spurred by the accumulating wealth of new archaeological material.<sup>1</sup> Because of its wider chronological range, the British 38th Spring Symposium of Byzantine Studies titled “Byzantine Trade (4th–12th c.): Recent Archaeological Work,” held in Oxford in March 2004, was advertised as the first symposium directly focused on Byzantine trade.<sup>2</sup> Finally,

another conference held in Vienna in October 2005, codirected and just published by one of our speakers, Johannes Koder—“Handelsgüter und Verkehrswege: Aspekte der Warenversorgung im östlichen Mittelmeerraum (4. bis 15. Jahrhundert)” —underscored the growing interest in the subject.<sup>3</sup>

Trade deserves special attention because, as many economic historians have shown, it plays an essential role in the economy and particularly in economic development; the famous slogan “Trade Not Aid” embraced by African leaders and Western economists nicely encapsulates the idea that growth results not from massive aid but from an increase in exports, which—as the examples of Japan, Korea, Taiwan, and now China demonstrate—leads underdeveloped economies out of poverty.<sup>4</sup> All things being equal, the evolution of the Byzantine economy from the ninth to the twelfth century and, later, from small-scale trade to far-flung involvement in international exchanges clearly illustrates the correlation between the expansion of trade and that of the economy in general. However they interpret its

1 S. Kingsley and M. Decker, eds., *Economy and Exchange in the East Mediterranean during Late Antiquity: Proceedings of a Conference at Somerville College, Oxford, 29th May, 1999* (Oxford, 2001).

2 M. Mundell Mango, ed., *Byzantine Trade, 4th–12th Centuries: The Archaeology of Local, Regional and International Exchange*, Papers of the Thirty-eighth Spring Symposium of Byzantine Studies, St John’s College, University of Oxford, March 2004, Society for the Promotion of Byzantine Studies 14 (Aldershot, 2009); review by J.-P. Sodini and me in *The Medieval Review* 10.03.04 (March 2009), at <http://hdl.handle.net/2022/6770> (accessed August 2010).

3 E. Kislinger, J. Koder, and A. Künzler, *Handelsgüter und Verkehrswege/Aspekte der Warenversorgung im östlichen Mittelmeerraum (4. bis 15. Jahrhundert)*, Österreichische Akademie der Wissenschaften, Veröffentlichungen zur Byzanzforschung 18 (Vienna, 2010). This volume appeared too late for its contents to be taken into account here.

4 World Bank, “Industrialization and Foreign Trade,” in *World Development Report 1987* (New York, 1987), 38–170, available at <http://go.worldbank.org/6DBKU5WP10> (accessed August 2010); S. Edwards, “Openness, Trade Liberalization, and Growth in Developing Countries,” *Journal of Economic Literature* 31 (1993): 1358–93.

causes and context, this expansion is now generally recognized by historians. An expanding trade relies on an efficient division of labor, about which Adam Smith said, with typical Scottish humor: “Man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only.”<sup>5</sup>

Indeed, the permanence of interregional and international relations, defined as the exchange of commodities, information, and population at all levels, which Peregrine Horden and Nicholas Purcell labeled “connectivity,” is a primary concern of their *Corrupting Sea* and of another magisterial book, Michael McCormick’s *Origins of the European Economy*,<sup>6</sup> while receiving due consideration in the *Economic History of Byzantium*, edited by Angeliki Laiou. In her final overview, she pointed to the parallels she had drawn between the West and the Byzantine economy as supporting her “insistence on trade as a dynamic element in the medieval economy, especially in the eleventh and twelfth centuries.”<sup>7</sup> In his no less monumental *Framing the Early Middle Ages*, Chris Wickham proclaimed that his final chapter, “Systems of Exchange,” was “in many ways the core of the book.”<sup>8</sup> Although it may have been a later addition and a shift of thinking by an author who has reflected for many years on the transformation of the Roman world, it marks a welcome recognition of the importance of trade. The recent assessment of early and mid-Byzantine trade at the regional and international levels provided by the contributions to the Oxford 2004 symposium clearly recognized its vitality and role, even in the dark eighth century, in comparison with “non-economic exchange.”

### “Trade and Markets” versus the Byzantine Market Economy

The invitation letter stated that the Symposium would “focus equally on markets and the market

5 A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), book I, chap. 2.2.

6 P. Horden and N. Purcell, *The Corrupting Sea: A Study of Mediterranean History* (Oxford, 2000); review by M. Whittow in *English Historical Review* 116 (2001): 900–2; M. McCormick, *Origins of the European Economy: Communications and Commerce, A.D. 300–900* (Cambridge, 2001).

7 A. E. Laiou, “The Byzantine Economy: An Overview,” in *EHB* 3:1148.

8 C. Wickham, *Framing the Early Middle Ages: Europe and the Mediterranean, 400–800* (Oxford, 2005), 693.

place.” Because of the polysemy of the term “market,” this phrase requires qualification. The Dumbarton Oaks meeting did not consider the concept of *the* Byzantine market, defined as an economic system of transactions to exchange goods and services, nor did it formally assess different models of the extension of the Byzantine market economy, whether constituted in a comprehensive network of relatively independent markets or in fragmented, unconnected markets within the more restrictive frame of a tributary state.

But that long-debated topic could not be passed over entirely; it is treated in the first and last chapters of this volume. In the latter, Peter Temin analyzes the Polanyian concepts of reciprocity, redistribution, and exchange and Frederic Pryor’s differentiation of exchanges and transfers, before stating the conditions in prices and individual behavior that are characteristic of a market economy. The skeptics who deny the existence of a Byzantine “market” should take note that a market economy is one in which market exchanges are the most common type of interaction—other forms of exchanges, whether reciprocal or redistributive, may take place as well, as indeed was the case in Byzantium. In the first chapter, Jean-Michel Carrié recalls the shifting fortunes of the “traditional, innocently modernist” model of late antiquity in the early twentieth century and the “primitivist” one, before offering his own characterization of the late Roman market economy. He concurs with Peter Temin in defining it as a “conglomeration of interdependent markets.”<sup>9</sup> And this notion of the Byzantine economy as a network of interconnected relatively “free” markets<sup>10</sup> implicitly lies behind most of the chapters in this volume.

### Trade in the Debate Regarding the Ancient Economy

A short account of the various schools of thought may be of use. Broadly speaking, the “modernists” view the ancient economy as functioning, all things being equal, in ways comparable to the modern one, with differences in quantity and not quality; this idea was maintained by both Michael Rostovtzeff

9 J.-M. Carrié, “Market Economies? Links between Late Roman and Byzantine Economic Historiography,” below, 13.

10 P. Temin, “A Market Economy in the Early Roman Empire,” *JRS* 91 (2001): 169–81.

and Henri Pirenne.<sup>11</sup> The “primitivists,” on the other hand, insist, as did Moses Finley in several influential essays, that modern analysts cannot approach the ancient economy using economic concepts ignored by its actors and that it was essentially driven by social forces rather than a desire for profit.<sup>12</sup> The ideal of self-sufficiency (*autarkeia*) prevailed; there was hardly any division of labor, regional specialization, or technical innovation; goods were traded or rather redistributed mainly for social or political reasons; and trade played a negligible role in the economy. This “academic battleground,” to use Keith Hopkins’s phrase,<sup>13</sup> involved mainly historians of the early and late Roman economy, as Rostovtzeff’s views opposed those of Hugo Jones, but it did not leave Byzantinists untouched. Michael Hendy, who acknowledged his intellectual debt to Finley, Jones, and Philip Grierson,<sup>14</sup> brilliantly took sides with them in his great book and other studies in which he contended that the role of the state in the “Byzantine monetary economy” was paramount: trade, in his view, played no part at all in the state’s monetary policy nor in its resources and only a limited one in monetary distribution and circulation.<sup>15</sup> Evelyne Patlagean also upheld the approach of “primitivists,” relying on the perspectives of Karl Polanyi, Moses Finley, and Marcel Mauss (notably in her paper delivered at Spoleto in 1992).<sup>16</sup>

In contrast, Angeliki Laiou was well aware of the developments of contemporary economic analysis and modern economic history and did not shy from

employing their categories in her reasoning. Therefore Patlagean implicitly considered her a “modernist,” in her long, nuanced review of *The Economic History of Byzantium* in 2004.<sup>17</sup> Yet Laiou’s conception of the Byzantine economy was quite balanced, and she did not belong among those whom Carrié calls the traditional, innocent modernists. Before outlining Byzantine trade in the middle Byzantine period,<sup>18</sup> she devoted an entire chapter to the non-economic forms of exchange as defined by Mauss and Polanyi,<sup>19</sup> which Grierson highlighted in his pioneering and famous article, “Commerce in the Dark Ages.”<sup>20</sup> For the late Roman period, readers should consult the seminal article by Richard Whittaker and his analysis of its “tied trade,” as well as the more recent assessment offered in the introduction to the *Cambridge Economic History of Greco-Roman Antiquity*.<sup>21</sup>

In that authoritative volume, distribution in the early Roman Empire is viewed from a more balanced perspective, which signals that the debate has subsided and a new consensus has been reached. Neville Morley, among others, recognizes that the Roman economy was “organized through market incentives or directed through requisition and compulsion” and knew a “degree of integration, of the movement of goods, people, and ideas.”<sup>22</sup> In spite of the revival

11 M. I. Rostovtzeff, *A History of the Ancient World*, vol. 1 (Oxford, 1926), 10; H. Pirenne, *Mahomet et Charlemagne*, 2nd ed. (Paris, 1937), 219.

12 M. I. Finley, *The Ancient Economy*, 3rd ed. (Berkeley, 1999). See also the account of M. M. Austin and P. Vidal-Naquet, *Economic and Social History of Ancient Greece: An Introduction*, trans. and rev. M. M. Austin (London, 1977); originally published as *Économies et sociétés en Grèce ancienne* (Paris, 1972).

13 K. Hopkins, introduction to *Trade in the Ancient Economy*, ed. P. Garnsey, K. Hopkins, and C. R. Whittaker (London, 1983), ix.

14 M. F. Hendy, *The Economy, Fiscal Administration and Coinage of Byzantium* (Northampton, 1989), x.

15 Idem, *Studies in the Byzantine Monetary Economy, c. 300–1450* (Cambridge, 1985). He strongly opposed attempts to apply economic reasoning to the interpretation of monetary developments, as in the case of the eleventh-century debasement (25).

16 É. Patlagean, “Byzance et les marchés du grand commerce vers 830–vers 1030: Entre Pirenne et Polanyi,” in *Mercati e mercanti nell’alto medioevo: L’area Euroasiatica e l’area Mediterranea*, Settimane di studi del Centro italiano di studi sull’alto medioevo 40 (Spoleto, 1993), 587–632.

17 É. Patlagean, “Écrire l’histoire économique de Byzance: À propos d’un ouvrage récent,” *Le Moyen Age* 110 (2004): 659–69. She used the metaphor “mise à proximité” to mean “modernism.”

18 A. E. Laiou, “Economic and Noneconomic Exchange,” in *EHB* 2:681–96.

19 Eadem, “Exchange and Trade, Seventh–Twelfth Centuries,” in *EHB* 2:697–770.

20 P. Grierson, “Commerce in the Dark Ages: A Critique of the Evidence,” *Transactions of the Royal Historical Society*, 5th ser., 9 (1959): 123–40 (repr. in idem, *Dark Age Numismatics* [London, 1979], art. II).

21 C. R. Whittaker, “Late Roman Trade and Traders,” in Garnsey, Hopkins, and Whittaker, eds., *Trade in the Ancient Economy*, 163–80; I. Morris, R. P. Saller, and W. Scheidel, introduction to *Cambridge Economic History of Greco-Roman Antiquity*, ed. I. Morris, R. P. Saller, and W. Scheidel (Cambridge, 2007), 1–7. See also W. Scheidel and S. von Reden, eds., *The Ancient Economy* (Edinburgh, 2002), which offers a collection of reprinted articles on the subject with their own comments, and J. Manning and I. Morris, eds., *The Ancient Economy: Evidence and Models* (Stanford, 2005), which collects original essays attempting to frame the enlarged available evidence in new models that incorporate basic economics and abandon the Finleyan orthodoxy.

22 N. Morley, “The Early Roman Empire: Distribution,” in Morris, Saller, and Scheidel, eds., *Cambridge Economic History of Greco-Roman Antiquity*, 570–91, at 591; and idem, *Trade in Classical Antiquity* (Cambridge, 2007).

of the old polemic provoked by Peter Bang's recent book,<sup>23</sup> the debate has progressed to the point that all participants are at least more aware of the importance for current and future investigations of two elements: on the one hand, quantification of the "performance" of the Roman economy (production, input-output, costs and benefits, population and standards of living, prices, sales, and exports),<sup>24</sup> and, on the other hand, the role of structures such as institutions, technology, ecology, demography, and ideology. Though not put in the same terms, such an approach was by and large that of the *Economic History of Byzantium*, which provided the framework for this Symposium; we thus did not take up the debate again.

### Local, Regional, and Interregional Exchanges: The Evidence

The purpose of bringing together historians and archaeologists was to gather further evidence and present the state of the art of research on the movement of goods—"things that travelled" in the words of David Whitehouse<sup>25</sup>—within the Byzantine world on markets at various levels, especially at the regional scale. Regional trade was rather neglected in previous research, which had long been more interested in interregional and long-distance trade and the mostly prestige or luxury items it carried than in smaller regional and local markets and market-places. The numerous markets that make up the Byzantine market economy imply a chain of transactions in which trade takes place on varied tiers. How to classify these markets is an issue considered

23 P. F. Bang, *The Roman Bazaar: A Comparative Study of Trade and Markets in a Tributary Empire* (Cambridge, 2008). P. Temin published a critical review in *Journal of Economic History* 69 (2009): 1165–66; for more positive remarks from a historian, see B. Shaw in *Journal of Interdisciplinary History* 41 (2010): 126–27.

24 A. Bowman and A. Wilson, eds., *Quantifying the Roman Economy: Methods and Problems* (Oxford, 2009), particularly A. Wilson's "Approaches to Quantifying Roman Trade," 210–49; M. Fulford's "Response" to this chapter, 250–65; and W. Harris's "Comment," 259–65. See also the contribution to the proceedings of the Brussels Francqui Conference (2009): "Long-term Quantification in Ancient Mediterranean History," *Quantifying Monetary Supplies in Greco-Roman Times*, ed. F. de Callatay, Pragmateia 19 (Bari, 2011).

25 D. Whitehouse, "'Things that Travelled': The Surprising Case of Raw Glass," *Early Medieval Europe* 12 (2003): 301–5.

by several chapters.<sup>26</sup> Various criteria can be used for this purpose, most notably those offered by Luuk de Ligt in his *Fairs and Markets in the Roman Empire*:<sup>27</sup> type of transaction, duration, and distance. A combination of the last two, duration and distance—the latter reflecting the constraints on human travel in an ancient or medieval context—seems relatively free from dispute and has been used in this book.

### *The Three Levels of Trade*

Agreement emerged in the Symposium on the following rough limits of the three tiers:

**ONE** Local, defined as a one-day transit time, or within a radius of less than about 50 kilometers (31 miles) by land or the distance of one day's sailing,<sup>28</sup> to a maximum of two or three days' travel on foot.<sup>29</sup>

This is the smallest and the most difficult level to apprehend. But the diffusion of the most ordinary cooking ware generally constitutes a good proxy of a network with a 50-kilometer radius, as shown by Alan Walmsley, who uses as a marker Jerash Bowls, Palestinian Fine Ware from Jerusalem, and Red Painted Ware of Jordanian origin (possibly from 'Ammān).<sup>30</sup> Archaeology is now fortunately devoting greater attention to this kind of ordinary ceramics—witness the now regular meetings on Late Roman Coarse Wares (LRCW), published in three volumes to date—and this area of research,

26 See A. E. Laiou, "Regional Networks in the Balkans in the Middle and Late Byzantine Periods"; S. Redford, "Trade and Economy in Antioch Cilicia in the Twelfth and Thirteenth Centuries"; and J. Koder, "Regional Networks in Asia Minor during the Middle Byzantine Period (Seventh–Eleventh Centuries): An Approach."

27 L. de Ligt, *Fairs and Markets in the Roman Empire: Economic and Social Aspects of Periodic Trade in a Pre-industrial Society*, Dutch Monographs on Ancient History and Archaeology 11 (Amsterdam, 1993), 1, 79–81.


28 Laiou, "Regional Networks in the Balkans," 126 n. 5; M. McCormick, "Byzantium on the Move: Imagining a Communications History," in *Travel in the Byzantine World: Papers from the Thirty-fourth Spring Symposium of Byzantine Studies, Birmingham, April 2000*, ed. R. Macrides, Society for the Promotion of Byzantine Studies 10 (Aldershot, 2000), 3–29; Koder, "Regional Networks in Asia Minor," 147.

29 J. Haldon, "Commerce and Exchange in the Seventh and Eighth Centuries: Regional Trade and the Movement of Goods," 99.

30 See in this volume A. Walmsley, "Regional Exchange and the Role of the Shop in Byzantine and Early Islamic Syria-Palestine: An Archaeological View," 311–30.

though not systematized, is also being explored in the Byzantine period.

**TWO** Above this limit and below ten days' travel is the regional level;<sup>31</sup> in terms of distance, it corresponds to a radius of 100 to 300 kilometers. Regional travel also involves professional traders, whereas local trade is still partly or mostly in the hands of the local producers themselves.<sup>32</sup> For this tier, the ongoing study of unglazed coarse pottery is a promising line of research that is beginning to be investigated—for instance, in Amorion by Chris Lightfoot and his team<sup>33</sup>—and still has much to tell us. In defining regional networks, we are also aided by the study of ecological conditions for agricultural and other production. As Johannes Koder highlights, the supply radius from the hinterland to urban settlements varied according to the agrarian productivity of their respective landscapes. All things being equal, local and regional trade mostly concerned everyday staples (foodstuffs) and pottery, but it also handled raw material and energy sources for crafts such as hemp, flax, leather, iron, wood, charcoal, and so on.<sup>34</sup>

 **THREE** Interregional trade connects two different regions that each have a radius of 100 to 300 kilometers. It is not necessarily carried over a long distance, but that is most frequently the case, for the two regions are not systematically coterminous. It is often but not always international; conversely, regional exchanges might cross over political boundaries in the middle Byzantine period, as between Byzantium and the Bulgars, or in the later period, as Scott Redford describes, between Armenian Cilicia and the Principality of Antioch, and as was the rule in the “small states” of the fragmented Byzantine world after 1204.

It should be pointed out that for maritime commerce, the distinction between the regional and interregional is more blurred, since the lower cost of transportation does not limit quantities as much as it does in terrestrial trade. Moreover, the two levels often intermingle, since commodities that travel

long distances often end up in regional exchanges and vice versa, as the “intra-Adriatic port-hopping” described by Rowan Dorin illustrates.<sup>35</sup>

*Sources: Archaeology, Numismatics,  
Texts, and Documents*

Another obvious area of agreement pertains to our various sources, and the need to combine and cross-check them. The seminal contribution of archaeology is now fully and universally recognized. In many instances, as will be seen below, it opens entirely new avenues; in others, as in the case of Comacchio described by Sauro Gelichi,<sup>36</sup> it offers a welcome confirmation of the trends suggested by the study of written sources. The abundance of the material yielded by archaeology over the past fifty years, its context, and its wide distribution in themselves argue for a movement that, in the late Roman world as well as in the twelfth century and later, involved trade in a wide range of goods, from luxury items to more common commodities. Ceramics feature in many contributions of this volume: on the one hand, high-value glazed ceramics enable scholars to trace regional and interregional commerce and are a main focus of Demetra Papanikola-Bakirtzi's and Scott Redford's chapters; on the other hand, unpretentious and cheaper unglazed or even coarse pottery points to geographically smaller networks with a larger clientele.

The enormous progress made in the classification of amphorae and the location of their production centers, together with the analyses of their contents, enables Dominique Pieri, by plotting the varied provenances against the distribution of finds, not only to outline in detail the long-distance export and distribution of Gaza wine through the Mediterranean and to the West but also to highlight the regional imports in Beirut of Acre amphorae and Bag amphorae, as well as the local distribution of North Syrian ones, attested in Zeugma, Ruşāfa, Apameia, and villages in the Limestone massif. “Operational” approaches to amphorae can lead to economic inferences: the implicit relation between the heavy Late Roman African amphorae of some 80 kilograms each and

31 Koder, “Regional Networks in Asia Minor,” 147 and n. 3.

32 Laiou, “Regional Networks in the Balkans,” 126.

33 C. Lightfoot, “Business as Usual? Archaeological Evidence for Byzantine Commercial Enterprise in Amorion in the Seventh to Eleventh Centuries,” 190.

34 Koder, “Regional Networks in Asia Minor,” 155–58.

35 In this volume, R. Dorin, “Adriatic Trade Networks in the Twelfth and Early Thirteenth Centuries,” 264.

36 See in this volume S. Gelichi, “Local and Interregional Exchanges in the Lower Po Valley (Eighth–Ninth Centuries).”

elaborate port facilities; the ergonomic explanation of the curious shape of Aegean Kapitän 2 or Pieri's Late Roman 9, which was easier for a single stevedore to grasp and carry; and the lightness and thinness of the walls of sixth-century globular amphorae, which made it possible to transport more content for the same tare and were better adapted to beachside or smaller-scale landings as well as to reuse.<sup>37</sup>

Although ceramics evidence has brought a revolutionary change in our perception and even has enabled us to quantify Roman and Byzantine exchanges, as Pieri emphasizes, the bias resulting from the "invisibility" of commodities transported in perishable packing (bags, skins, or textiles) or simply as a loose cargo, such as grain, lentils and other pulses, textiles, spices, furs, and the like, seems nearly insuperable for archaeological investigation, where they hardly leave any trace. The problem is addressed at length in Michael McCormick's chapter below. The solution is often to turn to indirect evidence—primarily written documents; for example, their frequent mention of *cupae* in the West and βουττία in the East points to the key role of wooden containers in transportation.

Some contributors to the Symposium included numismatics—an approach rarely taken before, which bears tribute to the efforts of researchers in that discipline to make its material available to and usable by nonspecialists—even if its evidence, not yet included in a geodatabase, is difficult to interpret because coins change hands so much more easily than do other materials.<sup>38</sup> Nevertheless, when considered in aggregate and in relation to other material, whether archaeological or documentary, coin circulation can help define chronological patterns

or spatial distribution, as the chapters by Lightfoot, John Haldon, and Laiou show. The latter two authors saw as paradoxical the lack of precious metal coin finds from large and active production and trade centers such as Corinth or Athens, but this phenomenon should not be surprising; indeed, it is common throughout the Byzantine world, due to the higher rate of loss of petty coinage (one is much more likely to expend effort to recover a gold or silver coin than a small one of little value). The coexistence in some particular areas of coins from various political entities sometimes points to a "currency community," as in the case of the Antioch region and Cilicia in the thirteenth century—a community that is also made visible in a community of taste, as expressed by the motifs of the Port Saint Symeon Ware or its imitations and their standardization.

The testimony of texts on trade have been used ever since Wilhelm Heyd's *Histoire du commerce du Levant au Moyen Âge* (1885–86) or Henri Pirenne's famous *Mahomet et Charlemagne* (posthumously published in 1937) for their meaningful and picturesque anecdotes, but not until Michael McCormick's *Origins of the European Economy* (2001) was the potential of all written sources and documents for statistical analysis fully recognized and exploited. The rich western archives, even when already the object of numerous studies, can provide new perspectives when approached from new angles, as Rowan Dorin does in his study of the regional Adriatic networks in the twelfth and early thirteenth centuries, before Venice had fully established her dominance of the region's sea-lanes.

More obliquely, literary or religious texts can also yield details in the many metaphors related to commercial practice, the good and evil deeds or the risks incurred as found in Church teachings on virtuous trading, and all the allusions to market-conditioned behavior. Such metaphors also tell us that trade and markets were so common that the many topoi based on them were readily understood by churchgoers.<sup>39</sup> Previously neglected texts, such as the Arab

37 See in this volume D. Pieri, "Regional and Interregional Exchanges in the Eastern Mediterranean in the Early Byzantine Period: The Evidence of Amphorae," and M. McCormick, "Movements and Markets in the First Millennium: Information, Containers, and Shipwrecks," as well as E. Zanini, "Forme delle anfore e forme del commercio tardoantico: Spunti per una riflessione," in *LRCW 3, Third International Conference on Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry, Comparison between Western and Eastern Mediterranean* (forthcoming).

38 C. Morrisson, "La monnaie sur les routes fluviales et maritimes des échanges dans le monde méditerranéen (VI<sup>e</sup>–IX<sup>e</sup> siècle)," in *Lacqua nei secoli altomedievali (Spoleto, 12–17 aprile 2007)*, Settimane di studio della Fondazione Centro italiano di studi sull'alto Medioevo 55 (Spoleto, 2008), 631–70. See the cautionary observations on the value of coins as evidence in A. Stahl, "Coinage," *Early Medieval Europe* 12 (2003): 293–99.

39 McCormick, "Movements and Markets in the First Millennium," analyzes several metaphors on trade, risk, profit, etc. 78–79; C. Morrisson, "Weighing, Measuring, Paying: Exchanges in the Market and the Marketplace," analyzes cases (legal or literary) of defrauders and swindlers, 387–88, 389–90]; L. Lavan, "From *polis* to *emporion*? Retail and Regulation in the Late Antique City," 333–77, examines shops and daily exchanges in late antiquity, *passim*.



almanacs and chronological treatises examined by André Binggeli, yield precious information on Bilād al-Shām's fairs (the regular intervals at which they were held and the area from which they drew attendees); those in Filastīn; those on the Damascus–Mecca route, which existed in the preceding period under Byzantine rule; and the later ones established in the Jazīra on the Euphrates axis.

Relying on this combined evidence, the essays in the first three sections of the book concur in depicting and analyzing the dynamics of local, regional, and interregional trade and that of the artisanal or manufactured products which were exchanged. The last section is devoted to the practical functioning and environment of the Byzantine marketplace.

### *Marketplace and Shops*

The final chapters in this volume consider regulation and control of measures, weights, and payments—an essential institutional condition of the functioning of market exchange generally,<sup>40</sup> and specifically an important foundation of the Byzantine economy<sup>41</sup>—together with indirect taxes from the fifth to the fifteenth century. The unified system inherited from Rome, which was of great benefit in supporting market exchanges and lowering transaction costs, never disappeared even when Byzantium had to agree, from the twelfth century onward, that the privileged Italian merchant communities could use their own measures in their colonies.<sup>42</sup> Brigitte Pitarakis provides a material perspective on this legal and documentary survey by bringing together representations in various media of everyday transactions and installations and the widely attested archaeological remains of measuring and weighing instruments.

Markets as physical spaces have received scarcely any attention, except in the recent studies by Luke Lavan.<sup>43</sup> He offers here an in-depth and innovative

study of archaeological evidence for shops and markets in late antiquity, combined with many references to the abundant literary sources. He presents an almost exhaustive survey of present knowledge of material environment for transactions, including market stalls (tables) revealed by slits cut in front of porticoes; wooden tables revealed by postholes and *topos* inscriptions; cellular shops, often grouped according to their trade and equipped with shelves for the display of goods, counters, and, in the case of taverns, benches or couches for customers; and specialized market buildings, whether tetragonal agorai and *macella* or sigma shopping plazas. In addition, he proposes a new interpretation of the legal texts (especially *CTh* 15) that have long been taken as a proof of the encroachment of streets and the transformation of the late antique city into a *medina*. The overall picture clearly supports his main argument that the “commercialization” of city centers was a sign not of urban decay but of a conscious evolution toward a new monumentality, accepted and even fostered by urban elites in the sixth century. This new urban environment obviously matched the active exchanges inferred elsewhere in the book from other sources.

The subject of shops and markets is also considered by Alan Walmsley in the last section of his chapter, which partly overlaps with Lavan's observations and complements them: in Byzantine and early Islamic Syria and Palestine, excavations of many secondary urban centers and even big villages (Ruṣāfa, Palmyra, Pella, Jarash, Skythopolis, Arsūf, Umm al-Raṣās, Subaytah/Shivta) provide evidence from the sixth through the eighth century for market streets and agglomerated courtyard units, often located near the church or the mosque. The continuity, renovation, and even new construction of these facilities offer yet more proof of the vigorous functioning of local exchange.

\* \* \* \* \*

Though it may be bold to generalize, we may draw some conclusions about points of agreement between the contributors: a widely shared focus on

40 World Bank, *World Development Report 2002: Building Institutions for Markets* (New York, 2002), available at <http://go.worldbank.org/YGBBFHLL1Yo> (accessed August 2010).

41 On the importance of legal and social institutions and intangible resources for economic stability and growth in Byzantium, see A. E. Laiou and C. Morriison, *The Byzantine Economy* (Cambridge, 2007), 17–22.

42 Morriison, “Weighing, Measuring, Paying,” 392–93.

43 L. Lavan, “Fora and Agorai in Mediterranean Cities: Fourth and Fifth Centuries A.D.,” in *Social and Political Life in Late Antiquity*, ed. W. Bowden, C. Machado, and A. Gutteridge, Late

Antique Archaeology 3.1 (Leiden, 2006), 195–249; T. Putzeys and L. Lavan, “Commercial Space in Late Antiquity,” in *Objects in Context, Objects in Use: Material Spatiality in Late Antiquity*, ed. L. Lavan, E. Swift, and T. Putzeys, Late Antique Archaeology 5 (Leiden, 2007), 81–109.

geographical and ecological constraints to explain the formation and limitations of regional or local markets supplying an urban center, as well as close attention to the division of labor conducive to interregional exchanges. Relying on such analysis, many essays explore the correlation between trade and urbanization, an element most typically at work in the expansion of long-distance and interregional trade in the Adriatic and the Aegean beginning in the twelfth century or even earlier, since larger cities such as Venice or Constantinople could no longer rely on their medium-range hinterland to feed their inhabitants. Whereas the growth of urban centers was both a cause and a precondition for the emergence of interregional networks, the development of rural centers (e.g., in Boeotia) entailed the expansion of regional and local networks as analyzed by Laiou and Papanikola-Bakirtzi and in other studies. When examined over the course of centuries, most regions displayed common trends, though the mid-Byzantine decline did not occur at the same date everywhere, and the subsequent recovery started in some places as early as the late eighth or early ninth century, at others only in the late tenth century.

The most striking commonality is a new vision of the so-called dark age (the long eighth century, broadly speaking). It is true that increased localization and decreased quality of production in this period cannot be doubted, as exemplified *inter alia* by the restricted diffusion of Sagalassos local semi-fine and coarse kitchen wares; but contributors with different emphases and approaches converged in insisting on the continuity of general settlement and economic activity in Asia Minor. They also concurred in describing the resilience of some coastal areas or islands, like Cyprus, due to the survival of long-distance trade. However limited, these long-distance relations can be traced—for example, in the wide diffusion of Crimean transport amphorae as far as Butrint and in the new centers of trade in northern Italian sites like Comacchio. Resilience also characterized certain areas of inland Anatolia, where the decline of long-distance trade, the plague, and other factors had less effect and where the presence of the army stimulated agricultural and artisanal production aimed at satisfying its needs.

At the same time, weight was given to the analysis of regional diversity and to the changing patterns of networks, such as the growing importance of the Black Sea north–south route between Amastris,

Paphlagonia, and Cherson; the shift of the Adriatic trade from a north–south to a west–east emphasis; the reorientation of Halmyros trade from its earlier destination, Thessalonike, to its western hinterland; and so on. Better knowledge of common wares or new approaches to documentary analysis enabled several contributors to look for the structure of local or regional networks, stressing the role of secondary distribution centers<sup>44</sup> or differentiating between regular and occasional markets.<sup>45</sup> New aspects or contexts of exchanges were brought to light for the first time, such as informal markets on the beachside and retail sales on board the tramp ships themselves, probably aimed at dodging imperial taxes.

Not all topics or aspects could be addressed, and regional trade in the late Byzantine period, for which contemporaneous documents can certainly yield more information than has already been retrieved,<sup>46</sup> was not thoroughly treated. Few attempts at quantification were made, despite their necessity for valid economic analysis (admittedly, their dependence on ancient and medieval documents obviously limits the precision of such efforts). One of the possible approaches to the subject suggested here relies on a renewed survey of shipwrecks, a much greater number of which are known now (ca. 309 for the Mediterranean, AD 300 to 1500) than in 1992, when Anthony Parker published his pioneering book on the subject.<sup>47</sup> Michael McCormick is aware of the imperfection of this proxy measure of seaborne traffic, due to the influence of such other factors as decline in population and demand, difference in ship sizes and the cargoes transported, variations in the sinking rate caused by different knowledge and conditions of navigation, and the age of the vessel.<sup>48</sup> Yet all these biases can be taken

44 Walmsley, “Regional Exchange and the Role of the Shop,” below, 315, and Dorin, “Adriatic Trade Networks,” below, 271, etc.

45 A. Bingelli, “Annual Fairs, Regional Networks, and Trade Routes in Bilād al-Shām (Sixth–Tenth Centuries).”

46 E.g., by K.-P. Matschke, “Commerce, Trade, Markets and Money: Thirteenth–Fifteenth Centuries,” in *EHB* 2:771–806, who deals with “regional economic zones” at 782–89.

47 A. J. Parker, *Ancient Shipwrecks of the Mediterranean and the Roman Provinces*, BAR International Series 580 (Oxford, 1992).

48 McCormick, “Movements and Markets in the First Millennium,” 89–98. See also Wilson’s review of Parker’s data in “Approaches to Quantifying Roman Trade,” 219–29, who likewise both emphasizes an increase in the use of barrels rather than amphorae as perhaps leading to the decline in the number of perceived shipwrecks in late antiquity from its peak in the second

into account to qualify the present picture—a lower number of datable wrecks from the ninth to the fifteenth century than from antiquity, though other sources point to considerable numbers of bigger ships in the late medieval Mediterranean. Another task will be to compare assemblages of pottery production or usage, following on the pioneering attempts to quantify the frequency of late Roman sherds of a defined form (ARS) over time.<sup>49</sup> Similarly, the already well-known comparisons of find patterns from late antique Mediterranean sites published by Michael Fulford and Clementina Panella<sup>50</sup> could be extended to the Byzantine period, when more progress has been made in identifying ceramics

---

century AD and examines the influence of the size of ships on their sinking rate.

49 Wilson, “Approaches to Quantifying Roman Trade,” 237–43.  
50 M. G. Fulford, “To East and West: The Mediterranean Trade of Cyrenaica and Tripolitania in Antiquity,” in *Libya: Research in Archaeology, Environment, History and Society, 1969–1989*, ed. D. J. Mattingly and J. A. Lloyd, *Libyan Studies* 20 (London, 1989), 169–91; C. Panella, “Gli scambi nel Mediterraneo Occidentale dal IV al VII secolo dal punto di vista di alcune ‘merci,’” in *Hommes et richesses dans l’empire byzantin*, vol. 1, *IV<sup>e</sup>–VII<sup>e</sup> siècle, Réalités byzantines 1* (Paris, 1989), 129–41; eadem, “Merci e scambi nel Mediterraneo tardoantico,” in *Storia di Roma*, ed. A. Carandini, L. Cracco Ruggini, and A. Giardina, vol. 3.2, *L’età tardoantica: I luoghi e le culture* (Turin, 1993), 613–97.

and publishing sites—provided that there is enough consistency in how finds are recorded, classified, and published that the necessary geodatabases can be built. A number of hurdles, both methodological and practical (notably, unequal distribution of information) are still in the way, but a consensus on what we know, at least qualitatively, and what we do not has been achieved, and several lines of research have been proposed.

From my standpoint as the editor and a historian, such are the main points that I encourage the reader of this book to bear in mind. A genuine economic perspective is offered in Peter Temin’s assessment at the end of this book. The variety and complexity of the exchange networks analyzed by the essays in this volume, the ubiquity of coins or at least the role of money as measure of exchange, the persistence of local exchanges throughout the designated period, and the recovery of long-distance trade from its eighth-century nadir, which signals the return to economic prosperity in the eleventh and twelfth centuries—all characterize the Byzantine markets as free but regulated. It now remains to follow the paths that have been opened in the various chapters of this volume.

*Cécile Morrisson, August 2010*

# Weighing, Measuring, Paying

## *Exchanges in the Market and the Marketplace*



CÉCILE MORRISSON

*in memory of Angeliki, χάρις*

IF MONEY IS UNDOUBTEDLY “THE GREAT wheel of circulation, the great instrument of commerce,” as Adam Smith claimed,<sup>1</sup> that is because, as we all know since Aristotle, it is “a measure of all things” on the basis of which exchange can take place.<sup>2</sup> It is only natural that in the fourth century, the bishop of Constantinople, St. John Chrysostom, who was born in the great merchant metropolis of Antioch, heralded “the use of coins [which] welds together our whole life and is the basis of all our transactions,”<sup>3</sup> while a roughly contemporary epigram of Palladas in the *Anthologia Palatina* praised the “fertilizing follis.”<sup>4</sup> But money is only one among many other measures, as traditional images of a Byzantine and a western merchant illustrate: the for-

mer carries a jar on his shoulder and holds the scales in his left hand (fig. 15.1),<sup>5</sup> while the latter holds the scales in his right hand and the measuring rod in his left, his conspicuous purse hanging from his belt (fig. 15.2). In the words of Peter Spufford, “To be a merchant is to weigh and measure.”<sup>6</sup> Money, weights, and measures, plus taxes and various excises, always formed the core of the merchant’s culture—as Francesco Balducci Pegolotti put it in the fourteenth century, they are the *cose bisognevoli di sapere a mercatanti di diverse parti del mondo* (topics that the merchants from various parts of the world need to know).<sup>7</sup>

No treatise on the art of commerce comparable to Pegolotti’s survives from Byzantium, but much information can be gained from several sources: first, the many laws that governed commerce and ensured security and uniformity in weighing and paying in “markets,” be they permanent, weekly, or annual, or local, regional, or international; second, other textual sources giving evidence of daily practice; and, last but not least, the archaeological documentation on instruments of weighing, measuring, and paying. This latter perspective is considered in greater detail in this volume in the chapter by Brigitte Pitarakis, but it cannot be entirely ignored in what follows, which will outline the regulation and enforcement

1 I am indebted to the late Angeliki Laiou for having insisted at an early stage of this research on the importance of studying the evolution of measuring practices in the late Byzantine period. This chapter would not have been the same without her advice but unfortunately lacks what she would have added to it later. I am grateful to Christophe Giros for valuable information. Alice-Mary Talbot’s accurate reading saved me from several mistakes and improved my English.

A. Smith, *The Wealth of Nations* (London, 1964), 256.

2 Aristotle, *Politics* 1.3.17: “For money is the first element and limit of commerce” (τὸ γὰρ νόμισμα στοιχεῖον καὶ πέρασ τῆς ἀλλαγῆς); trans. H. Rackham, Loeb ed. (Cambridge, Mass., 1972), 45. See O. Picard, “Considérations historiques, éthiques (chrématistique), économiques, juridiques sur la monnaie chez Aristote,” *Ktèma* 5 (1980): 267–76.

3 PG 51:100.

4 *Anth. Pal.* 9.528: Χριστιανοὶ γεγαῶτες Ὀλύμπια δώματ’ ἔχοντες ἐνθάδε ναιετάουσιν ἀπήμονες· οὐδὲ γὰρ αὐτοὺς χῶνῃ φύλλιν ἀγούσα φερέσβιον ἐν πυρὶ θήσει. Cited by C. Mango, “L’attitude byzantine à l’égard des antiquités préromaines,” in *Byzance et les images*, ed. A. Guillou and J. Durand (Paris, 1994), 95–120, at 99.

5 See K. Weitzmann, *The Miniatures of the Sacra Parallela, Parisinus Graecus 923*, *Studies in Manuscript Illumination* 8 (Princeton, N.J., 1979), 58 and fig. 67.

6 P. Spufford, *Power and Profit* (London, 2002), 7.

7 Francesco Balducci Pegolotti, *La pratica della mercatura*, ed. A. Evans (Cambridge, Mass., 1936), 4 (and pl. 1).



Figure 15.1. Byzantine merchant (after *Sacra Parallela*, BnF, Paris, gr. 923, fol. 201v)



Figure 15.2. Western merchant, 14th c. (German manuscript, after Iacopus de Cessolis, *Liber de scacchis*; frontispiece of Spufford, *Power and Profit*)

of weighing, measuring, and paying in Byzantine markets from the fourth through the fifteenth century. In this *longue durée*, the power of tradition and material constraints contributed to a certain degree of continuity. Yet political and economic changes and their consequences require a chronological assessment, which here takes the form of a classic three-period division, paralleling the distribution of our sources: late antique or early Byzantine, middle Byzantine, and late Byzantine.

#### The Early Byzantine Period (Fourth–Sixth Centuries)

A fourth-century text by Pacatus describes the usurper Maximus (409–11) as staying “at the scales (*lances*) . . . watching the movement of the weights (*momenta ponderum*) and the oscillations of the balances (*nutus trutinorum*) on which are weighed the spoils of the provinces. . . . here, gold taken from the hands of the women; there, *bullae* torn from the necks of children. . . . Everywhere, coins (*pecuniae*) were counted up, chests (*fisci*) were filled up, [bronze] moneys (*aera*) were heaped up and vessels

(*vasa*) were cut up.”<sup>8</sup> In a less dramatic way, the same distinction between weighing and counting was made in the marketplace, where it was customary to pay by weight for precious metal, by tally for small change. This long tradition is summed up in the eleventh century in the versified *Synopsis tōn nomōn*, where Psellos answers the question about which commodities were sold “by weight, by measure, or by number” with the following examples: “by weight, such things as gold, silver, and lead; by number, small change (*noummoi leptoi*); and by measure, wine.”<sup>9</sup> Market transactions relied on accurate and honest scales or balances, weights, and measures of capacity or length applied to both the various commodities exchanged and the coins used in their payment.

8 *Panegyricus Theodosio Augusto dictus* 12.2; *Panegyriques latines*, ed. E. Galletier, vol. 3 (Paris, 1955), 93—cited and translated by M. F. Hendy, *Studies in the Byzantine Monetary Economy, c. 300–1450* (Cambridge, 1985), 189.

9 L. G. Westerink, *Michaelis Pselli poemata* (Stuttgart, 1992), poem 8; ll. 896–99: ὅπερ ἐστὶ τὰ πόνδερε νοῦμερε μένσουρέ τε, / ὅσα σταθμοῦ καὶ μέτρου τε καὶ ἀριθμοῦ τυγχάνει, / πόνδερε μὲν οἶον χρυσὸς ἄργυρος μόλιβδός τε, / νοῦμμοι λεπτοὶ τὰ νοῦμερε, οἶνος τὰ μένσουρέ τε.



**Figure 15.3.** Bronze steelyard and weight (48 cm long; 7.5 cm high, weighing 510.3 g; *DOCat*, 1:63, no. 73; BZ 1940.11, from the Bliss collection)

Let us recall briefly the different types of scales and weights, in order to understand better the nomenclature followed in regulation and practice. Heavier commodities were weighed either on a steelyard (Latin *statera*, Greek *κάμπανος*) or on an equal-arm balance (*ζυγός*). Many specimens of steelyards, complete or fragmentary, have been found in excavations in western Europe and the Byzantine world (e.g., at Pliska, Sardis, Amorion, and Skythopolis, among many sites) or in shipwrecks such as Yassi Ada or Gruissan.<sup>10</sup> One of the three preserved in Dumbarton Oaks (fig. 15.3a–e) has a four-sided rod, 48 centimeters long, divided into longer (32 cm) and shorter (16 cm) sections.<sup>11</sup> Three of the four sides of

the longer section are engraved with varying scales. A counterpoise (7.5 cm high), weighing 510 grams, slid along the longer section and gave the weight when it balanced. On the shorter section, the punched inscription  $\text{+H}\Delta\text{E}\text{C}\text{I}\text{O}\text{Y}\text{+}$  probably gives the name of the owner (fig. 15.3b). This section has three hooks, each attached to a different side of the rod. One hung the steelyard from the hook corresponding to the scale one wanted to read. The hook farthest from the collar served for the lightest amounts, the closest for the heaviest ones. The three marked sides of the longer section are engraved with dotted graduations in *librae* (Roman pounds),<sup>12</sup> referring to weights from  $\frac{1}{2}$  pound (1.63 kg) and 1 pound (fig. 15.3a; 3.26 kg) to  $12\frac{1}{2}$  pounds (4.07 kg) (fig. 15.3c), from 12 (IB; 3.91 kg) to 38 pounds

<sup>10</sup> For more on steelyards see B. Pitarakis, “Daily Life at the Marketplace in Late Antiquity and Byzantium,” in this volume, pp. 399–426.

<sup>11</sup> *DOCat*, 1: no. 73.

<sup>12</sup> Throughout, the “pound” cited is the Roman one (estimated to be ca. 327 g), not any modern weight of that name.

(12.38 kg) (fig. 15.3d), and finally from 40 (M; 13.04 kg) to 95 pounds (30.97 kg) (fig. 15.3e). Another steelyard in the Prähistorische Staatssammlung Munich has a longer arm (73.5 cm), also engraved with three scales, which allowed for the measurement of loads from ¼ pound (81.5 kg) to 32 pounds (10.43 kg) on the first one, from 20 to 71 pounds (6.52 kg to 23.15 kg, in pounds and half pounds) on the second one, and from 42 to 135 pounds (13.69 kg to 44 kg) on the third one (in pounds only). A comparable steelyard in the Museum für Vor- und Frühgeschichte Frankfurt, with a total length of 100.6 centimeters, allows for measuring weights from 75 to 245 pounds (24.45 kg to 79.87 kg).<sup>13</sup> Finally, a larger scale offered for sale in Munich with an arm of 1.25 meters can weigh loads up to 229 pounds (74.65 kg). Taking into account the total weight of such an instrument, with its hooks, chains, and pan (in Latin, *lanx*), its installation must have required great care for any loads above 25 kilos.<sup>14</sup> The signboard of a Roman butcher preserved in Dresden shows how a steelyard, obviously used for smaller loads, was suspended from the shop's beam by two ropes or chains with its arm provisionally lying to the side in a slot in the pole of the stall or the shop (fig. 15.4).<sup>15</sup>

Of much smaller dimensions (ca. 10 cm) and scope were *staterae*, which could be held between two fingers; the counterpoise slid inside one arm incised for the purpose, and the coin or light object was laid on a little pan at the other end.<sup>16</sup> A less sophisticated device consisted of a small scale with unequal arms (7.8 cm long); lacking a counterpoise, it was designed to balance only when a *hyperpyron* was put in the pan.<sup>17</sup> In contrast, big steelyards had sizable counterpoises; those preserved range from 1.4

13 D. Stutzinger, "Zwei spätantike Schnellwaagen," in *Tesserae: Festschrift für Josef Engemann*, Jahrbuch für Antike und Christentum, Ergänzungsband 18 (Münster, 1991), 304–28 (with references).

14 J. Garbsch, "Wagen oder Waagen?" *Bayerische Vorgeschichtsblätter* 53 (1988): 191–222, at 201–5 and the auction catalogue, with details on both scales. For the first one (Munich Museum Inv. No. 1987, 996) see also *Rom und Byzanz: Archäologische Kostbarkeiten aus Bayern* (Munich, 1998), 171, no. 224. The Yassi Ada steelyard maximal load was 400 pounds (ca. 130 kg).

15 *Ibid.*, pl. 32.

16 B. Kisch, *Scales and Weights: A Historical Outline* (New Haven, 1965), 62 (fig. 26), 65. See Pitarakis, "Daily Life," 407–11.

17 See the specimens discovered in excavations at Păcuil lui Soare (Romania) and Shumen (Bulgaria); see P. Diaconu, "Cintare pentru verificat greutatea perperilor de Vicina," *Studii și Cercetări de Numismatică* 6 (1975): 243–45.

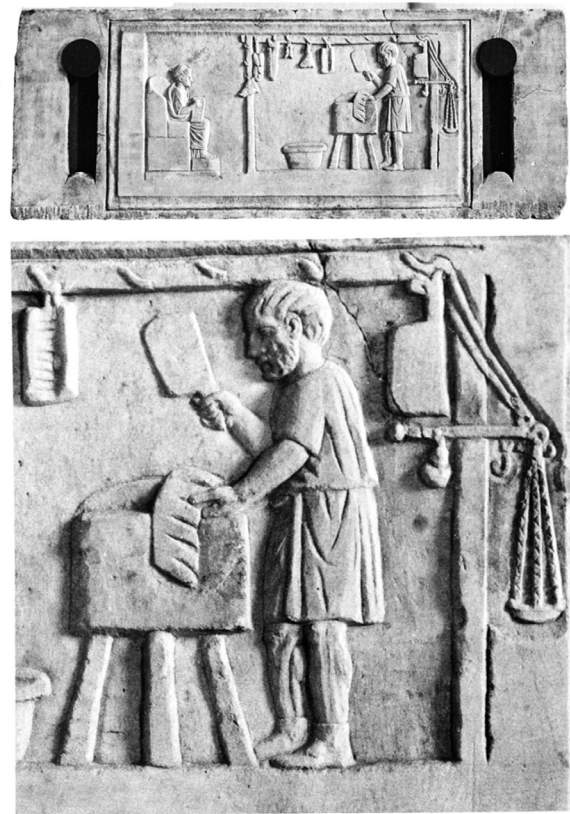


Figure 15.4. Sign of a Roman butcher with scale suspended from the shop's beam (Dresden Museum; after Garbsch, "Wagen oder Waagen?" pl. 32)

to 2.6 kilos. Their mass could be adjusted by filling the inner part with lead or by adding some lead at its base; tampering and fraud was thus easy, as will be considered below.

Balance scales with equal arms had suspended pans and sometimes could be used even for heavy loads measured with stone weights of some 12 kilos or more; the balance arm would be hung from a strong beam lying on two trestles. But most equal-arm balance scales were used for smaller commodities, such as spices, metal, and of course (and most often) coins. Some of them had a collapsible beam with a joint in each arm, permitting them to be folded and carried in a small container in the pocket.<sup>18</sup> Balances of Byzantine money changers have been recovered also from shipwrecks, such as the late sixth-century ship sunk near the island of Port-Cros (Var, France;

18 Kisch, *Scales and Weights*, 38–39; see also Pitarakis, "Daily Life," 422–23.

see fig. 15.5).<sup>19</sup> The best preserved are the well-known specimens from the Flinders Petrie collection found in Upper Egypt, but many others have been brought to light in Turkey by Brigitte Pitarakis's survey.<sup>20</sup>

We are concerned here not with the problem of the development of Roman and Byzantine measures<sup>21</sup> but with their use and control. Since Augustus, the emperors had aimed at normalizing and unifying measures in their domain,<sup>22</sup> and Roman standards had gradually become the unique measures of the empire, though they long coexisted with local or unofficial measures.<sup>23</sup> Public control was exercised over the original standard measures (étalons or *Urmasse*) against which all other weights and measures could be checked or copied. In old Rome they were kept in the temples of Juno Moneta or Jupiter Capitolinus; in Egypt, in the Serapeion,<sup>24</sup> before Constantine I transferred them to the cathedral church of Alexandria. In Constantinople they were probably kept in a similar location and from there distributed all over the empire.

These official standard measures, previously controlled by members of the curia, were in the late antique period directly overseen by state officials.

19 L. Long and G. Volpe, "Origini e declino del commercio nel Mediterraneo occidentale tra età arcaica e tarda antichità: I relitti de La Palud (Isola di Port-Cros, Francia)," in *L'Africa romana: Atti dell'XI convegno di studio Cartagine, 15–18 dicembre 1994*, ed. M. Khanoussi, P. Ruggeri, and C. Vismara (Sassari, 1994), 3:1235–84. Thanks are due to Luc Long for providing the original illustration.

20 T. Sheppard and J. F. Musham, *Money Scales and Weights* (London, 1923), 2–4. See Pitarakis, "Weighing Instruments," in "Daily Life," 419–20.

21 See E. Schilbach, *Byzantinische Metrologie*, HAW 12.4, *Byzantinisches Handbuch* 4 (Munich, 1970).

22 Cassius Dio 30.9 (cited by E. Schilbach, "Rechtes Maß von Gott gesetzt: Zur Legitimierung von Maßen in Antike und frühem Mittelalter," in *Acta Metrologiae Historicae V: 7. Internationaler Kongreß des Internationalen Komitees für Historische Metrologie*, ed. H. Witthöft, Sachüberlieferung und Geschichte 28 [St. Katharinen, 1999], 17–31, at 19 n. 12).

23 On what follows, see the rarely cited but important article by Schilbach, "Rechtes Maß von Gott gesetzt: Zur Legitimierung von Maßen in Antike und frühem Mittelalter," (above, n. 22).

24 See Sozomen 5.3.3 (*Historia Ecclesiastica = Kirchengeschichte*, ed. and trans. G. C. Hansen, *Fontes Christiani* 73.2 [Turnhout, 2004], 2:574), on the restitution by Julian to the Serapeion of the Nile *cubitus* and other standards (τὸν πῆχυν τοῦ Νείλου καὶ τὰ σύμβολα) that had been transferred to the cathedral church by Constantine I. Christophe Giros suggests (personal communication) that *symbolon*, which is frequently used by Sozomen to designate a religious insignium, may apply here to insignia of the cult of Serapis.

These were mainly the *zygostatai*, who were first appointed in each city, according to an edict of Julian in 363,<sup>25</sup> and then elected by the bishop, the inhabitants, and the landlords of the city following a prefectural edict of 495.<sup>26</sup> In fact they are documented by inscriptions from such places as Bostra,<sup>27</sup> Korykos, Gadara, and Corinth and by many papyri from Egypt.<sup>28</sup> A late antique inscription from Antioch in Pisidia even mentions a *zygostasion*—that is, a building where weighing was carried out and probably the standards were kept.<sup>29</sup>

One of the most enlightening of such inscriptions is that from Andriake, the well-known Lycian port of Myra, where Hadrian had built public granaries that were still in use in the fourth and fifth

25 *CTh* 12.7.2 (slightly shortened in *CI* 10.73.2; emphasis mine): "Imp. Iulianus a. ad Mamertinum praefectum praetorio. emptio venditioque solidorum, si qui eos excidunt aut deminuunt aut, ut proprio verbo utar cupiditatis, adrodunt, tamquam leves eos vel debiles nonnullis repudiantibus impeditur. *ideoque placet quem sermo graecus appellat per singulas civitates constitui zygostaten*, qui pro sua fide atque industria neque fallat neque fallatur, ut ad eius arbitrium atque ad eius fidem, *si qua inter vendentem emptoremque in solidis exorta fuerit contentio, dirimatur*. dat. viiii kal. mai. saloniae iuliano a. iiii et sallustio cons. (363 apr. 23)." For a *zygostatēs tēs poleos* in Corinth, see L. Robert, *Hellenica*, vols. 11–12 (Paris, 1960), 51. For a mention of Jewish *zygostatai* in Side in the early Byzantine period, see L. Robert, "Inscriptions grecques de Sidé," *Revue de philologie* 32 (1958): 15–51, at 36–37. Denis Feissel (personal communication) knows also of inscriptions mentioning *zygostatai* in Seleukeia in Isauria, Korykos, Gadara (Μαξιμίνοσ ὁ Κ(α)ισαρίας), and Bostra. The *zygostatai* in Alexandria were controlled by the *augustalis* (Justinian Edict XI, *CIC* 3:777).

26 *Ed. Praef.* 7. See A. Laniado, *Recherches sur les notables municipaux dans l'empire protobyzantin* (Paris, 2002), 173. Several seventh-century seals of a Cypriot *zygostatēs* called Epiphanius, with the figure of the homonymous saint on the obverse, are published by D. M. Metcalf and A. Pitsillides, *Byzantine Lead Seals from Cyprus* (Nicosia, 2004), no. 299.

27 S. Sari, "A Church at Khirbat Sa'ad: A New Discovery," *Lib. ann* 45 (1995): 526–29, pl. 84, fig. 5; cited by D. Feissel, *Chroniques d'épigraphie byzantine: 1987–2004* (Paris, 2006), no. 863.

28 P.Oxy. LXIII 4395, ca. AD 499–500, in which a *zygostatēs* certifies the quality of 10 solidi in a loan; cited by C. Zuckerman, *Du village à l'Empire: Autour du registre fiscal d'Aphroditô (525/526)*, Centre de recherche d'histoire et civilisation de Byzance, Monographies 16 (Paris, 2004), 103. For other references, see R. Delmaire, *Largesses sacrées et res privata: Laerarium impérial et son administration du IV<sup>e</sup> au VI<sup>e</sup> siècle*, Collection de l'École française de Rome 121 (Rome, 1989), 257 n. 37.

29 S. Mitchell and M. Waelkens, *Pisidian Antioch: The Site and Its Monuments* (London, 1998), 226, no. 9, dated to the third century or later with references to the otherwise rare antique inscriptions where this term occurs: Pergamon, Apollonia on the Rhyndacos, Acmonia (in the *macellum*), and Selge.





**Figure 15.5.** (a) Balance in its box from the 6th-c. shipwreck of La Palud (Var, France), with (b) close-up of the weight preserved in the box (courtesy L. Long, Département des recherches archéologiques subaquatiques et sous-marines, DRASSM, Marseille)

centuries. The inscription is dated by its mention of Fl. Eutolmios, prefect of the East between 388 and 392, and is located to the right of one of the central doors to the granaries.

Ἐπὶ τοῦ κυρίου μου καὶ τὰ πάντα θαυμασιωτάτου  
τοῦ λαμ(προτάτου) καὶ μεγαλοπρεπεστάτου  
Φλ(αβίου) [Εὐτολμίου][ἐπάρχου] τῶν ἱερῶν  
πραιτωρίων κατεσκευάσθη κατὰ τὰ  
ἀποσταλέντα φραγέλλια σιδαρᾶ β' καὶ ξέεται  
χάλκεοι β' ἔχοντες τρία αὐγούστια καὶ μόδιοι  
τρὶς κατὰ τὴν ποιότητα τῶν ἀποσταλένων παρὰ  
τῆς μεγίστης ἐξουσίας, ἀφ' ὧν ἓν μὲν φραγέλλιον  
δέδοτε τῇ Μυρέων μητροπόλι, τὸ δὲ ἕτερον τῇ  
Ἄρναιατῶν, ὁμοίως δὲ καὶ ξέεται εἰς Μυρέων  
καὶ ὁ ἕ[τερο]ς τῇ Ἄρναιατῶν, καὶ τῶν μοδίων  
δύο μὲν Μυρεῦσιν καὶ ἡμιμόδια δύο, ἓν δὲ  
Ἄρναιατες, καὶ ἡμιμόδιον ἓν, ἐπὶ τῷ φροντίδι  
τῶν κατὰ καιρὸν πρεποσίτων φυλάττεσθαι  
τά τε μέτρα καὶ τὰ σταθμὰ ἀνεπιβούλευτα  
τοῖς ὀρρίοις<sup>30</sup>

30 G. Manganaro, "Due note tardoantiche," *ZPapEpig* 94 (1992): 283–94, with updated comment and edition and references to previous publications by H. Grégoire, *Recueil des inscriptions grecques chrétiennes d'Asie Mineure*, vol. 1 (Paris, 1922), no. 290; M. Wörle, *Myra: Eine lykische Metropole* (Berlin, 1975), 67–68. I am grateful to Denis Feissel for bringing this text to my attention and for discussing it with me and Brigitte Pitarakis. The

Under my lord, admirable in all,  
*lamprotatos* and *megaloprepestatos* Flavius  
Eutolmios, prefect of the Sacred Praetoria,  
were prepared according to what had been  
sent, two iron sticks (*phragellia/flagellia*)  
and two bronze *xestai* having the three  
*augoustia* and three *modioi* according to  
the quantity of the (standards) sent by  
the supreme authority. Out of these one  
*phragellion* was given to the metropolis of  
Myra, the other to that of the Arnaiaitai,  
and similarly one *xestēs* to Myra and the  
other to the Arnaiaitai, and to Myra on the  
one hand two *modioi* with two half-*modioi*,  
and on the other hand to the Arnaiaitai  
one (*modios*) with one half-*modios*, while  
the measures and weights will be kept  
untampered for the granaries under the  
*praepositus* of the moment.

Several expressions in the text are problematic. First is the word *phragellion*, which, in his recent com-

importance of the imperial granaries at Andriake is discussed by K. Belke, "Prokops De Aedificiis book V und Klein Asien," *AnTard* 8 (2001): 116–17. He cites Manganaro's interpretation of the *phragellion* and seems to accept it; but in n. 19, he gives later parallel examples of a linear measure called *bergion* (rod), which support the alternative interpretation offered here.

mentary, Giacomo Manganaro takes in the most obvious meaning of *flagellum* (whip), used to punish defrauders on grain measures in Rome in the fifth century.<sup>31</sup> In an earlier comment, the Austrian scholar and numismatist Wilhelm Kubitschek, who fully recognized the great metrological interest of the inscription, assumed that *flagellum* could be a linear measure. He drew attention to the fact that many “feet measures” (*Fußmaße*) in wood, bone, bronze, or iron were preserved and that “*flagrum* or *flagellum* as instruments of punishment included the representations not only of whips but also of sticks (*Geißel, Gerte, Stecken*) and other things.” He added that it was not fortuitous that Hesychios equated φραγέλλια with σκυτάλαι βακτηρίαι.<sup>32</sup> To a modern mind, it indeed makes more sense to distribute standard linear measures together with standard weights rather than a standard instrument of punishment. But the question must be left open.

The phrase *tria augoustia* remained unexplained by Kubitschek, while Manganaro interpreted it as designating standard weights—which are missing from the list, though mentioned at line 11 together with standard measures. He had in mind counterpoises with an imperial bust (*[augoustia] aequipondia*).<sup>33</sup> In order to explain the phrase “xestai *having* the *tria augoustia*,” he even went as far as to suggest that there were “three poises of various weights attached between them and *contained* inside each of the two xestai, which, before being proper *sextarii*, units of measurement for liquids and dry staples, functioned as containers.”<sup>34</sup> But the text does not allow the *tria augoustia* to be considered as a separate measure. In the enumeration of the consignment sent by the prefect, the second and third objects mentioned after the *sphragellia* are both

introduced by a *kai: sphragellia sidara duo kai xestai khalkeoi duo . . . kai modioi tris*—the *xestai khalkeoi duo* “having” or “bearing” (not “containing”) “the *tria augoustia*.” Although no other occurrence of *augoustia* or *augousteia* can be retrieved from the Thesaurus Linguae Graecae, in my opinion the phrase can only be understood only as an allusion to *augoustia [laurata]*. The xestai bore the images of the three emperors, engraved or punched as a mark of validity, as found later on silver plate. In the late fourth century and early fifth century, examples of ingots or weights featuring the busts of various combinations of the three ruling emperors of the time (Gratian, Valentinian I, and Valens, 367–78; Arcadius, Honorius, and Theodosius II, 402–8) abound (see fig. 15.6). Although no such marked xestai survive (to be sure, their corpus is rather limited), the hypothesis cannot be ruled out and provides the easiest practical explanation of the text now available.

In general the inscription of Andriake is a vivid example of how the edict of 386—which provided that all official measures, including “*modii* of bronze or stone, *sextarii* (liquid measures), and *pondera* (weights)[.] were to be placed in each station (*mansio*) and city”—was enacted.<sup>35</sup> In 545, Justinian I renewed the regulation in greater detail, explaining that the measures and weights of commodities were to be provided to the cities by the prefects—as evidenced in the Andriake inscription—and the weights of gold, silver, and other metals by the Count of Sacred Largesses. The measures and weights were “to be preserved in the most holy church of each city.”<sup>36</sup> The role of the church as depository and guarantor of the weights was not only related to the increasing scope of bishops’ functions as leaders of the city;<sup>37</sup> it also derived from the trust that could be placed in the “justice” of the Church. The long association of divine justice with good weights and scales (cf. Leviticus 19:35–36),<sup>38</sup> as well as the insistence in Church teaching on practicing honest weighing and

31 Manganaro, “Due note,” 285–86, with reference.

32 W. Kubitschek, “Eine Inschrift des Speichers von Andriake,” *NZ* 51 (1918): 63–72; Hesychios, *Lexikon* 3.1190, ed. K. Latte (Copenhagen, 2005), 318.

33 Manganaro, “Due note,” 284–85. For the interpretation of the busts on these counterpoises, see Pitarakis, “Daily Life,” 417–22. The Thesaurus Linguae Graecae search for “augoustia” yields only two instances, both referring to the Spanish city.

34 “Tre di questi ἀγούστ(ε)ια—contrappesi, che in italiano sono anche denominati ‘romani’, certamente di tre diversi valori ponderali, raccordati tra loro—erano contenuti in ognuno dei due xestai, indicati a lin. 4 con una sigla e poi per esteso a lin. 8 . . . ξέστης εἰς . . . καὶ ὁ ἕτερος; a mio avviso, prima che di veri *sextarii*, unità di misura per liquidi e aridi, essi avevano funzione di contenitori per i tre pesi-campione.”

35 *CTb* 12.6.21 (AD 386). *CTb* 12.6.19 (AD 383) already provided that *mensurae et pondera* must be placed publicly in each mansion. For actual specimens of such measures, see Pitarakis, “Dry and Liquid Measuring Instruments,” in “Daily Life,” 410–16.

36 *CI, Novella* 218.15; trans. Hendy, *Studies*, 332.

37 J. Durliat, “Les attributions civiles des évêques byzantins: L'exemple du diocèse d'Afrique,” in *XVI. Internationaler Byzantinistenkongress, Wien, 4.–9. 1981: Akten*, vol. 2.2, *JÖB* 32.2 (Vienna, 1982), 73–84.

38 “Do not use dishonest standards when measuring length, weight, or quantity. Use honest scales and honest weights.”

**Figure 15.6.** *Exagium solidi* with the three imperial busts of Arcadius, Honorius, and Theodosius II (402–8); on the reverse, a standing female figure (Moneta or Aequitas) holding scales (a. P. J. Sabatier, *Description générale des monnaies byzantines* [Paris, 1862], pl. III, 9 = Bendall, 18, no. 10, from the Cabinet de France or the British Museum [4.78g]; b. Dumbarton Oaks, BZC 60.88.5608 [Bertelè collection], publ. in A. Kirin, ed., *Sacred Art, Secular Context: Objects of Art from the Byzantine Collection of Dumbarton Oaks, Washington, D.C., Accompanied by American Painting from the Collection of Mildred and Robert Woods Bliss* (Athens, Ga., 2005), [3.78g], “slightly broken,” 20mm)



assaying, pointed to that reliance. It is well exemplified in the edict proclaimed in Alexandria by John the Almsgiver on his accession to the patriarchate in the early seventh century:

He insisted that it should not be lawful to use at will different measures (μέτρον) or scales (στάθμιον), whether great or small, throughout the city, but that everything should be bought and sold according to a single standard and weight, whether the “modius” or “artaba” (ἀλλὰ πάντα ἐν ἐνὶ καμπάνῳ καὶ ζυγῶ καὶ μοδίῳ καὶ ἀρτάβῃ πωλεῖν καὶ ἀγοράζειν). . . . He sent out an edict signed by his own hand throughout the whole neighbourhood worded as follows: “. . . I exhort you, beloved, since God hates ‘a large and a small balance,’ as the holy Scripture says [Deut. 25:13], never to allow such a transgression of law to be seen anywhere amongst you. But if, after the promulgation of this our edict, subscribed by us, anyone shall be proved to have rendered himself open to such a charge, he shall hand over all his

possessions to the needy, whether he will or no, and receive no compensation.”<sup>39</sup>

Except for the law providing that the *zygostatēs* was to settle disputes that arose between a seller and a buyer of *solidi*, all the other regulation dealing with weighing and measuring was directed at protecting both the state and the taxpayer from possible tampering in fiscal transactions, whether payments in cash or in kind. But they give details on procedures that could also occur in the marketplace. The proper method of weighing to avoid fraud is neatly described in the Theodosian Code 12.7.1, a law of 325 which states that

when gold is paid, it shall be received with level pans (*aequa lance*) and equal weights (*libramentis paribus*) in such a fashion, naturally, that the end of the cord (*summitas*

39 Leontios of Neapolis, *Leben des heiligen Iohannes der Barmherziger, Erzbischofs von Alexandrien*, ed. H. Gelzer (Freiburg, 1893), 9–10; trans. E. Dawes and N. H. Baynes, *Three Byzantine Saints: Contemporary Biographies* (Oxford, 1948), 211.

*lini*) is held with two fingers, the remaining three being free and extended towards the tax-receiver (*susceptor*) so as not to depress the weights (*pondera*) by restraining either of the pans suspended from the tongue (*examen*) of the balance, but so as to permit the level and equal movement of the balance (*stater*).<sup>40</sup>

The correct finger position appears on specimens of an *exagium solidi* (the weight standard for the gold unit) (see fig. 15.6a). In rare cases, cheating could be viewed in a positive light: on his accession, when Justin II reimbursed the debts of Justinian I, the officials who were weighing and paying solidi are described by Corippus as having given “good weight” to the state’s creditors: “they pour out solidi and weigh them, and press down the scales with their thumbs.”<sup>41</sup>

But in most cases cheating was detrimental to taxpayers or buyers, and allusions to *iniusta* or *iniqua pondera* are frequent.<sup>42</sup> Kekaumenos cites such

40 *CTh* 12.7.1 = *CI* 10.73.1 (trans. and comm. by Hendy, *Studies*, 329; emphasis mine): “Imp. constantinus a. ad eufrasium rationalem trium provinciarum. si qui solidos appendere voluerit, auri cocti septem solidos quaternorum scripulorum nostris vultibus figuratos adpendat pro singulis uncis, xiiii vero pro duabus, iuxta hanc formam omnem summam debiti illaturus. eadem ratione servanda, et si materiam quis inferat, ut solidos dedisse videatur. aurum vero quod inferatur aequali lance et librantis paribus suscipiatur, scilicet ut duobus digitis summitas lini retineatur, tres reliqui liberi ad susceptorem emineant nec pondera deprimant nullo examinis libramento servato, nec aequis ac paribus suspensio stateris momentis. et cetera. proposita xiiii kal. aug. paulino et iuliano cons. (325 iul. 19).”

41 Corippus, *In Laudem Iustini Augusti minoris* 2.395–96, trans. Av. Cameron (London, 1976), 101. The French translation by S. Antès, *Corippe (Flavius Cresconius Corippus): Éloge de l'empereur Justin II* (Paris, 1981), 50 (“on divise en poids égaux les sous d’or éparés et d’un coup de pouce on donne une impulsion au plateau de la balance”), is partly incorrect. In the sentence *pondera fusos exaequant solidos et lancem pollice pulsant, exaequare* means to “balance” (horizontally align) the scale. Jean-Pierre Callu agrees (personal communication) with my interpretation and with understanding *fusi* as alluding to the fineness of the gold coins.

42 See Hendy, *Studies*, 332 (citing Cassiodorus and Gregory the Great). The main biblical statements are Proverbs 11.1, “A false balance is an abomination to the Lord, but a just weight is his delight,” and Psalm 61.10: “But vain are the sons of men, the sons of men are liars in the balances: that by vanity they may together deceive.” This last is commented on by Neophytos Enkleistos, “Ἄγιου Νεοφύτου τοῦ Ἐγκλείστου, Ἐρμηνεία τοῦ Ψαλτῆρος καὶ τῶν Ὡιδῶν,” ed. Th. Detorakes, in *Ἄγιου Νεοφύτου τοῦ Ἐγκλείστου Συγγραμματα*, ed. D. Karavidopoulos et al., vol. 4, *Ἐκδοσις Τετῆς Βασιλικῆς καὶ Σταυροπηγιακῆς Μονῆς Ἁγίου Νεοφύτου* (Paphos, 2001), 229–559, at 356–57 (Ps. 61). For other

(morally?) dangerous but highly profitable activities as “making false coins or clipping them, falsifying documents, reengraving seals, and so forth.”<sup>43</sup> The life of St. Markianos, the fourth-century *oikonomos* in Constantinople, tells the story of a *trapezitēs* to whom the holy man, then *protector*—that is, a headquarters officer—went regularly at midnight, with his face hidden so as not to be recognized, to “change gold into a lot of small bronze change for his alms to those in need.” The banker or money changer used the suspicious night visits as a pretext to weigh the gold coins on an unfairly adjusted (*adikoi*) balance. Puzzled by the recurring visits, the money changer sent a young servant to spy on the saint. He saw a miracle accomplished by Markianos, who had resurrected a poor man whom he had found dead and had washed for his burial. When the servant reported the event to his master, naturally the dishonest *trapezitēs* repented—and on the next visit of the saint, he confessed and reimbursed all that he had unjustly taken.<sup>44</sup> We know of George Koutales, the son of a couple of money changers and pawnbrokers (ἔχων γονεῖς διὰ τοῦ χρυσοκαταλλακτικοῦ καὶ σημάδαρικοῦ πόρου), whose parents were training him to master this business of the precise use of scales and weights (τῶν τε ζυγίων καὶ ἐξαγίων τὴν ἀκριβειαν). But in spite of his youth he knew their “vain and disreputable profiteering and the weighting of scales and their greedy and usurious rate of interest and the unadulterated exorbitance of interest on pawned objects” (τὴν ματαίαν αὐτῶν αἰσχροκέρδειαν καὶ τὴν τῶν ζυγίων βαρυσταθμίαν καὶ τὴν τῶν τόκων ἀπληστίαν καὶ τὴν τῶν ἐνεχύρων ἀδιάκριτον πολυτοκίαν).<sup>45</sup> The *Parastaseis*, in its eighth-century version, includes the colorful story of a certain Karkinelos, an *argyrokopos* with “balances

biblical citations about false weights and scales, see D. Hendin, *Ancient Scale Weights and Pre-coinage Currency of the Near East* (New York, 2007).

43 Kekaumenos, *Stratēgikon*, chap. 122; *Cekaumeni Strategicon*, ed. B. Wassiliewsky and V. Jernstedt (St. Petersburg, 1896), p. 51, lines 20–23: τέχνην πολυκερδῆ προξενούσαν σοι ἀχρειωσύνην εἴτε κίνδυνον μὴ μετέλθης, εἰ καὶ σφόδρα εἰ ἐμπειρος αὐτῆς, οἷον παραχαράσσειν καὶ ψαλιῶν τὰ νομίσματα καὶ φαρσογραφεῖν καὶ βούλλας ἐπισφραγιῶν καὶ τὰ τούτοις ὅμοια.

44 *Βυζαντινὸν Ἐορτολόγιον*, ed. E. Gedeon (Constantinople, 1899), chap. 13, 276–77; cited and commented on by Zuckerman, *Du village à l'Empire*, 79.

45 *Varia Graeca Sacra*, ed. A. Papadopoulos-Kerameus (St. Petersburg, 1909), 62; trans. V. C. Crisafulli and J. W. Nesbitt, *The Miracles of St. Artemios: A Collection of Miracle Stories by an Anonymous Author of Seventh-Century Byzantium*, Medieval Mediterranean 13 (Leiden, 1998), miracle 38, 197–99.

truquées” (false scales, ἐν πλαστοῖς ζυγοῖς) who lived near the place an enormous elephant used for circus games. As the elephant was ruining his house and he could not get the mahout to settle the matter, he finally murdered the mahout and gave his corpse to the elephant to eat. But as the elephant was wild he killed Karkinelos too. Later a golden statue of the elephant was erected on this spot, which became that of the Basilica.<sup>46</sup>

How could such wrongdoings in weighing and measuring be checked and deterred? Valentinian’s law of 386, which ordered that standards be placed in each station and city, helps us imagine the procedures: “Each tax-payer, with the established measures of all articles beneath his eyes, shall know what he ought to give the tax-receiver. As a result, if any tax-receiver should suppose that he may exceed the norm of established measures, liquid measures, or weights, he shall know himself liable to a suitable punishment.”<sup>47</sup> Those engaged in transactions taking place in public spaces could resort to checking on “established measures” (*constituti modii*) or could appeal to the *zygostatēs*. As in today’s markets, word of mouth and reputation probably directed customers to the trustworthy merchants or money changers, whose honest behavior was proposed as an ideal model and transposed into spiritual life by many preachers.<sup>48</sup> Now the specialized market controllers were not the *agoranomoi*, as previously, but *curiales*, who were responsible for the market and who must have settled disputes arising about transac-

tions.<sup>49</sup> Weights referring to *curiales* (*ephoroi*) show that municipal authorities could issue measures of reference alongside the two official main groups of weights: commercial or commodity weights, which were the responsibility of the praetorian prefect and the prefect of the city, and coin weights, initially controlled by the Count of Sacred Largesses and later by the prefect of Constantinople.<sup>50</sup> They are well known and classified, and we need not take time to review them here.<sup>51</sup>

Most of our information about fraud and its punishment, not surprisingly, concerns money. Counterfeiting gold coinage was considered treason and punished by some manner of execution, including “burning in flames.”<sup>52</sup> Clipping and putting into circulation counterfeit solidi were regarded as equally grievous crimes.<sup>53</sup> Casting bronze coins was punishable only by confiscation or minor penalties. But nothing is known about incidents of false measurement, although the insistence of legislation and ecclesiastical texts is abundant proof of that the

46 *Patria* §37, *Scriptores Originum Constantinopolitarum*, ed. T. Preger, vol. 1 (Leipzig, 1901), 40; commented on by G. Dagron, *Constantinople imaginaire: Études sur le recueil des Patria* (Paris, 1984), 42–43. Note that in the later tenth-century version of the *Patria* (K III, p. 89; comm. Dagron, 166), the story is modified into an example of an “elephant’s memory”: the trapezitēs who had once given a slight stroke with a pike to the animal on the Milion as it was on its way to the Hippodrome is struck to death by the animal, who recognized him ten years after the incident. Note that the money changer here is no longer a cheating one. Is law more easily enforced under Leo VI, in a smaller metropolis, than in the early Byzantine capital?

47 *CTh* 12.6.21 (trans. Hendy, *Studies*, 331; emphasis mine): “Imppp. valentinianus, theodosius et arcadius aaa. cynegio praefecto praetorio. modios aeneos seu lapideos cum sextariis atque ponderibus per mansiones singulasque civitates iussimus collocari, ut unusquisque tributarius sub oculis constitutis rerum omnium modiiis sciat, quid debeat susceptoribus dare; ita ut, si quis susceptorum conditorum modiorum sextariorumque vel ponderum normam putaverit excedendam, poenam se sciat competentem esse subiturum. (386 nov. 28).”

48 St. John Chrysostom, *In principa actorum*, PG 51, col. 100.

49 Laniado, *Recherches sur les notables*, 93 n. 41.

50 D. Feissel, “Le préfet de Constantinople, les poids-étalons et l’estampillage de l’argenterie au VI<sup>e</sup> et au VII<sup>e</sup> siècle,” *RN*, ser. 6, 28 (1986): 119–42.

51 See C. Entwistle, “Byzantine Weights,” in *EHB*, 2:611–14, with references.

52 P. Grierson, “The Roman Law of Counterfeiting,” in *Essays in Roman Coinage Presented to H. Mattingly*, ed. R. A. G. Carson and C. H. V. Sutherland (Oxford, 1956), 240–61 (reprinted in *Scritti storici e numismatici*, ed. E. A. Arslan and L. Travaini [Spoleto, 2001], 107–28); Hendy, *Studies*, 317–27, with references.

53 *CTh* 9.22.1 (21 July 317; emphasis mine): “omnes solidi, in quibus nostri vultus ac veneratio una est, uno pretio aestimandi sunt atque vendendi, quamquam diversa formae mensura sit. nec enim qui maiore habitu faciei extenditur, maioris est pretii, aut qui angustiore expressione concluditur, minoris valere credendus est, quum pondus idem exsistat. quod si quis aliter fecerit, aut capite puniri debet, aut flammis tradi, vel alia poena mortifera. quod ille etiam patietur, qui mensuram circuli exterioris arrosarit, ut ponderis minuatur quantitatem, vel figuratum solidum adultera imitatione in vendendo subiecerit. dat. vii. kal. aug. gallicano et basso coss.” Trans. Hendy, *Studies*, 364 (brackets his): “All solidi on which Our face and venerability is to be found are to be valued and sold at one price, however diverse the extent of the image. For that which is spread out with a larger representation of Our face is not worth more, and that which is contracted with a smaller portrait is not to be thought worth less, when the same weight is present. And if anyone should suppose otherwise he is to be capitally punished either by being handed over to the flames or by some other death-carrying punishment. [And indeed he that should nibble away the extent of the outside edge of a solidus, so as to diminish the total of its weight or should nibble away the extent of the outside edge, or should replace a stamped solidus with a false imitation in a sale, is to suffer in the same fashion.]”

practice was common. However, the long tradition of trade, the force of legal and moral penalties, and the disgrace of the *parazygiasitēs* may have led to a certain amount of self-discipline and self-regulation in the marketplace.

### The Middle Byzantine Period (Leo VI to the Twelfth Century)

It is impossible to trace the evolution of the previous regulations and practice in the seventh and eighth centuries, although the Basilics took over almost unchanged the Justinianic prescriptions: most likely, however, the shrinkage of cities and the decline of the earlier municipal institutions led to the disappearance or transformation of many elements. The *zygostatēs*, for instance, was now a member of the *sakellion*, the central financial administration—initially a high-ranked one, as several seventh-century seals of ὑπατος and ζυγοστάτης demonstrate.<sup>54</sup> Some seals call him *basilikos*. In the ninth and tenth centuries he is mentioned in the three official lists of titles and offices (*taktika*) of 842–43 (Uspenskij), 899 (Philotheos), and 971–75 (Escorial). Philotheos gives him the higher dignity of *spatharios* and puts him in the third position in the *sekretion*.<sup>55</sup> After him the same list mentions *metrētai*, who also appear on seals and in the Basilics.<sup>56</sup> A certain Nicholas, “*metrētēs* of the Phylax”—an imperial private treasury, close to the *eidikon*—possessed a lead seal in the eleventh century. To modern editors, he “seems to have been a professional weigher who performed services for the crown.”<sup>57</sup> This is not entirely convincing, since we know that the mint department of the *chrysocheion* (gold foundry) was part of the *eidikon* and that there were also *metrētai* in the *sakellion*.<sup>58</sup> *Metrētai* must have also been imperial officials like the Nicho-

las, “*metrētēs* of the Phylax,” cited above. The functions of these middle Byzantine officials are unclear, but probably had to do with the measurement of all items coming into and out of the treasuries or kept therein: coins, metal, silk, and other commodities. The standard weights and measures must have also been under their control.<sup>59</sup>

Fortunately the *Book of the Prefect* brings us closer to ordinary dealings in the market, at least that of the capital. As in the late sixth century, the prefect still controls weights, measures, and scales and μέτρα (measures), which are marked by his seal.<sup>60</sup> False weighing (*παρακαμπανίζειν*) is of course still severely punished by flogging and tonsuring (see fig. 15.7).<sup>61</sup> Moreover, the silk merchants (*μεταξωπράται*) must use steelyards (ζύγια) and *bolia* (βόλια)<sup>62</sup> sealed with his stamp.<sup>63</sup> Since no surviving Byzantine scales or steelyards bear any imperial stamp or inscription, but only names of individuals, as Brigitte Pitarakis notes in her chapter, we must imagine that they were provided at some point with a lead or wax seal like the official labels or seals appended to

54 W. Brandes, *Finanzverwaltung in Krisenzeiten: Untersuchungen zur byzantinischen Administration im 6.–9. Jahrhundert* (Frankfurt am Main, 2002), 642, with references.

55 Hendy, *Studies*, 317–18, with references.

56 Basilics 60.9.1–5; *Synopsis Basilicorum* 10; Zepos, *Jus*, 5:418–19. N. Oikonomides, *Les listes de préséance byzantines des IX<sup>e</sup> et X<sup>e</sup> siècles* (Paris, 1972), 315 n. 162, doubts that they are the same officials as assumed by H. Antoniadis-Bibicou, *Recherches sur les douanes à Byzance: L’“octava,” le “kommerkion” et les commerçants* (Paris, 1963), 138 n. 2.

57 *DOSeals*, 5:68–69, no. 27.1.

58 Cf. the seal of Petros, *metrētēs tou sakellariou* (eleventh century), in V. Laurent, *Le corpus des sceaux de l’Empire byzantin*, vol. 2, *L’administration centrale* (Paris, 1981), 428, no. 818.

59 Note that in Constantine VII Porphyrogenetos, *De thematibus* 15, ed. A. Pertusi (Vatican City, 1952), 61–62, the ἀργυρὰ μινσοῦρια τὰ ἀνάγλυφα (silver *minsouria* with low relief sculpture) kept in the imperial *vestiarion* in the tenth century were not measures “of the earlier period” as assumed by Hendy (*Studies*, 333), but an early Byzantine *missorium* (silver plate) “inscribed with the name of Jordanes, *stratelatēs* of Anatolia and other peoples of Asia Minor”—i.e., Jordanes, *magister militum* of Leo I in 466–67.

60 *Eparchenbuch* 13.2.

61 *Ibid.*, 16.6. Fol. 43v of the Skylitzes Matritensis (fig. 15.7, below) illustrates the description of Theophilos’s weekly visit to the market by Skylitzes. The text does not mention flogging but notes only the interest taken by the emperor in the price of goods, especially food and drink, cloth, and heating materials, and the fear his punishment inspired in the *adikoi* (*Ioannis Scylitzae Synopsis historiarum*, ed. I. Thurn [Berlin, 1973], 50–51). The fact that the Skylitzes Matritensis painter chose the flogging scene as exemplary implies that the punishment was known and practiced in the twelfth century. Zonaras, who describes the same visits, recalls that the emperor, after finding that his brother-in-law Petronas had behaved contrary to the law, had him stripped of his clothes and publicly whipped on his back and on his chest in the marketplace (Zonaras, *Ioannis Zonarae Annales*, vol. 3, *Epitomae Historiarum libri XVIII*, ed. M. Pinder and T. Büttner-Wobst [Bonn, 1897], 356–57).

62 Koder here understands βόλια as *Seidengewichte* (silk weights). But assuming some symmetry in the sentence, one could take it as a name for an equal-arm balance used for silk. That Schilbach (*Byzantinische Metrologie*) does not deal with this word suggests that he did not consider it a weight measure. For a different interpretation of *bolia*, see below, note 69.

63 *Eparchenbuch* 6.4.



Figure 15.7. A flagellation scene in the market of Constantinople, a miniature illustrating Skylitzes' description of Theophilos's weekly visit to the market (photo courtesy of the Biblioteca nacional, Madrid, Skylitzes Matritensis, fol. 43v)

weighing instruments in our open-air markets or shops today.<sup>64</sup> Similar control was exercised over innkeepers (κάπηλοι): their measures were inspected each time they received deliveries of wine. The prefect's assessor (σύμπονος) was to come and force them to "prepare the weights and the vessels in which they sell wine corresponding to those in which they had bought it."<sup>65</sup> Their vessels (ἀγγεία) had to be

64 For example, the U.S. Constitution gives Congress the power to "fix the Standard of Weights and Measures" (art. 1, sec. 8). Individual states take slightly different approaches to controlling weights and measures. In New Jersey, for instance, "Each county or municipal superintendent shall cause an inspection of the weights and measures used in trade within his jurisdiction to be made at least once in each year" (*New Jersey Statutes Annotated*, title 51:1-65). "The state superintendent [now the Superintendent of the Division of Weights and Measures] shall provide for himself and for the use of the county and municipal superintendents, seals or certificates of proper form and wording to be attached to duly approved standards of weights and measures" (*NJSA*, title 51:1-58) (information kindly supplied by Joseph Romano, Acting Chief Supervisor, New Jersey State Office of Weights and Measures, on 1 September 2010). In France, according to a decree of 26 May 2004, all instruments used for selling to the public goods up to 30 kg must be verified every two years and impressed with an official stamp.

65 *Eparchenbuch* 19.1: Οἱ τῶν καπήλων προεστῶτες ὀφείλουσιν ἀναγγέλειν τῷ ἐπάρχῳ ὅπηνίκα οἶνος εἰσέλθῃ, ὡς ἂν παρ' αὐτοῦ ἡ οἰκονομία γένηται, ὅπως ὀφείλῃ πιπράσκεισθαι, προστασσομένου καὶ τοῦ συμπόνου καταναγκάζειν τοὺς καπήλους ἀναλόγως τῇ ἐξωνήσει καὶ τὰ ἀγγεία ποιεῖν, ἐν οἷς τὸν οἶνον πιπράσκουσι. The

of the proper weight (the *metron* should weigh 30 pounds, or ca. 10 kg, and the *mina* 3 pounds) and bear the usual seal. The innkeepers whose vessels were found not to have the proper weight or not to bear the usual seal were to be "flogged, tonsured, and expelled from the guild."<sup>66</sup> The soap traders were also obliged to have a steelyard (*kampanos*) with such a seal.<sup>67</sup> The silk merchants were subject to a tax called *kankelarion*, not otherwise attested.<sup>68</sup> It was charged "only on hundreds (*kentenaria*),"

insistence on using similar measures in buying and selling was intended not only to prevent tampering but also to control the profit margins of merchants—an effort for which we have several examples (A. E. Laiou, "Exchange and Trade, Seventh–Twelfth Centuries," in *EHB*, 2:719; J. Koder, "Επαγγέλματα σχετικά με τον επισιτισμό στο Επαρχικό Βιβλίο," in *Πρακτικά του Α' Διεθνούς Συμποσίου "Η καθημερινή ζωή στο Βυζάντιο"* [Athens, 1989], 363–71, at 369–71). This is confirmed by *Eparchenbuch* 13.5, which allows the grocers a profit of 2 *miliaresia* per *nomisma* (2/12) but punishes them if they are shown, through a check of their *exagia* (*nomismata* weight), to have earned a greater profit.

66 *Eparchenbuch* 19.4. The proper weight of the *metron* is cited in 19.1.

67 *Ibid.*, 12.9.

68 J. Koder, "Problemwörter' im Eparchikon Biblion," in *Lexicographica Byzantina*, ed. W. Hörandner and E. Trapp, Byz-Vindo 20 (Vienna, 1991), 185–97, refers (189–90) to the employees (*Untergebene*) of the prefect of that name (καγκελλάριοι) mentioned in a novel of Constantine VII and proposes that the tax took its name from them.

which Johannes Koder assumes to be hundreds of “cords or *bolia*”—presumably bales of silk cloth tied together with cords and sealed.<sup>69</sup> As Koder recently recalled, the sealing of various wares (*βουλλεύειν*; see *Eparchenbuch* 4.4) was entrusted to the *boullotai* (*Eparchenbuch* 8.3), dependents of the prefect. Two such boullotai are mentioned as very wealthy in the twelfth century: John Tzetzes reports that they owned precious *kodikēs* that he could borrow from them.<sup>70</sup>

The regulations were to prevent fraud not only on measures but also on coins: the trapezitai must not accept any clipped miliaresion, nor must they themselves practice filing (*xeein*), clipping (*temnein*), or forging (*parakharattein*). Forgery required specialized skills that the bankers possessed, but filing and clipping were certainly widespread and punished especially among perfumers and grocers.<sup>71</sup> Penalties for forgery were less harsh than in the Roman period or in contemporary western Europe, where counterfeiters were boiled in a cauldron: in Leo VI’s time, the culprit was whipped and his property confiscated.

The *Book of the Prefect* is also one of the few sources mentioning the factual context of coin exchange: it commands the *trapezitai* to remain in their shops on the fixed market days with their “assistant” (*στήτωρ*, *stētōr*)<sup>72</sup> and have the stock of

coins present in the front of their stall (*ἀββάκιον*) in miliaresia (or “with nomismata and miliaresia set out before them”).<sup>73</sup> Each banker must have two employees in charge of the heaping up (*ἐπισώρευσις*, *episōreusis*) of small coins (*noumia*).<sup>74</sup> The presence of the money changer is essential to the functioning of the market, since he provides small change to buyers who have only gold or silver coins.

The famous affair of the *foundax* (depot) of Rodosto (ca. 1075) is one of the rare recorded events that throw some light on the functioning of provincial markets.<sup>75</sup> Before the creation of the foundax by Nikephoritzes, logothete of Michael VII, and the enforcement on its monopoly on wheat trade, “Many carts used to bring the grain to the *kastron* of Raides-tos and sell it retail to the hostels (*xenodocheia*) and depots (*katatopia*) of the monasteries, of the Great Church itself, and of many inhabitants, and they would carry out their sale freely without hindrance to whoever wished. . . . Anyone who wanted to buy grain contacted a seller, and if he was not satisfied in a depot (*κατατοπίω*) went to another, eventually to another one, and the sale took place directly from the carts[.]” But afterward the “inhabitants of the region and those of Raides-tos” were “forbidden to sell the produce of their lands on their own premises, and their measures (*medimnoi*) were confiscated and the foundax alone became master of the measures (*medimnoi*).”<sup>76</sup> It is clear that the landlords had measures of their own, and transactions taking place on private premises apparently could avoid being taxed (probably on the pretext of their loca-

69 *Eparchenbuch* 6.4. *Bolia* designates either dice (as in Leontius’s *Life of Symeon Salos*, ed. L. Rydén, *Das Leben des heiligen Narren Symeon von Leontios von Neapolis* [Uppsala, 1963]; repr. in A.-J. Festugière, *Vie de Syméon le Fou, Vie de Jean de Chypre* [Paris, 1974], 99 [Greek text], 155 [French trans.]) or seals. In Constantine VII Porphyrogennetos, *Le Livre des Cérémonies*, ed. A. Vogt (Paris, 1967), 1:79; 2:144.5, 145.2.6, *bolia* or *boulla* is applied to the seals of the prefect that are affixed to the urn used for drawing (*tirer au sort*) the starting places of the Hippodrome races; see G. Dagron, “L’organisation et le déroulement des courses d’après le Livre des Cérémonies,” *TM* 13 (2000): 151–52. Here obviously it must have applied to a category or package of pieces of silk that were sealed. Cf. *Eparchenbuch* 8.9, which mentions “mantles found wrapped in rolls which did not bear the *boulla* of the prefect.” The term has survived in modern Greek to describe a long silk scarf. Therefore Koder (“Problemwörter,” 190) understands that the “kankelation was to be paid by the silk merchants to the exarchs for each hundred of *bolia* or cords.”

70 John Tzetzes, *Epistula* 58 (δύο δέ εἰσι βουλλωταί, πατήρ Θεόδωρος τὴν κλήσιν καὶ υἱὸς Κωνσταντίνος διάκονος); cited by J. Koder in “The Eparch’s Authority in the Marketplaces of Constantinople,” a paper delivered at the conference “Authority in Byzantium,” King’s College, London, 15–18 January 2009.

71 *Eparchenbuch* 3.1 (trapezitai), 10.4 (perfumers), 13.2 (grocers).

72 *Ibid.*, 2.3; for a discussion of this term and the unacceptable correction of *statēr* proposed by Sjuzjumov, see Koder, “Problem-

wörter,” 186–87, and C. Morrisson, “Manier l’argent à Byzance au X<sup>e</sup> siècle,” in *Eupsychia: Mélanges Hélène Abbrweiler*, Byzantina Sorbonensia 16, 2 vols. (Paris, 1998), 2:557–65, at 560.

73 The translation of Hendy (*Studies*, 252) is more readily understandable and logical in concrete terms than Koder’s “das Geld in Form von Miliaresia” (*Eparchenbuch* 2.3, p. 85).

74 See Morrisson, “Manier l’argent,” 561.

75 It also throws light on price formation; see Laiou, “Exchange and Trade,” 742–43, and A. E. Laiou and C. Morrisson, *The Byzantine Economy* (Cambridge, 2007), 135.

76 Attaleiates, *Historia*, ed. W. Brunet de Presle and I. Bekker, CFHB (Bonn, 1853), 201–4 = *Historia*, ed. I. Pérez Martin (Madrid, 2002), 148–50. Cf. the analysis and interpretation of P. Magdalino, “The Grain-Supply of Constantinople, Ninth–Twelfth Centuries,” in *Constantinople and Its Hinterland*, ed. C. Mango and G. Dagron (Aldershot, 1995), 40–43. My and Christophe Giros’s translation follows his except that he has “dispers[e it] to the hostels” instead of “sell it retail to the hostels” and “of local churches” rather than “of many inhabitants” (πολλῶν ἐγχωρίων). See also M. Gerolymatou, *Αγορές, ἔμποροι καὶ ἐμπόριο στο Βυζάντιο (9ος–12ος αι.)* (Athens, 2008), 198–200.



tion). Attaleiates alludes to the “heavy market tolls” (βαρείας ἀπαιτήσεις ὑπὲρ τῶν τοπιατικῶν) that were required in the new organization and to the *kommerkion* that was charged “from that point not only on the grain, but also on the other commodities that were transported along with the grain.”<sup>77</sup> Since we know incidentally of the market tax (τελώνησις) that was collected by some masters of a fair,<sup>78</sup> and since there is no reason why the *kommerkion* attested in the eighth and ninth centuries should have ceased to be collected in the eleventh century,<sup>79</sup> we may assume that the tax-free transactions in Rodosto in the golden age before the foundax were more the exception than the rule.<sup>80</sup> Most probably the various taxes that appear in the later period, to which we turn now, in fact were established earlier and escape our notice simply because of the bias and gaps of our documentation. Only a few twelfth-century documents point to the existence of some of them. For example, in the chrysobull of Alexios I (1104), Lavra’s ships are exempted from the landing tax (*emblētikion*) as well as from the *pratikion* that was levied in exchange for the authorization to sell.<sup>81</sup>

77 Attaleiates, *Historia*, CFHB, 203, lines 1–2.

78 For these merchants and the founders of fairs, see A. E. Laiou, “Händler und Kaufleute auf dem Jahrmarkt,” in *Fest und Alltag in Byzanz*, ed. G. Prinzing and D. Simon (Munich, 1990), 53–70, 189–94, and eadem, “Exchange and Trade,” 731. For a market tax on the local fair at Kouperion, in Thrace, see *ibid.*, 755. *Nicetae Choniatae Historia*, ed. J. L. van Dieten, CFHB 11.1 (Berlin, 1975), 501, describes the Cuman attack on the city at the time of the feast of Saint George and the fair and blames the “scoundrel from the monastery of Antigonos who had come to tax the festival” and “was fearful lest a copper coin escape him should the people disperse” (trans. H. J. Magoulias, *O City of Byzantium: Annals of Niketas Choniates* [Detroit, 1984], 275).

79 See in this volume J. Haldon, “Commerce and Exchange in the Seventh and Eighth Centuries: Regional Trade and the Movement of Goods,” 114 n. 58.

80 In the view of A. E. Laiou, the earlier direct sales “seem to have escaped the payment of the *kommerkion*, because they were small-scale and involved large numbers of people” (“Exchange and Trade,” 742). A more plausible reason may lie in the sales’ private location, since Raideustos, a market renowned for the quality of its wheat (later praised by Pegolotti; see *La pratica della mercatura*), did not have only small-scale exchanges. N. Oikonomides, “The Role of the Byzantine State in the Economy,” in *EHB*, 3:999, underlines the existence “of ‘satellite’ markets around the Constantinople area for those who did not wish to bring their goods into the markets of the capital” since “the *kommerkion* does not seem to have been charged on unofficial sales and purchases.”

81 *Actes de Lavra*, ed. P. Lemerle et al., 4 vols. (Paris, 1970–82), 1:286, no. 55, line 62. The *pratikion* is probably the tax *a causa onerandi* from which the Venetian merchants are exempted by the

### The Late Byzantine Period: Encroachments on the Unified System of Weighing, Measuring, and Paying

In the late Byzantine period, the availability of a large number of archival sources, whether Italian or Byzantine, greatly enlarges the amount of our documentation. But because it is less systematically arranged than before, we have to glean information from numerous texts. Parallel economic growth in Byzantium and in the West added substantially to the complexity of weighing and measuring, as markets in both areas opened with the grant of privileges to merchants of Venice, Pisa, Genoa, and elsewhere. The opening of the markets entailed the use of a much greater variety of measures than before.

“In Gostantinopoli e in Pera si à di più maniere pesi e misure come diviserà qui appresso in questa altra faccia che segue,” begins Pegolotti, and the explanation goes on eight more pages, reflecting the diversity of trade in Constantinople.<sup>82</sup> Apparently an implicit rule was that the various commodities were measured according to the standards of their country of origin: for cloth, for instance, “si conviene che’l venditore faccia al comperatore ciascuna pezza tanti picchi secondo la terra ove il panno è fatto, come dirà ordinatamente in questo libro.”<sup>83</sup> Gone was the former unity of Byzantine official measures, though their long-established position ensured that they retained an important role. Thus, the account book of Badoer (1436–39) reveals that he kept his accounts in *perperi* and often used Byzantine measures, starting from the carat and the *saggio/exagium* to its larger multiples, the pound or *rotolo* (72 *saggi*) and the *cantar/centenarium* (100 *rotoli*). But equally often he used Italian or other foreign units and carefully noted in his ledger which standard of *pexo* was being employed.<sup>84</sup> When the item was destined for

treaty of 1198 between Isaac II and the Venetians: M. Pozza and G. Ravegnani, eds., *I trattati con Bizanzio (992–1198)* (Venice, 1993), 129, §15.

82 Pegolotti, *La pratica della mercatura*, 32–40.

83 *Ibid.*, 37.

84 C. Morrisson, “Coin Usage and Exchange Rates in Badoer’s *Libro dei Conti*,” *DOP* 55 (2001): 217–44; for weights, see J.-C. Hocquet, “Weights and Measures of Trading in Byzantium in the Later Middle Ages: Comments on Giacomo Badoer’s Account Book,” in *Kaufmannsbücher und Handelspraktiken vom Spätmittelalter bis zum beginnenden 20. Jahrhundert/Merchant’s Books and Mercantile Pratiche from the Late Middle Ages to the Beginning of the 20th Century*, ed. M. A. Denzel, J.-C. Hocquet,

resale in Constantinople, he would convert its entry into the Byzantine standard.<sup>85</sup>

For some two centuries Italian merchants, starting with the Venetians in 1265, had been authorized to use their own weights.<sup>86</sup> In 1304 Andronikos II granted the Genoese “omnimodam livertatem et franchisiam ad ponderandum mercaciones eorum,”<sup>87</sup> and before 1346 even the merchants from Narbonne enjoyed the same privilege.<sup>88</sup> The importance to the different communities of weighing and measuring is underlined in several earlier sources going back to the twelfth century, when control of balances, weights, and measures (*staterae, metrae, pesae et mensurae*)<sup>89</sup> was granted to various institutions. But

---

and H. Witthöft, *Vierteljahrsschrift für Sozial- und Wirtschaftsgeschichte* 163 (Stuttgart, 2002), 89–116 (translated with slight modifications from idem, “Pesi e misure del commercio veneziano a Bisanzio: Dal libro dei conti di Giacomo Badoer,” in his *Denaro, navi e mercanti a Venezia: 1200–1600* [Rome, 1999], 265–93). See now T. Bertelè, “Misure di peso a Bisanzio,” with postscript by B. Callegger, in *Bollettino del Museo civico di Padova* 96 (2007): 189–229.

85 *Il libro dei Conti di Giacomo Badoer (Constantinopoli, 1436–1440)*, ed. U. Dorini and T. Bertelè, *Il nuovo ramusio* 3 (Rome, 1956), carta 191, p. 384: “charatelo j e sachò j de zera, pexa in Chafa neta chant. 5 r. 93, la qual zera pexò in Constantinopoli chant 6 r. 28, neta de tara.”

86 Zepos, *Jus*, 1:498; G. L. F. Tafel and G. M. Thomas, eds., *Urkunden zur älteren Handels- und Staatsgeschichte der Republik Venedig*, vol. 3, 1256–99 (Vienna, 1857), 73: ἵνα ἔχωσι στατήρας ἰδίου, μοδίου, μέτρα, λίτρας, πήχεις εἰς τοὺς οἰκείου τοποῦς. The Latin version has *suas staterias, modia, miliaria, libras, pichos* (ibid., 84). The Venetian Commune in Constantinople had two *ponderatores* to whose office all Venetians residing in the empire or the Black Sea region had to register (C. Maltezou, *Ο θεσμός τοῦ ἐν Κωνσταντινουπόλει βενετοῦ βαίλου (1268–1453)* [Athens, 1970], 79, 137–43, documents dating to 1327, 1361, and 1368). D. Jacoby, “Mediterranean Food and Wine in Constantinople: The Long-Distance Trade, Eleventh to Mid-Fifteenth Century,” in *Handelsgüter und Verkehrswege: Aspekte der Warenversorgung im östlichen Mittelmeerraum (4. bis 15. Jahrhundert)*, ed. E. Kislinger, J. Koder, and A. Külzer, *Denk Wien* 388 (Vienna, 2010), 127–47, at 146, draws attention to this “Venetian scale” (τὸ ζυγ(ί)ν τὸ βενέτικ(ον)) mentioned in the “Pontic” (rightly Constantinopolitan) account (P. Schreiner, *Texte zur spätbyzantinischen Finanz- und Wirtschaftsgeschichte in Handschriften der Biblioteca Vaticana* [Rome, 1991], no. 62, line 111).

87 L. T. Belgrano, “Prima serie di documenti riguardanti la colonia di Pera,” in *Atti della Società Ligure di Storia Patria*, vol. 13 (Genoa, 1877–84), 106; see also Zepos, *Jus*, 1:529. For a confirmation of this right in 1317, see Belgrano, 119; cited by M. Balard, *La Romanie génoise: XII<sup>e</sup>–début du XV<sup>e</sup> siècle*, 2 vols. (Rome, 1978), 2:649.

88 Zepos, *Jus*, 1:610.

89 This control was always maintained by Latin churches, and it supplied part of their revenues. See, e.g., the various documents pertaining to the Pisan church of Sts. Peter and Nicholas in Con-

stantinople, whose *introitum* consisted of weighing *statera*, at the rate of 1 staminum per centinarium, or ½ for Pisans, and measuring with *rubo et modio et metro* at the same rate; see J. Müller, *Documenti sulle relazioni delle Città Toscane coll’Oriente cristiano e coi Turchi fino all’anno 1531* (Florence, 1879), nos. VIII (1162), XVI (1180), and XLIII (1197). Schilbach (*Byzantinische Metrologie*, 207), s.v. *rubo*, cites not our Pisan or Venetian documents but only Pegolotti, *La pratica della mercatura* (102, 29), who mentions a *rubo* of 4 *ruotoli* used for weighing wax.

90 Tafel and Thomas, *Urkunden*, 1:103–5, 107–9.

91 *DCV*, vol. 1, no. 225.

92 Ibid., nos. 245, 238–39. The concession applies “to the whole of our maritime section (*ripa*), its houses and taverns, and balances (*stateris*), measures [?] (*rubis*), weights (*ponderibus*) as well as measures used for wine and oil and honey (*mensuris ad vinum et oleum et mel mensurandis*).”

93 If the Venetian *migliaio* (477 kg, approximately 37 1/3 modioi) is implied here, and assuming that we are dealing with wheat (the main object of trade in Rodosto) costing 1/3 hyperpyron in the late twelfth century, we get 2 stamena (1/24 hyperpyron)

at that time, their authority did not include the franchise of using foreign weights; it pertained only to Byzantine weights and the profit derived from the right to control them.

The profit from weighing is demonstrated by the story of the church of St. Akindynos in Constantinople: in 1107 the doge donated it to the patriarch of Grado together with its balances (*staterae*), weights (*pesae*), and liquid and capacity measures (*metrae* and *mensurae*), which no other Venetian could possess.<sup>90</sup> In 1169 the patriarch of Grado leased the revenue of the church, including this monopoly of weighing and measuring, for 500 pounds of Veronese deniers a year (approximately 240 *hyperpyra*, a substantial amount).<sup>91</sup> Note that the Latin names do not imply that the measures were Venetian but instead reflect the origin of the document: *pesae* covers the exagion and its multiples up to the pound, the kentenarion, and the πῆσα itself (= 4 kentenaria, some 128 kg), while *metrae* refers to the current Byzantine unit for wine (μέτρον) and the *misurae* to the μουζούρια, the other name of the modios.<sup>92</sup>

Other similar Italian documents give details of the fees demanded for weighing on the balances and standards of other colonies: in 1147, in Rodosto, where the weights were deposited in the church of St. George—which was a branch of San Giorgio Maggiore in Venice and enjoyed the same monopoly—for each *miliarion* (*migliaio*?) of wares traded, presumably mostly wheat, two *stamines* (silvered bronze coins worth 1/48 hyperpyron) were demanded from Venetian merchants and four from Byzantines.<sup>93</sup>

---

stantinople, whose *introitum* consisted of weighing *statera*, at the rate of 1 staminum per centinarium, or ½ for Pisans, and measuring with *rubo et modio et metro* at the same rate; see J. Müller, *Documenti sulle relazioni delle Città Toscane coll’Oriente cristiano e coi Turchi fino all’anno 1531* (Florence, 1879), nos. VIII (1162), XVI (1180), and XLIII (1197). Schilbach (*Byzantinische Metrologie*, 207), s.v. *rubo*, cites not our Pisan or Venetian documents but only Pegolotti, *La pratica della mercatura* (102, 29), who mentions a *rubo* of 4 *ruotoli* used for weighing wax.

90 Tafel and Thomas, *Urkunden*, 1:103–5, 107–9.

91 *DCV*, vol. 1, no. 225.

92 Ibid., nos. 245, 238–39. The concession applies “to the whole of our maritime section (*ripa*), its houses and taverns, and balances (*stateris*), measures [?] (*rubis*), weights (*ponderibus*) as well as measures used for wine and oil and honey (*mensuris ad vinum et oleum et mel mensurandis*).”

93 If the Venetian *migliaio* (477 kg, approximately 37 1/3 modioi) is implied here, and assuming that we are dealing with wheat (the main object of trade in Rodosto) costing 1/3 hyperpyron in the late twelfth century, we get 2 stamena (1/24 hyperpyron)

“If it were really necessary, the Venetian will have a half *metro* and *rubo* with him and will sell up to 50 pounds and if he wishes to sell above these 50 pounds, he will take the *metro* from the aforesaid church, and for each *metro* he will pay to the church one *tetarteron* and if he weighs on retail (*per minutum*) (?) more than 50 pounds, he must take the *rubo* from the church and give, according to what will appear from the account (*sicut per rationem advenentit*), two *stamines* per *miliare* without any contest.”<sup>94</sup>

The importance of a thriving mint, just weights, and commercial regulation for the market and a prosperous economy is highlighted in Gregoras’s report of Agathangelos’s visit to Cyprus in the 1340s. In his comprehensive general narrative, he pointed to

ὁπόσα τῆ νήσῳ περίεστιν ἄξια θεάς, τά τε ἄλλα καὶ ὅσα ἐν θεάτροις, ἐν ἀγοραῖς, ἐν δικαστηρίοις, τὸ ἐν νομίμασι καὶ χαράγμασι τὸν ἅπαντα χρόνον ὡσαύτως ἔχον καὶ μηδαμῆ μηδ’ ὅπως οὖν τρεπόμενον, καὶ ὅπως ἐν σταθμοῖς καὶ μέτροις πλάστιγξιν εἶη διδόμενά τε καὶ λαμβανόμενα εἶδη καθάπαξ ὠνίων ἅπαντα, οὐχ ὡς τῶν πιπρασκόντων ἕκαστος βούλοιτ’ ἄν, ἀλλ’ ὡς τὰ τῆς πολιτείας ἀρχαῖα κελεύουσι δόγματα, οὐδ’ ὡς τῆς τῶν ἐτυχεστέρων πλεονέξιας τὸ λίχνον παρακερδαίνειν ἐθέλει, ἀλλ’ ὡς οἱ σωτήρες τῆς ἀνωθεν εὐταξίας προστάττουσι νόμοι τὸν ἅπαντα χρόνον[.]<sup>95</sup>

what is especially worth seeing on the island, both overall and what is in the theaters, the marketplaces, and the courts—the stability in coins and issues over time that change neither in any way nor in the slightest degree, and how every sort of salable goods in each instance would be sold and bought according to weights and scales [used for] measuring,<sup>96</sup> not as each

on a total price of 12 2/5 hyperpyra, so the tax amounted to ca. 0.32 percent.

<sup>94</sup> Tafel and Thomas, *Urkunden*, 1:103–4, no. XLVII (1145), and 107–8, no. XLIX (1147). The church will possess in perpetuity *suas proprias rubos et metras atque modia sua propria* and hence may gain from any of the above-mentioned measures (*quaeunque his prefatis mensuris lucrari poterit*).

<sup>95</sup> Nikephoros Gregoras, *Romaïke Historia* 25.12, ed. B. G. Niebuhr (Bonn, 1855), 3:34. I am grateful to Elizabeth Fisher and Denis Sullivan for their help with the translation.

<sup>96</sup> Because there is no connective between μέτροις and πλάστιγξιν, Fisher and Sullivan suggested this translation.

of the sellers might choose, but as the long-standing principles of the state dictate, not as the appetite for gain of the wealthy wishes to profit unjustly, but as the salvific laws of heavenly order ordain for all time.

An important Byzantine document, the *prostagma* of Andronikos III for the Monemvasiots of Pegai (1328),<sup>97</sup> throws light on the various taxes that could be levied on sea traders and their market transactions.

In no way during the practice of their business will they be hindered by anyone or made liable to requests for *kampanistikon*, *mesitikon*, *metritikon*, *opsonion*, *skaliatikon*, *dekateia*, *tetramoiria*, *orikē*, *kastruktisia*, *mageireia*, *antinaulon*, *kormiatikon* or to any other chapter (*kephalaion*) of all these taxes, but they will remain absolutely untouched and undisturbed. Similarly nothing will be demanded for *kommerkion* from those who sell to them [the Monemvasiots] or who buy from them, either beasts or natural commodities or something else, whether in God-honored Constantinople or in other places of my Empire, because of the *dephendeusis* of these Monemvasiots[.]<sup>98</sup>

The *prostagma* had stated in detail the places of their trade and the commodities affected by the reduced rate of *kommerkion* (2 percent) granted to them:

my Majesty grants . . . the present *prostagma* according to which is stated that the aforesaid Monemvasiots in whatever affairs they will undertake either in God-honored Constantinople, in Herakleia, in Selymbria,

<sup>97</sup> Ed., trans., and comm. P. Schreiner, “Ein *Prostagma* Andronikos’ III. für die Monembasioten in Pegai (1328) und das gefälschte Chrysobull Andronikos’ II. für die Monembasioten im Byzantinischen Reich,” *JÖB* 27 (1978): 203–28. The reader should keep in mind that the data of the forged chrysobull of Andronikos II (1316) are considered as authentic in older studies (F. J. Dölger, “Zum Gebührenwesen der Byzantiner,” *Études dédiées à la mémoire d’André Andreadès* [Athens, 1939], 35–59, though Dölger later drew attention to its status as a forgery without dismissing all its contents; idem, *Regesten der Kaiserurkunden des oströmischen Reiches von 565–1453* [Munich, 1977], no. 2383) as well as in recent reference works.

<sup>98</sup> Schreiner, “*Prostagma*,” 208–9.

in Raideustos, in Gallipoli and other coastal sites of Macedonia [i.e., Thrace], either in Ainos or other ports of call nearby, be it with grain on the Prosporion [marketplace in the harbor in Constantinople of that name] or anywhere of their choice, be it with wine, or with *prosphagia pasta* [salted fish or meat], or *xylakhyros* [wood and straw], or *tzokharikē* [woolen cloth]<sup>99</sup> or four-footed animals or other wares of their choice, will give as *kommerkion* according to quantity two hyperpyra on a hundred hyperpyra.<sup>100</sup>

I will not dwell on the *kommerkion*, since this tax—also called *dekaton* (tenth) or *pratikon*, amounting to 10 percent of the value of the merchandise and levied on movements or sale of goods—has been extensively studied,<sup>101</sup> mainly with respect to the exemptions conceded to Italian merchants and their consequences on Byzantine trade and finances.<sup>102</sup> Instead, I will focus on the other charges on the circulation of commodities, their means of transportation, and sales, which have attracted little attention<sup>103</sup> and whose economic significance was relatively restricted, according to Nicolas Oikonomides.<sup>104</sup> In the list in the prostagma we find several charges for the official measuring or weighing of merchandise that were intended to protect from cheating not just the public but also the state, since other taxes—mainly the *kommerkion*—were based on the value of traded commodities, which in turn

99 Ibid., 207 n., for references on these technical names.

100 Ibid., 206–7.

101 See, principally, Antoniadis-Bibicou, *Douanes*; Oikonomides, “Role of the Byzantine State,” 978–80, 1042–43.

102 R.-J. Lilie, *Handel und Politik zwischen dem byzantinischen Reich und den italienischen Kommunen Venedig, Pisa und Genua in der Epoche der Kommenen und der Angeloi, 1084–1204* (Amsterdam, 1984); N. Oikonomides, *Hommes d'affaires grecs et latins à Constantinople: XIII<sup>e</sup>–XV<sup>e</sup> siècles*, Conférence Albert-le-Grand 1977 (Montreal, 1979), 41ff.; Laiou, “Exchange and Trade,” 750–51; and eadem, “The Byzantine Economy: An Overview,” in *EHB*, 3:1156–60.

103 Exceptions are Antoniadis-Bibicou, *Douanes*, and, more recently, A. Kontogiannopoulou, *Η εσωτερική πολιτική του Ανδρονίκου Β΄ Παλαιολόγου (1282–1328): Διοίκηση, οικονομία, Byzantina keimena kai meletai 36* (Thessalonike, 2004), 247–50, and now eadem, “La fiscalité à Byzance sous les Paléologues (13<sup>e</sup>–15<sup>e</sup> siècle): Les impôts directs et indirects,” *REB* 67 (2009): 5–57. I am grateful to Anastasia Kontogiannopoulou for letting me consult her article before publication.

104 Oikonomides, “Role of the Byzantine State,” 1000.

was calculated on their weight or other measurement. These charges for measurement were

the *kampanistikon* (weighing tax: from *kampanos*, “balance”)<sup>105</sup>

the *metritikon* (measuring tax for liquids)<sup>106</sup>

the *modiatikon* (measuring tax for grain)

The other charges directly related to commercial transactions are

the *mesitikon* (brokerage)<sup>107</sup>

the *skaliatikon* (landing tax)<sup>108</sup>

105 The only comparable evidence of such a tax is found in a chrysobull of Andronikos II for the monastery of the Theotokos in Stèlaria (on the Çesme Peninsula opposite Chios; see V. Kravari, “Nouveaux documents du monastère de Philothéou,” *TM* 10 [1987]: 261–356, at 270): among the properties of the monastery were σιδηροκαυσεῖα δύο καὶ ἐσωεργαστήριον ὁμοιον ἔν, μετὰ τῶν δικαιωμάτων αὐτῶν ἤτοι καμπάνου μνησιατικοῦ καὶ καταθέσεως, “two [outer] forges and a similar inner workshop with their rights consisting in weighing, mina measurement, and deposit”; *Actes de Philothée*, ed. W. Regel, E. Kurtz, and B. Korabiev, *Actes de l’Athos 6* (St. Petersburg, 1913), app. I, 11 (no. 3). I am grateful to Christophe Giros for discussing this text with me; in his view, “Les ateliers dont il est question sont situés à proximité du monastère. Je comprends que le monastère détient deux forges à l’extérieur du monastère (*exōergastèria kai sidèrokauseia duo*) et un atelier semblable (c’est-à-dire un atelier de forge) à l’intérieur du monastère, probablement dans une cour annexe à la cour principale abritant l’église et le réfectoire. Les droits associés à ces forges me paraissent être au nombre de trois. On sait que la livraison de vin pouvait entrer dans la rétribution des ouvriers, ce qui expliquerait la mention de cette redevance dans le texte. La *katathésis* m’est inconnue. Le terme renvoie à un dépôt, mais de quoi: matière première, ou approvisionnement des forgerons?” Anastasia Kontogiannopoulou, whom I also consulted, agreed with this interpretation. See her “La fiscalité,” 38–39.

106 It is also mentioned in the imperial document (February 1214) exempting the ships (πλατύδια) of the monastery of Patmos from σκαλιατικόν, κομμέρκιον, . . . πρατίκιον, μετρητικόν; *Acta and Diplomata Graeca Medii Aevi Sacra et Profana*, ed. F. Miklosich and J. Müller, 6 vols. (Vienna, 1860–90), vol. 6, no. LII, 165–66 = *Βυζαντινὰ ἔγγραφα τῆς Μονῆς Πάτμου*, vol. 1, *Αυτοκρατορικά*, ed. H. L. Vranousē (Athens, 1980), no. 23. The same charges are mentioned in the confirmation of previous exemptions by Theodora Palaeologina, wife of Michael VIII, in July 1269 (XCIII, 225–26 = Vranousē, *Πατμος*, vol. 1, no. 36).

107 See Antoniadis-Bibicou, *Douanes*, 136. Her alternate interpretation of *mesatikon* as a measuring tax, derived from *messa* = barrel—is not compelling, since there is no Italian or Greek measure with this signification.

108 *Scalatico* is already mentioned in a twelfth-century document stating that Pisan ships could remain in the Pisan *scala* two months without paying it; Müller, *Documenti*, no. VIII, 10. It also

perhaps the *dekateia* (tenth), if we consider it to be the *dekateia* or *dekatosis* of the *oinara* or *oinaria* charged on the transportation and sale of wine<sup>109</sup>

the *zygastikon* cited in the false chrysobull of 1316; attested in Latin sources,<sup>110</sup> it might refer to weighing with a ζυγός (steelyard) as opposed to with the κάμπανος<sup>111</sup>

I leave aside the other charges in the list: *opsonion* (tax on provisioning, “Verproviantierungs-abgabe”), *tetramoiria* (a tax—4 percent[?—on a fisherman’s catch, according to Christophe Giros, rather than on ships), *orikē* (tax on the exploitation of forests, or on pasture in mountainous areas), *kastroktisia* (repair of forts), *mageireia* (support for feeding the poor, “Leistung für den Unterhalt der Armen”[?]), *antinaulon* (payment in lieu of the obligation to transport certain people or commodities), and *kormiatikon* (a hapax, difficult to interpret).<sup>112</sup> They all apparently concerned the Monemvasiots insofar they were liable to requisitions in kind or in service (*aggareiai*, “corvées”), which these payments could forestall.

Comparable weighing, measuring, and brokerage taxes are clearly described in Pegolotti:

“Pesaggio di mercatantia in Gostantinopoli e in Pera”: the seller as well as the buyer must pay 3 carats per cantar on all commodities sold by the cantar (indigo, wax, skins, tallow, raisins, soap, almonds, honey, cotton, rice, gall nuts, figs, orpiment, safflower, henna, cumin, pistachios, sulfur, senna, pitch, litharge, salted meat, cheese, flax, wool, chestnuts).<sup>113</sup>

“Senseraggio di mercatantie in Gostantinopoli e in Pera”: the seller as well as the buyer must pay 4 percent “di perperi” for brokerage on all com-

modities whether they are weighed or not. The tax is usually assessed on value, at 6 percent on grain, or for retail sale (*a minuto*) on pieces (*pezza* of cloth) or on the cask (*botte* of olive oil or wine) at the rate of 3 carats per *pezza* and 2 carats per *botte*, respectively.<sup>114</sup>

*Garbellatura* is a control tax charged on spices in the same places. Pepper, incense, ginger, mastic, cinnamon, zedoary, and other *spezierie grosse* are taxed at 1 carat per hundredweight; cloves “because their control is tedious” at 1 carat per 10; cubebs, mace, nutmeg, rhubarb, galingale, cardamom, spike lavender, and other *spezierie sottile* at 3 carats per hundred pounds.<sup>115</sup> Comparable control is extended over skins (*cuioa*) by the *cernitori* of the Comune, or over wine that is tasted by the *cernitori* at the rate of 6 carats per 100 *botti* and seen at between 6 and 12 per 100 *botti*.<sup>116</sup>

A special measurement tax (*per farlo picoare cioè misurare*) is charged on woolen cloth (*panni lani*) at ½ carat per *pezza*, or for olive oil (*misuraggio*) at 2 carats per *botte*.<sup>117</sup>

Without examining the other fees exacted for discharging, storing, transporting, binding, or packing,<sup>118</sup> we have a picture of the Constantinople and Pera markets showing that they were efficiently controlled to ensure the security of transactions. Estimating the cost of these fees remains to be attempted. Accepting Oikonomides’ low rating of their importance, we may assume that their revenue accrued partly to the public authority (the emperor in Constantinople, the Comune in Pera) and partly to the various inspectors (*pesatori*, *cernitori*, etc.), as did the *synētheiai* (gratuities) of the early Byzantine period.

The numerous Byzantine documents of the period preserved in monastic archives also give patchy information about taxes exacted on inland fairs, many of which were controlled by churches or monasteries. When in the 1270s Michael VIII confirmed and increased donations to St. Sophia in a

figures in Michael VIII’s treaty with the Venetians in 1265 (see note 86, above) and in several documents of the Mount Athos archive of the late thirteenth to early fourteenth century; see Kontogiannopoulou, *Εσωτερική πολιτική*, 249 n. 1102.

109 Oikonomides, “Role of the Byzantine State,” 1043.

110 See references in D. A. Zakythinis, *Le chrysobulle d’Alexis III Comnène, empereur de Trébizonde en faveur des Vénitiens* (Paris, 1932), 65, to the treaties drawn respectively between Pisa and the king of Tunis (1353) and between Venice and Tripoli (1356).

111 Antoniadis-Bibicou, *Douanes*, 137.

112 See references and discussion by Schreiner, “Prostagma,” 208–9 n.; see also Oikonomides, “Role of the Byzantine State,” for *orikē* (1026) and *naulon* (1044); C. Giros, oral communication.

113 Pegolotti, *La pratica della mercatura*, 33–35 (items listed).

114 *Ibid.*, 44–45.

115 *Ibid.*, 44.

116 *Ibid.*, 47.

117 *Ibid.*, 46. *Picoare* derives from *pico*, the Byzantine πῆχυς (some 57 cm; see Schilbach, *Byzantinische Metrologie*, 43). But “when oil is sold in jars, you don’t have anything to pay, because they are not measured” (*e quando veni l’olio in giarre non ai a pagare niente, perchè non si misurano*).

118 For a detailed study of such expenses in Badoer, see J. Lefort, “Le coût des transports à Constantinople, portefaix et bateliers au xv<sup>e</sup> siècle,” in *Eupsychia*, 2:413–25.

chrysobull, he mentioned the two villages of Theron and Loulon,<sup>119</sup> together with the *poron* (a toll exacted on the crossing of fords), the *kommerkion*, the *ennomion* (a tax on common pasture), and the *topiatikon*. This last tax was charged to each vendor, as is still done today in open-air markets, for the right to set up a table or simply display merchandise on the spot.<sup>120</sup> It is probably identical to the *pratikon* and the *plateaticum* attested in Puglia in the Lombard and Norman periods and known in an eleventh-century document as *πλάτζα*.<sup>121</sup> Among the fairs controlled by Lavra we learn from a 1317 *praktikon* that the one held twice a year (on St. Nicholas's feast and at Christmas) in the village of Doxompous, southeast of Lake Achinos on the lower Strymon, yielded 10 hyperpyra, and 50 hyperpyra for *gomariatikon* (a commercial tax on each load of merchandise),<sup>122</sup> *kommerkion*, *opsōnion*, and *katagōgion*.<sup>123</sup> The large *praktikon* of Pergamēnos and Pharisaios (1321) reports a revenue of 6 nomismata from the fair of St. Constantine in the land of Pinssōn (Pissōn) and 3 nomismata from another fair of St. Elias, whose location is not stated.<sup>124</sup>

119 I. Sakkeliou, "Μιχαὴλ Παλαιολόγου ἀνέκδοτον χρυσόβουλλον περὶ τῶν παρ' αὐτοῦ τῆς Μ. Ἐκκλησίας δωρηθέντων κτημάτων," *Πανδώρα* 15 (1864): 25–32, at 29. The text is reprinted in Zezos, *Jus*, 1:658–67. The chrysobull is analyzed and its date discussed in V. Kravari, "Évocations médiévales," in *La Bithynie au Moyen Âge*, ed. B. Geyer and J. Lefort, *Réalités byzantines* 9 (Paris, 2003), 88 n. 141.

120 For a vivid representation of a traditional fair in the preindustrial world, see Jacques Callot's seventeenth-century engraving of the Fair of Impruneta (Musée historique lorrain, Nancy). See D. Ternois, "La foire d'Impruneta," in *Jacques Callot 1592–1635, Musée historique lorrain, Nancy 13 juin–14 septembre 1992*, exhibition catalogue (Paris, 1992), 241–56, and J. Lieure, *Jacques Callot: Deuxième partie, Catalogue de l'œuvre gravé* (Paris, 1927), 2:14–16, nos. 361, 478 (image on <http://www.impruneta.com/fr/fairs-and-festivals.htm>).

121 *Sigillion* of the *katapano* Constantine Opos for the monastery of Montaratro in Capitanate, Trinchera 28, cited by J.-M. Martin, *La Pouille du VI<sup>e</sup> au XII<sup>e</sup> siècle* (Rome, 1993), 429.

122 K.-P. Matschke, "Commerce, Trade, Markets, and Money: Thirteenth–Fifteenth Centuries," in *EHB*, 2:802, understands *gomariatikon* as "a ship freight or cargo bale tax" and refers to Schreiner, "Prostagma," 170.

123 ὑπὲρ τῆς τελοῦμ(έν)ης πανηγύρε(ως) τοῦ ἀγ(ίου) Νικολ(άου) κ(αί) τῆς Χ(ριστο)ῦ γεννήσ(εως) ὑ(πέρ)π(υ)ρ(α) δέκα· ὑπὲρ τοῦ γομαριατικοῦ, τοῦ κομμερκίου μετὰ κ(αί) τοῦ ὀψωνίου κ(αί) τοῦ καταγωγίου, ὑ(πέρ)π(υ)ρ(α) πενήκοντα; Lemerle et al., eds., *Actes de Lavra*, 2:170. As in the case of the Monemvasiots discussed above, the *opsōnion* and *katagōgion* are requisitions in kind or in service and do not bear on commercial transactions.

124 *Ibid.*, 2:275, no. 89, line 131. See J. Lefort, *Villages de Macédoine*, vol. 1, *La Chalcidique occidentale* (Paris, 1982), 123–25. Fair

Some of these charges and the officials responsible for their collection, or similar ones with different names, still existed in the fifteenth century, as can be observed in the ledger of Badoer, where we encounter

*sanseria, sanssaria, senseria* (brokerage tax) at  
 a 0.5 percent rate on sales and acquisitions,  
 at 0.25 percent on barter transactions<sup>125</sup>  
*mexura*<sup>126</sup>  
 payments to the *pexador*<sup>127</sup>  
 the practice of *picas*, measuring in *picchi* in  
 Constantinople and in Pera  
*tarizadori*<sup>128</sup>  
*stimadori*<sup>129</sup>  
*boleta de Griexi*<sup>130</sup> for the seal (*bola*) applied  
 to merchandise, especially textiles  
 (reminding one of the *bolia* in the *Book  
 of the Prefect*)

\* \* \* \* \*

Markets in Byzantium long benefited from a unified system of control of paying and weighing,<sup>131</sup> In the later period the influence of this long-established

of St. Elias: see Lemerle et al., eds., *Actes de Lavra*, 2:282, no. 111, line 131; probably located in the region of Hērmeleia in eastern Chalkidike.

125 See references s.vv. in U. Dorini and G. Bertelè, ed., *Il libro dei conti di Giacomo Badoer (Costantinopoli 1436–1440): Complemento e indici* (Padua, 2002). A similar tax in Coron, Venice, or Trebizond was called *mesetaria*, a term more akin to the Greek *mesitikon*.

126 Dorini and Bertelè, eds., *Badoer*, carta 107, p. 217, line 4: "peza 1 de pano chupo, fo quelà che fo chonprada a denar chontadi a perp. 98 la peza zenza mendo e zenza mexura" (one piece of dark cloth, the one which was acquired in cash for 98 hyperpyra, the piece without defect and without measure).

127 *Ibid.*, chap. 43, p. 86, line 15: "per pexador e scrivano al pexo di Griexi" (for the weigher and the secretary at the weight office of the Greeks). Many other examples could be given.

128 E.g., *ibid.*, chap. 11, p. 22, line 8: "e per pichar e tarizar, chontadi ai tarizadori e al pichador a car. 3 per peza" of Flemish cloth (*pani loesti* of Alost).

129 E.g., *ibid.*, chap. 189, p. 380, line 5: "per stimadori e tarizadori, a car. 4½ per bota" of olive oil from Puglia.

130 E.g., *ibid.*, chap. 9, p. 18, lines 29–30: "per boleta al prete del chapetanio e barche de galia e boleta de Griexi e cortexia a quei da la porta, in tuto car. 1 per cholo" ("di stagni fasi": i.e., cargoes of tin in "loads," an equivalent of the Greek γομάριον). On the wards of city gates (*da la porta*), see K.-P. Matschke, "Tore, Torwächter und Torzöllner von Konstantinopel in spätbyzantinischer Zeit," *Jahrbuch für Regionalgeschichte* 96.2 (1989): 42–57.

131 In his first message to Congress on 8 January 1790, President George Washington declared: "Uniformity in the currency, weights and measures of the United States is an object of great

and elaborate tradition was still felt, even though part of the empire's regulatory power devolved to privileged western communities. Charges and regulations of transactions can now be better appre-

---

importance, and will, I am persuaded, be duly attended to" (<http://teachingamericanhistory.org/library/index.asp?document=324>).

hended than before; they were not higher or tighter in Constantinople than in other trading places of the Mediterranean. They aimed at, and certainly contributed to, the smooth and correct functioning of very active markets, which Brigitte Pitarakis will describe in the following chapter, using archaeological and iconographical evidence.

## ABBREVIATIONS

---

<i>AA</i>	<i>Archäologischer Anzeiger</i>
<i>AASOR</i>	<i>The Annual of the American Schools of Oriental Research</i>
<i>AASS</i>	<i>Acta sanctorum</i> (Paris, 1863–1940)
<i>AB</i>	<i>Analecta Bollandiana</i>
AbhGött, Philol.-hist.Kl.	Akademie der Wissenschaften, Göttingen, Philologisch-historische Klasse, Abhandlungen
<i>ActaArchHung</i>	<i>Acta Archaeologica Academiae Scientiarum Hungaricae</i>
<i>ADAJ</i>	<i>Annual of the Department of Antiquities of Jordan</i>
<i>ADSV</i>	<i>Antichnaia drevnost' i srednie veka</i> , Sverdlovsk
<i>AE</i>	<i>L'Année épigraphique</i>
<i>AJA</i>	<i>American Journal of Archaeology</i>
<i>ALA</i>	C. Roueché, <i>Aphrodisias in Late Antiquity: The Late Roman and Byzantine Inscriptions</i> , 2nd ed. (2004), <a href="http://insaph.kcl.ac.uk/ala2004">http://insaph.kcl.ac.uk/ala2004</a>
<i>AnatArch</i>	<i>Anatolian Archaeology. British Institute at Ankara Research Reports</i>
<i>AnatSt</i>	<i>Anatolian Studies</i>
<i>AnnalesESC</i>	<i>Annales: Economies, sociétés, civilisations</i>
<i>AnTard</i>	<i>Antiquité Tardive</i>
<i>AntJ</i>	<i>The Antiquaries Journal</i>
Ἀρχ.Δελτ.	Ἀρχαιολογικὸν δελτίον
<i>ArSonTop</i>	<i>Araştırma Sonuçları Toplantısı</i>
<i>ArtB</i>	<i>Art Bulletin</i>
<i>ASAtene</i>	<i>Annuario della Scuola archeologica di Atene e delle Missioni italiane in Oriente</i>
<i>AStIt</i>	<i>Archivio Storico Italiano</i>
<i>AttiLinc</i>	<i>Atti della Accademia nazionale dei Lincei</i>
<i>BAC</i>	<i>Bulletin archéologique du Comité des travaux historiques et scientifiques</i>
<i>BAR</i>	<i>British Archaeological Reports</i>
<i>BASOR</i>	<i>Bulletin of the American Schools of Oriental Research</i>
<i>BASP</i>	<i>Bulletin of the American Society of Papyrologists</i>



BBA	Berliner byzantinistische Arbeiten
BCH	<i>Bulletin de correspondance hellénique</i>
BCTH	<i>Bulletin du Comité des Travaux Historiques</i>
BEODam	<i>Bulletin d'études orientales de l'Institut français de Damas</i>
BHG	<i>Bibliotheca hagiographica graeca</i> , 3rd ed., ed. F. Halkin, <i>Subsidia hagiographica</i> 47 (Brussels, 1957; repr. 1969)
BHL	<i>Bibliotheca hagiographica latina antiquae et mediae aetatis</i> , <i>Subsidia hagiographica</i> 6 (Brussels, 1898–1911; new suppl. 1986)
BMFD	<i>Byzantine Monastic Foundation Documents: A Complete Translation of the Surviving Founders' "Typika" and Testaments</i> , ed. J. Thomas and A. C. Hero (Washington, D.C., 2000)
BMGS	<i>Byzantine and Modern Greek Studies</i>
BnF	Bibliothèque nationale de France
BSA	<i>The Annual of the British School at Athens</i>
BSI	<i>Byzantinoslavica</i>
BSOAS	<i>Bulletin of the School of Oriental and African Studies</i>
ByzArch	Byzantinisches Archiv
ByzF	<i>Byzantinische Forschungen</i>
ByzVindo	Byzantina Vindobonensia
BZ	<i>Byzantinische Zeitschrift</i>
CabArch	<i>Cahiers Archéologiques</i>
CCSL	Corpus christianorum, Series latina
CDS	<i>Codex Diplomaticus Regni Croatiae, Dalmatiae et Slavoniae</i> , ed. T. Smičiklas (Zagreb, 1904–)
CFHB	Corpus fontium historiae byzantinae
CI	<i>Codex Iustinianus</i> , vol. 2 of <i>Corpus Iuris Civilis</i> , ed. P. Krüger (Berlin, 1887)
CIC	<i>Corpus iuris civilis</i> , ed. P. Krüger et al. (Berlin, 1928–29; repr. 1993)
CIL	<i>Corpus inscriptionum latinarum</i> (Berlin, 1862–)
CMG	<i>Corpus Medicorum Graecorum</i>
CRAI	<i>Comptes rendus de l'année de l'Académie des Inscriptions et Belles-Lettres</i>
CSEL	Corpus scriptorum ecclesiasticorum latinorum
CSHB	Corpus scriptorum historiae byzantinae
CTh	<i>Theodosiani libri XVI cum constitutionibus Sirmondianis et leges novellae ad Theodosianum pertinentes</i> , ed. T. Mommsen and P. M. Meyer (Berlin, 1905)
ΔΧΑΕ	<i>Δελτίον τῆς Χριστιανικῆς ἀρχαιολογικῆς ἐταιρείας</i>
DCV	R. Morozzo della Rocca and A. Lombardo, eds., <i>Documenti del commercio veneziano nei secoli XI–XIII</i> , 2 vols. (Rome, 1940),
DenkWien	Österreichische Akademie der Wissenschaften, Philosophisch-historische Klasse, Denkschriften
DOC	A. R. Bellinger, P. Grierson, and M. F. Hendy, <i>Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and in the Whittemore Collection</i> (Washington, D.C., 1966–99)

<i>DOCat</i>	<i>Catalogue of the Byzantine and Early Mediaeval Antiquities in the Dumbarton Oaks Collection</i> , vols. 1–2 by M. C. Ross (Washington, D.C., 1962–65); vol. 3 by K. Weitzmann (1972)
<i>DOP</i>	<i>Dumbarton Oaks Papers</i>
<i>DOSeals</i>	N. Oikonomides and J. Nesbitt, eds., <i>Catalogue of Byzantine Seals at Dumbarton Oaks and in the Fogg Museum of Art</i> (Washington, D.C., 1991–)
<i>EHB</i>	<i>The Economic History of Byzantium: From the Seventh through the Fifteenth Century</i> , ed. A. E. Laiou, <i>Dumbarton Oaks Studies</i> 39, 3 vols. (Washington, D.C., 2002)
<i>EHR</i>	<i>English Historical Review</i>
<i>EF</i>	<i>Encyclopaedia of Islam</i> , 2nd ed. (Leiden, 1960–)
<i>Eparchenbuch</i>	<i>Das Eparchenbuch Leons des Weisen</i> , ed. J. Koder (Vienna, 1991)
<i>FGH</i>	<i>Fragmenta historicorum graecorum</i> , ed. C. Müller (Paris, 1841–70)
<i>GCS</i>	Die griechischen christlichen Schriftsteller der ersten [drei] Jahrhunderte
<i>GOTR</i>	<i>Greek Orthodox Theological Review</i>
<i>GRBS</i>	<i>Greek, Roman, and Byzantine Studies</i>
<i>HAW</i>	<i>Handbuch der [klassischen] Altertumswissenschaft</i> , ed. I. Müller; new ed. by W. Otto et al. (Munich, 1923–)
<i>Hesp</i>	<i>Hesperia</i>
<i>HZ</i>	<i>Historische Zeitschrift</i>
<i>IGLSyr</i>	<i>Inscriptions grecques et latines de la Syrie</i> , ed. L. Jalabert, R. Mousterde, and C. Mondésert (Paris, 1929–70)
<i>ILS</i>	<i>Inscriptiones Latinae selectae</i> , ed. H. Dessau (Berlin, 1892–1916)
<i>INA</i>	Institute of Nautical Archaeology
<i>IstMitt</i>	<i>Istanbul Mitteilungen</i> , Deutsches Archäologisches Institut, Abteilung Istanbul
<i>JAOS</i>	<i>Journal of the American Oriental Society</i>
<i>JHS</i>	<i>Journal of Hellenic Studies</i>
<i>JMedHist</i>	<i>Journal of Medieval History</i>
<i>JÖB</i>	<i>Jahrbuch der Österreichischen Byzantinistik</i>
<i>Josh. Styl.</i>	<i>The Chronicle of Joshua the Stylite: Composed in Syriac A.D. 507</i> , trans. and ed. W. Wright (Cambridge, 1882)
<i>JRAS</i>	<i>Journal of the Royal Asiatic Society</i>
<i>JRS</i>	<i>Journal of Roman Studies</i>
<i>KazSonTop</i>	<i>Kazı Sonuçları Toplantısı</i>
<i>Lib.ann</i>	<i>Studium biblicum franciscanum: Liber annuus</i>
<i>MGH Capit</i>	Monumenta Germaniae historica, Capitularia regum Francorum
<i>MGH Form</i>	Monumenta Germaniae historica, Legum sectio V, Formulae
<i>MGH ScriptRerGerm</i>	Monumenta Germaniae historica, Scriptores rerum Germanicarum
<i>MGH ScriptRerMerov</i>	Monumenta Germaniae historica, Scriptores rerum Merovingicarum
<i>NC</i>	<i>The Numismatic Chronicle [and Journal of the Royal Numismatic Society]</i>
<i>NDCV</i>	A. Lombardo and R. Morozzo della Rocca, eds., <i>Nuovi documenti del commercio veneto dei secoli XI–XIII</i> , Monumenti storici, n.s., 7 (Venice, 1953)
<i>NZ</i>	<i>Numismatische Zeitschrift</i>

ODB	<i>The Oxford Dictionary of Byzantium</i> , ed. A. Kazhdan et al. (New York–Oxford, 1991)
ÖJh	<i>Jahreshefte des Österreichischen Archäologischen Instituts in Wien</i>
ÖJhBeibl	<i>Jahreshefte des Österreichischen Archäologischen Instituts in Wien</i> , Beiblatt
OrChr	<i>Orientalia christiana</i>
PBSR	<i>Papers of the British School at Rome</i>
PEQ	<i>Palestine Exploration Quarterly</i>
PG	Patrologiae cursus completus, Series graeca, ed. J.-P. Migne (Paris, 1857–66)
PL	Patrologiae cursus completus, Series latina, ed. J.-P. Migne (Paris, 1844–80)
PLRE	<i>The Prosopography of the Later Roman Empire</i> , vol. 1, ed. A. H. M. Jones, J. R. Martindale, and J. Morris (Cambridge, 1971); vols. 2–3, ed. J. R. Martindale (1980–92)
PO	<i>Patrologia orientalis</i>
RBK	<i>Reallexikon zur byzantinischen Kunst</i> , ed. K. Wessel (Stuttgart, 1963–)
RBN	<i>Revue belge de numismatique</i>
RE	<i>Paulys Real-Encyclopädie der classischen Altertumswissenschaft</i> , new rev. ed. by G. Wissowa and W. Kroll (Stuttgart, 1894–1978)
REA	<i>Revue des études anciennes</i>
REB	<i>Revue des études byzantines</i>
RHC HOcc	Recueils des historiens des Croisades, Historiens occidentaux (Paris, 1844–95)
RIS	<i>Rerum italicarum scriptores</i> , ed. L. A. Muratori (Milan, 1723–51)
RN	<i>Revue numismatique</i>
RSBN	<i>Rivista di studi bizantini e neoellenici</i>
RSBS	<i>Rivista di Studi bizantini e slavi</i>
SBMünch	Sitzungsberichte der Bayerischen Akademie der Wissenschaften, Philosophisch-historische Klasse
SC	Sources chrétiennes
SEER	<i>The Slavonic and East European Review</i>
SEG	<i>Supplementum epigraphicum graecum</i> , ed. P. Roussel et al. (Leiden, 1923–)
SubsHag	Subsidia hagiographica
TAPS	<i>Transactions of the American Philosophical Society</i>
TIB	<i>Tabula imperii byzantini</i> , ed. H. Hunger (Vienna, 1976–)
TM	<i>Travaux et mémoires</i>
VizVrem	<i>Vizantiiskii vremennik</i>
Zepos, Jus	<i>Jus graecoromanum</i> , ed. J. and P. Zepos (Athens, 1931; repr., 1962)
ZPapEpig	<i>Zeitschrift für Papyrologie und Epigraphik</i>
ZRVI	<i>Zbornik radova Vizantološkog instituta, Srpska akademija nauka</i>

## ABOUT THE AUTHORS

---

ANDRÉ BINGGELI holds a permanent research position in the National Centre for Scientific Research (CNRS) in Paris, in the Institute for Textual Research and History (IRHT). He specializes in Greek, Syriac, and Arabic literature and manuscripts related to Christian-Muslim relations in the first centuries AH. His most recent publication is “Converting the Caliph: A Legendary Motif in Christian Hagiography and Historiography of the Early Islamic Period,” in *Writing “True Stories”: Historians and Hagiographers in the Late Antique and Medieval Near East*, ed. A. Papaconstantinou et al. (Turnhout, 2010), and he is currently finishing his edition of the *Narrationes* of Anastasius of Sinai.

JEAN-MICHEL CARRIÉ is director of research and teaches late Roman history at EHESS (Paris). He is the editor of the international journal *Antiquité tardive*. His research focuses on the transition from late antiquity to the early Middle Ages in the Germanic West and the early Byzantine East, particularly from the point of view of economic and social history; military, fiscal, and monetary matters; and ancient technology. Among his publications are *L’Empire romain en mutation des Sévères à Constantin, 192–337* (with Aline Rousselle) (Paris, 1999) and contributions to *Mons Claudianus: Survey and Excavation, 1987–1993*, part 2 (Cairo, 2001); *Cambridge Ancient History*, vol. 12 (*A.D. 193–337*), 2nd ed. (Cambridge, 2005); *Dictionnaire de l’Antiquité* (Paris, 2005); and *La monnaie dévoilée par ses crises*, ed. B. Thérét, 2 vols. (Paris, 2007).

ROWAN DORIN is a doctoral candidate at Harvard University. He was introduced to the medieval Mediterranean as an undergraduate by the late Angeliki Laiou, and is currently working on a dissertation on the expulsions of merchants in medieval Europe, under the supervision of Daniel Lord Smail and Michael McCormick.

SAURO GELICHI is professor of medieval archaeology at the University of Ca’ Foscari of Venice. His current research focuses on Venice and Adriatic towns during the Middle Ages. Among his more recent publications are *The Archaeology of an Abandoned Town: The 2005 Project in Stari Bar* (Florence, 2006), *A Town through the Ages: The 2006–2007 Archaeological Project in Stari Bar* (Florence, 2008), and *L’isola del vescovo: Gli scavi archeologici intorno alla Cattedrale di Comacchio / The Archaeological Excavations near the Comacchio Cathedral* (Florence, 2009).

JOHN HALDON is professor of history at Princeton University. He studied in the United Kingdom, Greece, and Germany, and is a Senior Fellow at Dumbarton Oaks. His research focuses on the history of the early and middle Byzantine Empire, in particular the seventh to the eleventh century; on state systems and structures across the European and Islamic worlds from late ancient to early modern times; and on the production, distribution, and consumption of resources in the late ancient and medieval world, especially in the context of warfare. His publications include *Byzantium in the Seventh Century* (Cambridge, 1990; rev. 1997); *Three Treatises on Byzantine Imperial Military Expeditions* (Vienna,

1990); *The State and the Tributary Mode of Production* (London–New York, 1993); *Warfare, State, and Society in the Byzantine World, 565–1204* (London, 1999); *Byzantium: A History* (Charleston, 2000); and *The Palgrave Atlas of Byzantine History* (New York, 2005).

JOHANNES KODER is emeritus professor at the Institute for Byzantine and Neohellenic Studies at the University of Vienna, where he was professor and director from 1985 to 2010. His current research focuses on settlement and traffic structures in Byzantium, on the history of Byzantine nutrition, on liturgical hymnography of the fifth and sixth centuries, and on middle Byzantine mystical literature (Symeon Neos Theologos). His publications include two volumes of the *Tabula Imperii Byzantini* and a German translation of the *Kontakia* of Romanos Melodos.

ANGELIKI E. LAIOU (1941–2008) was Dumbarton Oaks Professor of Byzantine History in the Department of History at Harvard University. Her research interests included Byzantine social and economic history, notably trade and manufacturing. She was the editor of *The Economic History of Byzantium* (Washington, D.C., 2002). Her complete bibliography and biography, written by C. Morrisson and A.-M. Talbot, appears in *Dumbarton Oaks Papers* 63 (2009).

LUKE LAVAN is lecturer in archaeology at the University of Kent, Canterbury, where he specializes in the archaeology of late antiquity. His doctorate (2001) considered provincial capitals of late antiquity. He is series editor of the annual *Late Antique Archaeology* and he currently directs excavations at Ostia, the port of Rome, where he focuses on the later development of streets and public space within the city, in partnership with the Humboldt University of Berlin.

CHRIS LIGHTFOOT is a curator in the Department of Greek and Roman Art at The Metropolitan Museum of Art, New York, where he specializes in Roman art and ancient glass. He has been the director of the Amorium Excavations Project since 1993; he is the editor of the Amorium Reports monograph series, and in 2007 he produced a guidebook with versions in English and Turkish titled *Amorium: A Byzantine City in Anatolia*.

MICHAEL MCCORMICK is Goelet Professor of Medieval History and teaches history and archaeology at Harvard University. His current research focuses on the economic and environmental history and archaeology of the late Roman and early medieval period, on computational philology, and on the natural science of the human past. His most recent major works include *The Digital Atlas of Roman and Medieval Civilizations* (2010), <http://darmc.harvard.edu/>; coedited with Jennifer R. Davis, *The Long Morning of Medieval Europe: New Directions in Early Medieval Studies* (Aldershot, 2008); and *Charlemagne's Survey of the Holy Land* (Washington, D.C., 2011).

CÉCILE MORRISSON is Director of Research Emerita at the Centre national de la recherche scientifique, Paris, and Advisor for Byzantine Numismatics, Dumbarton Oaks. Her research interests lie in Byzantine coins, monetary history, and economic history. She contributed to *The Economic History of Byzantium* (Washington, D.C., 2002), and published with A. Laiou *The Byzantine Economy* (Cambridge, 2007). Of the three volumes of *Le Monde byzantin* (Paris, 2004–11), she edited and co-authored volume one, *L'Empire romain d'Orient (330–641)*, and (with A. E. Laiou) volume 3, *L'Empire grec et ses voisins (1204–1453)*.

DEMETRA PAPANIKOLA-BAKIRTZI is an archaeologist in the Leventis Municipal Museum of Nicosia. She works on aspects of material culture in Byzantium, specializing in Byzantine glazed pottery. Among her publications are *Ceramic Art from Byzantine Serres* (with E. Dauterman-Maguire and H. Maguire) (Urbana, 1992); *Medieval Glazed Pottery of Cyprus: Paphos and Lapithos Ware* (Thessalonike, 1996 [in Greek]); and “Glazed Pottery Workshops in the Byzantine World,” in *Proceedings of the 7th International Conference on Medieval Pottery of the Mediterranean, Thessaloniki, 1–16 October 1999* (Athens, 2003), 45–66 (in Greek). She is editor of *Byzantine Glazed Ceramics: The Art of Sgraffito* (Athens, 1999) and *Everyday Life in Byzantium* (Athens, 2002).

DOMINIQUE PIERI teaches late Roman and early Byzantine archaeology at Panthéon-Sorbonne University in Paris. He works on aspects of material culture in the Byzantine Near East, specializing in early Byzantine pottery. He is the author of *Le com-*

*merce du vin à l'époque byzantine: Le témoignage des amphores en Gaule* (Beirut, 2005). He has been the director of the French Beirut Excavations (2000–2004) and has worked since 2007 at St. Symeon Sanctuary in North Syria.

BRIGITTE PITARAKIS is *chargée de recherches* at the CNRS (UMR 8167–“Orient et Méditerranée”). Her main area of research is material culture from late antiquity and Byzantium, with a focus on metalwork. She is author of *Les Croix-reliquaires pectorales byzantines en bronze* (Paris, 2006). Her most recent publication is “The Material Culture of Children in Byzantium,” in *Becoming Byzantine: Children and Childhood in Byzantium*, ed. A. Papaconstantinou and A.-M. Talbot (Washington, D.C., 2009). She recently organized an exhibition on the Hippodrome of Constantinople at the Pera Museum in Istanbul and edited its catalogue, *Hippodrome / Atmeydanı: A Stage for Istanbul's History* (Istanbul, 2010).

SCOTT REDFORD is professor in the Department of Archaeology and History of Art and Director of the Research Center for Anatolian Civilizations at Koç University, Istanbul. His areas of research include the archaeology, art history, and history of medieval Anatolia and the eastern Mediterranean. He is publishing the medieval levels of Bilkent University excavations at Kinet Höyük, Hatay, Turkey, directed by Prof. Marie-Henriette Gates of Bilkent. His recent publications include *Victory Inscribed: The Seljuk Fetihname on the Citadel Walls of Antalya, Turkey* (with Gary Leiser) (Istanbul, 2008).

PETER TEMIN is the Gray Professor Emeritus of Economics at the Massachusetts Institute of Technology (MIT). Professor Temin was the Pitt Professor of American History and Institutions at Cambridge University, 1985–86; Head of the Economics Department at MIT, 1990–93; and President of the Economic History Association, 1995–96. Professor Temin's research interests include macroeconomic history, the Great Depression, industry studies in both the nineteenth and twentieth centuries, and ancient Rome. His most recent books are *The World Economy between the World Wars* (Oxford, 2008) and *Reasonable RX: Solving the Drug Price Crisis* (Upper Saddle River, N.J., 2008), both with coauthors. He is the author of “A Market Economy in the Early Roman Empire,” *Journal of Roman Studies* 91 (2001).

ALAN WALMSLEY is MSO Professor in Islamic Archaeology and Art at the University of Copenhagen. His research and teaching centers on the archaeology, architecture, art, and numismatics of the Islamic world, with a focus on questions of continuity, resilience, and transformation in Syro-Palestinian society between the fifth and eleventh centuries. He has excavated in the Middle East for thirty-five years and has directed five major field projects, currently at the renowned site of Jarash in Jordan. He is also director of the Materiality in Islam Research Initiative, a research center devoted to investigating new ways of analyzing social trends in Islam by applying critical approaches to the analysis of visual culture. He is the author of *Early Islamic Syria: An Archaeological Assessment* (Duckworth, 2007), in addition to other publications.



## INDEX

---

Page numbers in **bold** indicate illustrative material.

'Abd al-Malik, 287, 320

Abū Nuwās, 289

Abulafia, David, 235–36n4, 248–49n78, 262n175, 269

Abydos, cargo inspectors in, 54, 64–65

accounting practices: shopkeepers' accounts, stone tablet with, 326–29, **329**, 433; Vienna accounting papyri, 22–23

*adaeratio*, 15

Adamnan, 290n67

Adrianople, 134

Adriatic trade networks in twelfth and thirteenth centuries, 6, 8, 235–79; ceramics, 258, 267n208; coastal geography, tides, currents, and wind factors, 236–40; documentary evidence for, 240–41, 246; extra-Adriatic trade, 263–70, 278; individuals involved in, 270–77, 279; intra-Adriatic trade, non-Venetian, 252–63, 278; lateral versus trans-Adriatic, 256–58, 261; map, **237**; micro-ecological variation, theory of, 239–40, 246, 254, 279; Otranto, Strait of, 236, 265; overland route to Constantinople and, 269–70, 279; pirates and piracy, 262–63; ships sailing Adriatic, 238–39; Venice, Adriatic as *contado* for, 241–52, **243**, 278, 279. *See also specific*

*Adriatic coastal settlements and trade goods*

Aegean, as shipping zone, 77

Aegean Kapitän amphorae, 6

Aegean Ware, 142n107, 143, 144, 207, 308

Aelianos (Syrian martyr), annual fair associated with, 288, 289

Aetius of Amida, 93n211

African oil gathered for export at Carthage, 53n16, 61, 65

African Red Slip (ARS) Ware, 9, 73, 106, 190, 368, 370, 375, 376

Africana 2D Grande amphorae, 62, **62**

agorai, **343**, **344**, 344–46, 348–49, 370–72

agrarian activity: on Adriatic coast, 236–37; in Asia Minor, 155–57, **157**, **158**; in Cappadocia, 118; grain supply requirements for nonproducers, 174

Albania, Adriatic trade of. *See* Adriatic trade networks in twelfth and thirteenth centuries

Aldoino, Domenico, 272, 274

Aleppo: annual fair at, 285, 288, 290, 292, 295; Norman Principality of Antioch and, 299, 300n4, 309n29

Alexander of Tralles, 36

Alexandria, 81–82, 284, 359

Alexios I Komnenos (emperor), 132, 137, 145, 180, 264, 270, 299, 392

Alfred the Great (king of Wessex), 58

Alinda, 166n90

almanacs as evidence of Syrian annual fairs in Islamic period, 283–85

Almissan pirates, 263

Almyros, 138, 139

Amastris, 8

Ambrosiani, Björn, 58n40

'Ammān, annual fair at, 286, 288, 289, 290, 292, 293, 314n20

Ammianus Marcellinus, 295n107

Amorion (Amorium), 5, 177–91;

Arab sack of 838, recovery following, 179–80, **180**; Army of the Anatolics in, 179; belt buckles from, 118; books and literacy in, **188**, 188–89; as capital of theme of Anatolikon, **178**, 179; ceramic evidence from, 104, 105, 106; ceramics found at, 189, 190, **190**; coin evidence from, 109n39, 110, 180–82, **181**; construction work, artisans and supplies required for, 189–90; de-urbanization of seventh century and, 177, 183–84; documentary evidence on, 117; inland setting, importance of, 177–78, 182–83; Mantzikert, decline after Battle of (1071), 180; maritime trade, distortions caused by focus on, 177, 184, 190; medicinal plants from, 188; metalwork and jewelry found at, 190–91, **191**; new construction in seventh century, 178–79, **179**; regional networks in Asia Minor



- Amorion, *continued*  
 and, 168, 168–69, 169, 177–78;  
 silk and luxury leather goods  
 found at, 187–88; spolia, use of,  
 180, 189; weight with protective  
 inscription from, 422n146; wine-  
 making in, 184–87, 185–87  
 amphorae, 5–6, 8, 27–49, 60–77;  
 at Amorion, paucity of, 186; bar-  
 rels versus, 73, 74–76, 91–94,  
 186; chain of transactions evi-  
 denced by, 61; changes in local  
 and regional exchange in seventh  
 and eighth centuries, 107; from  
 church workshops, 45, 46; from  
 Comacchio and Northern Italy  
 in eighth century, 225, 228–31,  
 229, 230; as commercial packag-  
 ing with marketing implications,  
 43; concept of market economy  
 and evidence from, 19; contents  
 of, 36, 43–44, 61; distribution  
 patterns, economic significance  
 of, 68; diversity and proliferation  
 of different forms, 28–30, 30, 31,  
 34, 43; Dumbarton Oaks, *cover*,  
 309; eastern Mediterranean  
 trade dynamism, as evidence of,  
 28–36, 32–35; economic signifi-  
 cance of specific amphorae and  
 their cargoes, 64–65; as imitative  
 or forged packaging, 47–48, 48,  
 69; as liquid measures, 414–16;  
 means and agents of exchange,  
 39–42; modern economic theory  
 and, 433; operational approach  
 to studying, 61–64, 62, 63; over-  
 land shipment of, 69–73, 70–72,  
 120–21; painted inscriptions on,  
 40, 41, 42, 44, 45, 46; Persian  
 wars and Arab Muslim con-  
 quests affecting production and  
 export of, 31, 32; production of,  
 45–47; relative values and vol-  
 umes of contents, assessing, 77;  
 size, shape, capacity, and tare  
 weight, significance of, 8, 32, 34,  
 42–45, 61–64, 62, 63, 65–68, 91;  
 standardization issues, 42–45;  
 storage, organization, and sale of  
 contents at receiving end, 66–67,  
 67, 68; transfer of contents into,  
 65–66, 69; typological classifica-  
 tion of, 28–29, 29–31; western  
 centers of production, decline of,  
 31; wine trade and, 36–39. *See also*  
*specific types*  
*anaglypha asēmia*, 196  
 Anastasius I (emperor), 150  
 Anastasius Bibliothecarius,  
 127n14  
 Anatolia, 177–91; environment of  
 vigorous supply and demand in,  
 177–78; livestock from, 53, 102,  
 182–83; manpower, as source of,  
 182; map, 178; numismatic evi-  
 dence from, 110; resilience of, 8;  
 Sagalassos pottery in, 106; urban  
 life, change and continuity in, 99.  
*See also specific sites*  
 Anazarbos, 169–71, 170, 301, 401  
 Anchialos, 128  
 Ancona: extra-Adriatic trade,  
 267–69, 270; identity of trad-  
 ers and naucleri, 271; intra-Adri-  
 atic trade, 253, 259, 260, 263, 278;  
 Venice, trade with, 236, 240,  
 245–46, 248–49, 252  
 Ancyra, 179  
 Andrew the Fool, *Life* of, 403–4,  
 407  
 Andriake inscription on official  
 weights and measures, 383–85  
 Andronikos II (emperor), 393,  
 394–95  
 Anemourion, 104, 377  
 'Anjar, 322, 362  
 Anna Komnena, 162n73, 270  
*annona*, 15, 20, 49, 52, 53n16, 61,  
 65n76, 96  
 annual fairs or markets, 116; in Bal-  
 kans, 137; de Ligt's criteria for  
 classifying, 289–90, 292, 293; at  
 Ephesos, 116, 121; Thessalonike,  
 Demetria in, 208. *See also* Syria,  
 annual fairs in  
 Anskar (missionary), *Life* of, 78n157  
 “anti-primitivist” view of Byzantine  
 trade and markets, 13–14  
 Antinoopolis, amphorae found at,  
 44–45, 46  
 Antioch, city of: physical shops and  
 marketplaces in, 340–42, 348–  
 52, 361, 364; Yakto mosaic depict-  
 ing daily life in, 340, 349, 350, 353,  
 357, 359, 360, 402, 403  
 Antioch in Pisidia, 358, 359, 360,  
 361, 383  
 Antioch, Norman Principality of,  
 5, 6, 297–309; archaeological  
 evidence of geographic/political  
 disjunction in, 305–9; Byzantine  
 Duchy of Antioch, modeled on,  
 297; Cilicia rather than south-  
 ern territories, geographic and  
 economic links to, 5, 6, 297, 299,  
 300–305; Italian merchants and,  
 304–9; maps of region, 298, 299;  
 port cities of Port Saint Symeon  
 and Laodikeia, 297–99, 300,  
 304–5; thirteenth-century com-  
 mercial boom, 305  
 Antonio de Andriuccio da Saxofer-  
 ato, 271n241  
 Apameia, 5, 319, 355, 356, 399n2, 401,  
 407n50  
 Aphiona, 105  
 Aphrodisias, 339, 340–41, 344,  
 346–47, 348, 352, 353, 355, 357,  
 359–62, 407  
 Apollinarios, amphorae of, 41–42,  
 42  
*apothēkai*, lead seals of, 112, 112–14,  
 113, 115, 148n9  
 apotropaic devices on weighing  
 instruments, 422–23, 423, 424  
 Appianus archive, 22  
 Apulia: extra-Adriatic trade,  
 263–64, 265–66; intra-Adriatic  
 trade, non-Venetian, 253, 255, 256,  
 258n142, 263; Venice, trade with,  
 244n37, 246–47, 249–51  
 Aqaba, amphorae from, 28, 30, 46,  
 47, 48  
 Aquileia, 75, 92n208, 93  
 Arab Muslim conquests: agrar-  
 ian and pastoral activity, effects  
 on, 118; Amorion, 838 sack of,  
 179; amphorae, production and  
 export of, 31, 32; dissolution of  
 Mediterranean community and,  
 148–49; Hattin, Battle of (1187),  
 305; Syrian trade networks, shift  
 in, 295–96 (*See also* Syria, annual  
 fairs in; Syria-Palestine, Byzantine  
 and early Islamic, regional  
 exchange in); textual evidence for  
 trade and markets during, 117  
 Arabic, adoption of, in Syria-Pales-  
 tine, 328–29  
*Arabic Gospel of the Infancy of the*  
*Savior*, 365

- Arcadius (emperor), 15, 385, **386**  
 archaeological sources of information about trade and markets, 5–6  
 Arculf, 287, 313  
 Argos, 141  
 Aristotle, 379  
 Armenian Cilicia. *See* Cilicia  
 Army of the Anatolics, in Amorion, 179  
 Arnobius the Elder, 74n114  
 ARS (African Red Slip) Ware, 9, 73, 106, 190, 368, 370, 375, 376  
 Arta, Epiros, Blachernitissa narthex painting, 404–6, **405**  
 St. Artemios, *Miracles* of, 423–24  
 Asdracha, C., 133n39  
 Asia Minor, regional networks in, 8, 147–75; agrarian productivity, 155–57, **157**, **158**; central and eastern Asia Minor, **166–70**, 166–71; ceramic evidence of, 104, 105, 107, 108; combining concrete information with theoretical models, 171–73, **172**, **173**; documentary evidence of, 117; map, **149**; monetization of economy, 147; names of sites, Byzantine and modern, 175; numismatic evidence of, 109, 110, 111; roads in, 118–19, **120**, 152–55, **153–55**, 157, **162**, **167**, 167–68, 171; settlement size, population density, and chronology, 149–51, **151**, **152**, 171–73, **173**, 174; western Asia Minor, 158–66, **159–62**, **164**, **165**. *See also specific sites*  
 Asinou, Cyprus, Panaghia Phorbiotissa in, 426  
 Askalon (ʿAsqalān): amphorae made at, 47; annual fair at, 287, 288, 289, 292, 294; camel-shaped bottle from, 70–71, **71**; shipwrecks off, 81n168; wine from, 36–37  
 astrological charts and shipwreck evidence, 80  
*al-Āthār al-Bāqiyya ʿan al-Qurūn al-Khāliyya* (“Chronology of Ancient Nations” of al-Bīrūnī), 283–84  
 Athena, weights and statues representing, 418, 420–22, **422**  
 Athens, 44n40, 110, 111, 138–40, 142, 350  
 Attaleiates, 391n76, 392  
 Augenti, Andrea, 66n78  
 Augustine of Hippo, 76, 78, 350, 352, 364–65  
 Augustus Caesar (emperor), 383  
 Aurelius Symmachus, 346  
 Ausonius, 56  
*autarkeia* or self-sufficiency, 3, 21–22, 24, 122, 138, 147, 148  
 Autun (Augustodunum), 18  
 Aylward, William, 159  
 Badoer, Giacomo, 392–93, 397, 405–6  
 Bag amphorae, 5, 38, **38**, 44n38, 64  
 Bahariya, 68  
 Baḥīra, 291  
 Baird, Jennifer, 349  
 balance scales, 382–83, **384**, 407–10, **411**, 416, **417**, **423**, **424**  
 Balard, Michel, 235–36n4, 301n8  
 Baldini Lippolis, Isabella, 333, 334n8  
 Balkans, regional networks in, 125–46; Adriatic trade and, 251, 260–62, 268–69, 279; ceramic evidence, 136, 137, **141–45**, 141–46; Constantinople and, 127, 128–29, 136, 140, 146; defining regional and interregional trade, 125–27; Greece and the Peloponnese, 137–45; Gregory Pakourianos, estates of, 130–35, **132**; Macedonia, 127, 129, 135, 137, 145; map of, **131**; maritime trade, 127, 135, 137; metal, ore, and mineral trade, Adriatic, 261–62, 279; monetization of economy, 129; numismatic evidence from, 110, 111, 129, 132–33, 137, 142, 145; patterns of, 145–46; roads and overland transport, 118–19, **119**, 127–28, 135–37; slave trade, 251, 260–61, 279; Slavic robbers, problem of, 127n13, 135; Thessalonike, 127, 129, 135–37; Thrace, 127–35, 145; urban life, change and continuity in, 100; Venetian commercial privileges, **131**, 133, 134–35, 137–41, 145. *See also specific sites*  
 Ballet, Pascale, 47  
 Balzaretta, Ross, 220  
 Bang, Peter, 4, 13  
 Bari, 258, 263, 266  
 Barletta, 266  
 barrels: as bathing vessels, 93; as transport containers, 73, 74–76, 91–94, 186  
 barter economy, 22–23  
 Basil I (emperor), 145  
 Basil II (emperor), 137  
 basket earrings from Amorion, **191**  
 Bawit, amphorae from, 47, **48**  
 Baybars (Mamluk sultan), 306  
 Baysān. *See* Skythopolis  
 beach markets, 53, 87–89, **89**  
 beasts of burden, 120, 151, 313, 401  
 Beersheba, 69  
 Beirut: amphorae found in, 5, 30, 32, **35**, 47; physical shops and marketplaces in, 349, 350, 352, 358, 359  
 Bell, Gertrude, 313–14  
 belt buckles, distribution patterns of, 118  
 Benjamin of Tudela, 137, 139n86, 140, 266, 267, 304n14  
 Beryozovo, silver bowl from, 196  
 biblical statements regarding weighing and measuring, 387n42, 416, **417**  
 Bilād al-Shām, annual fairs of. *See* Syria, annual fairs in  
 Binggeli, André, 7, 281, **435**, 441  
 Birka, Sweden, as trading center, 58  
 Birsama, 69, 72  
 al-Bīrūnī, 283–86, 289–92, 294  
 Bisceglie, 257  
 Bithynia, 117, 118, 162, 184  
 Blachernitissa narthex painting (Arta, Epiros), 404–6, **405**  
 black glaze ceramic, 18  
 black markets, 52, 89  
 Black Sea: evidence for trade via, 107, 114–15; north-south trade route, 8; sailor-traders of, 276; as shipping zone, 77; slave trade in, 261n170, 302  
 Blackman, M. James, 213, 308  
 bladders or skins used for transport of goods, 65, 120, 187, 401  
 Blanco, Deodatus, 275  
 Blasios of Amorion, 138n69  
 Boeotia, 8, 138, 141–42  
 Boğazköy, 118  
 Bogomils, as slaves, 261n170  
 Boncompagno da Signa, 253n107, 268

- Bonifay, Michel, 62n61, 66n80, 69n85, 73n108, 77n139
- Book of the Prefect*: Asia Minor, regional networks in, 155–56; Balkans, regional networks in, 126, 128, 129; daily life in the marketplace, 400, 407; evidence of markets and trade in, 52, 87n189; market economy, concept of, 21; physical shops and marketplaces, 333, 349; weighing and measuring, 389, 391, 407, 422
- books and literacy in Amorion, **188**, 188–89
- Booth, Ian, 152
- Borchardt measure, **413**, 413–14
- Bosporos (Kerch), 107
- Bouras, Charalambos, 142
- Brand, Charles, 148
- Bresson, Alain, 26
- Brindisi, 253, 265, 266, 275
- Brskovo, 261
- Bruhns, Hinnerk, 24
- Bücher, Karl, 13n4
- Bulgars and Bulgaria, 110, 114, 126–29, 136–37, 208–9
- Burono, Guglielmo, 273
- Butler, Thomas, 59n49
- Butrint, 8, 105, 108, 122
- Byrne, Eugene H., 276n276
- Byzantine-Bulgarian treaty of 716, 126, 128, 129
- Byzantine coarse ware, 188
- Byzantine glazed ceramics, 193–216; common tableware from thirteenth to fourteenth centuries, 205–12, 215–16; from Constantinople, tenth to thirteenth centuries, 194–98, **195–97**, 214; from Constantinople, thirteenth to fourteenth centuries, 207–8; from Corinth, 197–200, **199**, 201, 214; Cypriot tablewares, twelfth to fifteenth centuries, 212–14, **213**, **214**, 216; demands of market, meeting, 214–16; elite tableware from tenth to thirteenth centuries, 194–205, 214–15; emergence of lead glazing technique, 194; Italian majolica workshops compared, 215; from Kastellorizo shipwreck, 201–5, **203**, **204**, 207, 214; metal vessels, based on, **196**, 196–97, **197**, **199**, 200–201, 202; metal vessels, departure from, 205; from Pelagoussos-Alonnesos shipwreck, 200–201, **201**, 214; from Pergamon, 211–12; relief decoration on, 195–96, **196**; from Serres, 209–10, **210**, 215; from Thessalonike, **208**, 208–9, **209**, 215; from Thrace, **211**, **212**, 215; tripod stilts, use of, 205, 207, 213, 215. *See also specific types and classifications*
- Ca' Vendramin Calergi, 231
- Çadır Höyük, 105, 106, 185n42
- Caesarius of Arles, 76n131
- Cairo Genizah, 55, 80, 93, 275–76
- camels: as beasts of burden, 120, 151, 313, 401; wine amphorae transported by, 70–72, **71**, **72**
- Camurlu, cistern at, **167**, 167–68
- Capo Granitola 4 wreck, 82n169
- Capodistria, 255
- Cappadocia, agricultural and pastoral activity in, 118
- Caraciacanape, Vitale, 263
- Caria, 162, 166n90
- Carrié, Jean-Michel, 2, 3, 13, 429, 436, 441
- Carthage: olive oil gathered for export at, 53n16, 61, 65, 73n105; physical shops and marketplaces in, 334n8, 350, 352, 353, 362
- Casana, J., 303n12
- Cassiodorus, 348, 363, 387n42
- Cassius Dio, 383n23
- Çatal Höyük, 303n12
- Cato the Elder, 336
- Caunos, *sekoma* from, 411–12
- caviar, Byzantine consumption of, 405
- Cazichi pirates, 263
- Central Greek Painted Ware, 105
- Central Place Theory of land use and development, 171
- ceramics: Adriatic, 258, 267n208; from Amorion, 189, 190, **190**; in Antioch, 304; Balkans, regional networks in, 136, 137, **141–45**, 141–46; changes in local and regional exchange in seventh and eighth centuries, evidence for, 103–8; Comacchio, unglazed ware from, 227, **228**; comparative find studies, need for, 9; Nonan-  
tola, excavation of monastery of, **232**, 233; olive oil trade and, 73; as sources of information about trade and markets, 4, 5–6; Syria-Palestine, Byzantine and early Islamic, regional exchange in, 312n8, 313–17, **314–17**, 321; wide-spread trade in common wares, 18. *See also amphorae*; Byzantine glazed ceramics; *specific types and classifications*
- Cervia, 250–51, 255, 264
- Chalkidike, ceramics from, 208, 210
- Champlevé Ware, 143–44, **144**, 212
- changes in local and regional exchange in seventh and eighth centuries, 99–122; ceramic evidence for, 103–8; demand, 101–3; differentiation in trade activities in different areas, 121–22; documentary evidence of, 114–18; estate economy and, 101–2; lead seals of *kommerkiarioi* and *apothékai*, **112**, 112–14, **113**, 115; monetization of economy, 99, 102–3, 111–12; numismatic evidence for, 104, 108–12; overland movement of goods, 118–21, **119**, **120**; plague, effects of, 101; seasonal fluctuations in trade activity, 121; urban patterns of life, 99–101
- Charax, 115
- Charlemagne, 59, 74n111
- cheating. *See* fraud and cheating
- Cherson, 8, 104, 107, 108, 114, 206
- Chian amphorae, 61
- Chioggia, 241, 250, 255, 256
- Chonai, **166**, 166–68
- Choniates, Michael, 140, 414
- Choniates, Niketas, 139, 166, 170n107, 268n216, 392n78, 407
- Choricus of Gaza, 340, 364
- Christaller, Walter, 171
- Chrysoupolis, 133
- church workshops, amphorae from, 45, **46**
- Cicero, 17n23
- Cilicia: amphorae from, 45–46, 64–65, 69; natural links of Norman Principality of Antioch to, 5, 6, 297, 299, 300–305; thirteenth-century commercial

- boom, 305; unitary material culture of, 306
- cities. *See* urban areas and trade
- civil basilicas, 341–42, **343**, 367–68
- Classe, storehouse at, 66–67, **67**, **68**
- cloth and clothing. *See* textile and clothing production and trade
- coins: from Amorion, 180–82, **181**; from Balkans, 110, 111, 129, 132–33, 137, 142, 145; changes in local and regional exchange in seventh and eighth centuries, evidence for, 104, 108–12; from Comacchio, 227, **228**; counterfeiting, 388, 391; as evidence of trade and markets, 6; informal markets, coin finds as markers of, 53n111; monetized versus “natural” or barter economic system and, 22–23; physical shops and markets, evidence of, 326, 327, 330, 336, 360; shipwreck data, combined with, 80; Syria-Palestine, Byzantine and early Islamic, regional exchange in, 317–21, **319–21**, 326, 327, 330; Trier, coins minted in, 56; Veronese currency as standard 12th-c. coinage of Venice, 246n57
- colleganza* contracts, 240–41, 264, 277
- collegia*, 21
- Comacchio, 5, 8, 222–28; amphorae from, **225**, 228–31, **229**, **230**; archaeological evidence from, 224–28, **224–29**; changes in local and regional exchange in seventh and eighth centuries and, 105, 108; destruction of, 245; Liutprand Capitulary and, 220–21, 231; maps, **221**, **226**; reconstruction of, **231**; trade relations of, 230–33
- commerce. *See* trade and markets in Byzantium
- Constance (empress), 258
- Constans II (emperor), 110, 180, 227n32
- Constantine I (emperor), 383, 416n113, 417, 418, 420
- Constantine IV (emperor), 109, 110
- Constantine V (emperor), 129
- Constantine VII Porphyrogenitus (emperor), 136, 157n50, 166n90, 389n59, 401
- Constantine (Cyril, Apostle to the Slavs), 59–60
- Constantine weights, 417–19, **418**, **419**
- Constantinople: amphorae from eastern Mediterranean and rise of, 49; Ancona, trade relationship with, 267–68; Balkans, regional networks in, 127, 128–29, 136, 140, 146; ceramic evidence for trade with, 107, 108; glazed ceramics of tenth to thirteenth centuries from, 194–98, **195–97**, 214; glazed ceramics of thirteenth to fourteenth centuries from, 207–8; Hodegetria icon procession in, Blachernitissa narthex painting of, Arta, Epiros, 404–6, **405**; market buildings in, 341, 342, **344**, 346; overland trade routes from Dalmatian ports to, 269–70, 279; physical shops and shopping in, 349, 350, 352, 353, 355, 361, 362, 364; regulation of public behavior in, 339–40; road network in Asia Minor and, 152, 153, 157; Rome, as separate market from, 59; shipwreck evidence regarding importance relative to Rome, 85–86; short-distance deliveries by ship in and around, 77; street encroachments, removal of, 336; as supermarket, 53; Venetian trade with, 264–65; water supply of, 54n21; wine consumption in, 54
- Constantinopolitan Glazed White Ware, 104, 106, 107, 136–37, 141, 146, 194–98, **195**, 200
- Constantinopolitan Petal Ware, **190**
- Constantinopolitan Polychrome Ware, 136–37, **141**, 146, 196–97, **197**, 198
- consumer cities versus producer cities, as historiographical concept, 24
- Corfu, 238n11, 239, 265n192, 267
- Corinth: Balkans, regional networks in, 127, 138–45; Byzantine glazed ceramics from, 197–200, **199**, 201, 214; changes in local and regional exchange in seventh and eighth centuries, 104, 110, 111; physical shops and marketplaces, 346; weighing instruments and weights from, 409, 418, 421
- Corippus (Flavius Cresconius Corippus), 37, 54n17, 387
- Corner, Domenico, 272
- Cosyns, Peter, 336
- cotton trade in Adriatic, 249–50, 260
- Cotyaeum, 184
- counterfeiting coins, 388, 391
- craft associations, Roman versus medieval, 21
- credit and credit instruments, 102, 112, 327
- Cretan merchants, 276
- Crimean transport amphorae, 8
- Cromir of Bosnia, 261
- Crow, James, 54n21
- Crusades: First Crusade, 134, 304n14, 305, 308n27; Second Crusade, 134, 298; Third Crusade, 130n28, 132, 134, 301; Fourth Crusade, 243, 264, 265, 270, 421n140; Almissan pirates, preaching of crusade against, 263; Antioch, Norman Principality of, 298–300, 301, 304–6, 308n27; Asia Minor, regional networks in, 149; Byzantine glazed ceramics and, 212, 213, 214, 216; distinctive material culture, crusader states’ lack of, 306; Hattin, Battle of (1187), 305; Syrian annual fairs and, 286, 291
- Cuba, non-market economy in, 433
- currency. *See* monetization of economy; coins
- Cyprus: amphorae from, 46; Byzantine glazed ceramics from, 212–14, **213**, **214**, 216; changes in local and regional exchange in seventh and eighth centuries, 8, 105, 108, 111, 116; Red Slip Ware, Cypriot, 104, 105, 107; weighing and measuring in, 394
- Cyrene, **343**, 344, 350
- Cyril (Constantine), Apostle to the Slavs, 59–60

- Dagron, Gilbert, 54n21  
daily life in the marketplace, 399–426; pictorial evidence of, 340, 359, 360, 364–65, 402–7, 403, 405, 406; shopping, as social and daily life in the marketplace, *continued*  
cultural experience, 362–65. *See also* physical shops and marketplaces; transport of goods; weighing and measuring
- Dalmatia, Adriatic trade of. *See* Adriatic trade networks in twelfth and thirteenth centuries
- Damascus, annual fairs at, 289, 292, 293, 294
- Dandolo, Andrea, 246n53–54
- Dark-on-Light Slip-Painted Ware, 198, 199
- de Lig, Luuk, 4, 126n6, 289, 292
- De velitatione*, 166n91
- Decker, Michael, 1, 44, 125
- demand: “abundance” and “dearth” in Byzantine writings as proxies for concept of, 57; Anatolia, environment of vigorous supply and demand in, 177–78; Byzantine glazed ceramics meeting market demand, 214–16; changes in local and regional exchange in seventh and eighth centuries, 101–3; in Greece and the Peloponnese, 138, 142–43; modern economic theory, supply and demand in, 432; regular trade of goods, incentives for, 147–48
- Demetrias, 135, 138
- Derardo, Giuliano, 274
- Develtos, 128
- Diaporit, 105
- Didymoteichon, 134
- “Digenes and the Girl” Champlévé plate, 144, 144
- Diocletian (emperor), Price Edict of, 23, 69, 71, 77
- Divine Institutes* (Lactantius), 365
- documentary evidence, 6–7; for Adriatic trade networks in twelfth and thirteenth centuries, 240–41, 246; almanacs as evidence of Syrian annual fairs in Islamic period, 283–85; of changes in local and regional exchange in seventh and eighth centuries, 114–18; on Northern Italy in eighth century, 220–22, 223; of physical shops and marketplaces, 340. *See also specific texts and documents*
- dolia*, 74, 76, 358, 374
- Domenico of Chioggia, 251
- Domergue, Claude, 17
- Domitian (emperor), 336
- Donatus of Uzalís, 57–58, 76n131
- Dor G shipwreck, 409
- Dorin, Rowan W., 5, 6, 235, 441
- Doughty, C. M., 313
- Dramont E wreck, 42, 43n34
- Dressel 20 amphorae, 67, 91n203
- Ducellier, Alain, 274n262
- Dūmat al-Jandal, annual fair of, 281
- Dumbarton Oaks amphora, 309
- Duncan-Jones, Richard P., 414
- Dunn, Archibald, 140
- Dura-Europos, 349
- Durak, Koray, 126
- Durazzo: extra-Adriatic trade, 264, 269, 270; intra-Adriatic trade, 253n109, 254–55, 256, 259, 278; Venice and, 243, 247, 270, 274
- Durliat, Jean, 20
- Eberulf of Tours, 37
- economic concepts of trade and markets, 429–36
- economy, Byzantine. *See* market economy, concept of; trade and markets in Byzantium
- Edessa, 340
- Edwards, Robert, 301n7, 306n21
- Egypt: Adriatic trade with, 266, 267n207; Antioch’s economic links to, 300; imitative amphorae from, 47–48, 48; Serapeion, official weights and measures kept in, 383
- Eirene (empress), 117, 127–28
- Eisner, Robert, 432–33
- El Mahrine, 73n105, 73n109
- Elaborate Incised Ware, 207–8, 208, 215
- Elaiussa Sebaste, 345
- Eleutheropolis, 286, 293, 294
- Elousa, 69, 72
- Emesa, 339, 340, 341, 349, 351, 355, 357, 360, 362
- Empereur, Jean-Yves, 46
- emperors and empresses, weights in shape of busts of, 417–21, 418–21
- Das Eparchenbuch*, 87–88n189, 390n65, 391
- Ephesos: annual fair at, 116, 121; city walls, 162–63n81; physical shops and marketplaces, 353, 354, 355, 356, 358, 359, 361; road network in Asia Minor and, 152, 153, 157
- Epiphanius of Salamis, 286, 287n40, 293, 414
- Epiros: Despotate, in Adriatic trade, 254, 255n121, 267, 269–70; monastery of Molyvdoskepasti at, 210; procession of Hodegetria icon in Constantinople, Blacheritissa narthex painting of, Arta, 404–6, 405. *See also* Durazzo
- Erdkamp, Paul, 24
- ergastēria*, 347–50
- Eski Manyas, 161, 162
- estate economy and market economy, 21–23, 102–3
- Euchaita, 105, 106, 116, 121, 185n42
- Euripos, 139, 140, 141
- evidence for trade and markets in Byzantium, 5–7, 51–98; amphorae, 60–77 (*See also* amphorae); archaeological sources, 5–6; barrels as transport containers, 73, 74–76, 91–94, 186; ceramics (*See* ceramics); documentation (*See* documentary evidence); “market,” polysemantic meanings of, 51–54, 97; mental disposition towards markets and modes of economic behavior, 54–60; ships and shipwrecks, 77–97 (*See also* maritime trade; shipwrecks)
- exchange, as economic function, 429–30
- Expositio totius mundi*, 56–57, 64n70, 87
- Expulsion of the Merchants from the Temple, depictions of, 406, 406–7
- fairs. *See* annual fairs or markets; Syria, annual fairs in
- Fano, 244–45, 252n105, 271
- Farmer’s Law, 93
- Fazio, Bartolomeo, 275
- Fees, Irmgard, 273n253
- Fermo, 248, 254, 259

- Filasṭīn, 7, 285–87, 290–94, 296, 319, **321**
- Filippo di Albiola, 270
- Fine Sgraffito Ware, 142, **142**, 143, 144, **145**, 198–99, **199**, 200, **201**, 207, 212
- Finley, Moses, 3, 13, 17, 24, 125, 429
- First Crusade, 134, 304n14, 305, 308n27
- Fiumicino 12 wreck, 90n200
- flat-bottomed amphorae, 43n35
- Flavius Eutolmios, 384
- Flavius Cresconius Corippus, 37, 54n17, 387
- Flexo, Ingo de, 273
- fora, shops associated with, 336, 341, 342, 345–46, 347, 351, 352, 370–72
- Formulae Salzburgenses*, 59n48
- forum rerum venalium*, 15, 17
- Forum Ware, 227n30
- Fos-sur-Mer, 75
- foundax* of Rodosto (Raideostos), 391–92
- Fourth Crusade, 243, 264, 265, 270, 421n140
- François, Véronique, 205–6, 207–8
- Franken, Norbert, 409n71, 418, 421
- fraud and cheating: biblical statements regarding, 387n42, 416, **417**; counterfeiting coins, 388, 391; perception of swindlers, 423–26, **425**, **426**; practice, detection, and punishment of, 387–91, **390**, 410–11, 416–17; protective devices against, in decoration of weighing instruments, 416–23, **418–24**
- Frederick Barbarossa, 130n28, 132, 134, 268
- Frederick II of Sicily, 247, 249, 263, 266
- Frontinus, 76
- Fulford, Michael, 9
- fullonicae*, 339, 350, 352, 357, 358
- Gabričević, Martin, 413
- garbellatura*, 396
- Gardiki, 140
- Garnier, N., 62n61, 66n80, 73n108
- Gates, Marie-Henriette, 305
- Gaul: barrels from, 93; *Expositio totius mundi* on prices in, 56; Gaza wine imported to, 37, 68n83, 69n93, 77, 87; political situation and economic demand in, 87
- Gaza: fairs at, 291, 294, 340; North Syrian (Gaza wine) amphorae, 5, 34, 67–68, 68n83, 69, 326; physical shops, 340, 341; wine from, 5, 36–38, 53–54, 64–65, 77, 87
- Gelichi, Sauro, 5, 219, 435, 441
- Genoa, 206, 261n170, 273, 276, 307, 393
- Geoponica*, 169
- St. George, annual fairs in Syria on feast day of, 286, 287
- Gerasa. *See* Jarash/Gerasa
- Gering, Axel, 346
- Gesta apud Zenophilum*, 76n132
- Ghaly, Holeil, 47
- Giros, Christophe, 383n24, 391n76, 396
- glass: in Antioch, 304; China, Roman exports to, 104–5n22; Corinth as production center for, 143; physical shops dealing in, 350, 357, 357n140, 359, 365; raw materials, trade in, 17–18
- globular amphorae, 6, 228n33
- gods, goddesses, and personifications, weights in shape of, 420–22, **421**, **422**
- Goitein, Shelomo D., 276n279
- Göksu (Kalykadnos) Valley, 107
- gold currency market, 16
- Gradenigo, Domenico, 272, 273
- grain supply: *annona*, 15, 20, 49, 52, 53n16, 61, 65n76, 96; nonproducers, requirements for, 174; Rome, wheat prices and distance from, 430–32, **431**
- Gratian (emperor), 385
- Gratianou ceramics, 211, **212**
- Graufesenque, la, 18
- Grazel B shipwreck, 410
- Green and Brown Painted Ware, 142, 143, 144, 203, 212
- Greene, Kevin, 17
- Gregoras, Nikephoros, 394
- Gregory I the Great (pope), 387n42
- Gregory the Decapolite, 127n13, 135
- Gregory of Nazianzus, 407n2
- Gregory of Tours, 36, 37, 69n93, 290n67
- Grierson, Philip, 3
- Günsenin 3/Saraçhane 61 type amphorae, 138
- Günsenin, Nergis, 73, 77–78n144
- Hadrian (emperor), 383
- Hadrumetum, **62**, 357
- hajj* and annual fairs in Syria, 281
- Haldon, John, 6, 99, 126, **435**, 441
- Halmyros, 8, 138
- Hama treasure, 416
- harbors, silting of, 91
- Harris, Anthea, 349, 359
- Hārūn al-Rashīd, 59, 292
- Ḥattīn, Battle of (1187), 305
- Hayes, John W., 194, 229
- Heliopolis, 93
- Henchir Ech Chkaf, amphorae from, 47
- Hendy, Michael, 3, 132, 133n37, 137, 145
- Henry VI Hohenstaufen, 266
- Heraclius (emperor), 65, 109, 110, 111
- Herakleia, 129, 134
- Hero of Alexandria, 76, 93
- Herodian, 75n126
- Heroninos archive, 21
- Hesiod, 78
- Heyd, Wilhelm, 6, 302n9
- Hierokles, 158
- Hilarion of Gaza, 341
- Hishām (caliph), 314n19, 321, 322, 326
- Hodges, Richard, 235
- Honorius (emperor), 15, 385, **386**
- Honorius II (pope), 263
- Hopkins, Keith, 3
- Horden, Peregrine, 2, 239–40
- horreiariorum*, lead seals of, 129
- horse prices, Ibn Baṭṭūṭa on, 431–32
- Hugh of Provence, 227n32
- al-Īṭākhri, 292
- Ibn al-Athīr, 302n11
- Ibn Bahlūl, 283–89, 290n68–70
- Ibn Baṭṭūṭa, 302n11, 431, 432
- Ibn Buṭlān, 303
- Ibn Ḥabīb, 281n2
- Ibn Ḥawqal, 292, 303
- Ibn Hishām, 291n75
- Ibn al-Iskandar, 276
- Ibn Khurradādhbih, 296n109
- Ibn Māsawayh, 283–87, 294
- Ibn Saʿīd, 300n6

- al-Idrīsī, 133, 134, 137n66, 139, 260n161, 266, 268, 269, 303–4
- Ignatios the Deacon, 102n12, 115
- imperfect and perfect markets, 432
- Incised Sgraffito Ware, 142, 143, 144, 144, 203, 203–4, 204, 212, 213
- Incised Ware, 143
- informal markets and market events, 53, 87–89
- Innocent IV (pope), 253
- instrumental mode of economic behavior, 55, 57, 59, 60, 78, 97
- international exchange differentiated from regional and interregional trade, 125–26
- interregional exchange: defining, 4, 5, 99, 125, 126, 147, 434; fairs, interregional, 290, 293; scholarly interest in, 311–12
- Iol Caesarea, 336, 360
- Isidore of Seville, 29, 36
- Isis shipwreck, 81–82n169
- Iskandil Burnu I wreck, 82n170
- Islam: Seljuk Turks, arrival of, 149, 180. *See also* Arab Muslim conquests
- Israel, Y., 69n88
- Istria, Adriatic trade of. *See* Adriatic trade networks in twelfth and thirteenth centuries
- Italian majolica workshops compared to Byzantine glazed ceramics, 215
- Italian merchants: Norman Principality of Antioch and, 304–9; weighing and measuring, international trade affecting, 392–94. *See also* Adriatic trade networks in twelfth and thirteenth centuries; Northern Italy in eighth century; *specific cities in Italy*
- Jacoby, David, 308
- James, Liz, 419–20
- Jarash/Gerasa: coins and ceramic finds, 314–18, 320, 322; Jerash Bowls, 4, 314, 314–15, 316, 317; physical shops and marketplaces, 7, 326–29, 327–28, 334, 342, 358, 362
- Jazīra, annual fairs of. *See* Syria, annual fairs in
- Jerash Bowls, 4, 314, 314–15, 316, 317
- Jerusalem: annual fair in, 287, 291, 292, 294; shops in, 334
- jewelry found at Amorion, 190–91, 191
- Jews: Cairo Genizah documents, 55, 80, 93, 275–76; as coppersmiths, 352, 356; at fairs, 287n50, 294; as glassmakers, 304, 363, 365; in maritime trade, 41, 296n109; as shopkeepers and artisans generally, 363; travel limitations, 314; wine intended for Jewish communities, 38
- John the Almsgiver, 37, 40, 54n17, 87n189, 386
- John Chrysostom, 60n52, 78, 340, 350, 355, 356, 363, 364, 365, 379, 388n48
- John of Damascus, 78, 79n153
- John of Ephesos, 54n18, 420
- John of Jerusalem, 88n189
- John Malalas, 93, 342
- John Mauropous, 148n43
- Jones, Hugo, 3
- Julian the Apostate (emperor), 37, 339, 340, 383n24
- Julian of Askalon, 335, 339, 351, 357
- Justin I (emperor), 318
- Justin II (emperor), 37, 39, 54n18, 162n81, 318, 320
- Justinian I (emperor), 37, 96n227, 150, 318, 364, 385, 422
- Justinianic Code, 335
- Kaisaropolis, 130
- Kalenderhane, 109
- Kalykadnos (Göksu) Valley, 107
- Kalyvia Kouvara, Attica, Last Judgment scenes from Church of St. George in, 425
- Kamniates, 136n56, 136n59
- Kapitän 2 amphorae, 62, 62–63, 63
- Karkinelos, 387–88, 424
- Kastamonu, 190
- Kastellorizo shipwreck, 144, 144, 201–5, 203, 204, 207, 214
- Kastoria, Panaghia Mavriotissa in, 425–26
- Kastron Mefā'a (Umm al-Raṣās), 7, 322–25, 324, 325
- Kaupang, Norway, beach market in, 53n11
- Keay type amphorae, 42, 66, 77n139
- Kekaumenos, 138, 148, 387, 424–25
- Kellia, amphorae from, 47, 48
- Kellis, 22
- Kennedy, Hugh, 333
- Khirbat Susiyah, 324
- Kılıç Arslan (sultan), 407
- Kilistra, 167, 168
- Kinet, 305, 307, 308–9
- Kingsley, Sean, 1, 125
- Kinnamos, John, 268
- Kissufim mosaic pavement, 71–72, 72
- Kitāb 'Ajā'ib al-Makblūqāt* (“Cosmography” of al-Qazwīnī), 284–86
- Kitāb al-Azmina* (“Book of Times” of Ibn Māsawayh), 283
- Kitāb al-Azmina wa-l-Amkina* (“Book of Times and Places” of al-Marzūqī), 283
- Kitāb al-Dalā'il* (“Book of Signs” of Ibn Bahlūl), 283
- Knights Templar, 301, 302n11, 305, 306, 308
- Koder, Johannes, 1, 5, 147, 389n62, 391, 435, 442
- Kolossai, 166
- Komani-Kruja culture, 119
- kommerkiarioi*, lead seals of, 112, 112–14, 115, 128, 148n9, 150, 189
- kommerkion* (tax), 392, 395
- Konstantinos Alanos treasure, 199, 201
- Kotor, 258, 261
- Koutales, George, 387, 423–24
- Kruit, Nico, 69n86
- Kubitschek, Wilhelm, 385
- Kyzikos, 159, 162
- Lactantius, 365
- Laiou, Angeliki, ix, 2, 3, 6, 8, 13, 125, 129n26, 148, 236n4, 392n80, 434, 435, 442
- Lake of Nicaea, agrarian productivity of land around, 156–57
- Lake Tatta, agrarian nonproductivity of land around, 156–57, 158
- Lane, Arthur, 299–300n4, 306
- Lane, Frederic C., 277n285
- Lang, Mabel, 44n40
- Laodikeia, 167, 297–99, 304–5, 333

- Last Judgment scenes, swindlers portrayed in, 425–26
- Late Roman (LR) 1 amphorae, 19, 29, **29**, **31**, 32, 41, **41**, 42, 45–46, **46**, 47–48, **48**, 64–65, 66n78, 68n82, 77n139, 80n163, 82n170
- Late Roman (LR) 2 amphorae, 19, **29**, 34, 66n78, 68n82, 96, 97n230, 228n33
- Late Roman (LR) 3 amphorae, **29**, 34n12, 77n131
- Late Roman (LR) 4 amphorae, 19, **29**, 32, **34**, 42, 47, 64, 68n82–83, 69n88, 71, 77n139
- Late Roman (LR) 7 amphorae, **29**, 45, 46, 48
- Late Roman (LR) 9 amphorae, 6, 63
- Late Roman (LR) 13 amphorae, 65n76
- Late Roman Coarse Wares (LRCW), 4
- Lavan, Luke, 7, 333, 442
- Lazaros of Galesion, 187n46
- lead glazing technique in Byzantium, emergence of, 194
- lead seals. *See* seals
- Lefort, Jacques, 148
- Lemerle, Paul, 133n37
- Leo III (emperor), 110, 117
- Leo IV (emperor), 156n48
- Leo VI the Wise (emperor), 21, 391
- Leo of Synada, 53n15, 184
- Leontius of Neapolis, 87–88n189, 364, 365, 386n39, 391n69, 401n15
- St. Leucius, *Vita* of, 253n106
- Levanto, Ugolino da, 276
- Levi, Doro, 402
- Lex Rhodia* (Rhodian Sea Law), 94, 96, 276
- Libanius, 340, 341, 348, 353, 359, 363, 364, 402
- Liber Communis*, 247, 250n88–90
- Liber Syro-Romanus*, 335
- Licinius (emperor), 93
- Lightfoot, Christopher, 5, 6, 109n39, 177, **435**, 442
- Limestone massif, villages of, 5
- Limyra, 107, 163n88
- Lipefina, Manolesso, 275
- literacy and books in Amorion, **188**, 188–89
- liturgical wine, 37, 415, 416
- Liutprand Capitulary, 220–21, 231
- local exchange: changes in seventh and eighth centuries, 99–122 (*See also* changes in local and regional exchange in seventh and eighth centuries); defining, 4–5, 99, 147, 434; fairs, local, 289
- Location Theory of land use and development, 171
- Longobards in Northern Italy. *See* Northern Italy in eighth century
- Lopadion, 161, **161**
- Louis the Pious (Frankish ruler), 58, 227n32
- Low-ring Base Ware, 205
- Lower Po Valley. *See* Northern Italy in eighth century
- LR amphorae. *See entries at* Late Roman
- Lunt, Horace, 59n49
- Luzzatto, Gino, 244
- macella, 342–44, **343**, **345**, 346
- Magdalino, Paul, 391n76
- majolica workshops of Italy compared to Byzantine glazed ceramics, 215
- Malatesta family, 271, 276
- Manfred of Sicily, 246, 249, 250, 251, 259, 260
- Manganaro, Giacomo, 385
- Mango, Marlia Mundell, 148, 333
- Mantzikert, Battle of (1071), 149, 180
- Manuel I Komnenos (emperor), 264, 268, 407
- Mar Saba, 78
- Marcello, Filippo, 273
- Marcus Aurelius (emperor), 355
- Marignoni, Gabriele, 272
- maritime trade: antique connection between commerce and the sea, 78–79; in Balkans, 127, 135, 137; distortions caused by overemphasis of, 177, 184, 190; heterogeneity of cargo, 80; importance of, 177; overall economic networks, relationship of sea routes to, 85–87; regional/interregional distinction blurred in, 5; short-distance deliveries by ship, 77–78. *See also* Adriatic trade networks in twelfth and thirteenth centuries; shipwrecks
- Mark the Deacon, 53n16
- market economy, concept of, 2–4, 13–26; conceptual awareness of market prices and economic processes, 15–17, 54–60; criteria for, 14–15; economic life in absence of, 433; estate economy and, 21–23; low-cost artifacts and raw materials, trade in, 17–19; modern economic theory and, 429–30; “modernist,” “primitivist,” and “anti-primitivist” views of, 2–3, 13–14, 125, 429; monetized versus “natural” or barter system, 22–23; moral restraints on commerce, absence of, 17; professional craft associations, Roman versus medieval, 21; state intervention in economy, 20–21; technological innovation for commercial purposes, existence of, 17–19; unified currency market and regionally integrated commercial markets, 16; world-empire versus world-economy, 14, 21
- marketplaces. *See* agorai, physical shops and marketplaces
- St. Markianos, *Life* of, 387
- Marlière, Élise, 74n118
- Marmara Coast, wines of, 73, 77
- Marseille, 30–31, 77, 87
- Martin, J.-M., 266n197
- al-Marzūqī, 283–88, 290n68
- Maslama, 163
- Maurice, *Strategikon*, 76
- Mauricius Tiberius (emperor), 227n32
- Mauss, Marcel, 3
- Maximian (emperor), 23
- Maximinus (emperor), 75
- Maximus of Hispania (usurper), 380
- Mayer, Hans Eberhard, 299n4
- McCormick, Michael, 2, 6, 8, 51, 219, 235, 251n97, 433–34, **435**, 442
- Measles Ware, 143, **143**
- measuring goods. *See* weighing and measuring
- Mecca, 281
- medicine: Amorion, medicinal plants from, 188; wine, medicinal use of, 36–37



- Mefalsim, 69  
Megalopsychia Hunt, Yaktō mosaic depicting, 340, 349, 350, 353, 357, 359, 360, 402, **403**  
Megaw, A. H. S., 205  
Melenikon, 210  
Melitoupolis, 162  
Mesembria, 110, 126, 128  
metal, ore, and mineral trade, Adriatic, 261–62, 279  
metalwork: Amorion, found at, 190–91, **191**; Byzantine glazed ceramics based on, **196**, 196–97, metalwork, *continued*  
**197**, **199**, 200–201, **202**; Byzantine glazed ceramics departing from, 205  
Metcalf, Michael, 305, 318  
Methone, T'ang marbled ware vessel found at, 102  
*metron*, 415–16, **416**  
Meyer, Eduard, 13n4  
Michael III (emperor), 179, 180–82n13  
Michael IV (emperor), 129  
Michael VII (emperor), 391  
Michael VIII (emperor), 396–97, 396n108  
Michael Psellos, 156n47  
Michiel, Vitale II (doge of Venice), 246  
micro-ecological variation in Adriatic coastline, 239–40, 246, 254, 279  
Migeotte, Léopold, 26  
Mijuškovi, Slavko, 258n141  
Mikro Pisto ceramics, **211**, 215  
Miletos, 162, 163–66, **165**  
Milvian Bridge, Battle of (312), 417  
mining activities: in Balkans, 261–62, 279; fuel and mining in Cilicia, relationship between, 300  
*Miracles of St. Stephen*, 57n37  
Mirnik, I., 130n26  
“modernist” view of Byzantine trade and markets, 2–3, 13–14  
*modios*, 410–11, 416, **417**  
Mokisos, 150–51, **151**, **152**  
Molfetta, 257, 258, 259  
Molin, Pietro da, 270, 274  
Monemvasia, 127  
monetization of economy, 22–23; Asia Minor, regional networks in, 147; Balkans, regional networks in, 129; changes in local and regional exchange in seventh and eighth centuries, 22–23  
money. *See* coins  
money changers, 387, 391, 406–7  
Monica (mother of Augustine of Hippo), 76  
Monochrome Glazed Ware, 231n41, 304n14  
Monopoli, 258  
Monte Testaccio, Rome, amphora dump at, 67  
Morel, Jean-Paul, 18, 25  
Morelli, Federico, 22, 26  
Morgan, Charles H., II, 143  
Morley, Neville, 3, 434  
Morosini, Pietro, 270  
Morrison, Cécile, ix, 9, 379, 429, 434–36, 442  
Moselle Valley, wines of, 73  
Mosynopolis, 130, 133, 211, **212**  
Mouchasos the camel driver, 401  
Mount Athos, Protaton church, Expulsion of the Merchants from the Temple, **406**  
Mount Ganos, 73, 77  
*muda*, 249  
Muḥammad's encounter with Baḥīra at Syrian fair, 291  
al-Muqaddasī, 292, 293, 294  
murex shells, 140  
Muslims: Seljuk Turks, arrival of, 149, 180. *See also* Arab Muslim conquests  
Mysia, **159**, 159–61  
Nag Hammadi, camel-shaped bottle from, 70–71, **71**  
Naḥal Bohu, 69  
Narentari pirates, 263  
“natural” or barter economy, 22–23  
Neapolis, 68  
Nessana papyri, 316n27  
Nicaea, Lake of, agrarian productivity of land around, 156–57  
Nicaea, Second Council of (787), 115–16  
Nicholas, “*metrētēs* of the Phylax,” 389  
Nicolo da Lacroma of Ragusa, 271  
Niewöhner, Philipp, 151n28, 163, 173  
Nikephoros I (emperor), 115, 292  
Nikephoros II Phokas (emperor), 180  
Nikephoros (patriarch of Constantinople), 163  
Niš, *xestēs* from, 412–13  
Nonantola, excavation of monastery of, **232**, 233  
Normans, in Mediterranean, 137, 246, 265, 397. *See also* Antioch, Norman Principality of; Sicily  
North Syrian (Gaza wine) amphorae, 5, 34, 67–68, 68n83, 69, 326  
Northern Italy in eighth century, 219–33; amphorae, **225**, 228–31, **229**, **230**; documentary and archaeological evidence regarding, 220–22, **223**; Nonantola, excavation of monastery of, **232**, 233; trade relations of, 220–22, 230–33; Venice, eventual flourishing of, 219–20, 231, 232–33. *See also* Comacchio  
Notker the Stammerer, 60n53  
numismatics. *See* coins  
Odo of Cluny, 59n44  
Odoacer (king of Italy), 66  
Ohthere (Scandinavian trader), 58n38  
Oikonomides, Nicolas, 128n18, 148n9, 389n56, 395, 405  
oil. *See* olive oil  
Olbia ships, 84n176  
Old English Orosius, 58n38–39  
olive oil: African oil gathered for export at Carthage, 53n16, 61, 65; in bladders, 65, 120; ceramic industries and production of, 73; Chian amphorae, flavored oils transported in, 61; liquid measures for, 412–16, **413**, **415**, **416**; from Sparta, 138, 139, 143  
Orbikon the camel driver, Kissufim mosaic pavement, 71–72, **72**  
Oribasius, 37  
Orseolo, Pietro II (doge of Venice), 263  
Ostia: *modios*, depiction of, 411n79; physical shops and marketplaces, 334, 342, **345**, 346, 349, 353, 357, 358, 359, 361, 362, 364; wine amphorae, decline in, 92  
Otranto, 105, 253, 266  
Otranto, Strait of, 236, 265  
overland trade: amphorae, shipment of, 69–73, 70–72, 120–21; in Bal-

- kans, 118–19, **119**, 127–28, 135–37; changes in local and regional exchange in seventh and eighth centuries, 118–21, **119**, **120**; Constantinople, overland route from Dalmatian ports to, 269–70, 279; inland sites, importance of, 177–78, 182–83; pack animals and wheeled vehicles, 120, 155, 313, 401. *See also* roads
- Oxyrhynchos papyri, 16, 19, 55
- Pacatus, 380
- pack animals, 120, 151, 313, 401
- Pag, island of, 251, 255
- Painted Fine Sgraffito Ware, 142, **142**, 200
- Pakourianos, Gregory, estates of, 130–35, **132**
- Palace Ware, **316**, 316–17
- Palaia, 162
- Palestine. *See* Syria-Palestine
- Palestinian Fine Ware, 4, **315**, 315–16
- Palladas, 379
- Palmyra, 7, 322, 336, 362
- Palud, La, shipwreck, 409–10
- Panella, Clementina, 9
- Panidos, 134
- Papanikola-Bakirtzi, Demetra, 5, 8, 144, 193, **435**, 442
- Paphlagonia, 8, 107, 115, 171, **173**, 190
- Parastaseis syntomoi chronikai*, 387–88, 410, 424
- Parion, 159
- Parker, Anthony J., 8, 39, 79, 81, 84, 90n197
- Patara, 353, **354**, 362
- Patlagean, Évelyne, 3, 333
- Patria*, 352, 388n46, 411n78
- Paul of Aegina, 36
- Pefkos wreck, 82n170
- Pegai, 159–60, **160**
- Pegolotti, Francesco Balducci, 379, 392, 395n107, 396
- Pelagonisi shipwreck, 144, **145**
- Pelagonesos-Alonnesos shipwreck, glazed ceramics from, 200–201, **201**, 214
- Pella, 7, **316**, 318, 320, 322, 326
- perfect and imperfect markets, 432
- Pergamon, 162–63, **164**, 166, 211–12, 215
- Perge, 339, 353
- Peritheorion, 130, 133, 134
- Persian wars: amphorae, production and export of, 31, 32; dissolution of Mediterranean community and, 148–49
- Pesaro, 245
- Peschlow, Urs, 194
- Phaselis, 345
- Philagrius, 363
- Philippikos (emperor), 110
- Philippopolis, 128, 129, 130, 133, 134, 135, 136
- Philotheos, 389
- Phocas (emperor), 110, 419
- Photius (patriarch of Constantinople), 60, 78
- physical shops and marketplaces, 7, 333–77; accounting practices, 326–29, **329**, 433; amphorae, storage, organization, and sale of contents from, 66–67, **67**, **68**; archaeological evidence, appendix of, 366–77; architecture of, 353–55, **354**; building and repair of, 361–62, 366–68, 372–75; coin evidence of, 326, 327, 330, 336, 360; commercialization of city centers, 7, 333–36; decoration of, 355–56; documentary evidence of, 340; evidence for, 52–53; goods and services sold in, 325–26, 340–41, 350–51; as houses, 359–60; internal organization of, 356–59; laws and regulations regarding, 334, 335–36, 351, 357, 361–62, 364, 366; location and distribution in urban settings, 351–52; market buildings, 335, 341–47, **343–45**, **347**, 366–69; objects from, 325–26, 359–60; permanent retail establishments, defining and identifying, 347–50, **348**, **354**, 360; pictorial evidence of, 340, 359, 360, 364–65, 402–7, **403**, **405**, **406**; portico mosaics, 356, 360; regulated market stalls, 336–41, **337**, 407; restaurants, 357, 364; shopkeepers, 362–63; shopping, as social and cultural experience, 362–65; street and industrial encroachments, 333–36, 357, 362, 375–77; Syria-Palestine, Byzantine and early Islamic,
- regional exchange in, 321–29, **324**, **325**, **327–29**; *topos* inscriptions, 334, 338–40
- Piccolpasso, Cipriano, 214
- Picon, Maurice, 18, 25, 46
- Pieri, Dominique, 5–6, 27, 62–63, 64, 91n203, 433, **435**, 442–43
- Pietro of Bari, 260–61
- pirates and piracy, Adriatic, 262–63
- Pirenne, Henri, 3, 6, 87, 219, 235, 294–95n100
- Pisa, 267, 269
- Pisidian Antioch, 358, 359, 360, 361, 383
- Pitarakis, Brigitte, 7, 379, 383, 389, 398, 399, **435**, 443
- pitthoi*, 76, 186
- plague: fourteenth century, 84, 89, 90; Justinianic, 8, 73n100, 90, 101, 151, 158, 169
- Plain-Glazed Ware, 212
- Plain-Sgraffito Ware, 212
- Po Valley plain. *See* Northern Italy in eighth century
- Poimanenon, 161–62, **162**
- Polanyi, Karl, 3, 429, 430
- Pompeii, 75, 336, 341
- population density in Asia Minor, 149–51, **151**, **152**, 171–73, **173**, 174
- Porphyrius of Gaza, 53n16
- Port Saint Symeon, 297–99, 300, 304, 305, 309
- Port Saint Symeon Ware, 6, 214, 216, 304n15, 306–9
- post markets, 53–54
- Potter, Timothy W., 336
- pottery. *See* ceramics
- Preslav, 129
- Presthlavitz, 129
- prices and pricing: conceptual awareness of market prices in Roman world, 15–17, 58–59, 430; Diocletian, Price Edict of, 23, 69, 71, 77; *Expositio totius mundi* on, 56–57; increases and decreases in, 52; modern economic theory and, 430–32, **431**; price controls, Roman efforts at, 23
- Prilongion, 130, 133
- “primitivist” view of Byzantine trade and markets, 2–3, 13–14, 125, 429
- Pringle, Denys, 213, 306
- Procopius, 118n79

- producer cities versus consumer cities, as historiographical concept, 24
- professional craft associations, Roman versus medieval, 21
- prostitution, association of taverns with, 364
- Protaton church, Mount Athos, Expulsion of the Merchants from the Temple, 406
- Pryor, Frederic, 2, 429–30
- Psellos, 380
- Pseudo-Fulgentius of Ruspe, 53n13
- Pseudo-Lucian, 137n67
- Pseudo-Macarius/Symeon, 52n35
- Ptochoprodromos, 405n41
- Puglia, 249
- Purcell, Nicholas, 2, 239–40
- al-Qazwīnī, 284, 285, 286
- Ragusa: extra-Adriatic trade, 264, 266–67, 269, 270; inter-Adriatic trade, non-Venetian, 254–63 *passim*, 278; Venice, trade with, 239, 240
- Raidestos (Rodosto), 128, 130, 134, 391–92
- Rathbone, Dominic, 21–22
- Ravenna, 66, 117, 239–40, 248, 251, 253, 258, 259
- Recanati, 248
- reciprocity, as economic function, 24–25, 429, 430
- Red Painted Ware, 4, 316, 316–17, 317
- Red Sgraffito Ware, 144n122
- Red Slip Ware: African (ARS), 9, 73, 106, 190, 368, 370, 375, 376; Cypriot, 104, 105, 107
- Redford, Scott, 5, 213, 297, 435, 443
- redistribution, as economic function, 429, 430
- regional exchange: Adriatic trade networks, 6, 8, 235–79 (*See also* Adriatic trade networks in twelfth and thirteenth centuries); in Asia Minor, 8, 147–75 (*See also* Asia Minor, regional networks in); in Balkans, 8, 125–46 (*See also* Balkans, regional networks in); changes in seventh and eighth centuries, 99–122 (*See also* changes in local and regional exchange in seventh and eighth centuries); defining, 4, 5, 125–27, 147, 434; fairs, regional, 289–90, 293; scholastic interest in, 235–36; in Syria-Palestine, 311–30 (*See also* Syria-Palestine, Byzantine and early Islamic, regional exchange in); value of studying, 311–12
- Reidt, Klaus, 163
- restaurants, 357, 364, 402
- retail shops. *See* physical shops and marketplaces
- Rhodes, wrecks off, 81, 83
- Rhodian Sea Law (*Lex Rhodia*), 94, 96, 276
- Rhosos (Cilicia), amphorae produced at, 46
- Ribe, Denmark, beach market in, 53n11
- Rice, David Talbot, 194
- Riley, John A., 28, 29
- Riley-Smith, Jonathan, 305, 306
- roads: in Asia Minor, 118–19, 120, 152–55, 153–55, 157, 162, 167, 167–68, 171; in Balkans, 127–28; changes in local and regional exchange in seventh and eighth centuries, 118–21, 119, 120. *See also* entries at Via
- Rodosto (Raidestos), 128, 130, 134, 391–92
- Roger II of Sicily, 139, 246, 266, 303
- Rome: barrels used for maritime imports to, 75–76, 92; Constantinople, as separate market from, 59; Ephesos as traditional connector to, 152; official weights and measures kept in temples of, 383; physical shops and marketplaces in, 341, 342, 350, 351, 355; shipwreck evidence regarding importance relative to Constantinople, 85–86; wheat prices and distance from, 430–32, 431
- Rossano Gospels, 340, 419–20n128
- Rostovtzeff, Michael, 2–3
- Roueché, Charlotte, 333, 339
- Rovinj, 257, 258
- Ruṣāfa (Sergiopolis), 5, 7, 289n61, 304, 321, 322
- Russell, James, 174
- Russo, Giovanni, 275
- Sabbato of Split, 260
- Sacra Parallela manuscript (Paris. gr. 923), 416, 417
- Sagalassos: continuation of monumentalized main avenues in, 334; decline in seventh century, 151n28, 183; local semifine and coarse kitchen wares, 8, 106, 108; physical shops and marketplaces in, 336–39, 337, 342, 349, 351–53, 355, 357, 359–62
- sailor-trader, combined occupation of, 275–77
- Saint-Gervais 2 wreck, 96
- Saliou, Catherine, 335, 340
- salt trade, Adriatic, 220, 239, 241, 250–51, 255–56, 259, 260, 271
- Salvo of Savona, 276
- San Salvatore a Brescia, 220
- Sanders, Guy D. R., 143
- Santamaria, Claude, 43n34
- Saqqara, amphorae from, 47, 48
- Saraçhane, 108, 111, 229
- Saraçhane 61/Günsenin 3 type amphorae, 138
- Saradi, Helen, 333, 335
- Sardinia, wrecks off, 83, 84n176
- Sardis: amphorae from, 34n12; inscription at, 21; physical shops at, 353, 355–58, 402n29, 408
- Sasanids. *See* Persian wars
- Sauvaget, Jean, 333
- Scala, Giacomo della, 251
- Schiavone, Aldo, 18
- seals: of *horreiarioi*, 129; of *kommerkiarioi* and *apothēkai*, 112, 112–14, 113, 115, 128, 148n9, 150, 189; on weighing instruments, 389–90
- Second Crusade, 134, 298
- sekomata* (measuring tables), 411–12, 412
- Seleukeia Pieria, amphorae produced at, 46
- self-sufficiency or *autarkeia*, 3, 21–22, 24, 122, 138, 147, 148
- Seljuk Turks, arrival of, 149, 180
- Selymbria, 134
- Serapeion, 383
- Serçe Limanı wreck, 80n163, 95, 410
- Sergiopolis (Ruṣāfa), 5, 7, 289n61, 304, 321, 322

- Serres, Byzantine glazed ceramics from, 209–10, **210**, 215
- Severian of Gabala, 78
- Sgraffito Ware: from Antioch, 304n14; Fine, 142, **142**, 143, 144, **145**, 198–99, **199**, 200, **201**, 207, 212; Incised, 142, 143, 144, **144**, **203**, 203–4, **204**, 212, **213**; locally made, 143; Painted Fine, 142, **142**, 200; Plain-Sgraffito Ware, 212; Red, 144n122
- Shatzman, I., 72n104
- shipbuilding industry, Adriatic, 260
- shipwrecks, 77–97; amphorae found in, 36; barrel remains found in, 75; cargo visibility, problem of, 94, 96–97; drop in number over time, 9, 39, **40**, **84**, 84–85, 90; future studies of, 8–9, 89–90; geodatabase study of, 80–89, **82–84**, **86**; independent sources, relating data to, 79–80; limitations of evidence from, 89–97; modern economic theory and, 433, 434, **434**; new discoveries, value of, 79; raw materials and low-cost goods, evidence of trade in, 17, 19; sinking rate and age of ships, 94–96, **95**; sizes and capacities of ships, inferences drawn from, 90–92, 93–94
- Shivta/Subaytah, 7, 69, 323–24
- shopkeepers' accounts, stone tablet with, 326–29, **329**, 433
- shopping, as social and cultural experience, 362–65
- shops. *See* physical shops and marketplaces
- Sicily: Adriatic trade and Kingdom of, 246–47, 249, 252, 253, 262, 264–65, 266; coin evidence from, 110–11; wrecks off, 81–83, 86
- Sidonius Apollinaris, 36
- sigillata, 18
- sigillography. *See* seals
- sigma plazas, 346–47, **347**, 361, 368–69
- silk textiles, 139–40, 187, 259, 270, 304
- Simeticulo, Leonardo, 263
- Sinope: amphorae from, 28, **30**, 47, 48; as commercial center, 115
- Sirkeci railway station, Istanbul, Byzantine glazed ceramic finds from, 194, 207, 208, 209
- skins or bladders used for transport of goods, 65, 120, 187, 401
- Skopelos bowls, 204n55
- Skopelos shipwreck, 144
- Skuldelev vessels, 95, **95**
- Skylitzes, John, 129n22, 389n61, **390**
- Skythopolis (Baysān): annual fair, 294; coins and ceramic finds, 314, 315, 318, 320, 321; physical shops and marketplaces, 7, 322, 325, 326, 328, 334, **344**, 346, 349, 350, 355–57, 359, 360, 361, 364
- slave trade: Adriatic, 251–52, 260–61; in eastern Mediterranean, 261n170, 302
- Slavic robbers in the Balkans, 127n13, 135
- Slip-Painted Ware, 142, 143, 203, 212
- Smith, Adam, 2, 379
- Sofia, 128, 134
- Sokoloff, Michael, 72n103
- Sombart, Werner, 24
- Sparta, 138, 139, 141, 143, 144, 200
- spatheia*, 42, 43n34
- spindle-shaped amphorae, 47
- Split, 258, 259, 263, 267n209
- spolia, use of: in Amorion, 180, 189; in Asia Minor, 151, 162n74, 168n99
- Spufford, Peter, 379
- Sravikion, 130, 133
- Saint-Bertrand-de-Comminges, 346
- Stagnario, Giovanni, 247
- Stagnario, Pietro, 251
- Standing Caliph coins, **320**
- state intervention in economy, 20–21
- staterae*, 382
- steelyards, 381–82, 407–10; amphorae, weighing of, 45, 87; with apotropaic devices, **423**; as archaeological finds, 408–10; beachside markets, use at, 53, 87–89; defined and described, 407–8; illustrations of, **381**, **382**, **408**, **410**, **411**; shipboard use of, 87–89
- Stenimachos, 130, 133
- Stephanos Byzantinos, 162n73
- Stephen, St., *Miracles* of, 57n37
- Stephen of Dioclea, 129n26
- Stern, Edna, 213
- stillaturae*, 15
- Subaytah/Shivta, 7, 69, 323–24
- Sulaymān b. 'Abd al-Malik, 286
- Sullecthum, 68
- superregional exchange. *See* interregional exchange
- supply and demand. *See* demand
- Svetoslav (Russian prince), 129
- swindlers. *See* fraud and cheating
- Symeon (tsar), 129
- Symeon the Fool, *Life* of, 339, 341, 356, 357, 360, 363, 365, 391n69, 401, 402
- Symeon Stylites, 355
- Synesius, 81n168
- Syria, annual fairs in, 6–7, 281–96; almanacs as evidence of fairs in Islamic period, 283–85; Christian saints' days and festivals, origins in, 286, 287–89; commodities exchanged at, 292; *hajj* and, 281; list of, 285–87; map of antique and medieval fairs, **282**; Muḥammad's encounter with Baḥīra at, 291; pre-Islamic cycle of, 281–83, 284; range, scope, timing, and duration, 289–93; timing of, 290; trade networks and, 293–96. *See also specific towns and fairs*
- Syria-Palestine, Byzantine and early Islamic, regional exchange in, 311–30; Arabic language, adoption of, 328–29; ceramics, 312n8, 313–17, **314–17**, 321; coins, 312n8, 317–21, **319–21**, 326, 327, 330; map of area, **313**; operation of shops, 325–29, **329**; physical shops and markets, 321–29, **324**, **325**, **327**, **328**
- tabernae*, 347–50
- Tadić, Jorjo, 264n187, 267n209
- Tafur, Pero, 404
- T'ang marbled ware vessel found at Methone, 102
- taverns, 7, 350, 357, 359, 364, 402–4
- taxation: border duties, 313n11; in cash rather than kind, 129; fairs, abolition of taxes during, 290; private collection system, 22;

- taxation (*continued*)  
 professional craft associations  
 and, 21; sales process, taxes associated with, 392, 394–97; of salt, 220, 250; surplus production and, 148; tax offices, 351n96
- Tchernia, André, 72n104, 86n183, 92
- Temin, Peter, 2, 9, 13, 26, 55, 57, 59, 60, 78, 97, 429, 443
- Terlizzi, 258
- Termoli, 254, 257
- Teutonic Knights, 266, 301
- textile and clothing production and trade: in Adriatic, 249–50, 259–60, 279; Antioch and Cilicia, 302, 304; market prices, concept of, 58–59; silk, 139–40, 187, 259, 270, 304; technological innovation in, 18–19; value of studying, 25; wool and cotton, 249–50, 260
- textual evidence. *See* documentary evidence
- Thamugadi, 335n15, 341, 342, 349, 358
- Thebes, 138–42, 145, 270
- Theoderic (king of Italy), 66
- Theodore of Sykeon, 117
- Theodoret of Cyrillus, 78–79n153, 294, 295n104, 355
- Theodoros Stoudites, 60, 155n41
- Theodosian Code, 334, 335, 361, 386–87
- Theodosius I (emperor), 15
- Theodosius II (emperor), 169, 352, 385, **386**
- Theophanes the Confessor, 116, 126n8, 129n21
- Theophanes Continuatus, 52n4, 114n56, 116, 129n22
- Theophilus (emperor), 52, 109, 180, **181, 390**
- Theosebius of Skythopolis, 350
- Thessalonike: Balkans, regional networks in, 127, 129, 135–37; Byzantine glazed ceramics from, **208, 208–9, 209**; changes in local and regional exchange in seventh and eighth centuries, 8, 109; Demetria (annual fair), 208; Serres ceramics found at, 210
- thick and thin markets, 432
- Thietmar, 291, 292
- Thignica, 346
- Third Crusade, 130n28, 134, 301
- Thrace: Balkans, regional networks in, 127–35, 145; Byzantine glazed ceramics from, **211, 212, 215**
- Tiberias Hoard, 191
- Tiepolo, Marco, 272
- timber and wood: Adriatic timber trade, 256, 260; Asia Minor, wood trade in, 147–48; mining and wood fuel in Cilicia, relationship between, 300
- Tommaso de Drogasse of Zara, 271
- Topkaplı, Roman road near, **154, 155, 155**
- topos* inscriptions, 334, 338–40
- Tor, Deborah, 72n103
- Touratsoglou, Ioannis, 137
- towns. *See* urban areas and trade
- Trajan (emperor), 267, 293
- Tralleis, 349, 350, 353
- Trani, 246, 265, 266, 275
- transfer, as economic function, 430
- transmarini negotiatores*, 41–42
- transport of goods, 401; barrels, 73, 74–76, 91–94, 186; bladders or skins used for, 65, 120, 187, 401; pack animals, 120, 151, 313, 401; wheeled vehicles, 120, 151, 313, 401. *See also* amphorae; maritime trade; overland trade
- transregional exchange. *See* interregional exchange
- Tremiti islands, monks of, 253, 271
- tria augustia* (standard weights with busts of emperors), 385, **386**
- Trier, 56, 87
- tripod stilts used in making glazed ceramics, 205, 207, 213, 215
- Triscina 3 wreck, 82n169
- Trogir, 258, 259, 270
- Tyche of Constantinople, weights possibly in shape of, 420–22, **421**
- Tzetztes, John, 391
- ʿUkâz, fair of, 281, 290n67
- Ulpian, 74n114, 75n125
- Umm al-Jimâl, 324–25
- Umm al-Raşâs (Kastron Mefâ'a), 7, 322–25, **324, 325**
- urban areas and trade: Asia Minor, settlement size, population density, and chronology in, 149–51, **151, 152, 171–73, 173, 174**; change and continuity in urban patterns of life, seventh to eighth centuries, 99–101; commercialization of city centers, 7, 333–36; common relationship between, 7, 8; consumer cities versus producer cities, as historiographical concept, 24; country and town, interplay of, 23–26; de-urbanization attributed to seventh century, 99, 171–73, **173, 177, 183–84**; grain supply requirements for nonproducers, 174; location and distribution of shops, 351–52. *See also specific cities and towns*
- Uyun Musa, amphorae from, 47, **48**
- Uzalis, wine from, 57–58, 76n131
- Valens (emperor), 15, 342, 385
- Valentinian I (emperor), 15, 385, 388, 410
- Valentinian III (emperor), 53n12, 75, 89
- van Alfen, Peter G., 44, 65n76, 80n163
- van Doorninck, Fred Jr., 65n76, 74n118, 80n163, 81n168, 96n223, 184n37
- Van Minnen, Peter, 19
- Vandals, 66, 83, 86, 334n8, 362, 376
- Venantius Fortunatus, 37
- Venice: Adriatic trade networks and supply of, 241–52, **243, 278, 279**; Balkans, commercial privileges in, **131, 133, 134–35, 137–41, 145**; *colleganza* contracts, 240–41, 264, 277; Constantinople, trade with, 264–65; documentary evidence of new settlements of seventh and eighth centuries in Venetian lagoon plexus, 221–22, **223**; Durazzo, Venetian colony in, 270, 274; extra-Adriatic trade, 263–70; famine of 1224–27, 243, 244, 247, 263; identity of traders and naucleri, 271–77; Northern Italy in eighth century and, 219–20, 231, 232–33; pirates and piracy, 263; shipping losses in, 94; slaves and slave trade, 251–52; Thessalonike, glazed ceramics from, 208, 209; Veronese currency as standard coinage of, 246n57; Zeuxippus Ware and, 206

- Vera, Domenico, 20  
 Verina (empress), 420  
 Veroe, 128, 130  
 Veronese currency as standard coinage of Venice, 246n57  
 Via Egnatia, 118n79, 119, 127, 211, 269  
 Via Militaris/Via Regia, 127, 128, 133  
 Via Nova, 293  
 Via Sebaste, 167, 167–68  
 Viadro, Tommaso, and Viadro family, 273–75, 275, 279  
 Vienna accounting papyri, 22–23  
 Vienna Dioscurides, 359  
*vinum populi Romani*, 15  
 Vitruvius, 341, 349  
 von Thuenen, Johann Heinrich, 171  
 Vorderstrasse, Tasha, 303n12, 305  
 Vroom, Joanita, 142  
 Vryonis, Speros, 21  
 Waalkens, Marc, 336  
 Waksman, Sylvie-Yona, 205–6, 213  
 al-Walid I (caliph), 322  
 Wallerstein, Immanuel, 13n4, 14  
 Walmsley, Alan, 4, 7, 73n109, 311, 433, 434, 435, 443  
 Ward-Perkins, Bryan, 333  
 Wartburg, Marie-Louise, 213  
 water power, 17, 130, 303, 304n14  
 wax seals. *See* seals  
 Weber, Max, 24  
 weighing and measuring, 7, 379–98, 407–26; amphorae and jars used for, 414–16, 415, 416; balance scales, 382–83, 384, 407–10, 411, 416, 417, 423, 424; biblical statements regarding, 387n42, 416, 417; counterfeiting coins, 388, 391; decoration of weighing instruments, 416–23, 418–24; dry and liquid measures, 410–16; in early Byzantine period (fourth to sixth centuries), 380–89; fraudulent (*See* fraud and cheating); international trade affecting, 392–94; in late Byzantine period, 392–97; *metron*, 415–16, 416; in middle Byzantine period (Leo VI to twelfth century), 389–92; *modios*, 410–11, 416, 417; money changers, 387, 391, 406–7; official controls on, 383–87, 389–91, 394; *sekomata* (measuring tables), 411–12, 412; *staterae*, 382; taxes associated with, 392, 394–97; in traditional images of merchants, 379, 380; *tria augustia* (standard weights with busts of emperors), 385, 386; weighing instruments, 381–83, 407–10 (*See also* steelyards); wine and oil, liquid measures for, 412–16, 413, 415, 416; *xestai*, 41, 54n21, 64, 384, 412–16, 417  
 wheeled vehicles, 120, 151, 313, 401  
 Whitehouse, David, 4  
 Wickham, Chris, 2, 233, 235, 311  
 Wikander, Örjan, 17  
 Wilkinson, Tony J., 303n12  
 William I of Sicily, 266  
 William II of Sicily, 246  
 William of Tyre, 302n9, 304n14  
 Wilson, Andrew, 341  
 wine: Adriatic trade in, 259; aged wines, market for, 57n36; Amorion, winemaking in, 184–87, 185–87; amphorae mainly used for, 36–39 (*See also* amphorae); in bladders or skins, 65, 120, 187, 401; from Gaza, 5, 36–38, 53–54, 64–65, 77, 87; liquid measures for, 412–16, 413, 415, 416; liturgical, 37, 415, 416; port markets for, 53–54  
 winepresses, 69, 73, 184, 185  
 wood. *See* timber and wood  
 wool trade in Adriatic, 249–50  
 Woolf, Gregg, 13n4, 14, 20–21  
 Woolley, Sir Leonard, 306  
 world-empire versus world-economy, 14, 21  
 Worp, Klaas, 69n86  
 Xanthe, 130, 133  
 Xanthos, 358  
*xestai*, 41, 54n21, 64, 384, 412–16, 417  
 Yakto mosaic, 340, 349, 350, 353, 357, 359, 360, 402, 403  
 al-Ya'qūbī, 281n2  
 Yassi Ada shipwreck, 65, 79, 80n163, 85, 90, 96n223, 228n33, 381, 409  
 Yenikapı, ships found at, 77, 79, 84n176, 91n202, 409, 421n139  
 Zaccaria, Giacomo, 274  
 Zara, 240, 251, 258, 259, 265, 269, 270  
 Zeno, Rainier (doge of Venice), 245n44, 276–77  
 Zeugma, 5  
 Zeuxippus Ware, 142n107, 205–7, 206, 211, 212  
 Ziani family, 273  
 Ziani, Pietro (doge of Venice), 273  
 Zimolo, 268n217  
 Zonaras, John, 389n61  
 Zorzi, Pietro, 274n259  
 Zuckerman, Constantin, 414  
*zygostatai*, 383, 386, 389