# *Online Appendices*

# *Online Appendix A*

# DATA SOURCES

For each market, the entry first gives a description of the data and period coverage, followed by printed and/or archival sources.

## **Aachen**: 20 interest rates on life annuities yielding six yearly means (1385–1439)

Kraus, T.R. (ed.) 2004. *Die Aachener Stadtrechnungen des 15. Jahrhunderts*. Düsseldorf, pp. 42, 57, 93, 168.

Laurent (ed.) 1866. *Aachener Stadtrechnungen aus dem XIV. Jahrhundert nach den Stadtarchiv-Urkunden mit Einleitung, Registern und Glossar*. Aachen: P. Kaatzer, pp. 295, 369.

## **Amiens:** two interest rates on heritable annuities yielding two yearly means (1316 and 1494) and 1 interest rate on a life annuity yielding 1 yearly mean (1388)

Espinas, G. 1902. *Les finances de la commune de Douai, des origines au XVe siècle*. Paris: Picard, pp. 321, 328.

Maugis, M. E. 1899. *Essai sur le Regime Financier de la Ville d'Amiens du a la fin du XVI siècle (1356–1588)*. In Memoires de la Societe des Antiquaires de Picardie, Quatrieme Serie, Tome III, pp. 133–656, here pp. 563, 566.

## **Amsterdam**: 847 interest rates on heritable annuities yielding 36 yearly means (1515–1795) and 1095 interest rates on life annuities yielding 36 yearly means (1543–1651)

Daston, L. 1988. *Classical Probability in the Enlightenment*. Princeton: Princeton University Press, p. 121.

Fritschy, W. 2003a. Three centuries of urban and provincial public debt: Amsterdam and Holland. In Boone, M., Davids, K., and Janssens, P. (eds.) *Urban Public Debts: Urban Government and the Market for Annuities in Western Europe (14th–18th Centuries)*. Turnhout: Brepols Publishers, pp. 75–92, here pp. 79, 83.

Tracy, J. D. 1985. *A Financial Revolution in the Habsburg Netherlands: Renten and Renteniers in the County of Holland, 1515–1565*. Berkeley, Los Angeles and London: University of California Press, pp. 45, 60, 133.

Van der Burg, M. and Hart, M. 2003. Renteniers and the recovery of Amsterdam’s credit (1578–1605). In Boone, M., Davids, K., and Janssens, P. (eds.) *Urban Public Debts: Urban Government and the Market for Annuities in Western Europe (14th–18th Centuries)*. Turnhout: Brepols Publishers, pp. 197–218, here pp. 200, 204.

*Stadsarchief Amsterdam [Amsterdam City Archives]*:

No. 5014: Stadsrekeningen. Vol. 12, fol. 38v; Vol. 19, fol. 32r; Vol. 21, fol. 38v; Vol. 22, fol. 40v; Vol. 27, fol. 42v–43r; Vol. 33, fol. 54v; Vol. 34, fol. 52r; Vol. 36, fol. 55v–56r; Vol. 39, fol. 88r–89v; Vol. 40, fol. 55v–57v; Vol. 41, fol. 55v–57v; Vol. 42, fol. 62v–63v; Vol. 43, fol. 64v–66v; Vol. 44, fol. 61r–62v; Vol. 46, fol. 89r–90v; Vol. 47, fol. 60r–61v; Vol. 48, fol. 59r–61v; Vol. 50, fol. 70r–73r; Vol. 51, fol. 71r–74r; Vol. 52, fol. 72v–74r; Vol. 53, fol. 75v–77v; Vol. 54, fol. 68r–69v; Vol. 56, fol. 45v–46r; Vol. 59, fol. 35v; Vol. 61, fol. 35r–36v; Vol. 62, fol. 35v–37r; Vol. 63, fol. 32v–33r; Vol. 65, fol. 29v; Vol. 68; Vol. 69; Vol. 71.

No. 5025: Vroedschapsresoluties. Vol. 1: 16.1.1536–7.5.1565, fol. 113v, 123v; Vol. 2: 28.5.1565–11.1.1575, fol. 33r, 56v; Vol. 3: 16.1.1575–23.5.1578, fol. 19r–v; Vol. 6: 6.5.1588–1.5.1592, pp. 265, 436–7; Vol. 8: 14.5.1594–7.10.1603, pp. 13–14, 21–23, 25–26, 106–7, 858; Vol. 9: 13.10.1603–5.7.1610, p. 285; Vol. 10: 12.7.1610–28.1.1617, p. 224, 338–40; Vol. 19: 1649 januari 12–1652 augustus 29, fol. 158v.

No. 5044: Reeckeningen van overgeleverde losrenten, lijfrenten op eene lijve ende lijfrentenop twee lijven bij de stadt Amstelredamme verkocht. Vol. 461: Ingediend bij het kantoor der Staten van Holland, 1588 maart 10, fol. 2r, 3r, 12r; Vol. 462: Ingediend bij het kantoor der Staten van Holland, 1588 aug.3, nr. 4, fol. 2r, 3r, 31r; Vol. 463: Ingediend bij het kantoor der Staten van Holland, 1599 feb.17, nr. 7, fol. 1r, 2r, 5v, 9v, 11r, 12r.

No. 5044: Register van vercoopingen van Renten. Vol. 464: 1588 5e register gemerkt G, fol. 1r–24v; Vol. 465: 1589 5e register gemerkt F, fol. 1r–10v; Vol. 466: 1590 6e register gemerkt H, fol. 1r–10v; Vol. 467: 1591 6e register gemerkt I, fol. 2r–3r; Vol. 468: –1598, fol. 1r–12v; Vol. 469: 1603 6e register gemerkt M, fol. 1r–3r.

## **Antwerp**: 305 interest rates on heritable annuities yielding 32 yearly means (1472–1775) and 146 interest rates on life annuities yielding 17 yearly means (1639–1778)

*Stadsarchief Antwerpen [Antwerpen City Archives]*:

[Registratie van erf- en lijrenten Reductiekas, renten op de Aluinen (1640–1642).] R280: 1640–1642, rentmeester Jan van Weerden.

[Registratie van erf- en lijrenten Reductiekas, renten op de Corpus (1748–1750).] R364: 1748–1750, erfrenten.

[Jaarlijke rekeningen van de Reductiekas (1582).] R500: 1e rekening, alle cijnzen en erfrenten.

[Erf-en lijfrenten van de consumptiekas (1646–1793).] R1513: 1646–1648, erf- en lijfrenten, rentmeester Jan Janssens; R1516: 1655–1657, erf- en lijfrenten, rentmeester Thomas de Potter; R1525: 1670–1672, erfrenten, rentmeester Jan Bruynincx; R1526: 1670–1672, lijfrenten, rentmeester Jan Bruynincx; R1527: 1673–1675, lijfrenten, rentmeester Jan Baptist Huart; R1528: 1676–1678, erfrenten, rentmeester Jan Baptist Poesson; R1533: 1685–1687, erfrenten, rentmeester Norbertus van Mockenborch; R1544: 1703–1705, erfrenten, rentmeester Jan van Miert; R1553: 1718–1720, erfrenten, rentmeester Ignatius Clouwet; R1581: 1775–1777, erf- en lijfrenten, rentmeester Jan Baptist de Wolf; R1582: 1778–1780, erf- en lijfrenten, rentmeester Jacques Jos de Moor.

[Erf- en lijfrenten op de lepel.] R1586: 1678–1681.

## **Arras**: One interest rate on an heritable annuity yielding one yearly mean (1392) and six interest rates on life annuities yielding five yearly means (1241–1300)

Bougard, P. 1988. L'apogee de la ville (1191–1340). In Bougard, P., Hilaire, Y. and Nolibos, A. (eds.) *Histoire d'Arras*. France: Editions des Beffrois, pp. 53–76, here pp. 63–4.

Munro, J. H. 2003. *The Medieval origin of the financial revolution: Usury, rentes, and negotiability*. In International History Review, 25:3, 505–62, here p. 525.

Munro, J. H. 2007. *The Usury Doctrine and Urban Public Finances in Late-Medieval Flanders (1220–1550): Rentes, Excise Taxes, and Income Transfers from the Poor to the Rich*. Paper to be presented to the Washington Area Economic History Seminar at the University of Maryland Baltimore County on Friday, 11 May 2007, p. 10.

Richard, J. 1880. *Une conversion de rentes à Arras en 1392*. In Bibliothèque de l'école des chartes, tome 41, pp. 518–536, here p. 523.

## **Assen**: 53 interest rate on a heritable annuities yielding 53 yearly mean (1640–1781) and 63 interest rates on life annuities yielding 63 yearly means (1700–1795)

van der Ent, L. and Fritschy, W. 1998. *Gewestelijke financiën ten tijde van de Republiek der Verenigde Nederlanden. Deel 2: Drenthe (1602–1795)*. Rijks Geschiedskundige Publicatiën uitgegeven door het Instituut voor Nerderlandse Geschiedenis. Kleine Serie, Vol. 91. Den Haag: Instituut voor Nederlandse Geschiedenis. Table III.5.20, p. 210.

## **Assisi**: Five interest rates on heritable annuities yielding five yearly means (1598–1689)

Girelli, A. M. 1992. *La Finanza Comunale nello Stato Pontificio del Seicento. Il Caso di Assisi*. Padova: Cedam, pp. 65, 69–70, appendix.

## **Augsburg**: 85 interest rates on heritable annuities yielding 24 yearly means (1433–1501) and 6 interest rates on life annuities yielding 4 yearly means (1391–1447)

Espinas, G. 1902. *Les finances de la commune de Douai, des origines au XVe siècle*. Paris: Picard, p. 328.

*Stadtarchiv Augsburg [Augsburg City Archives]*:

S169 (1400–1437): Baumeisterbuch 14, 37; S170 (1437–1461): Baumeisterbuch 44–47, 50; S171 (1463–1477): Baumeisterbuch 60, 65–66, 70; S172 (1477–1491): Baumeisterbuch 73, 82; S173 (1491–1501): Baumeisterbuch 87; S174 (1501–1515): Baumeisterbuch 98.

## **Bar-sur-Aube**: One interest rate on a life annuity yielding one yearly mean (1240)

Desportes, P. 1979. *Reims et les Rémois au XIIIe et XIVe siècles*. Paris: Éditions A. & J. Picard, p. 129.

## **Basel**: 1135 interest rates on heritable annuities yielding 159 yearly means (1383–1601) and 685 interest rates on life annuities yielding 165 yearly means (1384–1601)

Harms, B. (ed.) 1909. *Der Stadthaushalt Basels im Ausgehenden Mittelalter. Quellen und Studien zur Basler Finanzgeschichte. Abt. 1: Die Jahresrechnungen 1360–1535. Vol. 1. Die Einnahmen*. Tübingen: Laupp, *passim*.

*Staatsarchiv Basel-Stadt [Basel State Archives]*:

AHA Missiven A 1: Missiven, Konzepte 1409 Oktober 12 – 1413 Dezember 18, pag. 82, 85; AHA Ratsbücher D 1: Abscheidbuch (1526–1542), fol. 135; D 2. Abscheidbuch (1541–1556), fol. 25v; AHA Städtische Urkunden (1180–1798): Nos. 1280, 2502, 2503, 2505, 2947, 2950, 2952, 3000, 3021; AHA Städtische Urkunden (Regesten) (0423–18. Jh.): Urkundenbuch VIII. fol. 95; Umschlag des Öffnungsbuches IV; Umschlag von E 45, no. 1; AHA Finanz H: Jahresrechnungen der Stadt Basel von 1444–1611, Fronfastenrechnungen von 1444–1700. Vols. 1535/36–1601/02.

## **Bergamo**: One interest rate on an heritable annuity yielding one yearly mean (1622)

Pulin, F. 1985. *Il Monte di Pietà di Bassano (1492–1797)*. Vicenza: Edizioni L.I.E., p. 122.

## **Berlin**: 11 interest rates on heritable annuities yielding seven yearly means (1588–1698)

*Landesarchiv Berlin [State Archives Berlin]*:

Rat zu Berlin.A Rep. 500 Berlinische Kämmereirechnungen: 1693–1694, alte Signatur R IV/3; 1697–1698, alte Signatur R IV/4); Rat zu Berlin.A Rep. 510 Coellnische Kämmereirechnungen: 1589–1590, alte Signatur R I/1; 1596–1597, alte Signatur R I/2; 1598–1599, alte Signatur R I/3.

## **Bologna**: 92 interest rates on heritable annuities yielding 65 yearly means (1501–1754)

Carboni, M. 1995. *Il Debito della Città. Mercato del Credito, Fisco e Società a Bologna fra Cinque e Seicento*. Bologna: Il Mulino, p. 86.

Felloni, G. 1971. *Gli Investimenti Finanziari Genovesi in Europa tra il Seicento e la Restaurazione*. Milano: Dott. A. Giuffrè Editore, pp. 181–182.

Nanni, F. 1968. Erettioni de’ Monti della città di Bologna e loro capitali e rendite. In Orlandelli, G. (ed.) *Due Relazioni sulla Erezione dei Monti di Pubbliche Prestanze in Bologna (1655–1744)*. Milan: Antonio Giuffrè, pp. 1–22, here pp. 6–21.

Pradelli, G. 1968. Relazione delle erezioni de Monti o siano luoghi de Monti di Bologna (1744–1762). In Orlandelli, G. (ed.) *Due Relazioni sulla Erezione dei Monti di Pubbliche Prestanze in Bologna (1655–1744)*. Milan: Antonio Giuffrè, pp. 23–117, here pp. 39, 51, 58–9, 61, 63, 65–7, 70–2, 76, 85–87, 89, 92–3, 95–7, 99, 104–6, 108–11, 113.

Vietti, A. 1884. *Il Debito Pubblico nelle Provincie che hanno formato il Primo Regno d'Italia Secondo i Documenti del R. Archivio di Stato Lombardo*. Milano: Emilio Quadrio Editore, p. 137.

## **Bonn**: 26 interest rates on heritable annuities yielding 20 yearly means (1550–1780)

*Stadtarchiv Bonn [Bonn City Archives]*:

Ku 80/3 Schuldurkunden, Städtische Schulden. Teil 1: 1550 – 1780; Teil 2: 1550 – 1783; Ku 80/4 Maaß´sches Kapital, 1578–1777 (Städtische Schulden); Ku 80/9 Schuldbrief der Stadt Bonn vom 1. Juni 1761 und darauf sich beziehende Dokumente, 1761 (Städtische Schulden).

## **Bremen**: 1409 interest rates on heritable annuities yielding 233 yearly means (1357–1802)

Albers, H. 1930. *Die Anleihen der Stadt Bremen vom 14. bis zum 18. Jahrhundert. In Veröffentlichungen aus dem Staatsarchiv der freien Hansestadt Bremen*, 3, pp. 1–163, here pp. 109–152.

*Staatsarchiv Bremen [Bremen State Archives]*:

1-Bs Städtische Urkunden: Schuldverschreibungen. Nos. 52a, 54a, 77a, 86a, 103–4, 118a\*, 118a.1–b, 126–7a, 131–3a.3.I, 135, 138, 147–8, 153, 155, 158, 166–71, 184–9, 193, 195–6, 198, 201, 203–4, 215, 217–8, 221–2, 224, 241–3, 248–9, 252–4, 258, 268–9, 274–5, 277–9, 281, 283–5, 287, 293–6, 298–300, 302, 304–5, 308–17, 319a, 320, 323–32, 334–41, 343–45, 348, 350, 352, 356–7, 360, 361a, 362–3, 379, 390, 395, 397, 399–400, 410, 419, 422–4, 426–7, 432–3, 437–8, 442, 486a, 567–9, 570–1, 616, 647–8, 680, 762, 772, 786, 791, 805b–805m, 806, 807, 808, 810, 811–811g5, 813–813d, 814–814b, 815–815i, 815l, 816, 816a; 2 Ratsarchiv-R.1.A. Finanzwesen im Allgemeinen: 2-adR.1.A.3.b.1.b. Rhederrechnungen: Verschiedene städtische Ausgaben, Anleihen, Abrechnungen usw. 1462–1496, pp. 9–10; 2-R.1.A.5.b.1.a. Rhederhauptbuch (Butenrenteboek) für auswärtige Gläubiger, 1556–1591, *passim*; 2-R.1.A.5.b.1.b. Rhederhauptbuch (Binnenrenteboek) für einheimische Gläubiger, 1556–1596, *passim*; 2-R.1.A.5.b.2. Rhederhauptbuch (Binnenrentebuch) für einheimische Gläubiger (1586–1615), *passim*; 2-R.1.A.6.b.1.-4. Kopiebücher der städtischen Schuldverschreibungen, 1437–1597. Vols. 1–4, *passim*.

## **Brescia**: One interest rate on an heritable annuity yielding one yearly mean (1587)

Montanari, D. 2001. *Il Credito e la Carità. Volume I: Monti di Pietà delle Città Lombarde in Età Moderna*. Milano: Vita e Pensiero, p. 103.

## **Bruges**: 85 interest rates on heritable annuities yielding 39 yearly means (1464–1645) and 27 interest rates on life annuities yielding 9 yearly means (1294–1632)

*Stadsarchief Brugge [Bruges City Archives]*:

Beden, Renteniers (betalingen van de renten op de Middelen tot de Beden(1): Register 1, vol. 1, 1626; Register 3, vol. 1, 1697; Kladrekening ontvangsten: 09.10.1294–02.09.1295 (W18); Rekeningen Rentenieren: 02.09.1496–02.09.1497; 02.09.1507–02.09.1508; 02.09.1509–02.09.1510; 02.09.1511–02.09.1512; 02.09.1513–02.09.1514; 02.09.1549–02.09.1550; 02.09.1551–02.09.1552; 02.09.1603–02.09.1604; 02.09.1699–02.09.1700; Memoriaal 1496–1497; Register '1471' (Hanboek 1596–1577); Rentieren dubbles: R.R. 01.09.1631–02.09.1632; Stadsrekeningen: 02.09.1501–02.09.1502; 02.09.1503–02.09.1504.

## **Brunswick**: Three interest rates on heritable annuities yielding three yearly means (1396–1416) and 758 interest rates on life annuities yielding 190 yearly means (1392–1664)

Espinas, G. 1902. *Les finances de la commune de Douai, des origines au XVe siècle*. Paris: Picard, pp. 320–21, 328.

*Stadtarchiv Braunschweig [Brunswick City Archives]*:

B I 11 Leibgedingebücher [6 vols.]. Vols. 1–6, *passim*; B I 12 Weddeschatbücher [12 vols.]. Vol. 1, fol. 1r–2r, 7v, 8r–10v (of 120); Vol. 2, fol. 4r–50r (of 169); Vol. 3, *passim*; Vol. 4, fol. 9r–53r (of 355); Vol. 5, *passim*; Vol. 6, fol. 1r–76r; Vol. 7, *passim*; Vol. 8, fol. 1r–126r (of 398); Vol. 9, fol. 1r–93r (of 500); Vol. 12, fol. 1r–101r (of 461).

## **Chambery**: Two interest rates on heritable annuities yielding two yearly means (1570–1735)

Duboin, C. (ed.) 1818–1868. *Raccolta per ordine di materie delle leggi, provvidenze, editti, manifesti ecc. pubblicati (negli Stati di Terraferma) dal principio dell’anno 1681 sino agli 8 Dicembre 1798, sotto il felicissimo dominio della Real Casa di Savoia, per servire di continuazione a quella del Senatore Borelli*. Torino: Davico e Picco. Tomo 7, Vol. 9, pp. 292–301; Tomo 20, Vol. 22, p. 1335.

## **Chambly**: Three interest rates on on life annuities yielding three yearly means (1260–1262)

Desportes, P. 1979. *Reims et les Rémois au XIIIe et XIVe siècles*. Paris: Éditions A. & J. Picard, p. 130.

## **Colmar**: 146 interest rates on heritable annuities yielding 55 yearly means (1408–1741) and 2 interest rates on life annuities yielding 2 yearly means (1441–1508)

*Archives municipales de la Ville de Colmar [Colmar City Archives]*:

CC 12: 1–12 Registres de cens; CC 13: Registres aux capiteaux engages par Colmar et revenus patrimoniaux; CC 14: Echange de titres avec Zorn von Bulach; CC 15: Capiteaux et cens dus par le gourvernement autrichien a Colmar; CC 16: Obligations, engagements, decomptes; CC 17: Reclamations de la ville a differents bourgeois, quittances, decomptes, lettres de cens, correspondence (1402–1741); CC 18: Listes des cens payes; CC 27: Decomptes, echanges, actes d'achat, heritages, partages (1654–1699); CC 30: Decomptes (1678–1700); CC 31–32: Liquidation de dettes; CC 35: Lettres de cens, releves de fortune, fondations pour de tierces personnes (1393–1693); CC 38: Nombreaux actes.

## **Cologne**: 71 interest rates on heritable annuities yielding 36 yearly means (1370–1476) and 38 interest rates on life annuities yielding 36 yearly means (1350–1476)

Espinas, G. 1902. *Les finances de la commune de Douai, des origines au XVe siècle*. Paris: Picard, pp. 321, 328.

Knipping, R. (ed.) 1897. *Die Kölner Stadtrechnungen des Mittelalters mit einer Darstellung der Finanzverwaltung. Vol. 1: Die Einnahmen und die Entwicklung der Staatsschuld*. Publikationen der Gesellschaft für Rheinische Geschichtskunde, Vol. 15. Bonn: Behrendt, p. 212.

## **Cremona**: 29 interest rates on heritable annuities yielding 12 yearly means (1550–1628)

Jacopetti, N. I. 1961. *Le finanze del comune di Cremona durante la dominazione spagnola*. Annali della Biblioteca Governativa e Libreria Civica di Cremona, Vol. XIV. Cremona: Athenaeum cremonense, pp. 44–6.

Montanari, D. 2001. *Il Credito e la Carità. Volume I: Monti di Pietà delle Città Lombarde in Età Moderna*. Milano: Vita e Pensiero, p. 103.

## **Cuneo**: Three interest rates on heritable annuities yielding three yearly means (1706–1764) and 2 interest rates on life annuities yielding 2 yearly means (1706–1745)

Duboin, C. (ed.) 1818–1868. *Raccolta per ordine di materie delle leggi, provvidenze, editti, manifesti ecc. pubblicati (negli Stati di Terraferma) dal principio dell’anno 1681 sino agli 8 Dicembre 1798, sotto il felicissimo dominio della Real Casa di Savoia, per servire di continuazione a quella del Senatore Borelli*. Torino: Davico e Picco. Tomo 23, Vol. 25, pp. 404–407, 531, 557.

Einaudi, L. 1908. *La Finanza Sabauda all'Aprirsi del Secolo XVIII e Durante la Guerra di Successione Spagnola*. Torino: Società Tipografico-Editrice Nazionale, p. 201.

## **Delft**: One interest rate on a life annuity yielding one yearly mean (1577)

Fritschy, W. 2003b. *A financial revolution reconsidered: public finances in Holland during the Dutch revolt, 1568–1648*. In Economic History Review, 56:1, 57–89, here p. 64.

## **Dijon**: One interest rate on an heritable annuity yielding one yearly mean (1475)

Humbert, F. 1961. *Les Finances Municipales de Dijon du Milieu du XIV Siècle à 1477*. Paris: Societe les Belles Lettres, p. 168.

## **Dordrecht**: Nine interest rates on heritable annuities yielding seven yearly means (1422–1607) and 7 interest rates on life annuities yielding 6 yearly means (1422–1696)

Tracy, J. D. 1985. *A Financial Revolution in the Habsburg Netherlands: Renten and Renteniers in the County of Holland, 1515–1565*. Berkeley, Los Angeles and London: University of California Press, p. 45.

Van der Heijden, M. 2003. Renteniers and the public debt of Dordrecht (1555–1572). In Boone, M., Davids, K., and Janssens, P. (eds.) *Urban Public Debts: Urban Government and the Market for Annuities in Western Europe (14th–18th Centuries)*. Turnhout: Brepols Publishers, pp. 183–196, here pp. 186–7, 443.

Regionaal Archief Dordrecht (formerly ‚Gemeente Archiev Dordrecht‘)*/DiEP (GAD) [Dordrecht City Archives]*:

De grafelijke tijd, 1200–1572. Inv.nr. 433: Rekeningen en verantwoording door de thesauriers: Thesaurier van het groot comptoir, reparaties etc., 1429, fol. 31v, 32r, 33v, 38v, 39r–v, 41r, 45v.

## **Douai**: Three interest rates on heritable annuities yielding three yearly means (1390–1403) and 6 interest rates on life annuities yielding 6 yearly means (1327–1398)

Espinas, G. 1902. *Les finances de la commune de Douai, des origines au XVe siècle*. Paris: Picard, pp. 319–20, 325–8, 344.

## **Erfurt**: 358 interest rates on heritable annuities yielding 55 yearly means (1419–1634) and 6 interest rates on life annuities yielding 6 yearly means (1451–1509)

*Stadtarchiv Erfurt [Erfurt City Archives]*:

0–0/A 41 B Städtische Urkunden: Nos. 1, 3–4, 6–7, 10, 15–16a, 18–19, 73, 80, 83–85; 0–1/4 Städtische Urkunden: Nos. 3, 7, 9(1), 10–9, 15a , 16a(1), 19a(1), 19b(1), 19c(1), 20(1), 20a, 20b(1), 20c(1), 21, 21a–b, 21c(1), 21d(1), 22(1), 22a(1), 22c(1), 25(1), 25a(1), 26–9, 30a, 30b(1), 31, 31a–b, 31c(1), 32(1), 32a(1), 32b, 33–5, 36(1), 36a–b, 37(1), 37a–b, 37c(1), 37d, 38a, 38c–d, 39a–c, 41–41e, 41f(1), 42a–b, 42d(1), 43(1), 43a–c, 45(1), 45a(1), 45b(1), 46(1), 46a(1), 47(1), 47a–b, 48, 48a(1), 48b, 49(1), 49a–c, 50–50c, 51, 51a, 52(1), 63–8, 69(1), 70–1, 73, 74(1), 75(1), 78–80, 81(1), 82, 83(1), 84(1), 85(1), 86(1), 87(1), 88, 91–2, 93(1), 95–6, 99, 100, 101(1), 101(4), 102, 103(1), 104(1), 106, 108(1), 109, 110(1), 111(1), 114(1), 115(1), 116(1), 117(1), 118(1), 119(1), 120, 121(1), 123–4, 125(1), 126–8, 129(1), 130, 131(1), 132, 133(1), 134, 142(1), 143, 146–7, 151, 153(2), 156, 220r(2), 268(2), 284, 314(2), 322(1), 323(1), 370–4, 375(1), 377, 378(1), 379, 380–7, 388(1), 389, 390(1), 391(1), 392–3, 394(1), 395, 397(1), 398–9, 400(1), 401, 402(1), 403(1), 404(1), 405–6, 407(1), 408, 409(1), 410–2, 413(1), 462 (2), 541(2), 927(2–3); 1–0/B 8 Finanzwesen: Aktiv- und Passivschulden, Nr. 43, 45; 1–1/21 10 Libri ordinationum: Vol. 1, fol. 1v–2r, 5r–8r, 41v; 1–1/22, 2 Hauptrechnungen: No. 1, fol. 22r–23r; No. 12, fol. 26v; No. 14, fol. 26v; No. 16, fol. 26v; No. 27, fol. 26v; 1–1/21–12 Obligationen: Vol. 1, pp. 5–10, 70–2, 75–77, 147–9, 279–81, 289–91; Vol. 2, p. 7–8; Vol. 4, fol. 33v–36r.

## **Ferrara**: 16 interest rates on heritable annuities yielding four yearly means (1630–1753)

Felloni, G. 1971. *Gli Investimenti Finanziari Genovesi in Europa tra il Seicento e la Restaurazione*. Milano: Dott. A. Giuffrè Editore, p. 194–5.

Vietti, A. 1884. *Il Debito Pubblico nelle Provincie che hanno formato il Primo Regno d'Italia Secondo i Documenti del R. Archivio di Stato Lombardo*. Milano: Emilio Quadrio Editore, pp. 143, 149.

## **Finale**: 14 interest rates on heritable annuities yielding 14 yearly means (1390–1403)

Cattini, M. 1988. Congiuntura economica e pressione fiscale in una comuintà del basso modenese. In Guarducci, A. (ed.) *Prodotto Lordo e Finanza Pubblica. Secoli XIII–XIX*. Firenze: Le Monnier, pp. 200, 204.

## **Florence**: 134 interest rates on heritable annuities (which include 81 secondary market yields computed with price data) yielding 92 yearly means (1345–1806) and eight interest rates on life annuities yielding eight yearly means (1591–1710)

Barducci, R. 1979. Politica e speculazione finanziaria a Firenze dopo la crisi del primo Trecento (1343–1358). In *Archivio Storico Italiano*, 137, p. 188.

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Cochrane, E. 1973. *Florence in the Forgotten Centuries 1527–1800*. Chicago: University of Chicago Press, pp. 198–9.

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Felloni, G. 1971. *Gli Investimenti Finanziari Genovesi in Europa tra il Seicento e la Restaurazione*. Milano: Dott. A. Giuffrè Editore, p. 284.

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*Archivio di Stato di Firenze [Florence State Archive]*:

Monte Comune o delle Graticole, Parte I: Pezzo 3, p. 260; Pezzo 4, p. 20; Monte del Sale: Pezzo 1; Pezzo 2, pp. 7, 15, 19, 21, 24; Monte di Pieta': Pezzo 3; Monte di Sussidio Vacabile e Non Vacabile: Pezzo 1; Pezzo 2; Pezzo 3; Pezzo 142, pp. 359–361; Pezzo 143, p. 2–3; Nuovo Monte Comune: Pezzo 383.

## **Frankfurt am Main**: 715 interest rates on heritable annuities yielding 110 yearly means (1546–1766) and 31 interest rates on life annuities yielding 14 yearly means (1561–1599)

*Institut für Stadtgeschichte Frankfurt am Main [City Archives Frankfurt am Main]*:

Rechneiamt **Bücher** (1341–1889): Nos. 715–6, 830–51.

## **Freiburg (Breisgau)**: 106 interest rates on heritable annuities yielding 44 yearly means (1441–1633) and 25 interest rates on life annuities yielding 13 yearly means (1561–1568)

*Stadtarchiv Freiburg [Freiburg City Archives]*:

C1 Akten der städtischen Hauptverwaltung (bis ca. 1860): Gemeindevermögen, vols. 12, 14, 22; E1 Städtische Rechnungen, A I b Städtisches Rentamt, Separat-Rechnung: AI b.1 Einnahmbücher 1538–9, 1541–5, 1548–50, 1552, 1554, 1558–61, 1568, 1633; AI b.2 Ausgabebücher 1520, 1566, 1569–70, 1572–3, 1575–6, 1597, 1600, 1602, 1604.

## **Genoa**: 551 interest rates on heritable annuities (which include 31 secondary market yields computed with price data) yielding 178 yearly means (1263–1466) and four interest rates on life annuities yielding four yearly means (1630–1683)

Cuneo, C. 1842. *Memorie Sopra l’Antico Debito Pubblico, Mutui, Compere e Banca di S. Giorgio in Genova*. Genoa: Stamperia dei Sordomuti, pp. 309–311.

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*Archivio di Stato di* Genova [State Archive *of* Genova]:

Antica Finanza: Pandetta 38, numero 322, 344; Archivio Segreto: 9/1026; Banco di S. Giorgio: Pandetta 17, numero 3081–95, 3111–16, 3135, 3137–8, 3140, 3142, 3144, 3177, 3181–2, 3184; Pandetta 18, numero 610/2464, 2471–7, 2479–80; Camera Finanze: 1093.

## **Ghent**: 288 interest rates on heritable annuities yielding 39 yearly means (1521–1748) and 117 interest rates on life annuities yielding 16 yearly means (1513–1715)

*Stadsarchief Gent [Ghent City Archives]*:

Leningen an Renten: Vol. 2 (Reeks 404 bis); Losrenten and Lijfrenten (405 bis): Vol. 11 Rentebrieven Projekten stadsrente-brieven; Vol. 12 Rentebrieven; Vol. 15 Listes et dclarations au sujet des entes; Rekeningen Tresorier Verkooping Los en Lyfrenten (405 bis): vol.4; Stadsrekeningen (400): Vols. 41, 44, 48–50, 52–3, 60–1, 64–5, 83–4, 86; Stadsrekeningen, Kladboeken van de stedelijke ontvangsten (401 bis): Vol. 1; Stadsrekeningen, Ontvangsten: Vols. 1, 3–4, 8, 10.

**Groningen**: Four interest rates on heritable annuities yielding four yearly means (1706–1790) and six interest rates on life annuities yielding six yearly means (1666–1669)

van der Ent, L. and Enthoven, V. 2001. *Gewestelijke financiën ten tijde van de Republiek der Verenigde Nederlanden. Deel 3: Groningen (1594–1795)*. Rijks Geschiedskundige Publicatiën uitgegeven door het Instituut voor Nerderlandse Geschiedenis. Kleine Serie, Vol. 94. Den Haag: Instituut voor Nederlandse Geschiedenis. Table III.5.42, pp. 285–6.

## **Göttingen**: 114 interest rates on heritable annuities yielding 40 yearly means (1328–1650) and 64 interest rates on life annuities yielding 28 yearly means (1320–1440)

Espinas, G. 1902. *Les finances de la commune de Douai, des origines au XVe siècle*. Paris: Picard, p. 329.

*Stadtarchiv Göttingen [Gottingen City Archives]*:

AA Kämmerei Kapitalien: No. 3/ 4518 Kämmerei Kapitalien, 1608–1700 (überwiegend Quittungen), fol. 2r; No. 4/4524 Quittungen und eingelöste Obligationen über für die schwedische Satisfaktion geborgten Geldes, 1648–1655, fol. 6r, 8r, 10r, 13r, 15r, 17r, 19r, 31r; B 7 II Amtsbücher, Kopialbücher: No. 1 Liber parvus copiarum, fol. 5r–36v; No. 2 Liber magnus copiarum (1296–1505), fol. 1r–15v, 17r–22r; No. 3 Novus Liber Papyraceus (1439–1583), fol. 1r–5v.

## **Halle (Saale)**: 644 interest rates on heritable annuities yielding 59 yearly means (1459–1621)

Klinger, J. (ed.) 2011. *Das Dresdener Stadtbuch 1477–1495. Edition und Forschung* *(Inaugural-Dissertation zur Erlangung der Doktorwürde der Philosophie, Kunst- und Gesellschaftswissenschaften der Universität Regensburg)*. Regensburg, pp. 336–8.

*Stadtarchiv Halle [Halle City Archives]*:

Urkundenbestand 567.

*Landeshauptarchiv Magdeburg [Provincial Archives Magdeburg]*:

Cop. Kopiare und andere Amtsbücher (0936–1844), Stadt Halle: no. 395a Kopiar der Obligationen der Stadt Halle (1568–1590), *passim*; no. 396 Copiarium der Obligationen der Stadt Halle (1591–1620), *passim*; no. 397 Copiarium der Obligationen der Stadt Halle (1605–1616), *passim*.

## **Hamburg**: 1962 interest rates on heritable annuities yielding 271 yearly means (1344–1809) and 50 interest rates on life annuities yielding 50 yearly means (1361–1530)

Koppmann, K. (ed.) 1869–1894. *Kämmereirechnungen der Stadt Hamburg*. 7 vols. Hamburg: H. Grüning et al. Vols. 1–7 (1869–94), *passim*.

Voigt, J. (ed.) 1912. *Die Anleihen der Stadt Hamburg Während der Jahre 1601 bis 1650*. In Zeitschrift des Vereins für Hamburgische Geschichte 17, 129–233, here pp. 134–56, 158–9, 161–70, 173, 175–88, 190–4, 197, 199, 202–4, 206, 221.

*Staatsarchiv Hamburg [Hamburg State Archives]*:

111–1 Senat. Cl. VII Lit. L/a no. 2. Vol. 1b. Rotes Stadtbuch, pp. 299–309, 311–339.

311–1 I Kämmerei I. Vol. 2: Urkunden 1496–1866 (Unbefristete Kammerbriefe), *passim*.

741–2 Genealogische Sammlungen 53. Kasten 91, Juristische Personen 1331–1370; Kasten 141, Juristische Personen 1426–1454; Kasten 165, Juristische Personen 1455–70; Kasten 187, Juristische Personen 1471–90.

## **Hanover**: 1097 interest rates on heritable annuities yielding 303 yearly means (1315–1723) and 383 interest rates on life annuities yielding 141 yearly means (1350–1606)

*Stadtarchiv Hannover [Hanover City Archives]*:

Urkunden-Abteilung 1: Allgemeine Urkundensammlung (14.–18. Jh.). Nos. 184, 207, 463, 465, 481, 525, 537, 542, 553, 559–60, 565, 570, 587, 599, 614, 618–9, 622–3, 668–9, 685, 689, 701, 707, 737, 741, 745, 753, 835, 846–7, 935, 942, 989, 1103, 1161, 1207, 1268, 1272–3, 1355, 1373, 1461, 1598, 1774, 1806, 1811, 1815, 1828; Urkunden Abteilung 3: Schuldurkunden des Rates (1351–1716). Nos. 1, 9, 12, 14, 18, 25–6, 39, 41–7, 50–2, 54–7, 59–60, 62, 64, 73, 76–7, 83, 86–90, 96, 93–101, 103–8, 111–3, 115–20, 122–4, 128, 130, 132–4, 136–9, 141–8, 150–64, 166, 168–73,175–6,178–83, 185–6, 189, 191–6, 198–206, 208–18, 220–36, 238–41, 248, 251–4, 257–66, 268–78, 280–9, 291–301, 304–38, 340–3, 345–51, 354–64, 366–412, 414–25, 428–42, 444–70, 473–5, 477–9, 482–3, 486–8, 490–1, 493–6, 498–503, 505–29, 531–2, 536–58, 561–646, 648–60, 662–3, 667, 669, 671–90, 692–3, 695, 698–718, 720–57, 759, 761–87, 789–93, 798–822; Neue Abteilung Bücher 7227–7230: Kämmereibücher. No. 7227, pp. 110–1, 187, 195–6, 232–3, 312–3, 349, 386, 387, 442–3, 486, 524–5, 564, 566, 606, 646, 732–3, 766, 802, 836, 876, 912, 956, 998, 1116; no. 7228, pp. 2, 38–9, 78, 165–6, 278, 308, 340–1, 396–7, 430, 434–5, 471, 514, 603, 646, 688, 737, 1233; no. 7229, pp. 2, 27, 381, 383; no. 7230, fol. 30r–v; Neue Abteilung Bücher, 8242 Stadtobligationsbuch 1387–1533, *passim*; Neue Abteilung Bücher, 8043 Stadtobligationsbuch I, *passim*; Neue Abteilung Bücher, 8044 Stadtobligationsbuch II, *passim*; Neue Abteilung Bücher, 8060 Schuldbuch betreffend die angeliehenen Kapitalien, fol. 4r–v, 5v, 6r, 8r–v.

## **Hildesheim**: 59 interest rates on heritable annuities yielding 72 yearly means (1333–1600) and 246 interest rates on life annuities yielding 54 yearly means (1328–1564)

*Stadtarchiv Hildesheim [Hildesheim City Archives]*:

Bestand 1 Nr. 1275: Schuldverschreibungen. Nos. 1275a–zzzz; Bestand 50 Nr. 159: Kämmereirechnungen. Vols. 1417, fol. 2r; 1419, fol. 1v; 1420, fol. 1v; 1421, fol. 1v; 1422, fol. 1v; 1425, fol. 1v; 1427, fol. 1v; 1428, fol. 1v; 1429, fol. 1v; 1437, fol. 1v; 1440, fol. 1v; 1441, fol. 1v; 1442, fol. 130v–131r; 1443, fol. 208v–209r; 1444, fol. 308r; 1445, fol. 2r; 1446, fol. 2r; 1447, fol. 2r; 1448, fol. 2r; 1449, fol. 2r; 1451, fol. 2r; 1452, fol. 2r; 1453, fol. 2r; 1454, fol. 2r; 1455, fol. 2r; 1456, fol. 2r; 1457, fol. 2r; 1458, fol. 2r; 1459, fol. 2r; 1461, fol. 2r; 1462, fol. 2r; 1464, fol. 2r; 1465, fol. 2r; 1469, fol. 2r; 1490, fol. 2r; 1491, fol. 2r; 1492, fol. 2r; 1494, fol. 2r; 1496, fol. 2r–v; 1497, fol. 2r–v; 1498, fol. 2r–v; 1499, fol. 2r–v; 1500, fol. 2r–v; 1501, fol. 2r–v; 1502, fol. 2v; 1503, fol. 2v; 1506, fol. 2r; 1508, fol. 2r; 1509, fol. 2r; 1510, fol. 2r–v; 1511, fol. 4r–v; 1512, fol. 81r, 82r–v; 1514, fol. 2r–v; 1519, fol. 90r–92r; 1520, fol. 4r–5r; 1521, fol. 80r–v; 1522, fol. 159r–v; 1523, fol. 2r–3r, 4r; 1524, fol. 80r–81v; 1525, fol. 149r–150r; 1526, fol. 2v–3v; 1527, fol. 67r–v; 1528, fol. 134r–v.

## **Hoorn**: One interest rate on an heritable annuity yielding one yearly mean (1522)

Tracy, J. D. 1985. *A Financial Revolution in the Habsburg Netherlands: Renten and Renteniers in the County of Holland, 1515–1565*. Berkeley, Los Angeles and London: University of California Press, p. 45.

## **Huy**: 11 interest rates on heritable annuities yielding 10 yearly means (1649–1675)

Morsa, D. 2003. La dette de la ville de Huy au 17e siècle. In Boone, M., Davids, K., and Janssens, P. (eds.) *Urban Public Debts: Urban Government and the Market for Annuities in Western Europe (14th–18th Centuries)*. Turnhout: Brepols Publishers, pp. 149–162, here p. 157.

## **Koblenz**: 52 interest rates on heritable annuities yielding 26 yearly means (1610–1797)

 *Stadtarchiv Koblenz [Koblenz Town Archives]:*

Bestand 623 Stadt Koblenz: No. 2884 Städtische Schulden (1611–1791), vols/fol. 1, 3, 7, 11, 16, 18, 28, 31, 38, 42, 45, 49, 53, 55, 62, 65, 67; no. 2893 Die Stadtschulden (1794–1811), vol/fol/pp. 15, 18.

## **Leeuwarden**: 146 interest rates on heritable annuities yielding 49 yearly means (1693–1770) and 54 interest rates on life annuities yielding 28 yearly means (1617–1758)

Trompetter, C. 2007. *Gewestelijke financiën ten tijde van de Republiek der Verenigde Nederlanden. Deel 6: Friesland (1587–1795)*. Rijks Geschiedskundige Publicatiën uitgegeven door het Instituut voor Nerderlandse Geschiedenis. Kleine Serie, Vol. 106. Den Haag: Instituut voor Nederlandse Geschiedenis. Table III.5.44, pp. 185–91.

## **Leiden**: 425 interest rates on heritable annuities yielding 31 yearly means (1439–1530) and 66 interest rates on life annuities yielding 16 yearly means (1361–1530)

Munro, J. H. 2007. *The Usury Doctrine and Urban Public Finances in Late-Medieval Flanders (1220–1550): Rentes, Excise Taxes, and Income Transfers from the Poor to the Rich*. Paper to be presented to the Washington Area Economic History Seminar at the University of Maryland Baltimore County on Friday, 11 May 2007, p. 34.

*Regionaal Archief Leiden [Leiden Provincial Archives]*:

SA I (1290–1575): Inv.nrs. 817, 838, 841: Rentebriefe, 1485, 1514, 1527; Inv.nrs. 818–835: Register van lijf- en losrenten ten laste van de stad, 1473–1552. Inv.nr. 818, fol. 3v, 8v, 17v; inv.nr. 819, 1r, 2v, 4v–8v, 16r, 17v, 18r, 21r–22r, 24r–25r, 28r, 29r–v, 31v, 33v, 37r–v, 42r–v, 43r, 44r–45r, 46v, 47r–v, 48r–v, 49v, 54r, 55r, 57v, 58r, 59v–60r, 61r, 62v–63v, 68r, 69r, 70v–71r, 73r–v, 76v–77r, 78r, 79v, 80v, 81v, 83r, 83v, 84v, 87r, 88r, 89r–90r, 91r, 92r–93v, 94v, 95r, 98r–v, 100r, 101v, 102v, 103v, 104r–105r, 106r, 107v, 109r–v, 110r–v, 111v, 114v, 117v, 125r, 131r–v, 132r–v, 133v, 134r, 136r–v, 137r–v, 138r, 139r–140v, 141v, 142r–v; inv.nr. 820, fol. 12r, 14r, 18r–v, 20r, 22r, 23r, 24v–25v, 27r–v, 28v; inv.nr. 825, fol. 2r–3r, 4v, 8r, 9r–v, 11v, 14r–v, 15v–16r, 17r, 18r–v, 19v, 20r, 27v, 28v, 30r–32r, 33r–v, 34r, 37r–v, 38r–v, 40r–42v, 47r–48r, 49v–50r, 51r–52r, 53r, 54r, 55v, 59v, 61r–64r, 65r–v, 66v–67v, 68v, 69r, 70r, 71r–72r, 74v–75r, 76r–v, 77v–78r, 79r–81r, 82r–83r, 84v–85r, 86r–89v, 90r, 92r–93r, 94r–95r, 96r, 97r–v, 99r, 100v–103r, 107v, 112r, 114r, 122r–v, 124r, 125v, 126r, 127v–130r, 131v, 132v, 133r–v; inv.nr. 833a, fol. 43v, 51r–53r, 54v, 55v–56r, 60v–61v, 62v, 63v–64v, 65v–67v, 77r, 78r, 79v, 83r; Inv.nr. 843: Register van de ontvangst uit verkochte lijf- en losrenten, 1528, fol. 5r–6r; Inv.nr. 852: Kwitanties van de koopsom van door de stad verkochte lijfrentebrieven, 1555–1568, nrs. 1–24; Inv.nr. 853: Register van lijfrenten verkocht van 1556 tot 1559. 1556–1559, fol. 1v, 2v–8r; Inv.nr. 856: Stukken betreffende de aankoop van een lijfrente van 24 gulden ten laste van de stad Leiden, voor elk van zijn kinderen gekocht door jonkheer Jacob van der Does, 1565; SA II (1574–1816): Inv.nr. 10161: Los- en lijfrentebrieven ten laste van de stad, uitgegeven in 1600, 1604, 1672, 1674, 1681, 1684, 1780, 1789. Met enkele bijlagen, 1614, 1654, 1796. 1600–1796.

## **Leipzig**: 181 interest rates on heritable annuities yielding 14 yearly means (1475–1625)

*Stadtarchiv Leipzig [Leipzig City Archives]*:

JHR 1473–75 (Bd. 2), fol.00175; Titel V 17: Acta des Ratheszu Leipzig Schuld-Wesen betretig de Anno 1625–1642, fol. 168–9, 171–5, 177, 180, 208, 210–1; Title VI 1a: Depostenbuch, fol. 22r; Verzeichnunge der verpferding Jar 1517 (v.2).

## **Liège**: Three interest rates on heritable annuities yielding three yearly means (1722–1724)

Henry, D. 1975. Les finances de la cité de Liège au XVIIIe siècle. In *Finances Publiques d'Ancien Régime. Finances Publiques Contemporaines en Belgique de 1740 à 1860. Processus de Mutation Continuités et Ruptures. Colloque international, Spa, 19–22 December 1972*. Bruxelles: Credit Communal de Belgique, pp. 193–218, here pp. 206–207.

## **Lille**: 552 interest rates on heritable annuities yielding 128 yearly means (1511–1791) and 666 interest rates on life annuities yielding 86 yearly means (1301–1790)

DuPlessis, R. 1991. *Lille and the Dutch Revolt: Urban Stability in an Era of Revolution, 1500–1582*. Cambridge: Cambridge University Press, pp. 76, 260, 264.

Espinas, G. 1902. *Les finances de la commune de Douai, des origines au XVe siècle*. Paris: Picard, p. 328.

Richebé, A. 1894. *Compte de recettes et dépenses de la ville de Lille. 1301–1302*. Lille: G. Leleu, p. 24–5.

Sivéry, G. 1970. Histoire économique et sociale. In Trenard, L. (ed.) *Histoire de Lille. Tome I: Des Origines à l'avènement de Charles Quint*. Lille: Publications de la faculté des lettres et sciences humains de Lille, pp. 111–270, here p. 204.

*Archives municipales de Lille [Lille City Archives]*:

AG 40; Reg. 2526; Reg. 2527, fol. 2–5, 7–9, 11, 14, 17, 20, 22, 33–4, 37, 40, 42, 52, 56, 63, 66–7, 73, 93, 98, 116, 118–20, 122, 133, 136, 166–7, 169–72, 176–7, 183–5, 190–3, 195, 198, 200–1, 206–8, 210–2, 215–20, 223–4, 232; Reg. 2528, fol. 1–9, 12–3, 15, 17–8, 20, 26–8, 34–8, 40–2, 44, 47–9, 51–3, 55–6, 58–9, 61–4, 66–8, 70, 72–6, 78–80, 82, 87, 90–2, 94, 96–7, 100–3, 105–7, 109–11, 113, 115, 119–22, 125, 128–34, 137–40, 142, 144–5, 147–8, 150, 153–4, 157, 159, 161–4, 167–9, 172–3, 175, 177, 179–80, 182–3, 185–6, 189, 191, 194–201, 203–4, 227–9, 231, 233–9, 241–2, 244–5, 247–8, 250–2, 255, 257–8, 262, 273, 275–6; Reg. 2529; Reg. 2530; Reg. 2531; Reg. 2898, fol. 14, 17, 29, 41; Reg. 2899; Reg. 2900, fol. 9–10; Reg. 2946; Reg. 16012, fol. 11–12; Reg. 16014, fol. 10–1; Reg. 16030, fol. 9; Reg. 16031, fol. 9; Reg. 16032, fol. 9; Reg. 16033, fol. 9; Reg. 16035, fol. 8; Reg. 16036, fol. 9; Reg. 16037, fol. 7–8; Reg. 16039, fol. 7; Reg. 16040, fol. 7; Reg. 16042, fol. 7; Reg. 16043, fol. 6–7; Reg. 16045, fol. 8; Reg. 16046, fol. 8; Reg. 16048, fol. 9; Reg. 16050, fol. 8; Reg. 16051, fol. 8; Reg. 16052, fol. 9; Reg. 16053, fol. 9; Reg. 16054, fol. 8; Reg. 16055, fol. 8–9; Reg. 16063, fol. 6; Reg. 16067, fol. 7; Reg. 16069, fol. 7; Reg. 16070, fol. 7–8; Reg. 16071, fol. 7; Reg. 16072, fol. 7; Reg. 16073, fol. 6; Reg. 16074, fol. 6; Reg. 16075, fol. 6; Reg. 16076, fol. 7–8; Reg. 16077, fol. 7; Reg. 16078, fol. 7; Reg. 16080, fol. 6; Reg. 16084, fol. 7; Reg. 16085, fol. 6; Reg. 16088, fol. 5–6; Reg. 16092, fol. 6; Reg. 16093, fol. 6–7; Reg. 16096, fol. 5; Reg. 16098, fol. 5; Reg. 16265, fol. 47; Reg. 16723; Reg. 16729; Reg. 16730; Reg. 16731; Reg. 16732; Reg. 16733; Reg. 16734; Reg. 16736; Reg. 16737; Reg. 16771; Reg. 16783; Reg. 16785, fol. 177, 181–2; Reg. 16786.

## **Lübeck**: 464 interest rates on heritable annuities yielding 93 yearly means (1439–1530) and six interest rates on life annuities yielding five yearly means (1286–1526)

*Archiv der Hansestadt Lübeck [Lübeck City Archives]*:

03.04–01.44.1. Kämmerei, Rentebücher: Nos. 1916 (1516–1530), 1917 (1545–1582), 1918 (1582–1612), 1919 (1612–1661); 03.04–02.9.3. Stadt-Cassa: No. 1402, Jährliche Rentebücher Nr. 2 (1667–1669); no. 1403, Jährliche Rentebücher Nr. 3 (1670–1671); no. 1404, Jährliche Rentebücher Nr. 4 (1672–1673); no. 1405, Jährliche Rentebücher Nr. 5 (1674–1675); 1406, Jährliche Rentebücher Nr. 6 (1676–1677); no. 1413, Jährliche Rentebücher Nr. 13 (1689–1690); no. 1423, Jährliche Rentebücher Nr. 23 (1708–1709); no. 1433, Jährliche Rentebücher Nr. 33 (1719); no. 1437, Jährliche Rentebücher Nr. 37 (1723); no. 1447, Jährliche Rentebücher Nr. 47 (1733); no. 1457, Jährliche Rentebücher Nr. 57 (1743); no. 1464, Jährliche Rentebücher Nr. 64 (1750); 08.01–5.1.02. Wissenschaftliche Handschriften, Brandt, Ahasver von: No. 1054, Auszüge der Renteneinträge aus dem Oberstadtbuch 1320–1350 von A. v. Brandt; 08.01–5.2.1. Bearbeitung der Urkunden und Testamente im AHL: No. 1046, Materialien u. Vorarbeiten zum Lübecker Urkundenbuch, besonders für Band VI–XI. Kämmereibücher: Mappe 2–4.

## **Lüneburg**: 2014 interest rates on heritable annuities yielding 243 yearly means (1363–1718) and 66 interest rates on life annuities yielding 14 yearly means (1386–1563)

*Stadtarchiv Lüneburg [Lüneburg City Archives]*:

UA (Urkunden-Abteilung). C: 1363 August 14; c: 1368 Oktober 18 I; b: 1370 November 6; c: 1372 Januar 13; c: 1372 April 5; c: 1374 April 25; a: 1375 Juli 22; b: 1376 Mai 15; c: 1377 Februar 14 II; c: 1386 September 16; c: 1389 August 9; c: 1421 November 10; c: 1422 September 28 II; b: 1423 Juli 28; c:1426 September 28; b: 1428 Marz 14; c: 1428 April 27; c: 1428 Mai 21; c: 1428 Juni 11; b: 1428 Oktober 30; ; c: 1429 April 3 II; c: 1429 April 10; b: 1429 April 26 I; b: 1430 September 20 I; c: 1430 September 20 II; b: 1431 April 9 I; c: 1431 April 9 II; b: 1431 Juni 28; c: 1431 September 29; c: 1432 April 9; c: 1433 Juli 13; c: 1434 April 4; c: 1434 Juni 23; c: 1437 Dezember 27 II; b: 1431 Dezember 31; b: 1439 April 4 II; c: 1439 April 9; c: 1439 September 28 I; c: 1439 Oktober 4; c: 1439 Oktober 18; c: 1439 Oktober 27; c: 1440 Juni 23 I; c: 1440 September 28; c: 1440 Oktober 18; c: 1441 April 10 I; c: 1441 April 10 II; c: 1441 April 10 III; c: 1441 April 18 I; c: 1441 April 18 II; c: 1441 Juni 3; c: 1443 Juni 23 II; AB 51: Darlehensregister (1368–1416), *passim*; AB 55: Kopie von Rentenbriefen (1441–1492), *passim*; AB 60: Abschriften von Schuldverschreibungen des Rates zu Lüneburg, *passim*; AB 65: Schuldurkunden des Rates mit alphabetischem Inhaltsverzeichnis (1492–1516), *passim*; AB 68: Registrum der Renthe bynnen unde buthen Lüneburg, de me hyr bynnen betaleth (15. & 1. Drittel 16. Jh.), *passim*; AB 69: Einnahmen und Ausgaben sowie Rentenbriefe (1534/1565, 1566, 1586), *passim*; AB 71: Kopien von Verschreibungen des Rates aus der Zeit von 1566 bis 1616, *passim*; AB 80: Schuldbuch mit Ratsrenteverschreibungen, *passim*.

## **Lyon**: Eight interest rates on heritable annuities yielding five yearly means (1536–1724)

Doucet, R. 1937. *Finances municipales et crédit public à Lyon au XVIe siècle*. Paris: M. Rivière, pp. 11–12, 49–50, 66.

Gascon, R. 1971. *Grand Commerce et Vie Urbaine au XVIe Siècle. Lyon et ses Marchands*. Paris: SEVPEN, p. 256.

Paillard, P. 2012. *La Cour des Monnaies de Lyon*. Lyon: Jacques Andre Editeur, p. 27.

## Mainz: Nine interest rates on heritable annuities yielding 2 yearly means (1410–1436) and 25 interest rates on life annuities yielding 2 yearly means (1410–1436)

*Bayerisches Staatsarchiv Würzburg [Würzburg State Archives]*:

Rechnung 50576, 12–16.

## **Mantua**: 38 interest rates on heritable annuities yielding 38 yearly means (1655–1787)

Montanari, D. 2001. *Il Credito e la Carità. Volume I: Monti di Pietà delle Città Lombarde in Età Moderna*. Milano: Vita e Pensiero, pp. 50–1, 68–9, 78–9, 243.

## **Meaux**: One interest rate on a life annuity yielding one yearly mean (1274)

Desportes, P. 1979. *Reims et les Rémois au XIIIe et XIVe siècles*. Paris: Éditions A. & J. Picard, p. 130.

## **Memmingen**: 674 interest rates on heritable annuities yielding 97 yearly means (1694–1805)

*Stadtarchiv Memmingen [Memmingen City Archives]*:

Bestand A Reichsstadt. Vol. 429F: Journal Lit. F (Zinseinnahmen, chronologisch), 1770–1787; Bestand A Reichsstadt. Vol. 430C: Zinsbuch Lit. C (mit Zinseinträgen bis ca. 1747), 1694 – 1720; Bestand A Reichsstadt. Vol. 430D: Zinsbuch Lit. D (mit Zinseinträgen bis ca. 1780), 1720–1747; Bestand A Reichsstadt. Vol. 430E: Zinsbuch Lit. E (mit Zinseinträgen bis ca. 1800), 1747–1765; Bestand A Reichsstadt. Vol. 430F: Zinsbuch Lit. F (mit Zinseinträgen bis 1808), 1766–1791.

## **Milan**: 143 interest rates on heritable annuities yielding 134 yearly means (1535–1796)

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Felloni, G. 1971. *Gli Investimenti Finanziari Genovesi in Europa tra il Seicento e la Restaurazione*. Milano: Dott. A. Giuffè Editore, p. 213.

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## **Moncalieri**: Six interest rates on heritable annuities yielding five yearly means (1611–1624)

Caligaris, G. 1984. *Vita e lavoro in una comunità rurale piemontese: Pancalieri nei secc. XVII–XVIII*. Bollettino della Società per gli studi storici, archeologici ed artistici della Provincia di Cuneo, 90–91. Cuneo: Società per gli studi storici, archeologici e artistici della provincia di cuneo, pp. 187–8.

## **Monferrato**: Two interest rates on heritable annuities yielding two yearly means (1730–1731)

Duboin, C. (ed.) 1818–1868. *Raccolta per ordine di materie delle leggi, provvidenze, editti, manifesti ecc. pubblicati (negli Stati di Terraferma) dal principio dell’anno 1681 sino agli 8 Dicembre 1798, sotto il felicissimo dominio della Real Casa di Savoia, per servire di continuazione a quella del Senatore Borelli*. Torino: Davico e Picco. Tomo 7, Vol. 9, p. 303.

## **Munich**: 108 interest rates on heritable annuities yielding 17 yearly means (1382–1558) and 252 interest rates on life annuities yielding 100 yearly means (1372–1553)

*Stadtarchiv München [Munich City Archives]*:

Bestand Kämmerei, Gemeindevermögen, Passiven (Schulden): Nr. 63/1–3, Ewiggeld- und Leibgedingbücher: Verzeichnisse der Gläubiger von Gnadengeldern, Ewiggelder und Leibgedingen: Vol. 1, 1382–1427; vol. 2, 1385–1397; vol. 4, 1428–1558 (Zimelie 28); Bestand Kämmerei, Gemeindevermögen, Passiven (Schulden): Nr. 65, Ewiggeldbriefasbschriften, 1528–1601; Repertorium der Abgelösten Ewiggeldbriefe: Vol. 26; Repertorium der Passiv-Reichnisse, Aktiv-Kapitalien, Pasiv-Kapitalien, Leibgeding: Vol. 28.

## **Münster**: 615 interest rates on heritable annuities yielding 74 yearly means (1447–1685) and 9 interest rates on life annuities yielding 8 yearly means (1447–1646)

Eberhardt, I. 2002. *Die Grutamtsrechnungen der Stadt Münster von 1480 und 1533: Edition und Interpretation*. Quellen und Forschungen zur Geschichte der Stadt Münster, 19. Münster: Aschendorff, p. 188.

*Stadtarchiv Münster [Munster City Archives]*:

A VIII 188a Gruetherrenregister (1536 – 1643). Nos. 5, 9, 13, 14; A VIII 277 Kämmereirechnungen (1447–1809). No. 1 (1447–49), fol. 1v, 16v, 17v, 31v, 32r, 43r; A IX Ratsarchiv Urkunden Stadtschulden. Nos. 27a&b, 28–37, 39, 41, 43–50, 52–54, 56–84, 86–92, 94–101, 103–7, 109–65, 167–71, 173–75, 177–83, 185–211, 213, 216–25, 227–44, 246–51, 253–56, 259–64, 267–8, 270, 272–3, 275–6, 278–83, 285–6, 288–90, 292–3, 295–98, 301–4, 306, 308–26, 328–35, 337–40, 342, 345–6, 348–53, 355–8, 360, 362, 364–66, 368, 370–7, 381–3, 387–91, 393–4, 396–8, 401–2, 404, 407–9, 411–2, 416, 418–25, 428–34, 436–41, 444–70, 472–74, 476–502, 504–35, 537–67, 570–642, 644–51, 653–72, 675–81, 683–6, 688, 691–2, 694, 697, 699–714, 727, 728, 729, 730.

## **Namur**: One interest rate on an heritable annuity yielding one yearly mean (1472) and 4 interest rates on life annuities yielding 2 yearly means (1465–1467)

Borgnet, J. and Bormans, S. (eds.) 1876. *Cartulaire de la Commune de Namur, recueilli et annoté par J. Borgnet et S. Bormans, Vol. I*. Namur, p. 149.

Brouwers, P. P. (ed.) 1920. *Cartulaire de la Commune de Namur, tome quatrieme.* Namur: Typographie de ad Wesmael-Charlier, pp. 253–256, 260.

## **Naples**: 200 interest rates on heritable annuities (which include 44 primary market yields computed with price data) yielding 139 yearly means (1498–1796) and seven interest rates on life annuities yielding seven yearly means (1554–1611)

Banco di Napoli (ed.) 1972. *L'Archivio Storico del Banco di Napoli. Una Fonte Preziosa per la Storia Economica Sociale e Artistica del Mezzogiorno d'Italia*. Napoli: Banco di Napoli, pp. 69, 74, 95.

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## **Nice**: One interest rate on an heritable annuity yielding one yearly mean (1623)

Duboin, C. (ed.) 1818–1868. *Raccolta per ordine di materie delle leggi, provvidenze, editti, manifesti ecc. pubblicati (negli Stati di Terraferma) dal principio dell’anno 1681 sino agli 8 Dicembre 1798, sotto il felicissimo dominio della Real Casa di Savoia, per servire di continuazione a quella del Senatore Borelli*. Torino: Davico e Picco. Tomo 7, Vol. 9, p. 292.

## **Nuremberg**: 1136 interest rates on heritable annuities yielding 125 yearly means (1388–1551) and 11 interest rates on life annuities yielding nine yearly means (1388–1446)

Espinas, G. 1902. *Les finances de la commune de Douai, des origines au XVe siècle*. Paris: Picard, pp. 321, 329.

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*Staatsarchiv Nürnberg [Nuremberg State Archives]*:

Losungsamt, Ewiggeldbücher: Nos. 69 & 70, *passim*.

## **Osnabrück**: 380 interest rates on heritable annuities yielding 135 yearly mean (1437–1767) and 35 interest rates on life annuities yielding 22 yearly means (1403–1499)

*Niedersächsisches Landesarchiv - Osnabrück [Provincial Archives of Lower Saxony, Osnabrück]*:

Dep. 3 a 1 XI Urkunden, Schulden der Stadt, nos. 3, 5–9a, 10a, 11–20, 22, 24, 36, 39, 43–5, 48–60, 62–3, 65–70a, 73–84, 86–7a, 88a–96b, 99, 100–107a, 108b, 109–12, 114, 116–8, 125, 138–42, 144–5, 147–51, 153–4, 156–66, 170, 172–7; Dep. 3 a 1 XI Urkunden, Schulden der Neustadt, nos. 3, 15–7; Dep. 3 b II Städtische Rechnungen: Lohnrechnungen, no. 1, fol. 30r, 61r–v, 70v, 139v, 164r–v, 176r, 188r, 202v, 232r, 265r, 290r–v, 306r–v, 326v, 348v, 369v–370v, 391v–392v; no. 2, fol. 6r–v, 25r–v, 48v–49r, 79r, 104r, 128v, 151v, 173r, 219v, 243r, 266v, 311v, 359r, 452v, 487r–v, 488v, 508r; no. 3, fol. 7v; no. 5, fol. 148r, 176r, 259r–v; no. 6, fol. 35r, 132v; no. 10, fol. 40v; no. 11, fol. 92v, 270r; Dep. 3 b IV Stadtsachen: No. 372, Renten- und Einkünfteverzeichnis der Neustadt (1579–1621), fol. 17r–20v, 29r–31v; Dep. 3 b IV Stadtsachen: No. 5745, Copiarium der Obligationen der Stadt Osnabrück (1623–1719), fol.1r–6v, 7v–9v, 11v–14v, 16r–20v, 22r–v, 24r–25v, 27r–v, 33r–34r, 38r–40r, 41r–43r, 44r–45r, 50r–52v, 57r, 58r–59r, 61r–65v, 72r–85v, 92v–94v, 98v–102r, 104r–105r, 106r–110v, 112r–120r, 121r–127r, 128r–v, 130v–131r, 132r, 134r, 135r, 136r, 137r, 138r–139r, 144r–146r, 147r–150r, 151r, 152v–154r, 155r–160r, 161v, 162r–v, 164r–166r, 167r, 170v–173r.

## **Palermo**: 77 interest rates on heritable annuities yielding 51 yearly mean (1512–1799)

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## **Paris**: 11 interest rates on heritable annuities yielding 11 yearly mean (1522–1634)

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## **Pinerolo**: Two interest rates on heritable annuities two yearly means (1621–1622)

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## **Pisa**: 14 interest rates on heritable annuities yielding 14 yearly means (1618–1734)

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## **Reggio Emilia**: One interest rate on an heritable annuity yielding one yearly mean (1561)

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## **Rome**: 141 interest rates on heritable annuities yielding 85 yearly means (1526–1793) and 39 interest rates on life annuities yielding 27 yearly means (1550–1786)

Colzi, F. 1999. *Il Debito Pubblico del Campidoglio: Finanza Comunale e Circolazione dei Titoli a Roma fra Cinque e Seicento*. Napoli, Roma e Milano: Edizioni Scientifiche Italiane, p. 60.

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## **Rotterdam**: Four interest rates on heritable annuities yielding two yearly means (1426–1556) and 30 interest rates on life annuities yielding three yearly means (1522–1556)

Tracy, J. D. 1985. *A Financial Revolution in the Habsburg Netherlands: Renten and Renteniers in the County of Holland, 1515–1565*. Berkeley, Los Angeles and London: University of California Press, p. 45.

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## **Savona**: Two interest rates on heritable annuities yielding two yearly means (1749–1766)

Felloni, G. 1971. *Gli Investimenti Finanziari Genovesi in Europa tra il Seicento e la Restaurazione*. Milano: Dott. A. Giuffrè Editore, pp. 110.

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## **Schaffhausen**: 45 interest rates on heritable annuities yielding 15 yearly means (1396–1446) and 43 interest rates on life annuities yielding 15 yearly means (1428–1446)

*Stadtarchiv Schaffhausen [Schaffhausen City Archives]*:

A II.05.01. Stadtrechnungen: No. 001 Einnahmen/Ausgaben 1396–1397, p. 2; no. 010 Einnahmen/Ausgaben 1410–1411, p. 23; no. 011 Einnahmen/Ausgaben 1411–1412, p. 28; no. 016 Einnahmen/Ausgaben 1416, pp. 4–5, 17, 19; no. 039 Einnahmen 1428–1429, p. 1; no. 041 Ausgaben 1429, p. 1; no. 044 Ausgaben 1429, p. 1; no. 048 Einnahmen 1431–1432, p. 1; no. 049 Ausgaben 1431–1432, pp. 1, 6; no. 051 Einnahmen 1433, p. 1; no. 052 Ausgaben 1432–1433, p. 2; no. 053 Ausgaben 1432, pp. 3, 6, 12; no. 054 Einnahmen 1434, p. 2; no. 055 Ausgaben 1434, p. 2–3; no. 059 Einnahmen 1434–1435, p. 2; no. 060 Einnahmen 1435, p. 2; no. 061 Einnahmen 1435–1436, p. 2; no. 062 Einnahmen 1436, p. 1; no. 063 Einnahmen 1436–1437, p. 3; no. 065 Einnahmen 1438–1439, p. 2; no. 067 Ausgaben 1438, p. 2; no. 068 Einnahmen 1439–1440, p. 2; no. 069 Ausgaben 1439–1440, p. 4; no. 070 Einnahmen 1440, p. 1; no. 071 Einnahmen 1441–1442, p. 2; no. 072 Einnahmen 1442, p. 2; no. 073 Einnahmen 1441, p. 3; no. 074 Ausgaben 1441, p. 3; no. 075 Ausgaben 1441–1442, p. 2; no. 076 Einnahmen 1442–1443, p. 2; no. 078 Einnahmen 1443–1444, p. 2; no. 079 Ausgaben 1443, p. 3; no. 081 Einnahmen 1444–1445, p. 2; no. 082 Einnahmen 1444, p. 2; no. 085 Einnahmen 1446, pp. 2–3.

## **Siena**: 177 interest rates on heritable annuities yielding 177 yearly means (1624–1800)

Mengozzi, N. 1913. *Il Monte dei Paschi e le sue Aziende. Compendio di Notizie Storiche e Statistiche.* Siena: Stabilimento Arti Grafiche Lazzeri, p. 280.

## **Soest**: 143 interest rates on heritable annuities yielding 68 yearly means (1429–1716) and 26 interest rates on life annuities yielding 14 yearly means (1499–1524)

*Stadtarchiv Soest [Soest Town Archives]:*

A 5135: Kopienbuch der der von der Stadt Soest aufgenommenen Kapitalien (1499–1530), fol. 2r–3v, 4r, 5v, 6r, 7r–13v, 15r–v; A 5137: Kopiar der Leibrentenbriefe der Stadt Soest (1502–1524), fol. 2r–13r, 14r–16v, 17v; A 5141: Designation der Gelder, die im Jahre 1616 zu Behuf der Stadt aufgenommen wurden (1616), 2r; A 5142: Protokoll der von der Stadt Soest herausgegebenen Obligationen (1622–1635), pp. 3, 16–23, 25, 27, 29–32, 34–6, 38, 40, 42; A 5143: Verzeichnis der von der Stadt Soest aufgenommenen Geldsummen (1628), fol. 2v, 4r–v, 6r; A 5144: Abschriftliche Sammlung der von der Stadt Soest herausgegebenen Obligationen (1629–1719), fol. 1r–v, 5r–6r, 10r–11v, 46r–v, 86r–87r, 88r–89r, 116r–117r, 158r–159r, 176r–177r, 186r–187r, 196r–v, 199r–v, 202r–203r, 209r–210r, 214r–v, 216r–v; A 5145: Akten betr. Die Kapitalschulden der Stadt Soest (1636–1719), fol. 12r; A 5154: Aufstellungen über die Obligationen zu Lasten der Stadt Soest (1716), fol. 4v, 6r–8r, 10v–11r; A 5155: Kredittabelle sowie Kredit- und Zinsetat der Stadt Soest (1717), fol. 8v–9r, 10v–11r; A 5161–5383: Kredit- und Schuldenwesen, Specialia, nos. 5175, 5178, 5181, 5191, 5196–5203, 5207–9, 5212–5, 5217, 5219, 5220, 5222–3, 5225, 5228, 5231–4, 5236–7, 5239–40, 5243, 5245, 5265, 5271, 5288, 5332, 5339, 5343.

## **St. Omer**: Seven interest rates on life annuities yielding seven yearly means (1306–1312)

Derville, A. 1981. Le premiere repli (1350–1550). In Derville, A. (ed.) *Histoire de Saint-Omer*. Histoire des villes du Nord/Pas-de-Calais, 1. Lille: Presses Universitaires de Lille, pp. 73–106, here p. 79.

## **St. Quentin**: Two interest rates on heritable annuities yielding two yearly means (1296–1360) and 4 interest rates on life annuities yielding 4 yearly means (1321–1360)

Desportes, P. 1979. *Reims et les Rémois au XIIIe et XIVe siècles*. Paris: Éditions A. & J. Picard, p. 450.

Lemaire, E. (ed.) 1888–1910. *Archives Anciennes de la Ville de St. Quentin*. 2 vols. Saint Quentin: Au Siege de la Societe Academique, Tome I (1076–1328)*,* p. 130; Tome II (1328–1400), pp. 243–244.

## **Strasbourg**: 893 interest rates on heritable annuities yielding 118 yearly means (1525–1791) and one interest rate on a life annuity yielding 1 yearly mean (1776)

*Archives de la Ville et de la Communauté Urbaine de Strasbourg [Strasbourg City Archives]*:

Série IV 69–74 Rentes dues par la ville (16ème et 17ème siècle): No. 69, p. 146 ; no. 70, pp. 37, 41, 44, 45, 63, 145; no. 71, pp. 27, 148, 154–9, 177–9; Série VII 1 Emprunts contractés par la ville de Strasbourg pour financer la construction des fortifications ; Remboursements des sommes avancées au magistrat par divers particuliers, pp. 2, 6; Série VII 2A: Remboursements, pp. 1–76; Série VII 7: Rachat de rente, pp. 1, 3, 36–40, 69; Série VII 21, 1: Emprunts faits par la ville (1706/07), p. 1; Série VII 150: Etats des recettes et dépenses de la tour aux Pfennigs (1783–1791) ; Mémoire de l’avocat de la ville, concernant les revenus et dépenses annuels, état comparatif, état des rentes à la charge de la ville. No. 1, fol. 9r, 15r, 21r ; no. 2, fol. 9r, 74r, 80r, 86r, 92r, 104r, 122r, 128r, 134r, 140r, 144r, 151r; no. 3, fol. 3r, 9r, 15r, 27r, 33r, 45r, 56r, 57r, 80r, 86r, 92r, 98r, 104r, 128r, 156r, 162r, 168r, 174r, 192r, 198r, 210r, 216r, 222r, 228r, 234r, 240r, 250r, 268r, 280r; no. 5A, fol. 9r, 15r, 20r, 26r, 32r, 44r, 50r, 68r, 86r, 92r, 98r; Série VII 1284–1285: Pièces concernant les finances de la ville de Strasbourg, comptes de la ville (1681–1802), no. 1284, fol. 34r ; no. 1285, fol. 67r; Série VII 1496–99: Hauptgutbücher I–V, 4 vols. (1592–18. Jh.). No. 1496, Hauptgutbuch I, pp. 1–24, 27–41, 43–50, 53–61, 63–72, 74–76, 79–102, 105–14, 116–26, 131, 134–53, 158–65, 168–80, 183–97, 199, 201–4, 206–7, 209–17, 219–22, 224–31, 235–41, 246–55, 257–8, 260, 262, 267–8, 275, 281–2, 287, 289, 290–2, 294, 296–7, 300–5, 308–9, 313–8, 327, 335, 341–2, 345, 348–9, 353–6, 359–60, 366, 369, 371–80, 382, 385–7, 393, 396, 413, 417, 419, 422, 425, 428, 439, 444, 450, 462, 471, 475, 477, 480, 486, 489–90, 500, 508, 512, 517, 519, 523, 525–33, 535–8, 540–55, 557–69, 572–601, 603–38, 641–79, 681, 684–721; no. 1497, Hauptgutbuch II, pp. 726–7, 747, 753, 755, 764, 765–9, 774, 777, 784–5, 788–90, 793, 795–9, 801–4, 806–15, 817–9, 822, 824, 826–7, 831–2, 835–7, 839, 842–3, 845–77, 922–41, 1002–13, 1040–1; Série VII 1518: Registre des rentes viagères à Paris (Zinsbuch G). 1 vol. 1736–1751, pp. 1–6 ; Série VII 1553: Emprunts contractés par la ville (1708–1749), fol. 1–9, 13–29, 34–8, 41–52, 57r–58r, 59r–61r, 62r, 63r, 64r, 66r, 67r, 68r, 69r, 70r, 71r, 72r, 74r, 75r, 79r, 81r, 83r.

## **s’Hertogenbosch**: 19 interest rates on heritable annuities yielding 15 yearly means (1511–1546) and 28 interest rates on life annuities yielding 24 yearly means (1501–1566)

van Zuijlen, R.A. (ed.) 1863. In*ventaris der Archieven van de Stad s'Hertogenbosch: chronologisch opgemaakt en de vornaamste gebeurtenissen bevattende. Stads Rekeningen van 1399 – 1800. 1ste Deel van 1399–1568*. s'Hertogenbosch: W.C. van Heusden, pp. 57, 203, 223, 313, 333, 344, 351–2, 360, 382, 406, 428–9, 455, 459, 525, 539, 549, 558, 569, 575–6, 590, 621, 639, 676, 726, 746, 753.

## **The Hague**: 42 interest rates on heritable annuities yielding 41 yearly means (1569–1671) and 89 interest rates on life annuities yielding 85 yearly means (1576–1745)

Liesker, R. & Fritschy, W. 2004. *Gewestelijke financiën ten tijde van de Republiek der Verenigde Nederlanden. Deel 4: Holland (1572–1795)*. Rijks Geschiedskundige Publicatiën uitgegeven door het Instituut voor Nerderlandse Geschiedenis. Kleine Serie, Vol. 100. Den Haag: Instituut voor Nederlandse Geschiedenis. Table III.5.g.1, pp. 381–2.

## **Tournai**: Five interest rates on life annuities yielding five yearly means (1269–1325)

Bigwood, G. 1925. *Les Financiers d'Arras (suite)*. In Revue belge de philologie et d'histoire. Tome 4 fasc. 3, 379–421, here p. 400.

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## **Turin**: 110 interest rates on heritable annuities yielding 56 yearly means (1627–1797) and 13 interest rates on life annuities yielding 8 yearly means (1681–1747)

Duboin, C. (ed.) 1818–1868. *Raccolta per ordine di materie delle leggi, provvidenze, editti, manifesti ecc. pubblicati (negli Stati di Terraferma) dal principio dell’anno 1681 sino agli 8 Dicembre 1798, sotto il felicissimo dominio della Real Casa di Savoia, per servire di continuazione a quella del Senatore Borelli*. Torino: Davico e Picco, Tomo 7, Vol. 9, p. 293; Tomo 20, Vol. 22, pp. 1266, 1289–95, 1300, 1318–19, 1324, 1327–29, 1332–33, 1337, 1345, 1349, 1351–2, 1357; Tomo 23, Vol. 25, pp. 333–6, 347–8, 350–1, 354–5, 370, 372–4, 376–8, 386–8, 396, 402–3, 423–7, 433, 438, 445–9, 454–5, 457, 460, 464, 481, 483, 489–90, 492, 495, 498, 511–2, 516, 524, 526, 528, 530, 534–5, 537, 539, 542, 545, 550, 552, 557, 565, 582, 584, 611.

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Symcox, G. 1983. *Victor Amedeus II: Absolutism in the Savoyard State 1675–1730*. London: Thames and Hudson, p. 201.

## **Udine**: Four interest rates on heritable annuities yielding four yearly means (1556–1578)

Tagliaferri, A. 1969. *Struttura e Politica Sociale in una Comunità Veneta del '500 (Udine)*. Milano: Giuffrè Editore, pp. 169, 180–1.

**Utrecht**: One interest rate on an heritable annuity yielding 1 yearly mean (1668)

Verstegen, S.W. 2006*. Gewestelijke financiën ten tijde van de Republiek der Verenigde Nederlanden. Deel 5: Utrecht (1579–1798)*. Rijks Geschiedskundige Publicatiën uitgegeven door het Instituut voor Nerderlandse Geschiedenis. Kleine Serie, Vol. 105. Den Haag: Instituut voor Nederlandse Geschiedenis. Table III.5.44, p. 142.

## **Venice**: 484 interest rates on heritable annuities (which include 307 secondary market yields computed with price data) yielding 201 yearly means (1285–1789) and 24 interest rates on life annuities yielding 12 yearly means (1538–1715)

Reale Commissione per la Pubblicazione dei Documenti Finanziari della Repubblica di Venezia (ed.) 1912. *Bilanci generali della Repubblica di Venezia, Vol. I (976/1641).* Venice: Premiato Stabilimento Grafico Visentini Cav. Federico, pp. 210–2, 550, 555–7.

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*Archivio di Stato di Venezia [State Archives of Venice]*:

Consiglio dei Dieci, Comune: r. 12, pp. 152, 158–9, 190, 201; Consiglio dei Dieci, Zecca: r. 1, pp. 6–8, 10, 12, 14–6, 18–9, 23–4, 27, 29, 31, 33, 36–7, 39, 43, 45–7, 49–50, 52–3, 79–80, 85, 87, 90, 114, 131; r. 2, pp. 51–53; r. 3, pp. 90, 93, 95–6, 100, 107–11, 113, 115–8, 121–4, 126–7, 129–31, 133–48, 151, 153–4, 157–9, 161–6, 171–2, 174, 181–2, 187, 189, 200; Savio Cassier, busta 587: decreto 7 Maggio 1787; proclama 23 Maggio 1789; Senato, Zecca, 1608–1626: pp. 101–8, 110, 115–7, 122, 126, 132–4, 145, 194.

## **Verona**: 466 interest rates on heritable annuities yielding 281 yearly means (1490–1797)

Ferlito, C. 2009. *Il Monte di Pietà di Verona e il Contesto Economico-sociale della città nel Secondo Settecento*. Venezia: IVSLA, p. 154–7.

Pulin, F. 1985. *Il Monte di Pietà di Bassano (1492–1797)*. Vicenza: Edizioni L.I.E., p. 116.

## **Verviers**: 13 interest rates on heritable annuities yielding five yearly means (1708–1795)

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Nautet, G. J. 1859. *Notices Historiques sur le Pays de Liege*. Verviers: Typographie G. Nautet Hans, pp. 180–1.

## **Vicenza**: One interest rate on an heritable annuity yielding one yearly mean (1493)

Pulin, F. 1985. *Il Monte di Pietà di Bassano (1492–1797)*. Vicenza: Edizioni L.I.E., p. 113.

## **Vienna**: 575 interest rates on heritable annuities yielding 59 yearly means (1443–1612) and 4 interest rates on life annuities yielding 4 yearly means (1439–1461)

Brunner, O. 1929. *Die Finanzen der Stadt Wien von den Anfängen bis ins 16. Jahrhundert*, Wien.

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*Stadt- und Landesarchiv Wien [Vienna – City and Provincial Archives]*:

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## **Vigevano**: Three interest rates on heritable annuities yielding three yearly means (1618–1669)

Caizzi, B. 1955. *Economia e finanza a Vigevano nel cinque e nel seicento*. In Nuova Rivista Storica, 3, 355–374, here pp. 371–3.

## **Wesel**: Five interest rates on heritable annuities yielding five yearly means (1350–1450) and 153 interest rates on life annuities yielding 33 yearly means (1349–1450)

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Gorissen, F. (ed.) 1963–1968. *Stadtrechnungen von Wesel 1349–1450. Regesten zur politischen Geschichte des Niederrheins*. 5 vols. Bonn: Hanstein. Vol. 1 (1349–1375), pp. 55–6; vol. 2 (1376–1400), pp. 80–2; vol. 3 (1401–1425), p. 41; vol. 4 (1426–1450), p. 39.

## **Wetzlar**: One interest rate on a life annuity yielding one yearly mean (1361)

*Historisches Archiv Wetzar [Wetzlar Archives]*:

Urkunden 1361 Marz 30 (2).

## **Wismar**: 261 interest rates on heritable annuities yielding 94 yearly means (1694–1729) and two interest rates on life annuities yielding 2 yearly means (1418–1561)

*Stadtarchiv Wismar [Wismar City Archives]*:

Ratsakten Nr. 2727 Schuldverschreibungen der Stadt (1634–1757). Enthält: Schuldverschreibungen der Nummern 1–10, 13, 17, 19, 27–29, 33–42, 44–50, 54–58, 60–72, 86, 88, 90, 92–103, 105–111, 113–127, 129–135, 139–142, 148, 151–179, 181–190, 193–196, 198–213, 218–254, *passim*; Ratsakten Nr. 2727/1–6 Schuldverschreibungen der Stadt. No. 1 (1418–1600), *passim*; no. 2 (1606, 1617, 1622, 1623), *passim*; no. 3 (1625, 1646, 1647, 1651, 1656), *passim*; no. 4, für die Gebäude der Nikolaikirche (1658, 1661), *passim*; no. 5, für den Kirchenziegelhof zu St. Marien (1618–1659); Ratsakten Nr. 2897 Kämmereisachen: 1583/84; Ratsakten Nr. 2898 Kämmereisachen: 1662, 1663, 1664; Urkunden I: Weltliche Urkunden. Nos. 66, 115.

## **Worms**: 85 interest rates on heritable annuities yielding 33 yearly means (1482–1758)

*Stadtarchiv Worms [Worms City Archives]*:

Abt. 1B: No. 1252a, Manuale der grossen Rechnung, 1614, fol. 21r; Abt. 1B: No. 1424/1–3, Sammlung der Verzeichnisse der Stadt Worms bei kaiserl. Kommision ausgezeigten Schulden (1690 – 1790); Abt. 1B: No. 1428/1–2, Sammlung aller bei den Moratorienakten gefundenen Verzeichnisse hiesiger Stadtschulden; Verzeichnis der mit Gläubigern der Stadt Worms getroffenen Vergleiche (1690 – 1790).

## **Würzburg**: 129 interest rates on heritable annuities yielding 46 yearly means (1551–1709) and 51 interest rates on life annuities yielding 17 yearly means (1415–1465)

*Stadtarchiv Würzburg [Würzburg City Archives]*:

Bestand Ratsbücher. Ratsbuch 44, fol. 3, 10, 30, 54–63, 65, 67–9, 72–3, 75–7, 80–3; Ratsbuch 46, fol. 5–6, 11, 15, 17, 19–21, 27, 30, 32–3, 35, 41, 44, 51, 54, 56, 60, 64, 67, 99, 102, 104, 108, 129, 132, 140, 143, 147, 163, 170, 172; Ratsbuch 47, fol. 1–9, 13–7, 20–9, 31–3, 36–44, 48–9, 52–4, 56–7, 59, 61, 63–4, 66, 76, 82, 86–7, 90, 92, 94–5, 98, 103–4, 113; Ratsbuch 50, fol. 376, 381; Ratsbuch 51, fol. 375.

## **Zürich**: One interest rate on a heritable annuities yielding one yearly mean (1404)

Fryde, E. B. and Fryde, M. M. 1963. Public Credit, with Special Reference to North-Western Europe. In Postan, M., Rich, E. E. and Miller, E. (eds.) *The Cambridge Economic History of Europe: III: Economic Organization in the Middle Ages.* Cambridge: Cambridge University Press, pp. 430–553, here p. 551.

## **Zutphen**: One interest rate on an heritable annuities yielding one yearly mean (1446) and one interest rate on a life annuity yielding one yearly mean (1451)

Van Schaïk, R. 2003. The sale of annuities and financial politics in a town in the Eastern Netherlands Zutphen, 1400–1600. In Boone, M., Davids, K., and Janssens, P. (eds.) *Urban Public Debts: Urban Government and the Market for Annuities in Western Europe (14th–18th Centuries)*. Turnhout: Brepols Publishers, pp. 109–126, here pp. 112, 118.

**Zwolle**: 96 interest rates on heritable annuities yielding 94 yearly means (1616–1795) and 64 interest rates on life annuities yielding 64 yearly means (1629–1794)

Fritschy, W. 1996. *Gewestelijke financiën ten tijde van de Republiek der Verenigde Nederlanden. Deel 1: Overijssel (1604–1795)*. Rijks Geschiedskundige Publicatiën uitgegeven door het Instituut voor Nerderlandse Geschiedenis. Kleine Serie, Vol. 86. Den Haag: Instituut voor Nederlandse Geschiedenis. Table III.5.40, pp. 213–224.

# *Online Appendix B*

# Clustering Technique

Model-based clustering with an ultrametric space is a technique to identify groups of nodes in a network (groups of cities and their hinterlands[[1]](#footnote-1) in our case) that are linked by a tie (in our case capital flows) (Schweinberger and Snijders 2003). It assumes that observed links are the product of a stochastic process. It is particularly suited to our context since this method identifies clusters across various levels of network intensity and thus it makes it possible to fully exploit the information provided by capital flows.

The likelihood that we recorded all the links between cities in the sample increases with the number of observations on imports per city. This implies that it is desirable to include in the analysis only relatively well-covered cities, or else we are bound to miss a non-trivial number of existing links. Yet, the fewer cities that are included, the smaller is the area covered by the analysis. With this trade-off in mind, we focus on the 28 cities for each of which we have at least 10 observations on investments made from other cities and their hinterlands.

For robustness, we re-run the analysis with the following two other samples: one with the 12 cities with at least 80 observations on imports and one with all the 210 places named in the sources. As an example, Figure B.1 shows the geographical origins of foreign investors for the sample of the 12 cities with the best data coverage. Although this sample is biased towards North Germany, it includes important centres from other areas and mitigates the negative bias on the connectivity implied by failure to record existing links. In addition, to investigate possible changes in the clusters over time, we also run the analysis including only observations from before 1520 and from 1520 onwards, for cities with at least 10 observations on imports.

Recorded capital flows between linked cities are bound to increase with their numbers of observations. This sample bias is econometrically addressed by regressing capital flows between city-pairs against the log of the sum of their numbers of observations on imports, using a negative-binomial specification. We use this technique because count regressions have desirable properties for estimating the determinants of bilateral flows (they do not suffer from the bias created by the logarithmic transformation and from the failure of the homoscedasticity assumption) and over-dispersion turns out to be a problem,
thus cautioning against the use of a Poisson specification (Burger, Van Oort, and Linders 2009). The capital flows that would have taken place if all linked cities were evenly covered are then estimated with the residuals. These are subsequently normalised to take values between 0 and 1. Hence, our measure of network intensity is capital flows compared to that of the pair with the highest value: This is



Figure B.1

Origins of foreign investors (12 cities sample)

*Sources*: Online Appendix A.

Lübeck-Lüneburg, where we find that capital flows (18,799 consumption baskets) were 17,514 consumption baskets greater than expected on the basis of their combined coverage (698 observations).

The model assumes that links within a cluster are symmetric and that clusters are not overlapping at any given level of capital flows. These assumptions are bound to be violated to some extent. However, they are shared by other clustering procedures and imply that groups are identified where the assumption of direct arbitrage between cities is closely approximated. Clusters can be identified either with a maximum likelihood or a Bayesian estimator. While the Bayesian estimator provides a more elegant model selection procedure, it yields in the present case unstable and occasionally implausible settings that suggest a poor fit with the data. We therefore use the maximum likelihood estimator. As our measure of strength is continuous, we assume a Gaussian distribution. To investigate possible non-convergence, we run ten sequences. Given that there are 28 cities in the main sample we allow up to seven different levels of clustering. The results are reported in Table B.1, where the second to the seventh columns report the expected network intensity at each clustering level for each total number of levels.

The log-likelihood function is maximised when we assume seven different levels, but the difference is big only when compared to a total of two or three levels. Inspection of the output reveals that non-convergence may be an issue, as evidenced by unstable maxima of the log-likelihood function, when we assume that there were five levels or more. Moreover, the results are qualitatively very similar for four to six levels: All detect very close values at levels 1 to 3 and sharp drops in network intensity subsequently. Hence, no important information is lost by only considering four levels, and we therefore present this model in the paper. The only new result emerging from the robustness checks is that enlarging the sample reveals a wide cluster around Nuremberg, which developed strong links with Salzburg and Maribor.

Table B.1

Network clustering: expected network intensity
by level and number of levels

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| LevelN. of Levels | 7 | 6 | 5 | 4 | 3 | 2 |
| 1 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.275 |
| 2 | 0.476 | 0.364 | 0.364 | 0.364 | 0.206 | 0.013 |
| 3 | 0.297 | 0.163 | 0.163 | 0.150 | 0.010 |  |
| 4 | 0.148 | 0.025 | 0.039 | 0.009 |  |  |
| 5 | 0.009 | 0.005 | 0.008 |  |  |  |
| 6 | 0.009 | 0.000 |  |  |  |  |
| 7 | 0.009 |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Log likelihood | –0.491 | –0.516 | –0.520 | –0.531 | –0.734 | –1.3191 |

*Sources*: Online Appendix A.

*Online Appendix C*

Supplementary Figures





Figure C.1

Inter-city investment in the Empire: the distribution of distance and capital before and after 1520

*Sources*: Online Appendix A.



Figure C.2

Integration between regions and the Empire as a whole: panel trends in dispersion around the mean (logs)

*Sources*: Online Appendix A.

1. A place is considered to belong to the hinterland of the closest other place that had at least 5,000 inhabitants at some point in time during the period covered here (1228 to 1802). Using links between places instead worsens the results as the adjacency matrix becomes too sparse. In most cases, the distance between the hinterland-place and its “central” town is small: less than 20 km in 85 percent of the cases, and 70 km at most. [↑](#footnote-ref-1)