IISH RESEARCH PAPERS

The mobility transition in Europe revisited, 1500-1900

Sources and methods

Jan Lucassen & Leo Lucassen

International Institute of Social History – www.iisg.nl

IISH-RESEARCH PAPER 46
A complete list of IISH-Research Papers can be found after page 126.

ISSN 0927-4618

IISH-Research Papers is a prepublication series inaugurated in 1989 by the International Institute of Social History (IISH) to highlight and promote socio-historical research and scholarship. Through distribution of these works the IISH hopes to encourage international discussion and exchange. See http://www.iisg.nl/publications/digipub.php#respap. This vehicle of publicizing works in progress or in a prepublication stage is open to all labour and social historians. In this context, research by scholars from outside the IISH can also be disseminated as a *Research Paper*. Those interested should write to Marcel van der Linden, IISH, P.O. Box 2169, 1000 CD, The Netherlands. Telephone 31-20-6685866, Telefax 31-20-6654181, e-mail *mvl@iisg.nl*.

The mobility transition in Europe revisited, 1500-1900

Sources and methods

Jan Lucassen & Leo Lucassen

International Institute of Social History

2010

CONTENTS

1: INTRODUCTION

In the Fall of 2009 we published the article 'The mobility transition revisited: What the case of Europe can offer to global history' in the *Journal of Global History*.[1] In this article we tried to quantify cross-community migrations in Europe as a whole in the period 1501-1900, differentiating between six forms of migration. The basic idea was to calculate the chance for an (adult) European to experience at least one cross-community move in his or her life. On the basis of this principle we computed migration rates for Europe as a whole per 50 year periods.

This exercise serves various goals. First of all, it is crucial in the ongoing discussion about the mobility transition, as proposed by Wilbur Zelinsky already in 1971. Zelinsky's conjecture posits that Europeans were rather sedentary and immobile until the industrial revolution when mass urbanization unchained the population and led to unprecedented mobility. These ideas fit very well in more general assumptions about the effects of modernization processes in the nineteenth century. Therefore, as we argue in our paper, the method to map and quantify migration, in a formalized way, can play an important role in debates about comparisons between long term social, economic, political and cultural developments in Europe and other parts of the world.

A second goal of our article, and this working paper, is to use the outcomes of our research in the discussion about the 'Great Divergence'[2] between Europe and China and the question why (Western) Europe overtook China from the end of the eighteenth century onwards. We believe that migration is one of the so far largely missing explaining variables and that not only migration rates in general, bur specific forms of migration tell us a lot about how societies developed, both socially, culturally and economically. Finally, our (formalized) model could serve as a tool to stimulate more systematic global comparisons of migration as a key social, cultural and economic phenomenon.

In our original JGH article we promised to publish a more elaborate discussion of sources and methods on which our reconstruction is based. The promise to have this paper online in October 2009 as an IISH research paper was clearly too optimistic, but we are glad that finally we have finished a first version of this working paper, that – we hope – will stimulate colleagues to come up with critique and additional and or better data. Apart from an elaborate presentation of our sources and methods, we have also tried to break down the total aggregates of all six forms of migration on a country or regional level, so that spatial comparisons within Europe are now possible, also differentiated for one or more of the six basic forms of migration we distinguish. In this IISH working paper the reader will, therefore, find all the necessary building blocks needed for comparisons between different European countries, in eight 50-year periods and for six different forms of migration. Moreover, in the conclusion we also briefly discuss the gendered nature of our six categories. The most important aim of this working paper, however, is to provoke comments, critique and additions so that in a second version of this paper we will be able to offer the scholarly community a more solid empirical basis for reconstructing migration rates and patterns.

[1] Lucassen & Lucassen 2009 .
[2] Pomeranz 2000. See also Van Zanden 2009.

New results since 2009

One of the preliminary results of this exercise is that the rates presented in our original paper have changed. Although these changes do not affect our basic argument (in fact, they strengthen it in various ways), they constitute important revisions of the results published in the JGH. Three important corrections have to be mentioned:

1) Rural to urban migrations in the period 1501-1750 are lowered, whereas for the last one and a half century period they increased somewhat. The reason for these changes is that we use different and, we hope, better estimates of natural increase and decrease, based on more data than we initially had at our disposal. We realize that these new rates are still provisional and, in the end, should be differentiated for different parts of Europe (especially the North versus the South), however, for the moment this is the best we have to offer.

2) We have more and better data on seasonal migrations in the nineteenth century. In addition, we also realized that the average period for one seasonal worker to be engaged in this type of migration was more likely to be 25 than 12.5 years. This had important repercussions for our calculations, especially in the nineteenth century, which went down by a factor of 2.

3) Finally, we gathered much more information on soldiers and sailors, including the camp followers (esp. from the Ottoman part of Europe), which enhance the mobility rates for the early modern period. These major improvements, together with smaller corrections, have changed the migration rates for Europe as a whole[3] and lead to the following estimates:

Table 1.1: Total migration rates in Europe 1501-1900 (millions)

	Total average population (millions)	**Total migrations (millions)**	**Migration rate %**	***Initial rates (2009 article)***
1501-50	76	9.9	13.0	*11.4*
1551-00	89	13.2	14.8	*12.5*
1601-50	95	19.1	20.1	*14.2*
1651-00	101	18.9	18.7	*15.7*
1701-50	116	20.5	17.7	*17.7*
1751-00	151	26.3	17.4	*15.6*
1801-50	214	48.5	22.7	*21*
1851-00	326	100.4	30.8	*35.3*

N.B. See Table 9.2 and preceding tables

The most important change is maybe the decrease of the rate in the period 1850-1900 from 35.3 to 30.8, which supports even better our contention that the nineteenth century cannot be characterized as a period of fundamental change in the way Zelinsky did. Rates did go up significantly, but much less dramatically than the modernization paradigm would assume and, moreover, they started already from a rather high level in the early modern period.

[3] Lucassen & Lucassen 2009: 370 (table 5).

Cross cultural migration

As explained in our original article, to calculate migration rates for each 50-year period we have distinguished six forms of cross-cultural migration, using the definition of cross-community migration by Patrick Manning. Whereas Manning defines communities in linguistic terms,[4] we have chosen a somewhat wider meaning of 'cultural' borders, which need not imply differences in languages, but can also refer to dissimilarities in lifestyle, customs and social practices (e.g. between rural and urban areas). The six forms we distinguish are: 1) Emigration, meaning people leaving Europe; 2) Immigration, meaning people entering Europe from other continents; 3) Colonization: people moving to sparsely populated rural areas in Europe; 4) Migration to cities: here we calculated all those who moved to cities over 10,000 inhabitants; 5) Seasonal migrants, who migrated on a yearly basis from peasant areas to commercialized farmer regions to work as wage laborers; and finally, 6) Soldiers and sailors, restricted to those who moved over cultural borders.

As mentioned earlier, this working paper allows the reader to disaggregate migration rates as well as migration forms at the national level and thus opens up ample opportunities for comparative research on the level of countries or regions, depending on the research question.

Finally, we would like to thank a number of colleagues who have been so kind as to offer critique on our initial paper, by pointing out a number of weaknesses and possibilities to improve our formalized model. First, we thank our colleagues of the Utrecht Seminar of Economic History where we presented our JGH paper on 5 November 2009. Second, we thank the panelists of the roundtable on our JGH paper at the European Social Science History Conference in Gent in the Spring of 2010. Adam McKeown, Leslie Moch, Jelle van Lottum and Joseph Ehmer all made valuable suggestions to refine and rethink our initial paper. Furthermore, the Cambridge Group for the History of Population, esp. Richard Smith and Tony Wrigley, discussed our JGH paper in June 2010.

One of the weaknesses that colleagues have highlighted is that we most likely underestimate the migration into cities, especially by tramping artisans. We share this critique but, so far, have deliberately left these migrations out of our calculations. Not because they do not fit in our cross-community definition but, primarily, because these migrations are very hard to calculate. For Europe as a whole and for the period we try to cover, simply not enough data are available. Moreover, there is an additional problem of individual migrants who made many such moves during their lifetime and it will be very difficult to identify in a systematic way the amount of multiple counts.

A second critique is linked to our suggestion, based on Manning, that migration leads to social change and thereby possibly also to innovation and economic growth. Although we did not spell this out specifically (neither in our original paper, nor in this working paper) this assumption should be discussed much more seriously and we hope that the disaggregation of the various forms of migration at the country level in this working paper offers new food for thought and may be the start for a more sophisticated approach that specifies under what conditions (forms of) migration may lead to economic growth. Aggregate total migration rates are only a first step, as below the surface they may be underpinned by very different forms of migration. Portugal, for example, has known migration rates almost equally high as the Netherlands, but this is primarily ex-

[4] Manning 2006.

plained by people leaving Portugal for Brazil and other non-European destinations (emigration), whereas in the Netherlands rural to urban moves and migration by soldiers and sailors were much more important. This, finally, also raises the issue of the impact of return migration on the regions of departure.

These issues are not solved in this working paper but, as mentioned above, we do think that the data offered will serve as a fruitful starting point to take this line of research much further.

2: EMIGRATION

Leaving Europe meant, in almost all cases, crossing cultural boundaries. Emigration occurred both to the *West* (overseas to the Americas), the *South* (to Africa, the Middle East and overseas to South East Asia) and the *East* (over land to Asiatic Russia and Central Asia). These exits need not be definitive, as many returned after some time and made multiple moves. Return migration varied over time and space but could be significant, as in the case of the mass migration to the Americas, of whom between 30 and 40 per cent returned to Europe. To calculate the number of people who left Europe we have excluded soldiers and sailors (5th category) to avoid double counting of these two categories. In the following tables we have split emigration by sending states, so that the numbers can also be used for disaggregation purposes. This was impossible for the number of Europeans who, often coerced, were taken to North Africa, whose numbers have been lumped together in table 2.1.

Table 2.1: Emigration from Europe to North Africa 1501-1800 (000s)

	Europe to North Africa Total 1 million 1530-1780 (1) (2) 625,000 to Algeria 1520-1830 (3)[5]
1501-50	60
1551-00	120
1601-50	120
1651-00	120
1701-50	120
1751-00	60
Total	600

Source: (1) Davis 2003; (2) Davis 2001; (3) Wolf 1979: 13. According to Wolf's work on the slave market in Algiers some 500,000 to 600,000 Christian slaves were sold. In the period 1501-1650 some 3000 per year and some 2000 in the latter period (1650-1830). On the basis of Davis, who tried to reconstruct the total Christian slave population in North Africa, we have doubled the estimates for Algiers.

[5] Of these total numbers it seems that at least 60 per cent were taken by land raids in Italy and Spain, whereas others were fishermen of these states. The rest were British, French, Dutch etc. (Davis 2001) sailors who have already been counted as sailors. Moreover, most of these prisoners were ransomed and then returned. The most intensive raiding took place in the period 1550-1750.

The following tables all concern Europeans who left Europe for overseas destinations, mostly the Americas and to some extent Asia, as in the case of Russians going to Siberia. We left out the category of Christian boys (between 7 and 18) who were enslaved by the Ottoman state in their Devşirme system, which was most intense in the period 1450-1650. On average some 200,000 of them were taken to Istanbul and the Asian part of the Ottoman empire to become Muslim and learn the language. Most of them were the enlisted in as Jannissaries in the army.[6] The reason not to include them is that they overlap with our numbers on soldiers.

Table 2.2: Emigration from the British Isles to the Americas (including the Caribbean) 1601-1900 (000s)

	England and Wales	Scotland	Ireland	Total
1601-1650	179	2	10	191
1651-1700	171	7	20	198
1701-1750	50	23	27	100
1751-1800	20	55	119	194
1801-1850	150 (1790-1815) + 500 (1815-1850) (1) Total: 650	32.5 (1790-1815) + 100 (1815-1850) (1) Total: 132.5	100 à 150 (1783-1815) + 800 à 1000 (1815-1845) (2)+ 924 (1846-1850) (3) Total (estimate): 1949	2731
1851-1900		8863 (4)	1279 (4) (5)	10142
Total		10152.5	3404	13556

Source: Unless otherwise indicated, based on Canny 1994 (England and Wales); Smout et al. 1994 (Scotland); and Cullen 1994 (Ireland). (1) Richards 2004: 118; (2) To the United States only: Kenny 2000: 45; (3) Willcox 1931, II: 265; Kenny 2000: 97-98; (4) Willcox 1931, II: 244; Ferenczi & Willcox 1929: I, 230-231; (5) Mitchell 1992: 124.

[6] Papoulia 1963; Sugar 1977.

Table 2.3: Emigration from Spain and Portugal to the Americas (including the Caribbean) and North Africa 1501-1900 (000s)

	Spain to the Americas	Spain to North Africa	Portugal to the Americas	Total
1501-1550	114		175	289
1551-1600	129		225 (4)	354
1601-1650	195	272 (Muslims) (10) + 75 Jews (5)	265 (4)	807
1651-1700	83		125 (4)	208
1701-1750	83		500	583
1751-1800	143		220 (4)	363
1801-1850	160 (3)		250 (4)	410
1851-1900	1400 (1)		832 (2)	2232
Total	2307	347	2592	5246

Source: Canny 1994, Conclusion, pp. 268-269 (Portugal) and Sanchez-Albornoz 1994.
(1) Ferenczi & Willcox 1929: I, 230-231; (2) Ferenczi & Willcox 1929: I, 230-231; Baganha 2003; see also Godinho 1992: 21; (3) Estimate based on a 65 per cent ratio of the Portuguese figures in this period; (4) Engerman & Das Neves 1997: 485; (5) Pietschmann (2007: 227) does not give exact figures for Africa, but mentions the total of 100,000 to 150,000 Jews who had to flee the Iberian Peninsula (including Portugal), many of whom went to North Africa and the Middle East. We estimated this would be 50 per cent.

Table 2.4: Emigration from The Netherlands and Belgium 1601-1900 (000s)

	Netherlands			Belgium	
	Asia civilians (1)	Americas (2)	[Germany] (3)	US (4)	Total
1601-1650		2.5			2.5
1651-1700		2.5			2.5
1701-1750		5			5
1751-1800		10			10
1801-1850	?	17 (5)			17
1851-1900	64	130	[80]	47	241
Total	64	167		47	278

Source: (1) Bosma 2007: 515, 523; (2) Oomens 1989: supplement staat 2 and Lucassen 1994.
(3) Lucassen 1993 (IISH research paper), not used for total in this table because of overlap with table 5.16, column 6; (4) Ferenczi & Willcox 1929: I, 230-231; (5) Deduced from Oomens 1989: 36 (17,000 Dutch born in the US around 1849).

Table 2.5: Emigration from France to the Americas, Africa and Asia 1651-1900 (000s)

	North Africa	Other colonies	North America	South America	Total
1651-1700		1 (1)	6		7
1701-1750			50		50
1751-1800			50		50
1801-1850			50 (3)	100 (2)	150
1851-1900	237	62	237	272	808
Total	237	63	393	272	1065

Source: For 1850-1900: Willcox 1931, II: 206-207; Ogden 1989: 36; For earlier periods: Moogk 1994: 250-251; 255; (1) Boucher 1981; (2) Estimate. Mörner 1995 (260), for example mentions at least 16,500 French Basque emigrants arriving in Montevideo in the years 1835-1842.
(3) estimate based on Ferenczi & Willcox 1929: I, 106-109.

Table 2.6: Emigration from Denmark, Norway and Sweden to the Americas 1859-1900 (000s)

	Total
1851-1900	1482

Source: For 1850-1900: Willcox 1931: 289.

Table 2.7: Emigration from German lands and Switzerland 1701-1900 (000s)

	German lands				Switzerland	
	(all destinations)	1851-1870 (all destinations)	1871-1900 (US)	1871-1900 (Brazil and Argentina)		Total
1701-1750	35 (3)					35
1751-1800	35 (3)					35
1801-1850	595 (1820-1850) (2)					595
1851-1900		1908 (1)	2676 (2)	68 (1)	166 (4)	4818
Total	715	1908	2272	68	166	5483

Source: (1) Willcox 1931: II: 333; 339-340; (2) Moltmann 1976: 201; (3) Fertig 1994; (4) Ferenczi & Willcox 1929: I, 230-231.

Table 2.8: Emigration from Austria-Hungary 1851-1900 (000s)

	All destinations	Total
1851-1900	846	846

Source: Willcox 1931: II, 398.

Table 2.9: Emigration from Italy 1851-1900 (000s)

	All destinations (also Europe)	Emigration outside of Europe	Total
1851-1900	[5250[7]]	2887	2887

Source: Willcox 1931: II, 445. According to Gabaccia (2000: 4) 55 per cent of them left Europe.

Table 2.10: Emigration from Russia 1501-1900 (000s)

	Russia to Ottoman Asia	Russia to Siberia	Russia to the United States	Total
1501-1550	1100 (1) We chose a conservative estimation of 500 (see also (3))			500
1551-1600	350 (1); 500 (5) We chose the conservative estimation of 350			350
1601-1650	320			320
1651-1700	830	270 Kalmyks (5)		1100
1701-1750	c. 200 (our estimate)[8]	150 (7)		200
1751-1800	200 Krim Tatars (8) + 100 slaves (estimate)	150 (7)		450
1801-1850	100 (3)	375 (6)		475
1851-1900	100 slaves (3) + some 600 Circassian refugees (2) = 700	1700 (6)	692	3092
Total	3300	2645	692	6637

Source: (1) Fisher 1972 and Clarence-Smith 2006: 13; (2) Toledano 1998: 84; (3) Clarence Smith 2006: 13; (4) Davis 2003: 56 and Clarence Smith 2006: 12-13; Mendes 2008: 836; (5) Hellie 2002: 307-308; (6) Hoerder 2002: 319: 1851-1890: yearly number of immigrants to Siberia increases from 19,000 to 42,000; 1890-1900: another 500,000. Moon (1997: 867-868) mentions 1 million peasant going to Siberia between 1867 and 1897; (7) Hoerder 2002: 309: 200,000 to 500,000 for the 18th century; (8) Quataert 2000 and McGowan 1994: 650; (9) Willcox 1931, II: 528.

[7] Based on an average of 210,000 for the period 1876-1900.
[8] Based on the fact that Circassians kept raiding Russia for slaves albeit catching lower numbers. Their last raid dates from 1774.

Table 2.11: Emigration from South Eastern Europe 1851-1900 (000s)

	Ottoman Europe[9]	Greece	Romania	Total
1851-1900	45(1)	35(2)	13	93

Source: (1) Karpat 1985: 185 and 198. We applied the proportion of Syrians to the US (90 per cent after 1900) to the entire group of 450,000 European Ottomans mentioned on page 185; (2) Fairchild 1911: 109.

Table 2.12: Overview of the total emigration from Europe 1501-1900 (000s)

	Table 1 (Europe to North Africa)	Table2 (UK)	Table 3 (Spain and Portugal)	Table 4 (Netherlands and Belgium)	Table 5 (France)	Table 6 (Nordic countries)
1501-1550	60		289			
1551-1600	120		354			
1601-1650	120	191	807	2.5		
1651-1700	120	198	208	2.5	7	
1701-1750	120	100	583	5	50	
1751-1800	60	194	363	10	50	
1801-1850		2731	410	17	150	
1851-1900		10142	2200	241	808	1482
Total	600	13556	5214	278	1065	1482

(**Table 2.12, continued: Overview of the total emigration from Europe 1501-1900) (000s)**

	Table 7 (German lands and Switzerland)	Table 8 (Austria)	Table 9 (Italy)	Table 10 (Russia)	Table 11 (South Eastern Europe)	Total
1501-1550				500		849
1551-1600				350		824
1601-1650				320		1440
1651-1700				1100		1635
1701-1750	35			350		1243
1751-1800	35			450		1162
1801-1850	595			475		4378
1851-1900	4818	846	2887	3092	93	26609
Total	5483	846	2887	6637	93	38140

[9] Albania, Bulgaria and Thrace.

3: IMMIGRATION

As explained in our article we defined immigration as people coming to Europe from other continents. For our period this was a marginal phenomenon in quantitative terms. It concerns very different groups like the central Asian Kalmyks who settled in Russia, and settlers from the Asian part of the Ottoman Empire in the Balkans, but also various kinds of groups who were taken as slaves to Italy, Spain and Portugal. In table 3.1 the most important groups are summarized.

Table 3.1: Immigration to Europe 1501-1800 (000s)

	To Russia	**Muslim slaves from Africa to Italy** (1)	**To Ottoman Balkans** (2)	**African slaves to Spain and Portugal** (3)	**Total**
1501-50		125	50	200	375
1551-00		125		100	225
1601-50	270	125		75	470
1650-00		125			125
1700-50		50			50
1750-00		20			20
Total	270	570	50	375	1265

Source: (1) Bono 1999: 35; (2) Inalcik 1994: 37; Todorov 1983: 47-49 (there 42,000); (3) Mendes 2008: 742; Phillips 2007; Fonseca 2005: 115; Saunders 1982.

4: COLONIZATION

Table 4.1: Colonization migration in Europe 1601-1900 (000s)

	Ireland	Scandi-navia	Russia (1)	Habsburg	Ottoman/ Balkans	Prussia	Total
1601-50	25	27		25 (estimate)	50 (esti-mate)		127
1651-00	285 (2)		1251 PTB	20 + 30 (Serbs) (3)	175 (esti-mate)		1761
1701-50			1378 PTB	200 (4)		50 (Oder, Warthe, Nedze) (6)	1628
1751-00			1) 100 (Germans) (7) 2) 2500 PTB	175 (8)		250 (Idem)	3025
1801-50			3006 PTB				3006
1851-00			2924 PTB				2924
Total	310	27	11159	450	225	300	12471

Legend: PTB= peasants to borderlands
Source: (1) Moon (1997: 863 and 867) provides numbers of male peasant settlers in the Forest Heartland and the Steppes regions, but excludes those who went to Siberia (under emigration, see table 11). Following Moon we estimate that one third of the growth was caused by natural increase (Moon 1997: 869). As these numbers only refer to males, one should double these numbers because of universal early marriage (Moon 1997: 869). However, this would result in twice as many migrants than the estimate by Russian demographers who calculated that, in total, between the 1670s and 1896 ten million *people* went to the frontier regions (Moon 1997: 867). It is not clear whether this number only concerns males. We have chosen for a conservative estimate within the 10 million range; (2) Canny 2007: 549. See also Smith 2007: 86; Smout et al. 1994: 85; (3) Estimate based on Hoerder 2002: 284-285; (4) Serbs from Kosovo to South Hungary (Sundhausen 2007: 295); (5) Hoerder 2002: 284; (6) Hellie 2002: 317-318; (7) Hellie 2002: 317-318; (8) Hoerder 2002: 285. (settlers along the Ottoman borders).

5: MIGRATION TO CITIES

As explained in the article, we consider the migration of people to cities larger than 9,999 inhabitants as a cross-community move. However, a lack of systematic longitudinal data for individual cities, especially before 1800, renders it impossible to know how many people were involved in the period 1501-1900. We have, therefore, chosen for a rough proxy, which is 1) the increase of the urban population in Europe combined with 2) the natural decrease/increase in relation to the share of the average urban population in a given 50-year period.

Increase of the urban population

The first criterion takes the increase in the urban population per country or region between the nine reference dates (1500, 1550…1900) as point of departure. As explained in our article we assume on the basis of the historical demographic literature that, in general, cities in Europe before 1800 could not sustain themselves. Therefore, we may assume that all city growth until 1800 must have been caused by immigration from the much more fertile countryside where the demographic balance was positive. Although, as we will explain further on in this paragraph, there were important differences within Europe when it comes to urban mortality.

For the reconstruction of urban growth we relied heavily on the very important pioneering work done, already in the 1980s, by Jan de Vries, Paul Bairoch and Thomas Fedor (for Russia) and Nikolai Todorov (Balkan). First, we have counted all urban growth in the period 1501-1900 as migration; as a second step we have added the urban natural decrease (before 1800) and subtracted the urban natural increase (after 1800).

The basis for our calculations of the first step (city growth) is table 3.2 in De Vries 1984 (p. 30), which covers the period 1501-1800 for Europe, without Russia, Hungary and the Balkans. Using De Vries' numbers, we first calculate the urban growth per 50-year periods and per country/region. These numbers offered by Jan de Vries were completed by estimates for Hungary, Russia and South east (Ottoman) Europe (table 5.2)

Table 5.1: Total urban increase/decrease in European countries/regions 1501-1900 (000s)

	1	2	3	4	5	6	7	8	9	10
	SCA	**UK**	**IRE**	**NL**	**BEL**	**GER**	**FRA**	**SWI**	**ITA**	**SPA**
1501-50	0	32	0	41	80	149	126	2	196	225
1551-00	13	160	0	173	- 74	128	300	13	475	284
1601-50	37	245	17	239	114	- 134	324	- 3	- 396	- 251
1651-00	52	241	79	36	71	186	309	17	184	1
1701-50	52	369	65	- 59	- 54	242	223	21	398	- 6
1751-00	61	1006	208	24	116	397	412	3	436	398
1801-50	228	6092	303	281	352	2366	2791	122	2280	1425
1851-90	*1045*	*11798*	*173*	*619*	*1206*	*10228*	*4766*	*295*	*1582*	*2120*
1851-1900[10]	1506	16854	247	884	1723	14611	6809	421	2260	3029

(Table 5.1 continued)

	11	12	13	14	15	16	17
	POR	**AUS-BOH**	**POL**	**HUN**	**RUS**[11]	**Ottoman Balkans**	**Total**[12]
1501-50	108	7	10	- 5	22	398	1396
1551-00	27	23	5	- 5	22	398	2021
1601-50	44	10	5	10	49	10	1104
1651-00	31	80	-5	10	49	10	1356
1701-50	- 21	114	21	66	570	- 63	2141
1751-00	43	116	67	165	-9	505	3957
1801-50	249	452	457	554	2008	304	20264
1851-90	*148*	*2627*	*750*				
1851-00	211	3753	1071	1023	8274	1005	63681

Source: columns 1-13: De Vries 1984: 30 (table 3.2) and 45-47 (table 3.8). Columns 14-15: Bairoch et al. 1988; Behar 1996. Fedor 1975; Hourcade 2008: 162. For a more detailed overview of urban developments in Russia, Hungary and the Balkans, see table 5.2.

[10] These numbers are extrapolations of De Vries' numbers for the increase between 1850 and 1890. We have added 30 per cent for the last decade, assuming that the growth rate accelerated at the end of the nineteenth century (Bairoch 1976: 309).

[11] The calculations for Russia are an absolute minimum, as there are ample indications that not all real inhabitants in cities have been counted in the censuses, which left out de facto settlement of peasants whose official domicile was in their villages of origin. Thus far it is, however, impossible to make educated guesses as to what percentage should be added per period. For this discussion see Rozman 1976 and Gorshkow 2000.

[12] We did not include the negative numbers.

Table 5.2: Total population of cities (>9999) in Russia, Hungary and Ottoman Europe 1501-1900 (000s)

	1500	1600	1700	1750	1800	1850	1900
Albania	5	42	46	28	112	109	
Rumania	93	97	143	194	276	521	
Bulgaria	97	103	126	143	285	337	
Yugoslavia	112	206	165	145	369	365	
Greece	29	83	70	77	290	273	
Istanbul	100	700	700	600	360	391	950
Ottoman total	436	1231	1250	1187	1692	1996	3882[13]
Hungary	22	12	33	99	264	818	1841[14]
Russia[15]	349	393	491	1061	1052	3060	11334

Source: Bairoch et al. 1988; Behar 1996. Fedor 1975; Hourcade 2008: 162-163.

We fully realize that this method underestimates the number of migrants to cities because, ideally, one should not use the aggregate level of states, but calculate these numbers using the level of cities. For the Netherlands, for example, the total inhabitants of cities over 9999 decreased in the first half of the eighteenth century (from 639,000 to 580,000),[16] which means that the number of migrants deduced from the aggregate growth of Dutch cities for this period was zero.[17] If we had used the city level, however, we would have added another 36,000, which is the total growth of cities like Amsterdam, Delft, Gouda, Maastricht, Nijmegen, the Hague, Bois-le-Duc and Zwolle. If we would extrapolate from this example, we have missed at least 20 per cent. For the moment, however, we have decided to refrain from adding a fixed percentage, also because this can differ considerably from period to period.[18]

Natural increase and decrease

As we explained in our article, the growth of cities until 1750 does not cover all migrations. Apart from urban to urban moves, which for our period and geographical unit are very difficult to calculate, we also miss the number of migrants needed to make up for natural *de*crease of the population, and, after 1800 we have to subtract the annual rate of

[13] We lack for figures for the European Ottoman Empire around 1900, so we have used the same multiplier as for Russia (factor 3) for the increase in the period 1850-1900.

[14] Figures for the urbanization rate of Hungary (in its present size) for 1900 are lacking. To reach an educated guess we first took the figure by Angus Maddison of seven million for the total Hungarian population in 1900 and combine this with the average urbanization rate of Europe in 1900 for cities over 5000 (37.9, according to Bairoch 1988: 216). We lowered this rate by deducing cities between 4999 and 10,000. If we apply the share for Danish cities in 1845 between 4,999 and 10,000 compared to the share of cities over 9,999 (De Vries 1984: 63) we would have to deduce 28 per cent of the Bairoch average rate for Europe in 1900, lowering 37.9 per cent with 10.6 per cent to 26.3 per cent. This results in an estimate of 1,841,000 Hungarians in cities over 9,999 inhabitants in 1900. 732,000 lived in Budapest, which would be 40 per cent.

[15] Without Poland.

[16] De Vries 1984: 30.

[17] We therefore only counted the annual number of migrants needed tot sustain the average of 610,000, which by that time was 5 per thousand leading to 5x610x50= 152,500 (explained further on in this paragraph).

[18] In a period in which all cities grow, this problem is non-existent for example.

natural *in*crease. In order to do this, and to disaggregate the total numbers given in our article (table 1, p. 361) to the level of countries and regions, we needed two different kinds of data: 1) average size of the urban population per 50-year period and 2) the average rate of decrease or increase per 1,000 inhabitants. Put together they allow us to calculate the number of people that should be added to or subtracted from the migrants calculated on the basis of urban growth (table 5.1)

The method we used to calculate the average size of the urban population is rather simple. We took the estimates of the urban population on the national level given by Jan de Vries and others at the start and end of each 50-year period and divided these by 2 (table 5.3)

Table 5.3: Average total urban population (of cities over 9,999 inhabitants) in Europe 1501-1900 (000s)

	1	2	3	4	5	6	7	8
	SCA	**UK**	**IRE**	**NL**	**BEL**	**GER**	**FRA**	**SWI**
1501-50	13	109	0	171	335	460	751	11
1551-00	19	205	0	278	343	598	964	19
1601-50	45	408	8	484	358	595	1276	23
1651-00	89	651	57	621	451	621	1593	31
1701-50	141	956	129	610	459	835	1859	50
1751-00	198	1643	265	592	490	1154	2176	62
1801-50	342	5192	520	745	724	2536	3779	124
1851-90	*983*	*14137*	*759*	*1195*	*1503*	*8833*	*7557*	*333*
1851-00[19]	1209	16665	796	1327	1761	11025	8578	396

(Table 5.3 continued)

	9	10	11	12	13	14	15	16	17
	ITA	**SPA**	**POR**	**AUS-BOH**	**POL**	**HUN**	**RUS**	**Ottoman Balkans**	**Total Europe**
1501-50	1400	527	84	64	5	17	371	834	5142
1551-00	1736	781	147	79	13	17	371	834	6394
1601-50	1775	798	177	95	18	23	442	1240	7765
1651-00	1669	672	215	140	18	23	442	1240	8533
1701-50	1960	1056	220	237	21	66	776	1219	10594
1751-00	2377	966	231	352	70	182	1057	1440	13255
1801-50	3735	1878	377	636	332	541	2056	1844	25361
1851-90	*5666*	*3650*	*575*	*2175*	*935*				
1851-00	6005	4104	607	2738	1096	1130	7197	960	65794

[19] These numbers are extrapolations of De Vries' (1984: 45-46) numbers for the increase between 1850 and 1890. We have added 30 per cent for the last decade, assuming that the growth rate accelerated in the years 1890-1900. So, as an example, for Scandinavia this means that the total urban population in 1890 (1,510,000), which means a growth of 1,054,000 since 1850 (456,000). This 1054 is 70 per cent of the total growth in the period 1850-1900, so that we should add 30 per cent, which results in a growth of 1,506,000. Together with the 456,000 in 1850 this leads to a total urban population in Scandinavia in 1900 of 1,962,000. Averaged with 456,000 in 1850, this results in an average urban population in the period 1850-1900 of 1,209,000.

Source: columns 1-13: De Vries 1984: 30 (table 3.2) and 45-47 (table 3.8). Columns 14-15: Bairoch et al. 1988; Behar 1996. Fedor 1975; Hourcade 2008: 162. For a more detailed overview of urban developments in Russia and the Balkans, see table 5.2.

The second criterion is necessary to calculate the natural decrease or increase of cities. This is important because cities before 1800 often could not sustain themselves and lost inhabitants through what is known as the urban graveyard effect: more deaths than births caused by unhealthy circumstances in cities. Based on our reading of the available historiography on urban demography, in our article we used very rough estimates per 50-year period, starting with a negative rate of minus 10 per thousand inhabitant since the sixteenth century and ending with a positive rate of 10 per 1,000 inhabitants.

The question, however, is what percentage to apply to the various periods? In our original JGH article, we used rather crude estimates ranging from minus 10 to plus 10 in the period 1501-1900. Since then, we have gathered much more data which enables us to refine and readjust these estimates. Before we present these new estimates, we first explain the sources from which we deduced these educated guesses. In the remainder of this paragraph we first present the data on urban mortality in the period 1501-1900 per country, on which we based our readjusted estimates for urban decrease or increase (table 5.14).

Table 5.4: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): The Netherlands 1551-1900

	A'dam (1)	A'dam (2)	Adam (3)	R'dam	Haarlem	Dordrecht (4)	Alkmaar	Enkhuizen (5)	Average
1551-00						-10			-10
1601-50						- 10		- 7.4	- 8
1651-00	- 1.6					- 10		- 3	- 5
1701-50	- 4.4		- 4.8			- 3		- 12	- 6
1751-00	- 3.5	- 19,6 [1]	- 5	+ 2.3 [10]	- 9 [20]	- 1	- 9.5 [10]	- 8	- 5 (6)
1801-50	+ 0.2		- 2			0			- 1
1851-00	+ 9		+ 8						+ 8.5

Source: (1) Van Leeuwen and Oeppen 1993: 70-71 (our calculations); (2) Peller 1920: 230; (3) De Vries 1984: 235; (4) Nusteling 1998: 91-93; 98-101; (5) Willemsen 1988: 178-179; (6) We left out the single observation for Amsterdam of minus 19.6.
Legend: numbers between brackets ([..]) refer to the number of yearly observations. Numbers without brackets are average of the 50 year period.

Table 5.5: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): Belgium 1651-1850

	St Nikolaas	**Verviers** (1)	**Brussels**	**Average**
1651-00	+ 8 [10]			+ 8
1701-50	+ 19 [20]			+ 19
1751-00	- 1 [5]		+ 2.9 [5]	+ 1
1801-50		+ 6		+ 6

Source: (unless otherwise indicated): Mols 1956 (vol. III), 207-211. (1) Desama 1982: 201.
Legend: numbers between brackets ([..]) refer to the number of yearly observations. Numbers without brackets are average of the 50 year period.

Table 5.6: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): France 1551-1900

	Paris	**Paris** (1)	**Paris** (2)	**Paris** (3)	**Strasbourg** (4)	**Dijon**	**Montpellier**
1551-00					- 20 [15]		
1601-50	- 2				- 64 [31]		
1651-00	- 2				- 4 (1681-1726)		
1701-50					- 9 [11]		+ 6.2 [1]
1751-00	+ 2.4 [20]	+ 1 [21]	0 [30]		-2.2 [3] -2.8 (1726-1789)	+ 1 [9]	
1801-50			+ 0.3	+2.1 [20] (5)			
1851-00			+ 0.5	+ 2.7 [30] (6)		- 14.7 [1]	

	Caen (7)	**Montauban** (8)	**Rouen** (9)	**Marseille** (10)	**Auray** (11)	**Amiens**
1551-00						
1601-50						
1651-00			+ 3.9			
1701-50	0 [16]		+ 5			
1751-00	+ 1,2/+ 0.9	+ 4	+ 2.5	- 0.2	-2,6	
1801-50				+ 1.6 [20]		
1851-00				- 3.2 [1]		+ 1 [1]

	Limoges	**Lyon**	**Nancy**	**Nantes**	**Nice**	**Pau**	**Reims**
1551-00							
1601-50							
1651-00							
1701-50							
1751-00							
1801-50							
1851-00	+ 3.4 [1]	- 0.7 [1]	- 0.4 [1]	- 3.7 [1]	+ 3.6 [1]	- 2.7 [1]	+ 1.6 [1]

(**Table 5.6 continued)**

	St. Etienne	Troyes	Le Havre	Toulouse	Dunkerque	Douai	Average
1551-00							- 20
1601-50							- 33
1651-00							- 0.7
1701-50							+ 0.6
1751-00			+ 8 [10]				+ 2.1
1801-50							+ 1.6
1851-00	+ 3.6 [1]	- 1.9 [1]	+ 2.7 [1]	- 4.2 [1]	- 2.8 [1]	+ 4.3 [1]	- 0.6

Source: (unless otherwise indicated): Mols 1956 (vol. III), 207-211. Numbers for the period 1851-1900 (unless otherwise indicated); Levasseur 1891: 408; (1) Esmonin 1964 (our calculation); (2) Levasseur 1891: 395; (3) Chevalier 1949: 48 (our calculations); (4) Kintz 1970: 158 and 161 (our calculations); (5) Chevalier 1949: 48 (our calculations); (6) Chevalier 1950: 51-52; (7) Perrot 1975: 152. Caen had about 36,000 inhabitants at that time; (8) Soboul 1974: 58. Montauban had about 19,000 inhabitants in this period; (9) Bardet 1983: Documents, 17-19 (our calculations). For the period 1650-1700 we assumed a total population of 80,000 and for 1700-1750 60,000 and for the period 1751-1800 100,000 (Bardet 1983: 27). For 1651-1700 this led us to the following calculation: 133866 births minus 118815 burials is a positive outcome of 15051. Divided by 50 (years) results in 301, which then is divided by 60 to come up with a natural growth of 5 per 1000; (10) Sewell 1985: 149; (11) Le Goff 1974: 200 (Auray had 4,000 inhabitants at that time).
Legend: numbers between brackets ([…]) refer to the number of yearly observations. Numbers without brackets are the average of the 50-year period

Table 5.7: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): Great Britain and Ireland: 1601-1900

	London	**London** (1)	**Manchester**	**Urban UK** (2)	**London** (3)	**'Urban England'** (4)
1601-50				- 1.2		- 1.2
1651-00	- 5.3 [4]	-10				
1701-50	- 33.9 [1]	-10			-11	- 0.4
1751-00	+ 9.1 [10]	- 8.5 (5) [2]	+ 10.7 [20]	- 0.4		+ 1.3
1801-50				+ 1.3		
1851-00		+ 13 (6) [5]	+ 8.4 (6) [5]			

	Glasgow	**Liverpool**	**Dublin**	**Average**
1601-50				- 1.2
1651-00				- 7.7
1701-50				- 13.8
1751-00				+ 2.4
1801-50				+ 1.3
1851-00	+ 12.4 (6) [5]	+ 6.7 (6) [5]	+ 2.8 (6) [5]	+ 8.7

Source: (unless otherwise indicated): Mols 1956 (vol. III), 207-211. (1) Wrigley 1978: 217; (2) Daunton 1978: 256; (3) Lampard 1973; (4) Daunton 1978: 256; (5) Peller 1920: 230; (6) Levasseur 1891: 396
Legend: numbers between brackets ([…]) refer to the number of yearly observations. Numbers without brackets are average of the 50-year period

Table 5.8: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): Switzerland 1601-1800

	Basel	**Zürich**	**Geneva**	**Geneva** (1)	**Average**
1601-50	- 4.4	+ 1.1 [20]		- 5 [30]	- 2.8
1651-00	+ 4.6	- 7.6 [20]	+ 1.3 [5]	- 10	- 3
1701-50	+ 1.1		+ 1.4	- 1.9	0
1751-00	-2.6		+ 2.2	+ 1.9	+ 0.5

Source: (unless otherwise indicated): Mols 1956 (vol. III), 207-211. (1) Perrenoud 1979: 60.
Legend: numbers between brackets ([…]) refer to the number of yearly observations. Numbers without brackets are average of the 50 year period

Table 5.9: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): Italy 1551-1900

	Rome	**Milan**	**Como**	**Pavia**	**Cremona**	**Mantua**	**Modena**
1551-00							+ 10 [12]
1601-50							+ 4 [10]
1651-00							- 1.4 [13]
1701-50	- 6.2						
1751-00	- 8.3	- 9.8 [15]	+ 7.8 [1]	- 10.6 [1]	- 15.1 [1]	- 11.8 [1]	- 9.3 [31]
1801-50							
1851-00	- 2.3 (1) [5]	+ 2.3 (1) [5]					

(Table 5.9 continued)

	Lodi	Varese	Pesaro	Trieste (2)	Bologna (3)	Cities>20,000 (4)	Venice
1551-00							
1601-50			+ 5.4 [3]				- 7.5
1651-00			- 5.6 [3]				+ 4.6
1701-50			+ 2.3 [3]				- 2.7
1751-00	+ 1.8 [1]	+ 7.2 [1]	+ 6.8 [3]				- 8.6 [40]
1801-50							
1851-00				+ 2 [1]	- 0.2	+ 1.6	+ 1.2 (1850-1869) (5)

	Naples	Turin	Palermo	Average
1551-00				+ 10
1601-50				+ 0.6
1651-00				+ 1
1701-50				0
1751-00				-5
1801-50				-
1851-00	2.3 (1) [5]	+ 3.3 (1) [5]	+ 9.3 (1) [5]	+ 2

Source: (unless otherwise indicated): Mols 1956 (vol. III), 207-211. (1) Levasseur 1891: 396; (2) Cattaruzza 2002; (3) Schiaffino 1982; (4) Natale 1982: 221; (5) Bengtsson et al. 2004: 51.
Legend: numbers between brackets ([…]) refer to the number of yearly observations. Numbers without brackets are average of the 50-year period

Table 5.10: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): Germany and Austria 1551-1900

	Berlin	Berlin	Berlin (1)	Augsburg (2)	Vienna (3)	Munich	Hamburg
1551-00				- 2			
1601-50				- 12			
1651-00				- 0.7			
1701-50	- 1.6 [30]		- 2.4	- 6	- 3.2 [40]		
1751-00	- 3.6 [40]	- 3.8 [1]	- 2.4	- 10.8	- 3.2 [30]		
1801-50			+ 3				
1851-00	+ 14.8 (4)		+ 9		+ 17 (4) [6]	+ 11.9 (4) [6]	+ 14.4 (4) [5]

(Table 5.10 continued)

	Breslau (5)	**Dresden**	**Leipzig**	**Halle**	**Frank-furt/M**	**Braun-schweig**	**Lübeck** (6)	**Average**
1551-00	- 7.8							-4.9
1601-50	- 7.8							- 9.9
1651-00	- 7.8							- 4.3
1701-50	- 7.8							-4.2
1751-00		- 6.4	- 4.4	- 2.7	- 2.8	- 13.7	- 6.2 [20]	-5.5
1801-50	+ 6.6 (4) [5]	+ 10.8 (4) [5]						+ 6.8
1851-00								+ 13.4

Source:
The figures for Dresden (57,000), Leipzig (35,000), Halle (13,000), Frankfurt am Main (32,000), Braunschweig (21,000) and Danzig (113,000) are for the year 1753 and based on Peller 1920: 230. (1) De Vries 1984: 236; (2) Francois 1978: 152-153 (our calculations). Total population figures we took from Bairoch, Batou & Chèvre 1988; (3) Peller 1920: 230. Vienna counted c. 180,000 inhabitants in the eighteenth century; (4) Levasseur 1891: 396; (5) Peller (1920: 230) gives the total figure for the entire period 1555-1735; (6) Mols 1956 (III) 154.
Legend: numbers between brackets ([…]) refer to the number of yearly observations. Numbers without brackets are average of the 50-year period

Table 5.11: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): Poland/Hungary/ Romania (1751-1900)

	Danzig (1)	**Bucarest**	**Budapest**	**Warsaw**	**Average**
1751-00	+ 1.4				+ 1.4
1801-50					
1851-00		+ 3.9 (2) [5]	+ 1.5 (2) [5]	+ 5.7 (3) [4]	+ 3.7

Source:
(1) Peller 2910: 230; (2) Levasseur 1891: 396; (3) Eisenbach & Grochulska 1965: 118. (Warsaw had at that time some 65 to 70,000 inhabitants).
Legend: numbers between brackets ([…]) refer to the number of yearly observations. Numbers without brackets are average of the 50-year period

Table 5.12: Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year): Scandinavia (1701-1900)

	Stockholm			Copenhagen	
	Peller (1)	**De Vries** (2)	**Bairoch** (3)	**Peller** (1)	**Average**
1701-50		- 11.3 (1721-1780)			- 11.3
1751-00	- 3	- 14 (1781-1810)	- 1 (1751-1760)	- 3.8	- 5.5
1801-50		- 8.7 (1811-1860)	- 1.7 (1801-1810) - 1.2 (1816-1840)		- 5.2
1851-00		+ 3.8 (1861-1880) + 9.2 (1881-1910)	- 0.6 (1851-1860) 0 (1871-1880) + 0.7 (1891-1900)	+ 13.6 (4) [5]	+ 5.3

Source: (1) Peller 1920: 230; and (3) Bairoch 1988: 241; and (2) De Vries 1984: 237 (based on the Statistical Yearbook for Stockholm City, 1965); (4) Levasseur 1891: 396.
Legend: numbers between brackets ([…]) refer to the number of yearly observations. Numbers without brackets are average of the 50-year period

Table 5.13: Summary of tables 5.4 - 5.12 (Natural population growth (positive and negative) of cities in Europe (per 1000 inhabitants, per year) 1551-1900

	Netherlands	Belgium	France	UK &Ireland	Switzerland
1551-00	-10		- 20		
1601-50	- 8		- 33	- 1.2	- 2.8
1651-00	- 5	+ 8	- 0.7	- 7.7	- 3
1701-50	- 6	+ 19	+ 0.6	- 13.8	0
1751-00	- 5	+ 1	+ 2.1	+ 2.4	+ 0.5
1801-50	- 1	+ 6	+ 1.6	+ 1.3	
1851-00	+ 8.5		- 0.6	+ 8.7	

	Italy	Germany & Austria	Poland/Hungary &Romania	Scandinavia	Average
1551-00	+ 10	-4.9			- 6.2
1601-50	+ 0.6	- 9.9			- 9
1651-00	+ 1	- 4.3			- 1.7
1701-50	0	-4.2		- 11.3	- 2
1751-00	-5	-5.5	+ 1.4	- 5.5	- 1.5
1801-50		+ 6.8		- 5.2	+ 1.6
1851-00	+ 2	+ 13.4	+ 3.7	+ 5.3	+ 5.9

From these scattered numbers we can first of all conclude that there is no direct relation with size, although some big cities like London (especially between 1651-1750) and Venice show dramatic death rates in the early modern period. The second conclusion is that in time things have changed for the better. Natural decrease was most deeply felt before 1700. The eighteenth century was an age of transition, while the urban graveyard effect is fading away in the nineteenth century with most cities showing natural increase. Finally, Southern European cities tend to show a more positive development already from the sixteenth century onwards. After 1800, however, Western and Northern Europe caught up, while Southern Europe stayed somewhat behind.

These data are insufficient to allow a sound geographical differentiation of natural decrease or increase. We do think, however, that the crude measure used in our original article should be modified on the basis of the averages presented in table 5.13, which leads us to the following readjustment:

Table 5.14: Old and new averages of natural decrease and increase of cities in Europe per 1000 inhabitants per year 1501-1900

	Lucassen & Lucassen 2009	New
1501-50	- 10	- 6
1551-00	- 10	- 6
1601-50	- 10	- 9
1651-00	- 5	- 2
1701-50	- 5	- 2
1751-00	0	- 1
1801-50	+ 5	+ 2
1851-00	+ 10	+ 6

Source: Lucassen & Lucassen 2009**;** and table 5.13 above

In the following table we have applied these new rates to the averages given in table 5.3. The calculation multiplies the rate with the number of thousand inhabitants and then multiplies by fifty (the number of years). So, to take the example of Scandinavia in 1501-1550: - 6 (natural decrease per 1000 inhabitants, as given in table 5.14) x 13 (average of the total urban population in 000s) x 50 (years) = - 3,900, the minus meaning that we should add 3.9 thousand migrants to the total urban growth in this period.

Table 5.15: Natural decrease and increase of the population of cities > 9,999, 1501-1900 (000s)

		1	2	3	4	5	6	7	8
	Rate per 1,000 inhabitants	SCA	UK	IRE	NL	BEL	GER	FRA	SWI
1501-1550	- 6	4	33	0	51	101	138	225	3
1551-1600	- 6	6	62	0	83	103	179	289	6
1601-1650	- 9	20	184	4	218	161	268	574	10
1651-1700	- 2	9	65	6	62	45	62	159	3
1701-1750	- 2	14	96	13	61	46	84	186	5
1751-1800	- 1	10	82	13	30	25	58	109	3
1801-1850	+ 2	34	519	52	75	73	254	378	12
1851-1900	+ 6	352	4992	259	415	530	3173	2640	118

(Table 5.15 continued)

	9	10	11	12	13	14	15	16	18
	ITA	**SPA**	**POR**	**AUS-BOH**	**POL**	**HUN**	**RUS**	**Ottoman Balkans**	**Total**
1501-1550	420	158	25	19	1	5	111	250	+ 1544
1551-1600	521	234	44	24	4	5	111	250	+ 1921
1601-1650	799	359	80	43	8	10	199	558	+ 3495
1651-1700	167	67	22	14	2	2	44	124	+ 853
1701-1750	196	106	22	24	2	7	78	122	+ 1062
1751-1800	119	48	12	18	4	9	53	72	+ 665
1801-1850	374	188	38	64	33	54	206	185	- 2539
1851-1900	1942	1272	197	784	330	399	2159	1014	- 20576

To arrive at the total number of migrants to cities we combined tables 5.1 (total urban in/decrease) with table 5.15 (new average of natural urban in/decrease). For the period 1501-1800 the natural decrease has been added to the urban growth figures. For the period 1801-1900 the positive natural growth numbers in table 5.15 were subtracted from the total urban growth numbers, because natural growth implies that for this share of the urban growth no migrants were necessary.

Table 5.16: Total number of migrants to cities in European countries/regions 1501-1900 (000s)

	1	2	3	4	5	6	7	8	9
	SCA	**UK**	**IRE**	**NL**	**BEL**	**GER**	**FRA**	**SWI**	**ITA**
1501-1550	4	65	0	92	181	287	351	5	616
1551-1600	19	222	0	256	103	307	589	19	996
1601-1650	57	429	21	457	275	268	898	10	799
1651-1700	61	306	85	98	116	248	468	20	351
1701-1750	66	465	78	61	46	326	409	26	594
1751-1800	71	1088	221	54	141	455	521	6	555
1801-1850	194	5573	251	206	279	2112	2413	110	1906
1851-1900	1154	11862	- 12	469	1193	11438	4169	303	318

(Table 5.16 continued)

	10	11	12	13	14	15	16	17
	SPA	**POR**	**AUS-BOH**	**POL**	**HUN**	**RUS**	**Ottoman Balkans**	**Total[20]**
1501-1550	383	133	26	8	5	133	648	2940
1551-1600	518	71	47	9	5	133	648	3942
1601-1650	359	124	53	13	20	248	568	4599
1651-1700	68	53	94	2	12	93	134	2209
1701-1750	106	22	138	23	73	648	122	3203
1751-1800	446	55	134	71	174	53	577	4622
1801-1850	1237	211	388	424	500	1802	119	17725
1851-1900	1757	14	2969	741	624	6115	- 9	43126[21]

[20] We did not include the negative numbers in our sum.

These calculations lead us to a significant readjustment of the figures presented in our 2009 article for the period 1851-1900. Instead of 42 million rural to urban migrants, we now have to come down from 42 million to 30 million, thereby lowering the migration rate for this period from 35 to 29. The most important cause for this readjustment is the wrong calculation of the total increase in the urban population of Europe, which is not (as stated in our article, p. 361) 79.5 million but 63.4 million (table 5.1). Furthermore, the total positive natural increase was lowered and readjusted from 36.8 million to 32.8 million. To show what our new calculations boil down to we reproduced table 1 in our original article (p. 361) with the adjusted numbers (table 5.17)

Table 5.17: Migration to cities over 10,000 in Europe, 1501-1900 (000s)

	A	B	C	D	E	F	G	H
	Increase in Europe	**Increase in Russia**	**Increase in Ottoman Europe**	**Total increase (table 5.1)**	**Average urban population**	**Annual increase/ decrease per 1000**	**+/- natural decrease/ increase (table 5.15)**	**Total number of migrants (D +/- G)**
1501-50	976	22	389	1396	5167	- 6	+ 1544	2940
1551-00	1601	22	389	2021	6419	- 6	+ 1921	3942
1601-50	1035	49	52	1104	7808	- 9	+ 3495	4599
1651-00	1287	49	52	1356	8576	- 2	+ 853	2209
1701-50	1505	570	98	2141	10716	- 2	+ 1062	3203
1751-00	3287	- 9	817	3957	13498	- 1	+ 665	4622
1801-50	17398	2008	604	20264	25551	+ 2	- 2539	17725
1851-00	53379	8274	1005	63681	67252	+ 6	- 20576	43105

[21] For Ireland and the (European) Ottoman Empire we have not added any rural to urban migrants, as the total urban increase (table 5.1) was lower than the total natural increase (table 5.15). In fact, on the basis of our assumptions people must have left cities, as the negative numbers in the period 1850-1900 suggest. Technically these would also be migrants. We have not counted them, however, in this table (5.16), as we limit ourselves to people moving to cities and we have no idea where these urbanites went to.

6: SEASONAL MIGRATION

Migratory labor of a seasonal nature (see our 2009 JGH article p. 363) is often studied with an emphasis on either the regions of destination – as is done in this paragraph – on the regions of departure, on migratory occupations, or on the combination of region of departure and occupation (in cases where seasonal migrants from the same area specialize in a trade which is in high demand in the region of destination, e.g. the Lippe brickmakers[22]). There is also some specialized literature on children as seasonal workers.[23]

The most important activities of seasonal workers are to be found in agriculture, especially in harvesting, as well as in construction, in certain branches of industry (like brickmaking and bleaching) and mining (peat digging and dredging), in trade (peddling) and in transport (rafting).[24]

Research methods

Seasonal migratory labor is one of the most neglected topics in migration history. More or less reliable data are available for only two cross-sections: for Western Europe 1811 (an official French enquiry) and – albeit with serious gaps - for Europe as a whole around 1900. On the basis of these two cross-sections we will try to sketch the developments in the nineteenth century. We will discuss separately the very important phenomenon of seasonal migrations in Russia during the nineteenth century. For the period 1501-1800 only occasional data are available, which necessitates us to make a highly speculative back-projection, based on the 1811 enquiry. We hope that new data will become available in the near future in order to provide a more reliable picture.

Guided by the sparsely available data we will order this chapter as follows:

1. The situation in Europe around 1800 (without Russia).
2. The situation in Europe around 1900 (without Russia).
3. Developments in Europe 1800-1850-1900 (without Russia.
4. Russia 1800-1900.
5. Back-projections 1500-1800.
6. Summary 1501-1900.

The situation in Europe around 1800 (without Russia)

Thanks to a systematic attempt to investigate the number of seasonal laborers in the French Empire at its zenith, the numbers for Western Europe around 1800 are well known.[25] They have been classified according to regions of destination where, annually, at least 20,000 workers used to arrive and regions where less, but still a substantial number of migrants were employed. The seven most important destinations or pull areas at the time were Eastern England, the North Sea Coast of the Netherlands with extensions

[22] This is possibly the best studied group, see e.g. Fleege-Althoff 1928; Linderkamp 1992; Lourens & Lucassen 1999, 2006, 2011; Wessels 2004.

[23] E.g. the 'Hütekinder' or 'Schwabenkinder' from Tirol and Vorarlberg, the chimney sweeps from Tessin and other parts of Northern Italy and Savoy, see e.g. Papathanassiou 2008, Spiss 2007 and Vuilleumier 2007.

[24] As far as sailing is seasonal (e.g. whaling), the data will be found under the heading 'labour migration'.

[25] Lucassen 1987: chapter 6.

into Flanders in the south and East Frisia in the north[26], the Paris Basin, Castile, the Mediterranean coast of Catalonia, Languedoc and Provence, the Po Valley, and Central Italy. In addition, a number of less prominent pull areas existed. With a single exception they appeared along the periphery of the northern and southern conglomerates of larger migrant-labor systems. From the north to the south: southern Scotland, mid-Ireland, western England, Aquitaine, Portugal, Andalusia, Sicily, and further to the north, Lyon and its environs, southern Germany, and finally the Rhine valley.

By regrouping these data according to modern states[27] (30,000 for the coast of the North Sea become 20,000 for the Netherlands, 5,000 for coastal Belgium and 5,000 for coastal northwest Germany; Catalonia is attributed to Spain) we arrive at the following results.

Table 6.1: Seasonal migrants according to countries or regions of destination, Europe c. 1800 (000s)

		Large pull areas (annual minimum 20)	Smaller pull areas (estimated at 10 on average)	Total
Great Britain		20	30	50
Coast of the North Sea	The Netherlands	20	-	20
	Belgium	5	-	5
	Germany	5	20	25
France (central and southern)		60 + 30	20	110
Spain (Castile and Catalonia)		30+5	10	45
Portugal		-	10	10
Italy (north and central)		50 + 100	-	150
				415

So far, no quantitative data are available for Scandinavia, Austria-Hungary and the Balkans around 1800.

The situation in Europe around 1900 (without Russia)

For 1900 much more data are available, but they either refer to push or pull areas, or only to seasonal migrants crossing international borders. One thing is clear: numbers have swollen considerably over the century.

[26] Apart from Tack (1902) and Lucassen (1984, 1987 and 2011) additional information on the 'Hollandgängerei' (Holland going) is to be found in Bölsker-Schlicht 1987; Eiynck et al. 1993; Nolte-Schuster, Vogel & Woesler 2001; and Küpker 2008 and 2009. Küpker's suggestion (2008: 181, fn. 68) that there have been 80,000 Hollandsgänger in the second half of the eighteenth century is derived from a wrong interpretation of De Vries & Van der Woude (1997: 644) who speak about a different category of migrants: VOC personnel.

[27] For more details than provided in Lucassen 1987, see Lucassen 1984 (in particular the appendices). So far it has been impossible to include the 'Hütekinder' (see footnote 22), although a few decades later, the numbers seem to have been substantial. According to Wap (1825, vol. II: 198) 30,000 to 40,000 seasonal migrants annually left Tirol.

Table 6.2: Seasonal migrants according to countries or regions of destination, Europe c. 1900 (000s)

	1900 reconstruction	Commentary	Sources (Lucassen 1987: 172-206, unless otherwise stated)
Great Britain	50	Mainly Irish harvesters and navvies	
The Netherlands	10		
Belgium		No data available, but mainly push area	
Germany	1030	Only foreigners	
France	1000	1912: 1500 after strong growth, including Poles	Lucassen 1987: 303, fn. 68
Spain	100	No precise data available	Lucassen 1987: 304, fn. 92
Portugal		No data available	
Italy	600	1910: 559 seasonal workers in Italian agriculture	Lucassen 1987: 200
		1900: 250 Italian seasonal workers in other European countries	Zeitlhofer 2008: 49; cf. Del Fabbro 1996
Scandinavia	20	Sweden and Denmark	
Austria-Hungary	150	1913: 118 from Bohemia, mostly working in Austria	Zeitlhofer 2009: 200; cf. Zeitlhofer 2008: 48
Switzerland	75	1850-1900: 500-90	Vuilleumier 2007:196
The Balkans		No data available	
Total	**3035**		

Developments in Europe 1800-1850-1900 (without Russia)

In general, numbers grew in the second half more than in the first half of the century and they continued to do so in the twentieth century, up until the beginning of the Great War.

Table 6.3: Seasonal migrants according to countries or regions of destination, Europe c. 1800, 1850, 1900 (000s)

	1800	1850	1900
Great Britain	50	300?	50
The Netherlands	20	20	10
Belgium	5	10??	No data available
Germany	25	200??	1030 (only foreigners)
France	110	300???	1000
Spain	45	50??	100
Portugal	10	?	No data available
Italy	150	300??	600
Scandinavia	?	?	20
Austria-Hungary	?	?	150
Switzerland	?	1850-1900: 50-90	75
The Balkans	?	?	No data available
Russia	500	1000	7000
Total	**915**	**2250**	**10000**

Source: see aforementioned tables and Lucassen 1987: 172-206; for Russia see below.

The Netherlands are the big exception. The demise of its age-old migration pattern developed unevenly over the nineteenth century. After the decrease during the French period it remained rather stable at a lower level, dwindling to insignificance quickly after 1870. *Hollandsgänger* from the bailiwick Osnabrück, for example, numbered about 8,000 in 1811, at least still 3,500 in 1871, but only a few hundred around the turn of the century. This development had far less to do with a diminishing demand in the traditional pull areas along the North Sea coast than with the emergence of successfully competing pull areas in Germany. It started with the economic development of Hamburg and Bremen after the Napoleonic period, but especially once the rise of the Ruhr area in the second half of the nineteenth century tolled the death knell of the North Sea System of migratory labor. Not only did this new pull area offer attractively higher wages, its drawing power was enhanced, primarily, by the variety of jobs it could provide: seasonal work in summer (especially in building) and winter, but full-time year-round employment as well. Push areas that had previously supplied labor to the North Sea coast were now drawn into the sphere of the Ruhr system, including seasonal and other workers from the eastern provinces of the Netherlands. Some former *Hollandsgänger* may also have joined the mass migrations from Westphalia to the United States that gained pace in the 1840s.

At the end of the nineteenth century only a few areas were still witnessing the annual departure of *Hollandsgänger*, such as Weener/Aschendorf and to a lesser extent also Diepholz, Lippe and Bentheim. Even this small trickle had come to an end by the First World War.

Russia (1600) 1800-1900

In Russia, serfdom did not exclude seasonal migrations. Peasant mobility was already regulated in the *Ulozhenie* of 1649 – the piece of legislation, which completed the process of peasant enserfment which had been under way for some two centuries. With the consent of the local authority, peasants 'who wish to hire themselves out' had the right to migrate for that purpose.[28] In 1719-1724, internal passports were introduced for permitted internal migration.[29] Internal passports had to be paid for since 1763. Figures are hard to obtain, but it is clear that numbers increased in the eighteenth century. Gorshkov concludes that in the period 1800-1861 'the aggregate number of peasants of the central industrial provinces who of their own volition regularly travelled from their villages reached several million'.[30] Similar observations about this phenomenon in the seventeenth and eighteenth centuries and about its growth thereafter have been made by Kolchin in his discussion of the *otchodniki* (serfs permitted to work elsewhere on condition that they return back home and pay their master part of their earnings).[31]

Kolchin gives some figures for the first half of the nineteenth century.[32] He mentions 136,000 *otchodniki* for Moscow and 228,847 for Saint Petersburg in 1840 ('almost half the total population'). Kolchin also discusses licenses that "authorized peasants to engage in trade of varying magnitude […]".[33] These traders, however, represented only

[28] Gorshkov 2000: 633; see Morrison 1987: 34.
[29] Moon 2002: 326. He provides an extensive overview of the Russian legislation regarding mobility.
[30] Gorshkov 2000: 655.
[31] Kolchin 1987: 336, and footnote. 54 on p. 492
[32] Kolchin 1987: 336.
[33] Kolchin 1987: 334 and footnote 52

the tip of the iceberg: the licenses were required only of peasants whose actual sales exceeded two thousand rubles (four thousand after 1821)'. The number of licenses for trading (not all necessarily travelling) peasants rose between 1816 (5,126) and 1852 (7,450).

Gorshkov also produces a table, showing the number of passports issued to peasants in Moscow and Iaroslavl' Provinces for the years 1826 and 1838-1857, which suggests an increase from 100,000 to 150,000.[34] Extrapolation for five central Provinces for which figures of issued travel documents are available in the years between 1854 and 1857 (apart from Moscow and Iaroslavl' also Kostroma, Tver' and Vladimir Provinces) suggests an increase from to 350,000 to 550,000 temporal migrants for this total region between 1826 and 1856. Sparse figures for Kostroma 1770s, Iaroslavl'1789 and Moscow 1799 seem to show that the numbers did not change substantially between say 1775 and 1825.[35] In the second quarter of the nineteenth century an increase can be noticed: receipts from the sale of passports increased by a third, reaching an average of 1.6 million rubles a year in the 1850s, a figure that had increased to 3.5 million rubles by the 1880s.[36] National figures have been published for the second half of the nineteenth century.[37]They show a virtual boom in the last decades, due to more liberal legislation and to government encouragement of settlement of outlying regions, in particular Siberia.[38] A summary and our total estimates are presented in the table below.

Table 6.4: Seasonal migrants according in Russia, estimates Europe c. 1650, 1700, 1750, 1800, 1850, 1900 (000s)

	1650	1700	1750	1800	1850	1900
Russian Empire	200??	200??	500?	500?	1000	7000

Source: apart from text above see for the period after 1850: Lucassen 1987: 125-127; Burds 1991: 57; Moon 2002: 342-343; Kolchin 1987: 334-338.
Legend: ? = only a few indications in cited text; ?? = no indications in cited text, back projection on the basis of general economic trends.

Back-projections 1500-1800

For some regions we may reconstruct pre-1800 developments.

The Dutch Republic[39]

During the first decades of the seventeenth century reports about Hollands- and Frieslandsgängerei surface at the same time in various parts of Westphalia, including Lippe (1604), Münster (c. 1605 and 1608/1609), and Osnabrück (1608). Initially it often remains unclear whether precisely permanent emigration, temporal migration during sever-

[34] Gorshkov 2000: 637.
[35] Gorshkov 2000: 632, 637. His figures for temporarily migrating male peasants in Iaroslavl' are 73,500 in 1798, 45,503 in 1826 and between 48,639 and 56,997 in the years 1842-1850. See Morrison 1987: 279 for more annual passport figures on Iaroslavl' (1778-1802: 55-75,000)
[36] Moon 2002: 333.
[37] Moon 2002: 343.
[38] Moon 2002: 335-337.
[39] After Lucassen 1987.

al years or seasonal migration is meant. Among the few exceptions are the phrasings regarding Münster 1608/1609 where already grass-cutting in Holland and Friesland is mentioned and Hadeln 1632/1633 where seasonal migration in the same direction is noted. In the case of Hadeln, the misery of the Thirty Years War seems to have played a major role.

From around 1650 indications for a seasonal trek to the west become more numerous. On the German side a list of some 925 *Hollandsgänger* among the 3,000 '*heuerleute*' in total in the Princebishoprick of Osnabrück has been preserved. On the Dutch side we have clear records from Friesland (1666) and from Groningen about the transport of *Hollandsgänger* to Amsterdam (1679). Based on the transportation of seasonal migrants by the ferries over the Zuiderzee between Overijssel and Amsterdam an initial period of growth in the first half of the seventeenth century can be discerned. This is followed by a second, more rapid spurt of growth in the second half of the century ending in stagnation of the figures at a high level throughout the eighteenth century and, finally, by retrogression in the first decade of the nineteenth century. This high level in the second half of the eighteenth century may have boiled down to 40,000 in the same region where, in 1811, 30,000 seasonal workers were counted.

This development is consistent with partial figures that are available for some regions within Westphalia. At the beginning of the nineteenth century more precise statistics are available, mainly due to the French occupation of Western Germany. In 1811 about 30,000 workers journeyed out and back to hold various jobs in the coastal strip from Calais to Bremen, never more than 50 kilometers wide. Of these, more than 20,000 were (Lower) German speaking and for that reason could be dubbed *Hollandsgänger*. We may suppose that the total number of seasonal *Hollandsgänger* in the eighteenth century annually may have averaged 30,000 persons or more.

It is also possible to calculate the number of *Hollandsgänger* in the total population. Figures are highest for the Département de l'Ems Supérieur (2.89%), the principality Lippe-Detmold (1.70%), the Département de la Lippe (0.88%), and the Département des Bouches du Weser (0.61 to 0.64%). On a local level this can boil down to one quarter of the total male, economically active population. Translated in more common denominations of regions in Western Germany it means that most *Hollandsgänger* came from the countryside of the following areas: Osnabrück, the Niederstift Münster and more to the East from Lippe and Paderborn. Adjacent regions to the south and the north of these lands supplied less seasonal migrants while the intermediate Prussian lands with their strong textile industries like around Bielefeld participated far less in the westward trek. The predominant position of the Princebishoprick of Osnabrück is confirmed by the sparse figures that are available: 925 *Hollandsgänger* in 1656, 6,000 around 1780, and some 4,700 in 1811.

Great Britain

East England, especially the big farms that specialized in grain in the counties of Lincolnshire and East Anglia, but also the market gardening around London, needed, on a yearly basis, some 20,000 seasonal workers. This labor migration most probably started in the eighteenth century as part of the Agricultural Revolution.

France
The target area of seasonal laborers consisted of Paris and its environs, which just like East Anglia for London, satisfied the demand for food, especially grain. The start of this system has been documented already for the second half of the sixteenth century. Together with the neighboring regions of Catalonia-Languedoc-Provence it generated some 35,000 seasonal workers, both for the cultivation of grain and wine. Most of these migrants came from the Western and Northern mountainous regions of the Pyrenees and the Massif Central, as well as the Western Alps.

Spain and Portugal
Castile, and its urban centre Madrid, was the target area for some 30,000 seasonal laborers (also called *Agolondrinas* or swallows), most of whom worked in grain cultivation, but also in urban construction projects. When these systems originated is still unknown. Only for Central Spain do we have more detailed data for the second half of the eighteenth century.

Table 6.5: Number of migratory workers from Galicia to Castile and the east of León, 1767-c. 1900 (000s)

1767	>25
1769	40
1775	>40
End 18th century	60
1804	30
C. 1900	25

Source: Lucassen 1987: 232 (after Meijide Pardo 1960).

Italy
The Po plain was the target area for an annual number of 50,000 seasonal migrants from the neighboring mountainous regions, from the Bergamasco Alps in the north to the Ligurian Apennines in the south. By far the largest number of these migrants was engaged in the rice cultivation in the West of the Po plain, where almost no other workers were employed. The middle of Italy (especially in the South of Tuscany, Lazio, Corse and Elba), with an annual number of 100,000 migrants, was by far the most important target area for seasonal migrants in Western Europe. Most of these came from the neighboring Apennines. As in the other destination areas a considerable number also worked in urban construction works and in the service sector, especially in Rome. The bulk, however, worked in agriculture, both in the cultivation of grain and wine. Vineyards also offered employment in the winter months.

Table 6.6: Seasonal migrants according to countries or regions of destination, estimates Europe c. 1600, 1650, 1700, 1750, 1800 (000s)

	1600	1650	1700	1750	1800
Great Britain	10??	10??	20?	40?	50
Netherlands	10	20	40	40	20
Belgium	?	?	5??	5??	5
Germany	10??	5??	10??	20??	25
France	20??	50??	100??	150?	110
Spain	10??	20??	30??	75?	45
Portugal	5?	5??	10??	15?	10
Italy	20??	50??	100??	180??	150
Russia	?	200??	200??	500?	500?
Total	**85**	**360**	**515**	**1025**	**915**

Source: Lucassen 1987: 133-171
Legend: ?: only a few indications in cited text; ?? no indications in cited text, back projection on the basis of general economic trends.

Summary 1501-1900

In order to compare these data with other types of migrants we propose to start from the following points of departure: An average seasonal migrant makes 25 annual seasonal trips in his life. This means that any estimation in time has to be multiplied by two in order to come up with total numbers of individuals per 50-year period. We averaged the numbers given in tables 6.3 and 6.6. for each 50-year period and multiplied these by two, arriving at the following estimates (table 6.7). Overall these more detailed calculations have led to lower estimates than in our original paper.

Table 6.7: Total number of seasonal migrants in Europe 1501-1900 (000s)

	Total
1501-1550	
1551-1600	
1601-1650	444
1651-1700	974
1701-1750	1640
1751-1800	1940
1801-1850	3164
1851-1900	12,250

Source: tables 6.3 and 6.6 (average for each period multiplied by 2).

7: SOLDIERS AND SAILORS

Temporal, multi-annual *labor migrants* as a rule were unmarried youngsters, trying to make savings in order to settle as independent producers later or to become economically attractive marriage partners.[40] As to their occupations, seamen, soldiers, domestics and tramping artisans are the most important groups. Of these, especially domestics and tramping artisans contributed to urban growth, as previously discussed. We are aware of the fact that this is not the full migration story: as planned, part of the domestics certainly returned successfully to the countryside or small towns where they came from and therefore may not be totally covered by the urbanization figures. The same goes for the mainly urban tramping artisans. Apart from the overlap with migrants to the cities, we have two extra reasons why we have not attempted to come up with separate estimates for the mobility of these two categories. First, the very insufficient historiography, in particular regarding the number of domestics (not to speak of the distinction between local and immigrant domestics); [41] and second, the fact that some of the migrants we may miss in this way are compensated for by some of the seamen – to be discussed hereafter – who settled permanently in the cities.

Seamen

Introduction

To what extent are seamen migrants? Let us approach this question by the method of elimination. We start by excluding inland navigation, i.e. navigation on rivers, canal, lakes or sea arms intruding into the continent. The generally small vessels operating in these waters could be handled by one or two people. They were rarely away from home for more than a week at the most.[42] In principle, we also exclude coastal fisheries. Those on board are not migrants according to the criteria applied in this article. Although by definition itinerant workers, they move between the villages or towns where they have been born and the coastal waters or high seas for one or more days, but hardly for more than a week, without encountering other human beings and, thus, without cross-cultural experiences. In practice it is sometimes impossible to split them off from general tonnage or manning statistics, but because of their relatively low numbers this does not influence our outcomes substantially. Besides, whalers or long-distance seasonal fishermen, like the French cod fishers in the Canadian waters certainly fall under our definition of migration.[43]

---

[40] Although the unmarried status of the bulk of these labor migrants is beyond dispute (Ehmer 2003 and 2004; Zwitser 1991: 188; Amersfoort 1988: 42), we know, thanks to Van den Heuvel, that a small but, given the numbers involved, not insignificant part of the Dutch ocean going sailors managed to marry and to continue their profession (Van den Heuvel 2005). This later part of their career does not influence our conclusions on the degree of their mobility.

[41] Ehmer 2003 and 2004.

[42] Van Lottum & Lucassen 2007: 19; see also Starkey 2007. A substantial part of these sailors were married and may have retired from high-sea jobs (Palmer & Williams 1997: 107-110).Timber-raft shipping on rivers is a different category because of the many men involved. It falls under our definition of seasonal labor, see Lucassen 1987: 86-88.

[43] Although these high-sea fishermen and hunters also can be defined as seasonal laborers, in the historiography they are treated as part of the maritime labor force.

All other seamen or sailors[44] working on ocean-going merchant vessels and on the ships of the navy have to be included in our definition of migration for two reasons: first, because of their destinations and, foremost and additionally for many, because of their places of origin. From the point of view of cross-cultural contacts the first is obvious although navy vessels occasionally made trips without calling at other than their home ports – especially cruisers in wartime. The place of origin of sailors asks for some more discussion. The available evidence shows that the majority of sailors on European ships were not born in the same place where they embarked. For the Netherlands, with its highly international maritime labor force, this has been shown sufficiently.[45] For other countries, which recruited crews from inside the national borders, between one quarter and one half of the sailors may have come from elsewhere to their ports of embarkation. France's petty officers and able seamen in the eighteenth century are a good case in point. Marseilles was heavily dependent on migrant seamen: besides the 13 per cent foreigners, 18 per cent of its sailors came from localities more than fifty kilometers away. However, France's northern ports knew only a few per cent of foreign sailors and, on average, about twenty per cent were Frenchmen born more than fifty kilometers away (ranging from fourteen per cent for St-Malo to 38 for Dunkerque). The figures for Nantes show that most mariners were not local, but were born in the surrounding countryside. The percentages of medium- and long-distance migrants increased in times of war when the French navy was subtracting thousands of experienced sailors from the merchant marine.[46]

Whatever the problems in collecting the available data – a 'statistical minefield' in the words of David J. Starkey[47] – in the following tables we not only summarize what we have found but we also present our own estimates of the European maritime market. Men in the navy may seem to be underrepresented, but until the late nineteenth century most war fleets were not kept on a permanent basis.[48] Their sailors had to be taken from the merchant marine which, at certain times, was even prevented from sailing as long as the navy did not have enough men. Unfortunately, we have found only a limited number of data for the Balkans, including the (European ports of) the Ottoman Empire. In addition, though less important, figures for Poland are missing.[49]

Great Britain (until 1707 England)

No navy has been studied more intensely than the British Navy and, therefore, we have made a choice regarding the numbers available in the literature. Before the nineteenth century, the majority of navy-men were recruited in times of emergency from the merchant marines. That is why these figures have been included here only sparsely in order to avoid double counting.[50]

---

[44] We will use the term sailors, although technically speaking this also includes galley crews. Their numbers were dwindling after 1660, see Doumerc 2001: 367.

[45] Van Lottum & Lucassen 2007; Lucassen 2004; Van Rossum 2009: esp. table 2.8.

[46] Le Goff 1997: 300-311, 316.

[47] Starkey 2007: 83; one of the earliest examples of this type of exercise is Vogel 1915.

[48] Besides, often data on navies are expressed in vessels rather than in men. Usual are indications of strength in the form of ships of the line and frigates. For the early nineteenth century an average ship of the line had 850 crew and a frigate 400 (Schnitzler 1846: volume 2, 236). Nevertheless, we have refrained from using such data as they add another uncertainty to our data base.

[49] Glete 2000: 127

[50] See Lloyd 1968: 31, 41, 56, 80, 112-123; for the number of sailing warships 1500-1650 see also Glete 2000: 188.

Table 7.1: Average annual maritime work force: Great Britain 1501-1900

	Year of source	Merchant marine		Navy	Total	
		Tonnage x 1000	Men x 1000	Men x 1000	Men x 1000	
					a	b
1501-1550	1310	70				15
	1346		14			
	1415		40			
1551-1600	1560	45-50				15
	1562	65				
	1570	[42]	16			
	1572	50				
	1582	67	13-17			
1601-1650	1603	[60]				20
	1629	115-118				
1651-1700	1670	[94]				50
	1676	500				
	1686	350	50			
1700-1750	1702	320				50
1751-1800	1750		70			90
	1753	468				
	1761	500				
	1773	581	53			
	1775	700	70			
	1786	751				
	1786/7	882				
	1788	1,055 or 1,200				
	1790	1,290				
	1789-1792				109	
	1792				123	
	1793			30		
	1794			81		
	1793-1801				197	
1801-1850	1800	1,856	105			200
	1803-1815				246	
	1810			142		
	1812			145		
	1816-1828				151	
	1830	2,202	134			
	1832			41		
	1841		196	41	235	
1851-1900	1850	3,565	193			210
	1860	4,659	172			
	1871-1899		212			

Source: After Unger 1992, partially revised in Lucassen & Unger 2000 (only merchant ships, so including coasters but excluding the navy; we estimate the net difference at some 20,000 men), with the following additions and revisions: 1346, 1415, 1560 (highest figure), 1572, 1582 (67,000 tons and 17,000 men), 1629 (highest figure), and 1753 after Lloyd 1968: 20-21, 34, 54, 285; 1582 tonnage (60,000) and sailors after Scammell 1970: 134 (13,000 seamen, 2299 fishermen and nearly 1000 Thames watermen); 1789-1792, 1793-1801, 1803-1815, 1816-1828 average numbers

of seafarers engaged per year in privately owned and naval vessels after Starkey 2007: 100 (minus inland navigation); 1792, 1793, 1794, 1812 after McCranie 2009: 85; 1810 navy after Parker 1988: 153; 1832 after Wap 1834, volume 1: 151 (30,000 sailors, 10,589 captains and lieutenants, 206 high officers); 1841 after Schnitzler 1846, volume 2: 216 (excluding 150,000 fishermen); 1871-1899 average number of men employed (212,000) after Gorski 2007: 183.
Legend: Men a = men in source; Men b = our mean for the half-century; [] means less reliable figures.

The Netherlands

Table 7.2: Average annual maritime work force: the Netherlands 1501-1900

	Year of source	Merchant marine and navy together		
		Tonnage x 1000	Men x 1000	
			a	b
1501-1550	1470	60		15
1551-1600	1567	175		40
	1570	232		
1601-1650	1600	240		50
	1607		43	
	1635		58	
1651-1700	1676	900		50
	1694		53	
1701-1750	1702			50
1751-1800	1788		58	50
1801-1850	1827		24	25
18511900	1850		26	25
	1899		26	

Source: 1607, 1635, 1694, 1785, 1827, and 1850 after Van Lottum & Lucassen 2007; 1850-1900 after Van Rossum 2009: 24-33, 244-251 (about 15,000 in merchant marine) and Stapelkamp 2003: 353 (about 11,000 in the navy).
Legend: Men a = men in source; Men b = our mean for the half-century.

France

For the first periods the information is patchy, except for the number of sailing warships and galleys.[51] Since Louis XIV France has had its '*inscription maritime*', a registration of all able seamen, if necessary available for the navy. These figures, however, do not correspond to our definition of sailors. First, because the numbers of the *inscription maritime* are very volatile, which is not congruent with the development of the tonnage (see below): 92, 398 seamen in 1829, 100,000 in 1836, 110,458 in 1840, 120,511 in 1843 and 125,272 in 1845.

Second, let us, for example, take a closer look at this last number of 1845.[52] If we leave aside 12,810 artisans, 112,462 sailors are left which can be divided into the following groups: 20,930 *novices*, 15,430 *mousses*, 11,156 *capitaines, maîtres et pilotes*, 5,430 *officiers mariniers*, and 59,516 *matelots*. The captains are an interesting category because

[51] Glete 2000: 188.
[52] Schnitzler 1846: volume 2, 216-225.

against 3,848 *capitaines au long cours* (high sea captains) we count 6,088 *maîtres au cabotage* (coaster captains). In close connection to this distinction, only 46,000 out of the 65,000 sailors were counted as '*marins d'élite*', the other 19,000 (without doubt employed on coasters – on average three per vessel) were classed as not being fit for the navy.

Third, the navy (30,396 in that same year 1845) relied for one third on conscripts and for two thirds on sailors, enlisted in the *inscription maritime*. Consequently, no less than 20,000 navy men had to be recruited from the 46,000 able bodied seamen. This was a very heavy tax indeed, because it would leave only 26,000 sailors or – together with the captains 30,000 men for high sea merchant ships (in 1845 measuring 611 tons, see below). This would mean some 20 tons per sailor, a result that is in line with what one would expect for that period.

Table 7.3: Average annual maritime work force: France 1501-1900

	Year of source	France		
		Tonnage x 1000	Men x 1000	
			a	b
1501-1550	1310	40		10
1551-1600	1570	80		15
1601-1650				20
1651-1700	1664	125 (all ships between 2 and 1000 tons)		40
	1670	80		
	1676	100		
	1686 / 1694		43	
1701-1750				50
1751-1800	1786/7	729		60
	1790 (1785 / 1787)		55	
1801-1850	See below table 7.4			50
1851-1900	See below table 7.5			45

Source: France only merchant ships, including coasters, but excluding the navy and (especially around 1700: 15,000 crew in 1690) the galleys after Le Goff 1997. As the navy's peace time requirements amounted to only 2,000-3,000 men and its requirements in war time weighed heavily on the merchant marine we have not corrected Le Goff's figures, the more so because the merchant marine in the period 1725-1785 included on average 20,000 men on coasters; 1664, 16. 1785/1787 after Bottin, Buti, Lespagnol 2005: 265 and 279.
Legend: Men a = men in source; Men b = our mean for the half-century.

Table 7.4: Maritime workforce (supplementary table): France 1801-1850

	Merchant ships tonnage x 1000	Merchant marine sailors	Navy sailors	Total
1825			15,000 sailors + 9,000 marines	
1827	689			
1828	692			
1837	697			
1838	680			
1839	673			
1840	663		32,000 of whom 1/3 conscripts	
1841	590		32,000 of whom 1/3 conscripts	
1842	590			
1843	600			
1844	604			
1845	611	46,000	30,396 of whom 1/3 conscripts	
1846	633			
1847	671			
1848	683			
1849	680			
Total	9,756:15			
Annual average	650			
Tonnage per man	17 our estimate			
Men 1801-1850		40,000 our estimate	10,000 our estimate	50,000

Source: Mitchell 1992: 690, except for 1825, 1827, 1828 after Wap 1834: volume l, 81-83; navy crew 1804, 1841 and 1846 after Schnitzler 1846: volume 2, 219, 236 (navy: one third conscripts and two thirds from inscription maritime).

Table 7.5: Maritime workforce (supplementary table): France 1800-1850[53]

	Merchant ships: tonnage x 1000	Merchant marine sailors (000s)	Navy sailors (000s)	Total (000s)
1850	688			
1855	872			
1860	996			
1865	1008			
1870	1072			
1875	1028			
1880	915			
1885	1000			
1890	944			
1895	888			
1897		15 – 16		
1900			47 (of whom 1/3 conscripts we suppose)	
Total	9,411			
Annual average	941			
Tonnage per man	30 our estimate			
Men 1850-1900		29 our estimate	16 our estimate	45

Source: Mitchell 1992: 690, 695; merchant marine sailors 1897 after le Bouëdec 2002: 525; navy sailors 1900 after L[…]n 1902: 177.

[53] More data needed, especially for the navy.

Germany

Table 7.6: Average annual maritime work force: Germany 1501-1900

	Year of source	Merchant marine		navy			total		
		Tonnage x 1000	Men x 1000	Tonnage x 1000	Men x 1000		Tonnage x 1000	Men x 1000	
								a	b
1501-1550	1470	60							5
1551-1600	1570		6						5
	1570	110							
1601-1650	1600	100	10						10
1651-1700	1675		10						10
	1676	104							
1701-1750									10
1751-1800	1786/7	155							10
1801-1850	See below table 7.7	364							30
1851-1900	1851	521	27						55
	1871	989	40						
	1901	1942	51		25				
	1850-1895	970							

Source: Unger 1992, partially revised in Lucassen & Unger 2000, with the following additions: 1500, 1600 after Scammell 1981 (estimated tonnage of the Hanseatic League, '50 per cent up on its level a century before'); merchant marine 1851, 1871, and 1901 after North 1997; merchant marine 1850-1895 (average) after Mitchell 1992: 690, 695; navy 1901/1902 after L[…]n 1902: 177.
Legend: Men a = men in source; Men b = our mean for the half-century

.

Table 7.7: Maritime workforce (supplementary table): Germany 1801-1850[54]

	Merchant ships tonnage x 1000	Navy (000s)	Total (000s)
1829	265		
1834	282		
1839	352		
1844	406		
1849	513		
Total	1,818		
Annual average	364		
Tonnage per man	17 our estimate		
Men (000s)	20 our estimate	10 our estimate on the basis of 1850-1900	30

Source: Mitchell 1992: 690; see Hassel 1805: volume 1, part 3, 23 (Prussia in 1803: 2.100 ships with 10,500 sailors), Hassel 1805: volume 3, 163, 165 (Bremen 1797: 139 ships; Hamburg 1787: 159 ships, Hamburg 1805: 200 ships); Wap 1835: volume II, 295 (Hamburg 200 ships, Lübeck 70-80 ships; volume III: 339 (Prussia 1827: 4.771 ships make 154,000 ton, esp. from Danzig, Stettin, and Rostock; data for Hanoverian East Frisia are lacking).

[54] More data are needed, especially for the navy.

Scandinavia

Table 7.8: Average annual maritime work force: Scandinavia 1501-1900

	Year of source	Denmark		Norway		Sweden		Finland		Scandinavia		
		T	M	T	M	Tonnage x 1000	Men x 1000	T	M	T	M	
											a	b
1501-50												10
1551-00	1563	>6n										15
	1564	4.5n				5n						
	1565					7.5n						
	1566					9n						
1601-50			10n									20
	1610	24n				15n						
	1644	18n				24,5n						
1651-00			10n									25
	1696	48	6.5		5							
1701-50												25
1751-00	C 1780						16					40
	1786/87									555	38	
	1787	92	8									
	late		15n									
1801-50	See below table 7.9										20	30
1851-00	1850				19							70
	1871	231	10									
	1878				62							
	See below table 7.10										60	

Source: Denmark and Sweden 1563-1566, 1610, 1644 after Glete 2000: 121, 126, 128 (vessels of at least 300 tonnes displacement in naval attacks; see also numbers of sailing warships on p. 188); Denmark seventeenth century, 1696, late eighteenth century, 1871 after Johansen 1997, 237-242; 1787 after Lucassen & Unger 2000: 130; Norway late seventeenth century (7,000 including the Dano-Norwegian navy in peacetime), 1800, 1850, 1878 after Saetra 1997: 182-183; Sweden c. 1780 after Lucassen & Unger 2000: 130; Finland, Denmark, Norway, Sweden 1786-1787 after Lucassen & Unger 2000: 130.
Legend: Men a = men in source; Men b = our mean for the half-century; n= including the navy.
NB All figures only merchant marine unless stated otherwise.

Table 7.9: Maritime workforce (supplementary table): Scandinavia 1801-1850[55]

	Den-mark Tons x 1000	Norway Tons x 1000	Sweden Tons x 1000	Finland Tons x 1000	Total Tons x 1000
1795			83		
1800		121 [14,000 sailors]	88		
1805			96		
1810			94		
1814	65				
1815	76	148	117		341
1818			129 [9,417 sailors]		
1820	79	125	94		298
1825	57	113 [6,300 sailors]	87-96		257
1830	63	135	121		319
1835	62	151	131		344
1840	69	205	159		433
1845	77	233	160	115	470 (without Finland)
Subtotal 1800-1849					2,462 (without Finland)
Annual mean					352 (without Finland)
Annual mean including Finland					450
Tonnage per man					17 our estimate [15 in Norway 1800; 14 in Sweden 1818, 18 in Norway 1825]
Men					20,000 our estimate

Source: Mitchell 1992: 690, 692-693, 708. For Denmark annual data are available from 1814 onwards (excluding ferries and fishing vessels until 1831), for Norway from 1850 onwards, for Sweden (to 1825 only staple towns, i.e. main ports; to 1894 , ships of 10 net tons or over) from 1830 onwards, for Finland (to 1868, ships of 9 net tons or over; for 1870-1872, ships of 18 net tons or over; for 1874-1882 ships of 50 net tons or over; for 1885-1887, ships of 25 net tons or over) from 1863 onward; not from Mitchell: sailors Norway 1800 after Saetra 1997: 183; sailors Sweden 1818 and Norway 1827, as well as tonnage of 96,000 for Sweden 1825 after Wap 1834: volume I, 226.

[55] More data needed, especially for the navy.

Table 7.10: Maritime workforce (supplementary table): Scandinavia 1800-1850 (000s)

	Denmark	Norway	Sweden	Finland	Total
1850	91	284	204	132	711
1855	123	405	229	135	892
1860	139	532	281	170	1122
1865	159	706	266	202	1333
1870	182	974	347	240	1743
1875	244	1352	507	300	2403
1880	250	1519	543	272	2584
1885	270	1563	517	264	2614
1890	294	1706	511	258	2769
1895	394	1605	483	266	2748
Total					18,919
Annual average					1,892
Tonnage per man					30 (our estimate)
Men					60 (our estimate)

Source: Mitchell 1992: 690, 692-695, 698. 1850-1899. Merchant marine without navy. For Denmark annual data are available from 1814 onwards (excluding ferries and fishing vessels until 1831), for Norway from 1850 onwards, for Sweden (to 1825 only staple towns, i.e. main ports; to 1894 , ships of 10 net tons or over) from 1830 onwards, for Finland (to 1868, ships of 9 net tons or over; for 1870-1872, ships of 18 net tons or over; for 1874-1882 ships of 50 net tons or over; for 1885-1887, ships of 25 net tons or over) from 1863 onwards.

Russia

For most of the period for Russia we have only reliable data for the navy. The merchant marine came into being only very late.[56]

Table 7.11: Average annual maritime work force: Russia 1501-1900

	Year of source	Merchant marine		Navy		Total		
		Tonnage x 1000	Men x 1000	Tonnage x 1000	Men x 1000	Tonnage x 1000	Men x 1000	
							A	b
1501-50								0
1551-00								0
1601-50								0
1651-00								0
1701-50	1700			24				10
1751-00	1782	30		40		70		15
1801-50	1829				45			60
	1841				50			
1851-00	See below table 7.12	349						65

Source: tonnage 1700 after Glete 2002: 37 (vessels over 300 tons in the Sea of Azov); 1782 after Meyer 1980, II-83; 1829 navy after Wap 1836: volume IV, 168 (33,000 sailors, 9,000 marines, 3,000 sea-gunners); 1841 navy after Schnitzler 1846: volume 2, 234 (a critical estimate: Baltic fleet 30,000 and Black Sea fleet 20,000); tonnage navy 1914 roughly estimated after Rottmann 1914: 69-70.
Legend: Men a = men in source; Men b = our mean for the half-century

Table 7.12: Maritime workforce (supplementary table): Russia 1850-1900 (000s)

	Merchant ships (tonnage x 1000)	Navy: crew x 1000	Total
1860	173		
1865	181		
1870	230		
1875	376		
1880	468		
1885	485		
1895	529		
1901/1902		62	
Total	2,442		
Annual average	349		
Tonnage per man	30 our estimate		
Men	11 our estimate	54 our estimate	65

Source: merchant marine after Mitchell 1992: 692, 698 (Vessels over 25 tons, exclusive of Finland); navy after L […] n 1902: 177.

Spain and Portugal

[56] Glete 2002.

For the period 1501-1650, Jan Glete provides figures for sailing and galley navies (see supplementary table 7.14), which are difficult to convert into number of crew, but the tendencies have been helpful in coming up with our final estimates.[57]
We have only included figures for Portugal in the sixteenth and seventeenth centuries by combining data from different sources and by supposing an extremely low labor productivity of two tons per man.[58] Comparing the only national total we have (6,000 sailors for the international trade at the beginning of the seventeenth century when the country was desperately short of shipping)[59] with the sailors departing for Asia, we may conclude that one third of the Portuguese high-sea sailors were involved in the Asian trade and two thirds in the Atlantic trade: ships leaving for Brazil only (ships between Portugal and Asia used to call at Brazilian ports) or for the intercolonial trade of Brazil.[60] This was to change rapidly, however, when, according to Scammell, 'the empire's great and rich trades were largely handled by alien and especially Dutch vessels'.[61] Besides, the Portuguese maritime sector provided employment especially for fishermen.[62] Mitchell's first figures are for 1920 and point in the same direction: only 236,000 tons for mainland steam and motor ships.[63]It is possible that our Spanish figures are too high because of the inclusion of too many small coasters.[64] In the first decades of the nineteenth century the Spanish navy lost most of its ships and, as a consequence – we suppose – many sailors could return to the merchant marine.[65]

[57] Glete 2000: 188; Glete 2002: 37.
[58] Subrahmanyam & Thomaz 1991: 307; and Magelhães Godinho 1993: 7, 13-23; Boxer 1969: 52-53, 218-219 (crew); Gaastra & Bruijn 1993: 183. For tons per man see Lucassen & Unger 2000.
[59] Scammell 1981: 291.
[60] Jobson de Andrade Arruda 1991: 395-397. It still has to be determined to what degree this has to be treated on an equal footing with the intra-Asian job opportunities for sailors departing from Dutch ports.
[61] Scammell 1981: 292-295 (quotation on 292), see also 386.
[62] Boxer 196: 13-14 (fishermen), 226-227 (Brazil); Rottmann 1914: 63 (navy); Rahn Phillips 1990: 55-73 seems to suggest that much of the trade between Portugal was done by English and Brazilian ships - which does not exclude employment opportunities for Portuguese sailors. Following Scammell 1981 (see previous footnote) we certainly have to add the Dutch.
[63] Mitchell 1992: 697.
[64] However, the caveat in Meyer 1980: II-78, II-89, footnote 16: '*sur 45.000 gens de mer, il n'existait en réalité q'un stock d'à peine 6 à 7,000 marins de haute mer*' is too much of an exaggeration. Pérez-Mallaína (1998: 50-53) shows convincingly that the *carrera de Indias* alone required over 7,000 crewsmen in 1594 and over 9,000 in 1604, and the great Armada sent to England in 1588 numbered over 8,000 men.
[65] In 1794 Spain counted 61 armed ships of the line and 44 armed frigates and 39 other vessels (Barbier 2007: 6); In 1804 it counted 67 ships of the line and 44 frigates (Hassel 1805: volume 1, part 1, 3; Portugal at the same time had 10 ships of the line and 14 frigates), in 1808 42 ships of the line and 30 frigates, to drop to 3 ships of the line, 8 frigates and 23 other vessels in 1824 and 3 ships of the line, 8 frigates and 18 other vessels in 1838 (Wap 1834: volume I, 447; Wap 1838, volume VI, 180).

Table 7.13: Average annual maritime work force: Spain and Portugal 1501-1900 (000s)

	Year of source	Merchant marine		Navy		Total		
		Tonnage x 1000	Men x 1000	Tonnage x 1000	Men x 1000	Tonnage x 1000	Men x 1000	
							a	b
1501-50	1520	[50S]						40
	1501-1550	4P	2P					
	1535				20S			
1551-00	1551-1600	4.5P	2P					40
	1580	250S+P						
	1585	225S						
	1570-1620		36S			165-209S	40S	
1601-50	1620	50P	6P					30
	1601-1650	2P	1P					
1651-00	1651-1700	1P	0.5P					25
1701-50	C1700				[35S]	40S		25
	C1740				[32S]	38S		
1751-00	1786/7	234S			[32S]	51S		30
1801-50	1846				16S			30
1851-00	See below table 7.15		17S					30

Source: Spain tonnage 1520, 1570-1620 and crew 1570-1620, c 1700, c 1740 and 1780s after Rahn Phillips 1997: 330-337; Spanish navy 1535 after Glete 2000: 100 (fleet against Tunis); Spain tonnage 1580 after Scammell 1981: 362; Spain tonnage 1585, 1786-1787 after Unger 1992: 260-261; Spanish navy 1846 after Schnitzler 1846, volume 2: 236; Portugal 1501-1600 after Subrahmanyam and Thomaz 1993: 307 (tonnage to Asia); 1600-1635 after Magelhães Godinho 1993: 7, 17 (number of ships to Asia), 13 (average tonnage); Portugal men 1620 after Scammell 1970: 134 and Scammell 1981: 291; 1620 Portuguese tonnage after Scammell 1995: 134 (the date is unclear: "at its maximum").
Legend: Men a = men in source; Men b = our mean for the half-century; P = Portugal, S = Spain.

Table 7.14: Navies of Spain and Portugal 1520-1700 (supplementary table) (ships)[66]

	1520	1545	1570	1600	1630	1650	1675	1700
Spain galleys	2/3	7/9	18	15/20	12/15	10/14	(10)	(10)
Spain sailing warships	-	-	3	40/60	40/60	25/35	15/20	(20)
Portugal sailing warships	?	?	?	-	-	20/25	15/20	25/30
Total (our estimates)	**3**	**9**	**22**	**55**	**52**	**55**	**40**	**60**

Source: Glete 2002: 37.

Table 7.15: Maritime workforce (supplementary table): Spain and Portugal 1850-1900[67]

	Merchant ships tonnage x 1000	Navy (men x 1000)	Total (men x 1000)
1850	245		
1855	350		
1860	415		
1865	410		
1874	625		
1880	560		
1885	613		
1890	618		
1895	719		
Total	4,555		
Annual average	506		
Tonnage per man	30 our estimate		
Men	17 our estimate	13 our estimate	30

Source: Mitchell 1992: 693, 698 (1874 to 1897 only vessels of 50 net tons or over).

Italy

The Italian figures for most of the periods are speculative as they have to be added from separate states. More figures are available for the merchant marine[68] and the navy in the nineteenth century, but these are only numbers of ships.[69] The same goes for Ragusa merchantmen in the seventeenth and eighteenth centuries.[70] We add a supplementary table for the tonnage of the Venetian navy for the sixteenth and seventeenth century, based

[66] Displacement of 1,000 tons of state owned vessels over 100 tons; in 1700 over 300 tons.
[67] More data needed, especially for the navy for which we have none so far.
[68] In 1803 Trieste, Venice, Rovigno, Fiume and the smaller port cities of Istria and Dalmatia employed 14,000 vessels, of which 2,400 under the national colors. The biggest were brigantines of 520 tons, the medium size were between 250 and 280 tons with 14 to 15 sailors, and the smallest measured 44 tons. In older days Venice used to have 3,300 ships with 40,000 sailors (Hassel 1805: volume 1, part 2, 28).
[69] In 1804 Ragusa had 12 frigates, Napels and Sicily 6 ships of the line and 9 frigates, Etruria 2 ships of the line and 4 frigates and Liguria 4 frigates, totaling 8 ships of the line and 29 frigates (Hassel 1805, volume 1, part 1: 3). In 1779 Ragusa had 162 vessels of 10-40 guns (Hassel 1805: volume 2, 169).
[70] In 1671 Ragusa had 112 *bâtiments*, in 1694: 55 *bâtiments* and 43 *marciliani* , in 1699: 69 *bâtiments* and 78 *marciliani*, in 1710: 77 *bâtiments* and in 1722: c. 50 *bâtiments*. Stagnation characterized the years 1720-1765, after which figures rose again in the years 1765-1795.

on a long series collected by Jan Glete, but we do not dare to convert these tonnages into numbers of men. However, the tendency shown by these figures (table 7.17) does not contradict our results, we think.[71]

Table 7.16: Average annual maritime work force Italy, 1501-1900

	Year of source	Venice		Other Italian states		Total		
		Tonnage x 1000	Men x 1000	Tonnage x 1000	Men x 1000	Tonnage x 1000	Men x 1000	
							a	b
1501-50	1423		36					50
	1424			31 G				
	1450	80						
	1490		49					
1551-00	1550			30G; 35R	5R			40
	1567	32						
	1571	27		50R				
	1581		30 navy					
	Late C			12G				
1601-50	1605	<40						30
1651-00	1650				2.2R			30
1701-50	1700	40						40
	1744-1761			17R	2.5R			
1751-00	1750				2.6R	312I		50
	1786/7	60		42 G				
	1787-1793			30R	5.2R			
1801-50	1805							30
	1839	11						
	1844	37						
1851-00	See below table 7.18					868I		40

Source: 1423 and 1490 after Lane 1973: 337 (1423 including 11,000 on galleys), 342, 366 (4,000 seamen on galleys); 1450, 1567, 1786-1787 after Unger 1992: 260-262, and Lucassen & Unger 2000: 130; Ragusa 1550 after Doumerc 2001: 306; Venice 1571 after Scammell 1981: 134 (110 galleys at Lepanto), 128-129 (200 to 300 men aboard merchant galleys: up to 40 seamen, 20 to 40 crossbowmen/*arquebusiers*, and 200 oarsmen); Venice 1581 after Scammell 1981: 130-131 (navy grew from 20 active light galleys in the fifteenth century to 146 vessels in 1581: the largest professional 'regular navy in Christian Europe, requiring with full complements about 30,000 men'; see Lane 1973: 364-374: at Lepanto 40,000 – 50,000 men on 208 ships, including 17 Spanish ships, of whom more than half oarsmen); Venice 1605 after Scammell 1981: 148; Genoa 1550 and late sixteenth century after Scammell 1981: 201; Ragusa 1650, 1700, 1744-1761, 1750, 1787-1793, 1805 after Chaline 2001: 376, 394; Venice 1700 after Doumerc 2001: 365; Venice 1839, 1844 after Chaline 2001: 419 (*long cors*).
Legend: Men a = men in source; Men b = our mean for the half-century; G = Genoa; I = Italy; R = Ragusa; S = Sardinia.

[71] Glete 2002: 37.

Table 7.17: Venetian Navy 1500-1700 (supplementary table) (ships) [72]

	1500	1520	1545	1570	1600	1630	1650	1675	1700
Galleys	(20)	(25)	(30)	(40)	30/40	25/30	(20)	(20)	(20)
Sailing warships	2/3	?	1/3	3	-	-	-	(8)	(40)
Total (our estimates)	20	25	30	40	35	30	20	25	60

Source: Glete 2002: 37.

Table 7.18: Maritime workforce (supplementary table): Italy 1851-1900 (000s)

	Merchant ships tonnage x 1000	Navy: crew	Total
1862	654		
1865	678		
1870	1012		
1875	1044		
1880	999		
1885	954		
1890	826		
1895	777		
1900/1901		21.4	
Total	6944		
Annual average	868		
Tonnage per man	30 our estimate		
Men	29 our estimate	11 our estimate	40

Source: Mitchell 1992: 691, 696; navy 1900/1901 after L[…]n 1902: 177.

Austria-Hungary

Before 1800 we have only one figure: in 1785 the Austrian coastal strip of the Adriatic Sea counted 5,300 sailors, of whom one third served on Venetian ships. This would leave some 3,500, eight hundred of whom were on ships of Trieste proper.[73]

[72] Displacement of 1,000 tons of state owned vessels over 100 tons; in 1700 over 300 tons.
[73] Chaline 2001: 387.

Table 7.19: Average annual maritime work force: Austria-Hungary 1801-1850

	Merchant ships tonnage x 1000	Tonnage per man	Sailors
1803			2,097
1818			6,836
1830	190		
1835	179		
1840	199		16,166 (incl. navy)
1845	209		
Total	777		
Annual average	194		
Tonnage per man		28 (comparison of sailors 1818 and tonnage 1830)	
Men merchant marine			7,000 our estimate
Men including navy			12,000 our estimate

Source: Mitchell 1992: 689. Venetia is included to 1866. The navy was not very important in this period (Wap 1835: volume II, 176); sailors 1803 after Hassel 1805: volume 1, part 2, 32; sailors 1818 after Wap, 1835, volume II: 165 (excluding coasters and fishing boats); sailors 1840 after Schnitzler 1846: volume II: 216 (‘*tous appartenant aux ports de l’Adriatique’*).

Table 7.20: Average annual maritime work force Austria-Hungary, 1850-1900

Exclusive of navy	Austria Tons x 1000	Hungary Tons x 1000	Austria-Hungary Tons x 1000
1850			260
1855			334
1860			342
1865			332
1870		[84]	363
1875		[73]	257
1880	262	73	335
1885	243	64	307
1890	195	54	249
1895	188	66	254
Total			3,033
Annual average			303
Tonnage per man			30 our estimate
Men merchant marine			10 our estimate
Men navy			5 our estimate
Total			**15,000**

Source: Merchant marine after Mitchell 1992: 689,694, 696. Venetia is included up to 1866 (in that year the difference for Venetia is only 36,000 tons); tonnage navy after L[…]n 1902: 177 (10,390 in 1901); 8,000 crew navy c. 1900 after Chaline 2001: 478 (part of whom were conscripts, originating from the merchant marine).

Turkish Europe and the Balkans

The reconstruction of the number of sailors is complicated to say the least. We will proceed as follows: first we will discuss employment in the Ottoman navy and its successor states on the Balkans in the nineteenth century. Second comes the merchant marine and, finally, the total estimates, including a discussion on the degree to which Ottoman maritime employment pertains to European migration history.

The navy

At the beginning of the early modern period three navies were important in the Eastern part of the Mediterranean: those of Venice, the Knights of Rhodes and the Ottoman Empire.[74] Above, we have dealt with the Venetians; here we will discuss the Ottoman navy. As to the navy of Rhodes information is still lacking. For the spatial distribution of the Ottoman navy we have to deal with three continents (Europe, Asia and Africa) and four seas (the Mediterranean and the Black Sea mainly in Europe, and outside Europe the Red Sea and the Persian Gulf; we leave aside the Caspian Sea). The following table shows that the European parts of the empire dominated its maritime activities, in particular if we realize that Gelibolu and Istanbul were the main centers and the Mediterranean fleet was

[74] Ágoston 2005: 49.

the core of the Ottoman navy.[75] Besides, all data on ships, tonnage, and crew that follows pertains to the Mediterranean and the Black Sea.

Table 7.21: Naval arsenals and shipbuilding sites in the Ottoman Empire

	Europe	Anatolia: Black Sea	Anatolia: Mediterranean	Asia other	Africa
Arsenals	Gelibolu, Istanbul, Rusçuk, Ni^gbolu, Vidin	Ere^gli, Sinop, Samsun	Izmit	Birecik, Basra	Suez
Shipbuilding sites	Lepanto, Preveza, Avlonya, Varna, Güvercinlik, Semendire, Belgrade, Mohaç, Buda, Gözleve, Kefe, Kerç, Taman	Ere^gli, Amasra, Trabzon, Rize			

Source: map in Ágoston 2005: 51.

The Turkish fleet, consisting of three great galleys (one of which with a displacement of 2,500 to 3,000 tonnes), 60 galleys, 30 small galleys and 20 large and medium-sized sailing ships which won the battle of Zonchio and conquered Lepanto in 1499 is believed to have had 37,000 men. This was only a part of all sailors on Ottoman ships at the time. Compare the Venetian fleet, which could not prevent this Turkish success; it was manned by 20,000 to 30,000 men, whereas the complete maritime population of the Republic at the time may have counted 50,000 men (see above under Italy).[76] We have some information on how to convert the numbers of ships into numbers of crew. The battle of Lepanto may have involved more than 80,000 men, sailors and soldiers together, on the Ottoman side, many of whom hailed from modern day Albania and Greece.[77]

For the late Ottoman navy, some more figures are available: 12,391 oarsmen (of whom at least 4,300 from Anatolia) in 1660-1661, 6,000 men in 1699, 21,800 men in 1738, 15,000 to 17,000 in 1770. As far as there were Greek sailors in the Ottoman navy, they started to disappear from the 1820s onwards and from the 1840 it was exclusively Muslim. On the eve of the battle of Navarone (1828) the Ottoman navy counted 24 ships of the line, 21 frigates and 40 smaller vessels, totaling 2000 guns.[78] In 1841, however, only 10 ships of the line, 10 frigates and 12 smaller vessels were left.[79] After the disappearance of the Greeks, not many European Muslims were left on Ottoman navy vessels because the 10,765 navy-men of 1845 are said to have been nearly exclusively from Pontic Anatolia.[80]

[75] Ágoston 2005: 51-52.
[76] Glete 2000: 1499.
[77] Scammell 1981: 134 (230 Ottoman ships); Parker 1988, 89 (400 galleys on both sides, which carried, between them, some 160,000 men); Glete 2000: 105 (220-230 galleys and at least 50-60 small galleys), 205, footnote 28 with slightly contradictory figures for losses: 30,000 or more Turkish dead and wounded, 3,000-3,468 Turks taken prisoner, and 15,000 Christian galley slaves freed.
[78] Wap 1836: volume IV, 243.
[79] Schnitzler 1846: volume 2, 232.
[80] Panzac 1999: 43, 45-46, 48, 53-54.

Table 7.22: The Ottoman navy 1456-1700

Year	Vessels			Tonnage x 1000			Crew
	Galleys and galeasses	Sailing vessels	Total	Galleys and galeasses	Sailing vessels	Total	
1456	64		200				25,000 (100 x200= 20,000 plus 150 x 30= 4,500)
1470			280				
1475	120		380				
1480	74		236				
1496	100		207				
1499			260				
1500			230	15/20	?	20	
1520				15/25	?	25	
1545				20/30	-	25	
1570				50/60	-	55	
1600				?	-	?	
1630				20/30	-	25	
1650				20/30	-	25	
1675				(15)	(5)	20	
1700				(10)	(40)	50	

Source: Vessels 1456-1500 after Ágoston 2005: 48-49; Tonnage 1500, 1520, 1545, 1570, 1600, 1630, 1650, 1675, 1700 (only vessels of minimal 100 tonnes, in 1700 minimal 300 tonnes) after Glete 2000: 188; Glete 2002: 37 (1700); crew 1456-1500 after Ágoston 2005: 53 (our conservative interpretation of his average crew per ship 1488).

The merchant marine

Here again the Ottoman share is dominant, although the Greek part of it – also before Greek independence – was important. A complication is that in 1774 Greek ships were allowed to sail under the Russian flag.[81] Based on tonnage figures for the year 1900, and taking into account the prevailing tonnage per man ratios of the day, total maritime employment figures for the Balkans as a whole will not have exceeded 20,000 crew at the end of the nineteenth century. Fifty years before, they were higher because of the greater share of very small boats.[82] Very provisionally, we might suppose that maritime employment in the Balkans has been greatest in the sixteenth century, declined in the seventeenth century and stabilized in the subsequent centuries.

[81] Todorov 1983: 199.

[82] As there were 3,800 vessels measuring 342,000 tons in 1850, all these data concern very small ships, nine tons on average in the years 1834-1850.

Table 7.23: Tonnage merchant marine Balkans 1764-900

		1764	1816	1831	1834	1847	1850	1879	1900 (vessels of 50 tons or more)
Turkey									529,600
Greece	Tonnage	153,580			250,000	307,000	342,000		298,361
	Vessels	615	600	617 vessels over 15 tons	2,891	3,407	3,800		
	Sailors	3,526					40,000 (sic)	16,157 sailors, 5,180 sailors abroad and 2,002 sailors in the navy	
Romania									18,844
Montenegro									3,772
Bulgaria									1,407

Source: Greece 1764, 1816 after Todorov 1983: 199, 274-276 (especially the islands Hydra, Spetsai and Ispara, together 615 ships); 1831 after Wap 1836: volume IV, 259. 1834, 1847 and 1850 after Todorov 1998, part xi: 232-233; 1879 after Todorov 1983: 331; 1900 after L[…]n 1902: 178 (he provides figures for sailing and steam ships separately, both based on 'Bureau Veritas').

Data for the recruitment of sailors from the Balkans proper (except for 'Italian' cities like Ragusa, which as far as available have been included in the Italian figures) are hard to come by because their share in the total Ottoman fleet is unknown. In reality, this problem is less important for the goal of our project - the reconstruction of European migration streams - than it seems. First, all data collected here pertain to Ottoman ships in the Mediterranean and the Black Sea and not to the Red Sea or the Persian Gulf.[83] Second, as far as we know, recruitment of sailors on Ottoman ships took place mainly in the Balkans (especially Greeks and Albanians), although a sizeable minority came from the Turkish Black Sea coast.[84] We have chosen to include these Anatolian sailors from the northern Anatolian coast because the majority may be seen as temporal immigrants to Europe, as the most important Ottoman ports of embarkation or destination for these Black Sea Ottoman sailors were situated on that continent. We realize that in doing so we omit some Ottoman sailors from ports like Trabzon or Sinope who stayed in the region and never embarked on Istanbul or Crimea based ships; however, as we are unable to separate those probably small numbers from the other Ottoman sailors, we think we may do so without distorting our numbers too much. All the data found so far about sailors from the Balkans might result in the following order of magnitude per sub-period.

[83] For the Ottomans in the Red Sea and the Persian Gulf (Shatt al-Arab), see Ágoston 2005: 51-53.
[84] See table 7.21.

Table 7.24: Sailors, originating from the Balkans 1501-1900 (000s)

	Navy		Merchant marine		Total
	Ottoman	other	Ottoman	other	
1501-1550	20	?	20?	?	40
1551-1600	50	?	20?	?	70
1601-1650	20	?	20?	?	40
1651-1700	20	?	20?	?	40
1701-1750	30	?	20?	?	50
1751-1800	20	?	20?	10	50
1801-1850	20	?	30	20	70
1851-1900	10	2	30	20	60

Summary for Europe

All these calculations culminate in the following table in which we have summarized the average annual maritime workforce in Europe between 1501 and 1900.

Table 7.25: Average annual maritime work force Europe 1501-1900 (000s)

	UK	NL	FRA	GER	SCA	RUS	SPA & POR	ITA	AUS-HUN	BALKANS	Total
1501-50	15	15	10	5	10	0	40	50	0	40	185
1551-00	15	40	15	5	15	0	40	40	0	70	240
1601-50	20	50	20	10	20	0	30	30	0	40	220
1651-00	50	50	40	10	25	0	25	30	0	40	270
1701-50	50	50	50	10	25	10	25	40	0	50	310
1751-00	90	50	60	10	40	15	30	50	4	50	398
1801-50	200	25	50	30	30	55	15	30	12	70	517
1851-00	210	25	45	55	70	60	20	40	15	60	600

The well-known Dutch maritime historian Jaap R. Bruijn concluded about the European seaman 1570-1870: 'If we consider men below the age of thirty as young, then it is obvious that seafaring was a young man's profession. This is a fair conclusion, especially considering that the average marriage age in those days was often twenty-five or older. Two-thirds to three-quarters of the crew, excluding officers, were younger than thirty. At an age when it was common for most children to look for paid labor, boys of twelve or a few years more also went to sea […] many youngsters went to sea, but for most it was a brief phase'.[85] We propose to depart from the supposition that an average seaman's career lasted twelve and a half years. Consequently, in order to come up with 50-year migration figures, we may multiply our figures of average maritime employment by, let us say, four in order to reach the number of individual men with high-sea experience and the migrations involved in recruitment, voyages, and discharge inherent to this type of occupation.

[85] Bruijn 1997: 27-28; see Le Goff 1997: 321.

Table 7.26: Average annual and total maritime work force Europe 1501-1900 (000s)

	Year of source	Europe total according to historiography		Europe total: our annual mean per half century		European individuals with high-sea experience (annual mean x 4)
		Tonnage x 1000	Men x 1000	Tonnage x 1000	Men x 1000	
1501-50	Late Middle ages	1,000			185	740
1551-00		Recovery after decline			240	960
1601-50	1600	1,000			220	880
1651-00	1670s	1,500	300-400		270	1080
1701-50					310	1240
1751-00	Late C18th	3,500			398	1592
1801-50					517	2068
1851-00					600	2400

Source of the columns 'Europe total according to historiography': Unger 1992, partially revised in Lucassen & Unger 2000, with the following additions: total number of sailors late seventeenth century (including fishermen and coastal mariners): Meyer 1980: volume II, 79. Because of the small size of their maritime labor market (less than 10,000 excluding coastal ships) we have left out a number of countries, like e.g. Belgium and Iceland.

Soldiers

Introduction

To what extent are soldiers migrants? In chapter 20 of *Candide* (published in 1759) Voltaire provides a clear-cut answer: 'a million assassins organized into regiments, rushing from one end of Europe to the other inflicting murder and pillage because they have to earn their living and they do not know an honest trade'.[86] Before the introduction of general military conscription many, if not most soldiers in Europe were indeed long-distance migrants. This certainly goes for mercenaries and professional soldiers, the prevailing recruitment system in the Late Middle Ages and the early modern period.[87] This is not to say that all mercenaries left their villages or home towns forever.[88] Redlich distinguishes between the Swiss mercenaries, in particular, whom he calls 'sedentary' because a substantial number returned home after the war was over, and the uprooted who made war their profession, the so-called *lansquenets*. The numbers of those *lansquenets* remained restricted until the late fifteenth century. [89] Parker has argued successfully that – related to a new use of fire power and a new type of fortification – the size of armies increased substantially from the early sixteenth century onwards.[90] Childs' distinction between the domination of mercenaries before the mid-seventeenth century and standing armies thereafter points into the same direction. Instead of an outlay confined to periods of war or disturbances the standing army was 'a military mouth which needed to be fed at all times'.[91] Apart from some medieval, especially French, experiments with standing armies, the Ottoman Janissaries, established in the late fourteenth century may be considered as the first standing army in Europe, to be maintained for many centuries to come.[92] Consequently, in the subsequent three centuries many more professional soldiers in Europe were to leave their homes than ever before. The so-called *fiscal-military* state, a famous expression coined by John Brewer, converted the tax-payers' money into mercenaries' salaries and thus contributed to the mobilization of wage labor and to its spatial mobility.[93] In this vein, we can also speak of the *fiscal-migratory-labor* state.

Mercenaries were available to the best paymaster and consequently moved frequently from one army or army commander to another. Besides, scenes of war and battlefields shifted continuously and fortresses were often far from the population centers. Half of the infantry of one of the most international armies – that of the Dutch Republic – consisted of foreigners.[94] But also Ancien Regime France partially relied on foreigners, as

[86] Forrest 1990: 30.
[87] Mallett & Hale 1984: 1-2; Pfister 1994: 53-54; Asche 2008: 15-25; For military recruitment systems see Lucassen & Zürcher 1999 and Lynn 1996; the mobility of occasional militias was very low, see Brewer 1989: 32-33.
[88] Parker (1988: 47, 172 fn 7) shows that the origin of professional soldiers (apart from the war-zone itself) shifted from upland pastoral villages to towns. The latter became preponderant in France and the Southern Netherlands in the second half of the eighteenth century.
[89] Redlich 1964: 114-117.
[90] Parker 1988: 43; see Luh 2000: 4-5.
[91] Childs 1984: 16-17.
[92] Ágoston 2005: 22-23.
[93] Storrs 2009.
[94] Zwitser 1991: chapter 3, Van Nimwegen 2003: 83-86.

did Spain, Britain, Sweden and Prussia.[95] Employing foreign troops in wartime was considered highly advantageous as expressed by an expert in 1630: 'If there should be war in Italy, it would be better to send Walloons there and bring Italians here [to the Netherlands], because the troops native to the country where the war is being fought disband very rapidly and *there is no surer strength than that of foreign soldiers'*.[96]
Only in Sweden in the seventeenth century and in a few more countries in the eighteenth century were experiments with conscription started – sometimes successfully like in Russia and Prussia, sometimes a failure like in Spain.[97] Especially the poor, considered to be idle, were targeted as conscripts. Nevertheless, overall professional soldiers were to dominate the European military scene until the end of the eighteenth century. Sometimes to the regret of onlookers, like the English traveler William Dalrymple under way in Spain and Portugal: 'the armies of other countries [outside Spain] filled with drunken mechanics and dissolute vagrants'.[98]

The impact of conscription on mobility

With the advent of the French Revolution, conscription became the dominant system of military recruitment in Europe. Only a limited number of European countries stuck completely to the old professional army, in particular Britain. Under specific conditions military mobility may diminish considerably with the introduction of universal conscription – at least in peace time - when conscripts have to show up for training during a limited number of months or years in the nearest barracks in the provincial capital.[99] In the mid-nineteenth Netherlands, for instance, the 11,000 recruits that were necessary to reach a nominal army strength of 30,000 to 40,000 soldiers were only required to come to the barracks for the maximum of one year and to be available for four more years during which exercises could last a maximum six weeks per annum.[100] In the first half of that century, the actual time which Dutch conscripts spent in arms away from home varied between a few months and one and a half years.[101] Essential for our reconstruction of a European migration rate is that, as a rule, short-term conscripts returned to their homes after the expiration of their exercises and of their service.[102] In this way, military conscription involved the type of migrations we described above as short-distance internal migrations.

There is, however, one exception to the rule. That is the situation in which the national government wishes to purposely mix recruits from different parts of the country in

[95] Redlich 1965: 200-201; Parker 1972: 27-35, 271-272; Childs 1982: 46-49; Parker 1988: 47-52; Corvisier 1976: 125-127; Asche 2008: 23-25; Amersfoort 1988: 14, 42; Esdaile 2009: 104, 110; Karamanoukian 1978.
[96] Parker 1972: 30, quoting from a letter of the marquis of Aytona to the Spanish king.
[97] Esdaile 2009; Thisner 2009.
[98] Esdaile 2009: 108.
[99] Weber 1976: 299; Jerram 1899: 111 (France), 148 (Germany); Woodward 1978: 30 (on Germany c. 1900), 46 (on France c. 1900), 58 (on Austria-Hungary c. 1900), 89 (Turkey c. 1900); Amersfoort 1988: 79; This was not the case in Austria-Hungary c. 1850 where most regiments seem to have been encamped in other crown lands than where they originated from, see Schmidt-Brentano 1975: 69.
[100] Gooren 1987: 3-4.
[101] Amersfoort 1988: 78-79.
[102] This was not the case before the recruitment system became really universal with a reduction of the term of duty and the concomitant abolition of substitution possibilities through which the military service became more normal and consequently more respectable, see Weber 1976: 301.

order to educate them in national sentiment. We know of two examples: Austria-Hungary before 1868 where most regiments seem to have been encamped in crown lands other than where they originated from;[103] and Italy after its unification, where Southerners had to travel to their barracks in the north and vice versa.[104]

Such conditions, however, were fulfilled in most countries only gradually during the nineteenth century because originally in many countries conscription lasted for an extremely long time, converting those actually drafted into more or less permanent migrants.[105] Let us start with the most extreme case, Russia. Whereas it had depended heavily on foreign troops in the seventeenth century (17,400 in 1630-1634, 60,000 in 1663, and 80,000 in 1681) this was changed by Peter the Great.[106] He introduced a conscription system in which, until 1793, serfs were drafted lifelong and thereafter only for 25, which boiled down to the same. Only in 1834 was the term of service reduced to a de facto twelve years, in 1855 to ten, and in 1874 universal conscription was introduced, an innovation made possible only by the abolishment of serfdom in 1861.[107] Still, between 1874 and 1906 Russia's active military service lasted no less than six years.[108]

In Austria, conscription in a limited form was introduced in 1771. The conscripts had to serve lifelong until 1802 (in Hungary even until later), between 1802 and 1845 between ten and fourteen years, and afterwards until 1868 during eight years. But this was theory. In fact, after 1850 Austrian conscripts stayed in the barracks between three and four years. In 1868 at last conscription during three years was ordered for the whole Empire.[109]

France reintroduced conscription in 1818 with a long term of duty (six years), and even extended it in 1824 to eight years. Between 1832 and 1868 it became seven years, between 1868 and 1889 it was still five years, only to drop to three years thereafter.[110] Like everywhere else in Europe long terms of duty could not exist without the system of substitutes. Recruitment was decided by a draft lottery, but those who had to follow the colors were allowed to pay for a substitute to serve in their stead. This opportunity was used extensively, for example, in France where until the late 1850s one quarter or more of all conscripts were substitutes. In the words of Eugen Weber 'poor lads seeking a way to raise some money, or veterans who meant to re-enlist in any case and who, this way, made a profit on their decision'. [111] In other words, even among the conscripts we meet a number of de facto professional soldiers. Guy Chapman even concludes: 'Since service was for six, later for eight years, the army was practically professional".[112] This can be substantiated by comparing these terms of duty with the service contracts of the professional British army. Until 1847, virtually all soldiers preferred lifetime enlistment (in

[103] Schmidt-Brentano 1975: 69; Stone 1966: 99-100; according to Childs 1982: 55 recruits in the Habsburg Empire still stayed in their homeland in the eighteenth century.
[104] Woodward 1978: 95-96.
[105] Curtiss 1965: 234, 237, 253; Menning 1992: 222-225 (about the traveling involved); Parker 1988, 53-54 (about the eldest form of conscription: 'Enlistment, in effect, had become a sentence of death […] a sustained one-way traffic [with] highly deleterious consequences').
[106] Parker 1988: 38.
[107] Keep 1985: 103-108; Lucassen & Zürcher 1999: 4, 7.
[108] Menning 1992: 23.
[109] Schmidt-Brentano 1975: 66-68, 78, 84, 93; see Wilson 2007: 421; Hochedlinger 2009: 86-94.
[110] Weber 1976: 292; Ritter 1960: 16-17.
[111] Weber 1976: 292; see Ritter 1960: 23, 25-26.
[112] Chapman 1957: 55.

practice for most of them 21 years) and only the Army Enlistment Act of 1876 introduced six years in the Colours, followed by six years in the regular reserve, with only a minority being allowed to extend their service to 21 years.[113]

Sweden was the first country to start a universal conscription scheme, which, at least in peace time, immobilized, rather than mobilized its soldiers. After the subsidies from its allies had dried up in the 1630s, Sweden had to rely on soldiers from its own small population. Besides, unlike Denmark, it was situated too far from the endless supply of German mercenaries. Therefore, it created a standing army built on specific Swedish conditions by confiscating noble lands in the 1680s and by allotting it in the form of leaseholds to army officers. This was the revival of a feudal payment system: 'what the state did through the Military Allotment Establishment was simply to hand this problem [i.e. tax collecting] to its servants to solve. The yields of their farms, like most of the taxes they received, were agrarian products. In the Military Allotment Establishment, it became the headache of the officers to turn grain and eggs into coins and bills. The wages of the officers and other personnel paid on this way were protected from inflation, a benefit the cash-salaried officers and officials did not enjoy'.[114] Supplementary was the Tenure Establishment for the maintenance of the soldiers of the infantry. Two peasant farms together were the unit of tenure which was forced to provide the uniform and upkeep of one soldier – in exchange for exemption of these farmers from conscription. In fact, in peace time the soldier and his family received a small cottage and some land, normally situated on the lands of the largest farm of his 'armament unit'. Between April and November these soldiers were gathered ten times at the parish church and four to twelve times for two days' exercise in regimental formation. All of these drills required little and only short-distance migrations, although military training could also be replaced by construction work.[115] Although 25 to 30 per cent of the Swedish soldiers were paid in cash, the Swedish army may be characterized as follows: 'This standing army to a large extent was demobilized, its personnel mainly devoting their time to allotted cottages and farms'.[116]

Prussia was not the earliest, but certainly the main country which introduced very early on conscription for a short term on a large scale. Also, other German states resorted to the combination of regulars and militias. From the late seventeenth century onwards long-established militia organizations were adapted to provide a constant flow of conscripts.[117] Although taken from their original surroundings, these recruits did not live permanently in barracks. In order to save money, the state allowed up to two-thirds of them extended unpaid leave for up to eleven months per year. Because of the ensuing activity of soldiers, the crafts guilds in garrison towns complained bitterly about unfair competition.[118] If needed, these soldiers could be mobilized easily and quickly either to defend their homeland or in order to be sent abroad.[119] Although Childs stresses, on the one hand, local recruitment and training as one of the characteristics of the Prussian can-

[113] Spiers 1980: 53.
[114] Thisner 2009: 165-166.
[115] Thisner 2009: 167.
[116] Thisner 2009: 168.
[117] Wilson 2007: 420.
[118] Childs (1982: 53), however, writes: 'although they pursued their civilian trades and occupations in their own town or village', which seems to suggest that this was possible during active service.
[119] Wilson 2007: 424.

tonment system in the eighteenth century, on the other hand, he underlines the geographical mobility of the conscripts: 'No one in his right mind would attempt to argue that men joined an eighteenth-century army 'to see the world', but once an individual had been enlisted his experiences gave him a much wider outlook on life than if he had stayed in his village as a farm labourer […] well over a quarter of adult males in many German, Italian, Slavonic and Scandinavian states had marched with an army and traveled throughout their country and many others as well'.[120]

Table 7.27: Terms of duty for military conscripts in European countries 1699-1906

	More than 3 years	3 years	2 years	1 year or less
France	1793/98-1815, 1818: 6y; 1824: 8y; 1832: 7y; 1868: 6y	1889-1905	1905-	
Austria-Hungary	1771-1802: ll; 1802: 10/14y; 1845: 8y	1868-		
Russia	1699: ll; 1793: 25y; 1834: 12y; 1855: 10y; 1874: 6y	1906-		
The Netherlands			1815-	1848-
Prussia	1713/33-1814/15	1814/15 -1830; 1856-	1830-1856	
Denmark 1849				
Sweden		1812-		
Norway 1814				
Spain 1831	1814: 8y; 1837: 6y; 1867: 4y	1882-		
Italy		1870-		
Belgium 1909				

Source: for France: Weber 1976: 292; Ritter 1960: 31; for Austria: Schmidt-Brentano 1975: 66-68, 78, 84, 93; Stone 1966: 99-100; Schneid 2009: 201; for Russia: Keep 1992: 23, 103-105, 226; Menning 1992: 23; Mikaberidze 2009; for the Netherlands: Amersfoort 1988: 78-79 (up to 1.5 years) and Gooren 1987: 3-4; for Prussia: Schmoller 1921: 189-190, 226-229; Redlich 1965: 86, 182-185; Ritter 1954: 167, 356 (footnote 169: in the 1860 de facto 2.5 years), but according to Childs 1982: 53 only 18-24 months in the eighteenth century; Walter 2009: 40; for Sweden: Thisner 2009; for Spain: Puell de la Villa 1996: 178, 190, 195-204, 284-288 (cf. Rottmann 1914: 76-77: Spain 3 years of active conscription, Portugal 1 year at a maximum); for Italy: Woodward 1978: 99 (around 1900); for Belgium: Jerram 1899: 26.
Legend: ll = lifelong; y = years.

But even if short terms of duty of three years and less diminished the intensity and character of mobility in such a way that it can be seen as an integral part of internal mobility, war could have an adverse effect. It could move recruits to the borders or to the battlefields, even abroad, to begin with the Napoleonic wars which raged during the first twenty years of the conscription system.[121] In sum, for our mobility rates we include all soldiers as an integral part of migrating Europe, with only one important exception: those

[120] Childs 1982: 57.
[121] Welten 2007; at the same time France continued to hire troops in Switzerland (Amersfoort 1988: 22-28).

conscripts that had to serve three years or less, who served in their own neighborhood and who had not been mobilized in a war.

Data harvesting: the strength of armies

Based on this taxonomy of military recruitment and its consequences for the mobility of soldiers, we have to discuss the most important military powers in Europe over the entire period 1501-1900: Britain, the Netherlands, France, Germany, Denmark-Norway, Sweden, Russia, Spain (and Portugal), Italy, in particular the Republic of Venice, Austria-Hungary and the Ottoman Empire. We may suppose that the sum of these countries reflects the general European trend and that the smaller countries not discussed here will not distort this picture. Some of these countries (Switzerland, Ireland, Scotland) were renowned as major exporters of soldiers. Their mobile inhabitants will, of course, show up in the figures of the countries where they were fighting. To give one example: Switzerland with its 1.75 million inhabitants catered for 60,000 to 80,000 soldiers in foreign armies in the years when Europe was at war. This equals 3.5 to 4.5 per cent of the total population apart from those serving their fatherland, whereas 1.5 per cent was the current rule of the thumb. In 1825 these numbers had been diminished to 25,000 troops in the service of Naples, the Netherlands, Prussia and France.[122]

From army strength to individuals on the move

The last step we have to take is – similar to the previous cases of the seasonal migrants and the sailors – the conversion of average military strength into individual men on the move. This depends on the average service time, which as such has been documented only sparsely.[123] A good indicator, however, is the pace at which soldiers were replaced. We have been able to collect the following data on the so-called 'wastage rate':

[122] Amersfoort 1988: 8. Further examples for Scotland and Ireland in Canny 2007.

[123] Redlich 1964: 373-377, 461-466, 473-476, and Redlich 1965: 215-219, suggests invariably high attrition figures because of casualties, desertion, contagious diseases, etc. but it is impossible to derive hard turnover figures from this.

Table 7.28: Military wastage rates, Europe 1501-1900

Country	Period (P= predominantly peace; W= predominantly war)	Average army strength (000s)	Recruitment (000s)		Annual wastage (per cent)		
					P	W/P	W
			total	per year			
Venice	1537-1617W				20		33
Venice	winter 1570-1571W						50
Army of Flanders: Italian tercios	May 1572 – April 1574 W	2415	987	493			40.9
Army of Flanders: German regiment	1593-1595 W						22
France	1701-1713W	300	655	50			16.7
	1714-1733P	130	415	42	11.2		
	1734-1735W	160	85	43			26.2
	1736-1741P	140	120	20	14.3		
	1742-1748W	150	345	49			32.7
	1749-1755P	140	140	20	14.3		
	1756-1762W	280	270	39			14.3
	1763-1789P	180		25 our estimate	13.9		
	1793/1794	750	300	300	40		
	1789-1798	380 (1795ff)	900	90	24		
	1799-1813	500 (1805-1815)	2482	165	33		
	1815		167	167	33		
Russia (lifelong conscripts)	1705-1801P/W	250	2250	23		9.2	
(conscripts 25y)	1802-1815W	900	1222	87			9.7
		510 (1804)					17.1
	1802-1825P/W	900	2000	80		8.9	
		670 (1820)/ 500 (1824)				11.91 6.0	
(conscripts 25-12y)	1826-1850P/W	900	2088	80		8.0	
(conscripts 12y)	1853-1854W	1000	866	433			43.3
Dutch Republic	1714P				10.0		
Dutch Republic	1780-1781P	42	3	3	6.2		
Prussia	1727-1806 P/W	[150]	4000	50		33.3	
Hessians in USA	1776-1783W	120	19	3			22.6
Austria	1788						38.7
United Kingdom (all troops, inside and outside Europe)	1800-1818W	234	900	50			21.4
	1819-1849P	113	350	11	10.0		
	1850-1899P/W	186	1337	27		14.4	
Austria (conscription, eight-years term)	1851P	461	76	76	16.5		
	1852P	487	105	105	21.6		
	1858P	403	85	85	21.1		

Source: Venice after Mallett & Hale 1984: 477; Army of Flanders after Parker 1972: 207-215; France after Corvisier 1964: 157-158, Schneid 2009: 1-2 (strength 1793-1815; see Blanton 1999: 9 for slightly higher figures) and table for France below; Russia 1705-1825 after Keep 1985: 145; Russia 1802-1815 after Mikaberidze 2009: 47; Russia 1826-1850 and 1853-1854 after Curtiss 1965: 234 (see Bosma 2009 who has 10 per cent in 1815-1850 and 15 per cent in 1851-1900 for

Russian troops in the Caucasus, Central Asia and Siberia) and see table below for strength; Dutch Republic 1714 after Van Nimwegen 2003: 85; Dutch Republic 1780-1781 after Zwitser 1991: 176-181; Prussia after Childs 1982: 53 (for the average strength see below); Hessians after Taylor 1994, 25; Austria 1788 after Ratajczyk 1970: 308; United Kingdom after Spiers 1980: 35-37: in the 1840s annually 11,500 on a total of 130,000, thus 8.8 per cent); Austria after Schmidt-Brentano 1975: 68 and Flora 1983: 50.

This table confirms Geoffrey Parker's observation that 'the absolute minimum wastage of any army' in the early modern period was 0.7 per cent per month in peace time and between 1 and 2 per cent in war time. According to him, total 'wastage' in years of peace amounted to 8.5 per cent per annum, of which half may be attributed to death and the other to desertion and possible reenlisting elsewhere. Total wastage figures surged in war time to respectively 12-24 of which and 8-20, or two thirds deceased.[124] But this table also enables us to be a bit more precise. Between 1500 and 1850 armies lost annually between 10 and 15 per cent of their troops in peace time and between 15 and 40 per cent in war time.[125] Because of the frequency of wars in Europe in those centuries up until 1815 we may safely suppose an overall wastage rate of at least 20 per cent per year. For our purpose, this means that we have to multiply the average strength of a given army in one of our 50-year periods by ten in order to reach at individual men under the colors.

One of the main reasons for these high figures is the high death rates, in the first place due to diseases. As the following table shows, this is especially true for war times. In peace time soldiers' death rates do not differ significantly from comparative groups in civil populations. Corvisier remarks: '*Tout se passe comme si l'armée prolongeait jusqu'aux environs de trente ans, la forte mortalité qui dans la population frappe les jeunes gens […] ce ne sont pas les batailles qui sont responsables du plus grand nombre de décès […] [l]es maladies, les épidémies qui fondent sur les troupes en quartier d'hiver se révèlent en definitive beaucoup plus meurtrières*'.[126]

The following table also shows something more. Thanks to the path-breaking study 'Death by migration', by Philip D. Curtin (1989) we see a substantial drop in military death rates in the second half of the nineteenth century. The consequence of this for the current investigation is serious as we have to lower our wastage multiplier considerably in our reconstruction of total numbers of individual soldiers. This will be indicated explicitly in the country tables (to follow hereafter) for which we have only indicators of military strength but no recruitment figures.

[124] Parker 1988: 46, 53-58.
[125] The, by international standards, low Russian figures make one suspicious about the strength data. Where alternative lower figures are available, like in the early nineteenth century, the Russian results come more in line with the others. see the critical footnote in Schnitzler 1846: volume 2, 178-179.
[126] Curtin 1964, 691-692.

Table 7.29: Mortality rates/Crude death rates per 1,000

Source	Country and specifications	Period	Civil	Military	
				Peace time	War time
Parker 1972, 207-215	Army of Flanders: Italian tercios	May 1572 – April 1574			80
	Idem: German regiment	1593-1595			150
Riley 1981, 655[127]	Western Europe (male 15-59)	C18th?	17.85-20.73		
Riley 1981, 655[128]	Breslau (Total population 34,000)	1687-1691	34.53		
	Breslau (ages 15-59: 20,705)		18.16		
Nusteling 1998, 98, 100-101[129]	Dordrecht (Total population)	1636-1681	51.80		
		1681-1750	38.90		
		1751-1810	33.10		
Corvisier 1964, 684-685	Vivarais	1716-1749		34.00	192.00
Taylor 1994, 210-211	Hesse (troops in America)	1785-1788			8.10
	Oberweimar (Hesse)	1775-1800 (total population)	21.70		
		1785-1795 (males 15-30)	6.20 – 6.70		
Spiers 1980, 59-60	United Kingdom (24 large towns)	1837-1846	17.10		
	United Kingdom	1840s		11.90	
Curtin 1989, 203	British troops serving in the UK	1837-1846		17.90	
Curtin 1989,204/5		1860-1867		9.34	
Curtin 1989,206		1869-1877		8.49	
Curtin 1989,169		1879-1884		6.73	
Curtin 1989,170		1886-1894		5.05	
Curtin 1989,171		1895-1904		4.20	
Curtin 1989,172		1909-1913		2.55	
Curtiss 1965, 250[130]	Russia	1800-1850	12.00 – 13.00	35.00 -36.00	
Bengtsson et al. 2004, 222[131]	Venice (Total population city)	1850-1869	34.80		

[127] Coale & Demeny 1966.
[128] Halley 1942: 6.
[129] Urban graveyard effect in seventeenth century Dordrecht 10 per mille or 1 per cent annually (declining to c. 2 per mille in 1696-1710 and 1 per mille in the first half of the eighteenth century (see table 5.4).
[130] Keep 1985: 196-198, who argues that many deserters may have been among the 'death'; Luh 2000: 48-65, pointing to regional differences, remarks that in particular campaigns in South-east Europe showed high wastage rates, especially due to sickness.
[131] Here we see no graveyard effect at all. Crude birth rate (34.8) minus crude death rate (33.6) is + 1.2.

Schmidt-Brentano 1975, 67-68	Austria	1850		40 maximum[132]	
Curtin 1989, 188	French troops serving in France	1862-1866		9.95	
Curtin 1989, 189		1872-1876		9.41	
Curtin 1989, 190		1882-1886		8.29	
Curtin 1989, 191		1892-1896		4.42	
Curtin 1989, 192		1902-1906		4.17	
Curtin 1989, 193		1902-1913		3.40	

Finally, two caveats are in place. On the one hand, the possibility that we are exaggerating military-induced geographical mobility; on the other hand, the possibility that we are underestimating this same migration. The first has to do with deserters, the second with camp followers.

Not all men registered as missing were lost to the military profession. In particular the deserters, but also demobilized soldiers could continue their martial career in another army. Corvisier discusses this possibility at length for eighteenth-century France .[133] The French army had to deplore 10,000 deserters per year during the Austrian War of Succession (1740-1748) and eight to nine thousand in 1761. As the army to which these figures pertain counted 130,000 to 135,000 men, desertion annually affected seven per cent of the troops. The authorities were well aware of the fact that later on deserters could enroll again (under a false name) in other regiments of the same army, let alone that they could do so in a different army.[134] Corvisier estimates that during the War of the Spanish Succession, one in four French soldiers deserted, whereas this was between one in four to one in five in the peaceful period 1712-1736. At the time, ten percent of the enrolments in the War of the Spanish Succession were estimated to be former deserters from other regiments. For other countries or periods we have no data. So far our overestimations.

Our underestimations are far more serious as we will show. This regards the so-called 'trains' of the armies, the considerable number of camp followers (servants, wives, children, prostitutes, sutlers or victualers), in particular during the wars of the ancient regime. The main reason for their huge numbers is the condition under which mercenaries were hired: while serving, they had to take full care of their maintenance themselves.[135] It is hard to quantify the numbers of camp followers. Van Creveld talks about tails of 'anywhere between fifty and hundred and fifty per cent of its own size'. Luh, however, estimates that they 'sometimes amount to more than half the number of soldiers' but that their numbers steadily decreased in the course of the eighteenth century.[136] This certainly is true for the nineteenth century with its highly professional conscription armies, which included specialized train companies and with its railways that started to be used by troops as early as the revolutions of 1848-1849.[137] Based on the recent study of John Lynn we come to the following estimates of the army train:

[132] This figure includes severe illness and desertion.
[133] Corvisier 1964: 711-713, 725-747.
[134] Corvisier 1964: 55, 736 (illegal re-enrollment was called '*billardage*', and those who did re-enroll illegally were called '*rouleurs*').
[135] Redlich 1954: 227; Childs 1982: 111-115.
[136] Lynn 2008: 2, 8; Van Creveld 1977: 6; Luh 2000: 13, 24-47; Parker 1972: 175-177, 288-289; Parker 1988: 77-78. See also the photograph of cantinière 1855 in Woodward 1978: 39.
[137] Van Creveld 1977: 75 ff.

Table 7.30: Estimate of the relative share of the army train in European armies 1494-1813

	Soldiers	Women etc. (army train)	= + %
France 1494-95	20,000	28,000-30,000	+ 40-50%
France 1520	10,000	20,000	+ 100%
Netherlands 1573	9,600	6,400	+ 65%
Bergen op Zoom 1622			+ > 100%
Germany 1633	30,000	70,000	+ 230%
Germany, early 17th century	3,000	4,000	+ 30%
France 1672-1700			+ 5%
Prussia 1733			+ 10%
British North America			+ 6%
United Kingdom 1813			+ 7%

Source: Lynn 2008: 12-14.

Great Britain

British soldiers were professionals. At the end of the nineteenth century they were recruited for four years.[138] It has to be remembered that the British army, after it had left France in 1818, primarily became a colonial force as three-quarters of the infantry battalions were assigned to garrison duty in overseas stations.[139] Although these troops are recruited and theoretically based in Britain, half or even the majority may actually have been stationed abroad (according to Bosma in the period 1815-1850 360,000 and 1851-1900 675,000).[140] Besides, the numbers given are certainly excluding the Indian and other colonial troops.[141]

[138] Jerram 1899: 67.
[139] Spiers 1980: 72.
[140] Bosma 2009; see Jerram 1899: 56: out of the total peace strength of 236,172, a force of 71,157 was in India; see also Idem 60-61: 131,802 at home, 73,157 in India, and 51,204 in other colonies, totaling 256,163; Idem 87: 271,157 Anglo-Indian forces, out of which 73,157 British troops; for an earlier period, see Lenman 1990.
[141] Bosma 2009; see figures in Spiers 1980: 138: 'one British to every two Indian soldiers'.

Table 7.31: Soldiers fighting for Britain inside and outside Europe 1501-1900

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	Europe		Average strength	Individuals involved
		peacetime	wartime		
1501-50	1470s	25		20	200
1551-00	1550s	20		20	200
	1590s		30		
1601-50	1600	30		30	300
1651-00	1650s		70	50	500
	1689-1697		76		
	1698	24			
1701-50	1700s		87	100	1000
	1702-1713		93		
	1710		75		
	1739-1748		62		
	1747		120		
1751-00	1756-1763		93	100	1000
	1776-1784		108		
	1783		51		
1801-50	1815	234		1800-1818: 250 with an attrition rate of c 20% or 900	1250
	1820	115		1819-1849 on average 113, while 11 enlisted annually, or 350	
	1825	100			
	1830	104			
	1835	102			
	1840	125			
	1845	132			
1851-00	1850	137		Average strength 186,100 while on average 26.756 joined annually, or 1338 in total	1338
	1855		169		
	1860		220		
	1865		203		
	1870		174		
	1875		178		
	1880		183		
	1885		181		
	1890		202		
	1895		214		

Source: 1470s, 1550s, 1700 after Parker 1979: 96 (occasionally, for brief periods, higher figures are recorded by Adams 1990: 31); 1500, 1600 after Tilly 1990: 79 (his figure of 292,000 for 1700 must be a mistake); 1689-1697, 1702-1713, 1739-1748, 1756-1763, 1776-1784 after Brewer 1989: 30-31 ("overestimates", but without 12,000 troops on the Irish establishment); 1698, 1710, 1747, 1783 after Corvisier 1976: 126 ("effectifs"); 1815-1895 (effective strength of non-commissioned officers and men as well as number who joined units) after Spiers 1980: 35-43.

The Netherlands

The insurgent Dutch provinces started to levy their own troops in 1576.[142] Prior to this, we cannot speak of a Dutch army, even if the first skirmishes started in 1568. Although the borders of the Dutch Republic were only fixed after some decades and the borders of the Dutch state since the end of the eighteenth century have been changed on a few occasions, we still can speak of a more or less stable unit, even if we take into account the union with Belgium between 1815 and 1830. Before the foundation of the Dutch East India Company in 1602 and its consolidation in the decade thereafter it is difficult to speak of Dutch colonial troops, even if the overseas expeditions overseas started a bit earlier. The troops in Asia are the best documented and far more numerous than those in the Americas.[143] That is why only colonial troops in Asia have been included.

The Belgian army, since its independence from the Netherlands consisting of solely professional soldiers, has been kept out of consideration.[144]

[142] Zwitser 1991: 14-15; Schulten 2003: 14.

[143] Lucassen 1995; for the period 1600-1800: Lucassen 2004, 15-16 (recalculated for 50-year periods), for the period 1800-1900: Bossenbroek 1992, 357.

[144] Its strength (55,000 in 1835 and 46,000 in 1836, when still on foot of war with Holland) explains the drop in the Dutch figures after 1831. See Wap 1835: volume II, 8-9 and Wap 1837: volume V, 478. The total Belgian peace strength in the 1890s was 48,500 (Jerram 1899: 27).

Table 7.32: Soldiers fighting for the Netherlands 1551 (1576)-1900

	Strength of the troops x 1000			Colonial (Asia) (000s) Individuals involved	Our estimates (000s)	
	Year of source	Europe			Average strength	Individuals involved
		peace	war			
1576-1600	1595, 1597-1599	0	33	0	20 (25 years)	100
1601-1650	1607-1609		50	50	45	500
	1609-1621	30				
	1621-1648		60			
	1648-1649	35				
1651-1700	1651-1665	28		75	52	595
	1666-1667		50			
	1669-1670	33				
	1671-1678		83			
	1679-1687	44				
	1688-1697		80			
	1698-1700	46				
1701-1750	1701-1713		117	100	71	810
	1718-1726	34				
	1727-1736		54			
	1737-1740	44				
	1741-1749		83			
1751-1800	1751-1772	41		100	40	500
	1792	43				
	1793		58			
	1795		58/16			
	1795-1796		24			
1800-1850	1801-1810		29	49 (1815-1850)	20 P + 30 conscripts with war experience + colonial	100
	1814	59				
	1819B	50				
	1831B	88				
1850-1900		37	0	100		100

Source: all data 1595-1793 according to Zwitser 1991: 175-178 (see Van Nimwegen 2003); 1795-1810 after Gabriëls 2003: 154, 160 (January 1795 in reality 16,000 soldiers available, but on paper over 58,000); between 1795 and 1807 all separate foreign regiments, 7.200 troops, disbanded, but 1814-1829 four Swiss and two German regiments, about 12,000 troops, reintroduced (Amersfoort 1988: 3, 7, 66, 284); Fall 1814 59,000 of whom 22,000 conscripts, 15,000 Dutch professional and 12,000 foreign professional soldiers, Fall 1819 (after the unification with Belgium) 50,000 of whom 21,000 conscripts and 29,000 professionals after Amersfoort 1988: 67, 90; 1831 after Bevaart 2003: 289 (see Schnitzler 1846: volume 2: 178: Holland in 1841 40,000 and Belgium more than 50,000); 1850-1900 average after Flora 1983: 249-250; colonial troops 1601-1800 after Lucassen 2004, 16 (where erroneously, both for "the Netherlands" and for "abroad", sailors and soldiers have been changed; consequently, this table should read "soldiers born in the Netherlands 108,000" and "soldiers born in other European countries 212,000") and 15 (distribution per subperiods); colonial troops 1801-1900 after Bosma 2009."

.

Legend: B: including Belgium; P: only professionals 1801-1829

France

Thanks to other authors, like A. Corvisier and more recently John A. Lynn, we have a lot of information about the soldiers in the French armies. In the time of Napoleon we are in the unique situation that one half of Europe is fighting the other. Thanks to the conscription machinery we have excellent figures about the number of men that actually joined the colors: between the introduction of the conscription according to the law of 19 Fructidor VI (5 September 1798) and the end of 1813, there were no less than 2,679,957 *conscrits* in the entire Empire from Central Italy to Northern Germany, or 178,000 on average per year. What is more, 47 per cent did not survive their military service.[145] Of the survivors, only a small number returned to the places they came from.[146]

France had a professional army until the French Revolution and, although limited, in the years 1816-1830 (four Swiss regiments).[147] In 1818 conscription was reintroduced, initially for very long terms, to be lowered to three years only in 1889 (see above). Therefore we consider French military mobility as short-term and internal migration. That is why we no longer include it in our mobility figures.

Less than in the British case, a substantial part of these troops, however, recruited and theoretically based in France, were actually stationed abroad (according to Bosma 400,000 in Algeria in 1831-1850 and 1,200,000 in1851-1900)[148]. We suppose that all other colonial troops are also included in the continental figures, presented here.

For the eighteenth and nineteenth centuries we have some figures for recruits actually entering the barracks: in the first half of the century 40,000 per annum, thereafter never more than 34,000 (minus those for the navy even only 10,000) and in the 1860s on average 23,000.[149]

[145] Welten 2008: 94, 736-737 (47 per cent after Darquenne, confirmed by Welten's own sample of 572 soldiers of whom 283, or 49 per cent, did not return).
[146] For the difficult reintegration of the ex-soldiers see Welten 2008: 660 (in his sample out of the 289 soldiers who did turn up at home – see the preceding footnote – 22 remained in this profession afterwards).
[147] Amersfoort 1988: 8.
[148] Bosma 2009; Jerram 1899: 109-111.
[149] Ritter 1960: 16-17.

Table 7.33: Soldiers fighting for France in Europe and outside 1501-1650

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	Europe		Average strength	Individuals involved
		peacetime	wartime		
1501-1550	1445-1475	14		30	300
	1450-1500		40-45		
	1490	17			
	1540-1560		60-70		
1551-1600	1567-1568		70	60	600
	early 1570s	13			
	1589-1598		50-60		
1601-1650	1600-1610	10		75	750
	1610 (plan)		55		
	1610-1615	10			
	1635-1648		125		

Source: Lynn 1997: 55 (if possible we have taken his 'discounted war high'); see Lynn 1994: 902 and Lynn 1990; for more details before 1550 see also Lot 1962.

Table 7.34: Soldiers fighting for France in Europe and outside 1651-1800

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	Europe		Average strength	Individuals involved
		peacetime	wartime		
1651-1700	1660-1666	72		200	2000
	1667-1668		134		
	1672-1678		253		
	1678-1688	165			
	1688-1697		340		
	1698-1700	140-145			
1701-1750	1701-1714		255		1620
	1715-1725	130-160			
	1740-1748		390		
	1749-1756	160			
	1701-1713		300	655 recruits	
	1714-1733	130		415 recruits	
	1734-1735		160	85 recruits	
	1736-1741	140		120 recruits	
	1742-1748		150	345 recruits	
1751-1800	1749-1755	140		140 recruits	1985
	1756-1762		280	270 recruits	
	1763-1789	180		675 recruits	
	1789-1798	750 (1793/4) 380 (1795ff)		900 recruits	

Source: 1600-1755 after Lynn 1997: 55 (if possible we have taken his 'discounted war high'); see Lynn 1994: 902; recruits 1701-1789 after Corvisier 1964: 55 (French only), 126 ('*effectifs*'), 157-158 and 259 (foreigners); 1789-1813 after Darquenne 1970: 176-177 (table XXI, including 225,147 in the Belgian departments, cf. Welten 2008: 736); for more and other figures see Wilson 2007: 429 and Corvisier 1976: 126 ('*effectifs*').

Table 7.35: Soldiers fighting for France in Europe and outside 1801-1900

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	Europe		Average strength	Individuals involved
		peacetime	wartime		
1801-1850	1798-1813	600 (1804) 500 (1805-1815)	2,679,957 conscripts in total	1798-1815: 2500 conscripts in total (none in 1814)	3860
	1815		166,666 new conscripts		
	1816	132		1816-1849: average 250; annually 40 recruits = 1360 in total	
	1830	259			
	1832	389			
	1836	309			
	1843 and 1844	344			
1851-1900	1850	439		1850-1889: average 500; annually 25 recruits	1850-1889: 1000
	1854		570		
	1860		608		
	1870		452		
	1880	544			
	1890	596			

Source: 1789-1813 after Darquenne 1970: 176-177 (table XXI, including 225,147 in the Belgian departments, see Welten 2008: 736; 1815 after Pigeard 2003: 271, friendly communication by Joost Welten; no levy in 1814); 1789-1815 see Forrest 1989: 20; 1816, 1830, 1860, 1880 after Kennedy 1988: 71; 1832, 1836 (including 28,925 in Africa), 1843 and 1844 after Schnitzler 1846: volume 2, 176-178; 1854 after Curtiss 1965: 108; 1850, 1860, 1870, 1880, 1890 after Flora 1983: 249-250. See also table about recruitment figures above.

Germany

One of the main problems we have is the early introduction of conscription in many German princedoms, but in particular in Prussia. What were the implications for the long-term and long-distance mobility of the Prussian soldiers?

After the Napoleonic wars the situation becomes clearer. Apart from a handful of foreign troops[150], the Prussian army consisted of conscripts who, after 1814, had to spend only three years under arms. Consequently, every year one third had to be replaced, which also happened in reality. In Prussia, in the first half of the nineteenth century the annual number of recruits who really left their homes for the army was 40,000 at a maximum, and in 1860 they were 63,000, which corresponds to an army of 200,000.[151] This smoothly working system did not ask much mobility from the recruits, except for the occasional wars when they had to march from their barracks to the battlefields. This only happened to the classes that served in the years 1848-1849 (first war with Denmark and suppression of revolutions at home), 1864 (second war with Denmark), 1866 (seven weeks war against Austria, Hanover and their allies) and 1870 (six weeks actual war against France). Only part of the Prussian troops participated in the wars of 1848-1849, many more in the short but intensive war in 1866, and virtually all in the Franco-Prussian war, followed by a temporary occupation of French soil. We therefore allow generously

[150] Amersfoort 1988: 8 (1814-1848 one Swiss battalion).
[151] Ritter 1954: 367 footnote 102; Ritter 1960: 16.

for half a million highly mobile German conscripts in total in 1848-1849, one million in 1864-1866 and another million in 1870-1871.[152]

The situation in the eighteenth century was different for two reasons. First, due to the large extent of the mercenary system; and second, because of the much longer term for the conscripts. If we concentrate on Prussia we gain the following picture: Foreign troops still played a role, although it seems to be an exaggeration that they were still good for one third to one half of the Prussian army in the eighteenth century.[153] The other two thirds were recruited as conscripts according to the so-called canton system, gradually introduced between 1713 and 1733.[154] For those who actually had to come up as recruits there was no limit on the length of service prior to the 1792 canton regulations which stipulated a maximum period of twenty years.[155] Although in reality these recruits had to show up for exercises only during brief periods, they nevertheless had to be available on short notice and often spent their time in artisanal work, away from their place of birth.[156] Together with the frequent wars in which Prussia was involved (encompassing half of the century of Enlightenment: the War of the Spanish Succession and the partly overlapping Great Northern War until 1720, the War of the Austrian Succession 1740-1748, the Seven Years War 1756-1763, First Partition of Poland 1772, the War of the Bavarian Succession 1778-1779, the Second and Third Partition of Poland 1792-1795 and the start of the wars against France in 1792), we may conclude that the eighteenth-century Prussian conscript was a migrant for most of his life, if not permanently. As Prussia's canton system was most developed of all those that existed among German states, we extend this conclusion to Germany as a whole.[157] To conclude, we define all German soldiers until Waterloo as long-term and long-distance migrants. Afterwards, short-term conscription became the rule and thereafter we only include those conscripts with war experience.

In order to compare the figures of the different states of Germany with the total we have compared the development of the Saxon, Prussian and other figures with the few benchmark dates we have for the Empire as a whole[158] (during the Thirty Years War, around 1790, 1805 and 1830).[159] In the Napoleonic period the Prussian share must have been lower because of the loss of its western territories.[160]

---

[152] See Van Creveld 1977: 79.

[153] Schmoller 1921: 116 (one third to one half); Wilson 2003: 364 (one third), 374 (in 1786 83,000 foreigners, or half of the Prussian army); but see Wilson 2009, 119, fn. 68 who quotes Kroener's estimates 'that 30,000 of the so-called 'foreigners' serving in 1763 were actually Prussian subjects recruited by regiments outside their home canton'.

[154] Wilson 2003: 355.

[155] Wilson 2003: 364-365.

[156] Wilson 2003: 374-375; Redlich 1965: 86, 182-185, 189; Ritter 1960: 121.

[157] Wilson 2003: 372-374.

[158] We do not take into account two figures which are available for the German Empire in the sixteenth century (Lot 1962: 39 and 46-47 gives 30,000 German troops who participated in the invasion of Burgundy and the siege of Dijon in 1514, as well as 20,000 in the Battle of Bicocca in 1522), because we suppose that they are part of the Habsburg figures which are given below under Spain.

[159] According to the figures in Flora 1983: 250 Prussia had slightly more than 210,000 soldiers in the period 1861-1867 and the German Empire slightly less than 430,000 in the period 1872-1879.

[160] Walter 2009: 30, 38. For the other German principalities supporting Napoleon, i.e. The Confederation of the Rhine which on its own took part in Napoleon's Russian campaign with 130,000 soldiers (friendly communication by Joost Welten after Dufraisse 1999: 486), Mecklenburg, Westphalia, Berg, Saxony, Baden, Württemberg, Bavaria see Pavkovic 2009: 137-138, 145 and Schneid 2009: 193.

Finally, while the Swiss were fighting everywhere, Switzerland itself had no standing army. In war time, however, it could mobilize many soldiers. We have only one example: in 1815 the Swiss army counted 37,000 men.[161] This lonely figure has not been included in our estimates.

[161] Wap 1835: volume 2, 46.

Table 7.36: Soldiers fighting for the German Empire, German states, Germany 1501-1700

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	peacetime	wartime	Average strength	Individuals involved
1501-50	1514		30GE	25	250
	1522		20GE		
	1542	6S			
1551-00					250
1601-50	1612		11S	150	1500
	1618		14GE		
	1620		30GE		
	1627		100GE; 4P		
	1630		150GE		
	1632		24S		
	1640		16P		
	1649	25GE			
1651-00	1650	3M; 0.7P; 15GE		100	1000
	1655	14GE			
	1654-1660		26P		
	1657	5B			
	1651	16P			
	1658		30P		
	1660	1BL; 12P; 32GE			
	1661	3P			
	1667	7P; 65GE			
	1670-1672		25.7P; 4M; 86GE		
	1675-1678		43.3P; 13S; 1.6HC; 163GE		
	1680		40P		
	1682-1683	25P; 112GE			
	1688-1690		29P; 4BW; 4.6 HC; 116GE		
	1695-1697		31P; 8BW; 181GE		

Source: Bavaria 1657 after Redlich 1965: 9; **Brunswick-Lüneburg** 1660[s] after Redlich 1965: 95; **Brunswick-Wolfenbüttel** 1688, 1690s after Luh 2000: 12; **Hesse-Cassel** after Taylor 1994: 24-25 (mostly fighting for non-German countries); **Münster** 1650, c 1672 after Redlich 1965: 9; **Saxony** 1542, 1612, 1632, 1676 after Hassel 1805: volume 2, 27; **German Empire** 1514 (invasion of Burgundy and siege of Dijon), 1522 (Battle of Bicocca) after Lot 1962: 30, 46-47; 1630 (100,000) after Redlich 1964: 205-206, 490; German Empire 1618, 1620, 1627, 1630 (150,000), 1649, 1655 after Hochedlinger 2009: 77, 81 **Prussia** 1627, 1688 (30,000) after Hassel 1805: volume 1, part 3, 26; Prussia 1651, 1658, 1661 after Redlich 1965: 9, 85-88 ('men with the troup'), 227; Prussia 1640, 1654-1660, 1688 (28,000) after Schmoller 1921: 111-112; **Prussia and German Empire** (from 1659 onwards except Austria; effective strength, except militia) 1650, 1660, 1667, 1670-1672, 1675-1678, 1682-1683, 1688-1690, 1695-1697 after Wilson 2007: 429.
Legend: B=Bavaria; BL=Brunswick-Lüneburg / Hannover; BW=Brunswick-Wolfenbüttel; CR= Confederation of the Rhine; GE= (Holy Roman) German Empire / (Habsburgs); GS= German states; HC= Hesse-Cassel (mostly serving outside Germany); M=Münster; P = (Brandenburg-) Prussia; S=Saxony

Table 7.37: Soldiers fighting for the German Empire, German states, Germany 1701-1800

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	peacetime	wartime	Average strength	Individuals involved
1701-50	1702-1705		41P; 25S; 11HC; 211GE	200	2000
	1710		44P; 214GE		
	1713	39P			
	1714	46.1P; 166GE			
	1729	24S			
	1730	66.9P; 152GE			
	1735	76P; 226GE			
	1740	77P; 6HC; 192GE			
	1745		135P; 37S; 6HC; 285GE		
1751-00	1756		137P; 12HC; 257GE	275 (1750-1792)	2200
	1758		201P; 25S; 29BL; 19HC		
	1760-1761		130P; 15HC; 295GE		
	1764	159P; 25S; 33BL			
	1770	160P; 270GE			
	1785	185P			
	1786	194-200P			
	1787	24S; 13B; 12HC			
	1789-1790	195P; 301GE			
	1790	190P; 26BL; 24S; 12B; 298GE			

Source: **Bavaria** 1787 after Hassel 1805: volume 2, 13; **Brunswick-Wolfenbüttel** 1789 after Luh 2000: 12; **Hesse-Cassel** after Taylor 1994: 24-25 (mostly fighting for non-German countries); **Saxony** 1729, 1745 and 1787 after Hassel 1805, volume 2: 27; Saxony 1700-1721 after Redlich 1965: 227; Saxony 1758, 1764 after Luh 2000: 13; **Prussia** 1740 (75,000) and 1786 (200,000) after Hassel 1805: volume 1, part 3, 26; Prussia 1740 (75,000), 1758, 1786 (194,000) after Redlich 1965: 9, 85-88 ("men with the troup"), 227; Prussia 1713 (39,000), 1740 (80,0000) after Schmoller 1921: 111-112; **Prussia and German Empire** 1702-1705, 1710, 1714, 1730, 1740, 1745, 1756, 1760-1761, 1770, 1789-1790 after Wilson 2007: 429; **All German states** 1790 after Schnitter and Schmidt 1987: 18 (after Krünitz 1790: volume 50).
Legend: B=Bavaria; BL=Brunswick-Lüneburg / Hannover; BW=Brunswick-Wolfenbüttel; CR= Confederation of the Rhine; GE= (Holy Roman) German Empire / (Habsburgs); GS= German states; HC= Hesse-Cassel (mostly serving outside Germany); M=Münster; P = (Brandenburg-) Prussia; S=Saxony.

Table 7.38: Soldiers fighting for the German Empire, German states, Germany 1801-1900

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	peacetime	wartime	Average strength	Individuals involved
1801-50	1804		240P; 24BL; 34S; 40B; 400GE	1792-1815: 500 (wastage 20% = 2000)	2500
	1812/13		130CR		
	1812/14		270P		
	1816	130P		1815-1847: only short-term conscripts	
	1830	107P; 235GS			
	1841	122P; >50B		1848-1849: 500 with war experience	
1851-00	1850-1853	136P		1864 and 1866: 1000 with war experience	2000
	1854		139-200P		
	1855-1863	174P			
	1864		212P		
	1865	216P			
	1866		214P		
	1867-1870	291P			
	1871		850GE	1870-71: 1000 with war experience	

Source: **Prussia** 1812/14, 1816 in Kennedy 1988: 128, 197; Prussia 1854 (200,000) after Curtiss 1965: 108; **All German states** 1790 after Schnitter & Schmidt 1987: 18 (after Krünitz 1790: volume 50); 1804 after Hassel 1805: volume 1, part 1, 3 and volume 1, part 2, 13, 26-27; all German states 1830 after Wap 1835: volume II, 307; Wap 1835: volume III, 1-343 (our addition); 1841 after Schnitzler 1846: volume 2, 178; all other data 1850-1871 after Flora 1983: 249-250.
Legend: B=Bavaria; BL=Brunswick-Lüneburg / Hannover; BW=Brunswick-Wolfenbüttel; CR= Confederation of the Rhine; GE= (Holy Roman) German Empire / (Habsburgs); GS= German states; HC= Hesse-Cassel (mostly serving outside Germany); M=Münster; P = (Brandenburg-) Prussia; S=Saxony.

Denmark and Norway

The reconstruction of the number of soldiers in the Napoleonic period is not easy. Although we know the strength of the army in the early years of the century, the average strength in the years 1807-1814 may have been lower as the army was not mobilized throughout the entire time of the war with Great Britain.[162] That is why we suppose that the average strength over the period 1800-1814 has been on average 50,000. Conscription was introduced in Denmark in 1849, but we do not have any details so far. Waiting for these, we suppose that it immediately entailed three years of compulsory service at a maximum and thus decreased the mobility of the military in such a way as to exclude Danish soldiers from 1849 onwards from our mobility tables, of course except for the Danish conscripts who participated in the war of 1864.

[162] Petersen 2009: 150, 156.

Table 7.39: Soldiers fighting for Denmark (united with Norway until 1814) 1501-1900

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	peacetime	wartime	Average strength	Individuals involved
1501-1550					50
1551-1600					50
1601-1650	1625-1629		18	15	150
1651-1700	1690		32	30	300
1701-1750	1700		35	30	300
1751-1800	1756		34	50	500
	1758		52		
	1764		63		
	1790		39D; 35N		
	1790s	20D	40D; 28N		
1801-1850	1804		75	1800-1814: 50 strength with 20% wastage = 150	180
	1828, 1838		26	1814-1849: 25 with war experience	
1851-1900	1850-1863	25D		32 with war experience	32
	1864		32D		
	1865-1899	20D			

Source: 1625-1629 after Redlich 1964: 207; 1690, 1756 after Childs 1982: 42; c. 1700 after Costello & Glozier 2008: 99; 1790 after Schnitter & Schmidt 1987: 17 (after Krünitz 1790: volume 50, 746 ff.); 1790s after Petersen 2009: 150, 156; 1804 after Hassel 1805: volume 1, part1, 3; 1828 and 1838 after Wap 1834: volume I, 198 and Wap 1838: volume VI, 181; 1850-1900 after Flora 1983: 249-250 (Jerram 1899: 36, however, gives a Danish peace strength of 13,734).
Legend: D = Denmark without Norway.

Sweden

Universal conscription in Sweden was introduced already in the seventeenth century to cover part of its need for soldiers, but two thirds of its soldiers did not migrate in peace time.[163] In Norway conscription was introduced when it became Swedish in 1814, but we do not have any details so far. Waiting for these, we suppose that it immediately entailed three years of compulsory service at a maximum and thus decreased the mobility of the military in such a way as to exclude them from our mobility tables. For the eighteenth century we have tried to distinguish between periods of war and peace, which results in 24 years of war in the first half (1700-1721 and 1741-1743) and eleven years of war in the second half (1757-1763 and 1788-1790). In the first half of the nineteenth century, Sweden was at war for five years. Only these years have been included in our migration figures.

[163] Thisner 2009.

Table 7.40: Soldiers fighting for Sweden (including Finland until 1809 and Norway from 1814 onwards) 1501-1900

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	Peacetime	wartime	Average strength	Individuals involved
1501-50					100
1551-00	1590s	15		15	150
1601-50	1600	15		80	800
	1630s		45		
	1632		150		
1651-00	1650s		70	70	700
	1670s		63		
	1675		30		
	1690		110		
	Late C		40		
1701-50	1705		100	100 during 26 years at war	500
	1709		110		
1751-00	1758		42	50 during 11 years at war	100
	1764	51			
	1790	47			
	Late c	45			
1801-50	1804	48		50 during 4 years at war	50
	1809		65		
	1820	33S			
	1825	37S; 12N			
	1827	12N			
	1837	32S			
	1838	33S			
	1841	52S+N			
1851-00	1850-1899	66			0

Sources: Spain 1590s, 1630s, 1650s and 1670s after Parker (1979: 96 and Roberts 1979); 1600 after Tilly 1990: 79; 1632, 1675, 1705, 1758, 1764 after Luh 2000: 12-13; 1690 after Childs 1982: 42; Late seventeenth century, 1709, late eighteenth century after Corvisier 1976: 126 ('*effectifs*'); 1790 after Schnitter & Schmidt 1987: 17 (after Krünitz 1790: volume 50, 746 ff.); 1804 after Hassel 1805 (volume 1, part1, 3); 1899 after Thisner 2009: 170; 1820-1838 after Wap 1834: volume I, 228; Wap 1837: volume V, 475 and Wap 1838: volume VI, 182; 1841 after Schnitzler 1846: volume 2, 178; 1850-1900 average after Flora 1983, 249-250 (NB. Sweden and Norway combined).
Legend: S=Sweden, N=Norway.

Russia

The Russian army of regular forces of professional soldiers and (since Peter the Great) of conscripts, was supplemented by 'irregulars' – mainly Cossacks.[164] Not only data for the strength of the army are available (alas very sparsely for the sixteenth and seventeenth century), but also the numbers recruited for the years 1705-1850. For the sixteenth and seventeenth century we suppose every decade saw a complete turnover of the troops. For

[164] Hartley 2009: 125-126.

the period 1851-1852 and 1855-1899 our estimates are based on the difference between peacetime and wartime and on the shortening of the service time in 1874, resulting in a higher turnover figure. All troops fighting 'colonial' wars in the Caucasus and in Central Asia are included here.[165]

Table 7.41: Soldiers fighting for Russia 1501-1900

	Strength of the troops x 1000			Recruitment per sub-periods (000s)		Our estimates (000s)	
	Year of source	peacetime	wartime	total	Annual average	Average strength	Individuals involved
1501-50						50	500
1551-00	Late		110			100	1000
1601-50	1600		35			50	500
	1630s		35				
	1654-1667		100				
1651-00	1670s		130			100	1000
	1675		100				
	1680s		200				
1701-50	1700		170	2250 (1705-1801)	23		1000
	1711		175				
	Early C		220				
	1720		177				
	1725		304				
1751-00	1758		291				1250
	1764		298				
	1790		224				
	1796		330				
1801-50	1804		510	2000 (1802-1825)	80		4000
	1820	1.040					
	1820s	670					
	1824	500 /900					
	1826	955		2088 (1826-1850)	80		
	1841	580					
1851-00	1850	850				1000	5000
	1853		1,100	866 (1853-1854)	433		
	1854		820 - 859				
	1856		1,700				
	1858	1,000					
	1859	850					
	1862	793					
	1867-1887	742					
	1872		1,358				
	1874	754					
	1876	722	1,500				

[165] Bosma 2009; see Jerram 1899 (768,000 in Europe and the Caucasus, and 92,000 'elsewhere', i.e. Central Asia).

Source: Strength of the troops 1600, 1700, 1850 after Tilly 1990: 79; 1630s and 1670s after Parker 1979: 96; 1654-1667 after Hellie 1990: 90; 1675, 1758, 1764 after Luh 2000: 12-13 (see Hellie 1990: 94-95); Late seventeenth century, 1711, 1720, 1725, 1824, 1853, 1856, 1858, 1859 after Keep 1985: 87-89, 136-138, 286, 326, 354 (estimated establishment, so actual size is less; 1824 both) ; Early eighteenth century, 1796 after Corvisier 1976: 126 ('*effectifs*'); 1790 after Schnitter & Schmidt 1987: 17 (from Krünitz 1790); 1804 after Hassel 1805: volume 1, part 1, 3; 1820 and 1820s after Wap 1836: volume IV, 167-168; 1826, 1854 after Curtiss 1965: 107-108; 1862-1887 after Menning 1992 (active force'); Recruitment 1705-1825 after Keep 1985: 145 (see Mikaberidze 2009: 47: 1802-1815: 1,221,592); 1826 and 1850 and 1853-1854 after Curtiss 1965: 234; 1841 after Schnitzler 1846: volume 2, 178-179.
Legend: a= active force; r=reserve force (peacetime).

Spain and Portugal

For most of the ages under scrutiny, Spain had a professional army consisting both of Spanish and foreign volunteers, supplemented by '*levas*', i.e. 'men without fixed abode or employment who were periodically rounded up and pressed into uniform as a means of diffusing poverty and other social problems'.[166] Even the insurrection against the French in 1808 was no people's war, because 'mobilization was above all the work of compulsion'.[167] Swiss professional troops (1814-1823 12,000) served in Spain until 1823,[168] although conscription was introduced in 1800 but not applied until 1814 with eight years active service. This was brought down in steps until 1867 (four years) and 1882 (three years).[169] That is why we have counted only 30 per cent of the mainland soldiers in the second half of the nineteenth century. Where no Portuguese figures are available, after its regained independence in 1640, we estimate the Portuguese army at half the Spanish one.

[166] Esdaile 2009: 105.
[167] Esdaile 2009: 102.
[168] Amersfoort 1988: 8 (1814-1823 six regiments (about 12,000 troops) Swiss at a maximum).
[169] See above, after Puell de la Villa 1996.

Table 7.42: Soldiers fighting for Spain and Portugal 1501-1900

	Strength of the troops				Our estimates (000s)	
	Year of source	Europe		colonial	Average strength	Individuals involved
		peacetime	wartime			
1501-50	1340		100		100	1000
	1492		020			
	1532		100			
1551-00	1552		148	included	150	1500
	1572	13AF	067AF			
	1572-1648		065AF			
1601-50	1600		200S/P		200	2000
	1630		300S/P			
1651-00	1650s	100S			120	1200
	1662	16AF				
	1664	11AF				
	1670s	70S				
1701-50	1700	50S			70	700
	1710	30S				
1751-00	1759		56S		80	800
	1775	50S				
	1789	50S				
	1790		85S; 36P			
1801-50	1804		76S; 45P		150 mainland; wastage 1/6 like contemp. France = 1200	1428
	1808		137S			
	1826	65S				
	1827	24P				
	1834, 1838	54S				
	1841	59S				
	1815-1850			25Sc 6Pc	(175 Sc + 53 Pc individuals)	
1851-00	1850	154Sm+c			150 mainland, for half the period with long term conscription and wastage 1/20 like contemp. France = 750 individual	1500
	1899	100S	360Sm+c			
		35P		9Pc		
	1911P	30Pm+c				
	1914S	115Sm+c				
	1850-1900			44Sc 9Pc	50 = 500 individual conscripts plus c. 250 extra in Spanish-American war	

Source: 1340 after Parker 1988: 172 (may have been mobilized briefly); 1492, 1532, 1552, 1600, 1630, 1700, 1850 after Tilly 1990: 78-79 (mostly after Parker 1988: 24, 45, 131-132 where he remarks that the figure for 1552 encompasses the whole empire of Charles V, which causes a partial – but unknown – overlap with the figures for the period 1550-16600 in our tables for Italy and Germany/Austria; he doubts the figure for 1630); 1572-1648, 1662, 1664 (Army of Flanders) after Parker 1972: 25-27, 227, 271-272 (more details); 1650s, 1670s after Parker 1979: 96; 1710,

1789 after Childs 1982: 421759 after Corvisier 1976: 126 ('*effectifs*'); 1775, 1808 (100,000 regular and 37,000 provincial militia) after Esdaile 2009: 103-104, 109; 1804 after Hassel 1805: volume 1, part 1, 3; 1826-1838 after Wap 1834: volume I, 31, 47; Wap 1837: volume V, 474; Wap 1838: volume VI, 180; 1841 after Schnitzler 1846: volume 2, 178; 1899 Spain after Jerram 1899: 278 (active peace time forces 100,000, but 'the number of men actually under arms at home and abroad during the late war was about 360,000'); Portugal 1899 after Jerram 1899: 217 (he also mentions a military service of 3 years); 1911 Portugal (of which 10,000 colonial), and 1914 Spain after Rottmann 1914: 76-77 (Spain 3 year active conscription, Portugal 1 year at a maximum)
Legend: AF: Army of Flanders; P= Portugal; S = Spain; m = mainland; c = colonial

Italy

In Italy we encounter the same data problem as in Germany (above): as the peninsula is no political unity before 1870 we have to add data for separate countries. In this case, however, as far as we know there is no historian, like Wilson in the German case, who has tried to come up with estimates for the whole. For this reason, more than all other data provided in this paper, our figures here are open for debate. Remarkably, many more data are available for the fifteenth century than for later centuries. We have included some here.[170]

The increase between the second half of the seventeenth century and the first half of the eighteenth century is most likely due to the diminishing power of Spain on the peninsula (see the lower figures there) and the ascendance of Savoy, which becomes a kingdom in 1720. Savoy also employed foreign mercenaries, especially Swiss (including the Grisons) and Germans. In the eighteenth century on average 6,000 foreigners served under the Savoyard flag in peacetime and 15,000 in war time.[171]

With the exception of Piedmont (where a militia provided part of the soldiers since 1714[172]) Italy before Napoleon had only professional armies. Between 1802 and 1814 the Napoleonic authorities of the Republic-Kingdom of Italy ordered the draft of 150,000 conscripts. Whereas the strength was only 8,000 soldiers in 1802, it peaked at over 70,000.[173] Foreign troops continued to be employed in Italy for a very long period, in particular Swiss mercenaries: 1814-1823 one regiment (2,000 troops) and one guard company in Sardinia, and 1825-1859 6,000 Swiss in Naples.[174] After the Napoleonic period some parts of Italy had only professional soldiers, like the island of Sardinia, some had military service according to the French system, like in the mainland part of the Kingdom of Sardinia.[175] Conscription was introduced in Italy in 1870, but we do not have any details yet. For the time being, we suppose that it lasted three years or less and for that reason exclude these conscripts from our mobility table.

[170] Mallett and Hale 1984: 21, 34-35, 39, 41, 47.
[171] Storrs 2005: 207.
[172] Storrs 2005: 207-209.
[173] Grab 2009: 122-123, 131.
[174] Amersfoort 1988: 8.
[175] Schnitzler 1846: volume 2, 194.

Table 7.43: Soldiers fighting for Italian states or for Italy 1501-1900

	Year of source	peacetime	wartime	Average strength (000s)	Individuals involved (000s)
1501-50				See below table 7.44	350
1551-00				See below table 7.45	250
1601-50				See below table 7.46	175
1651-00	1657-1699	5PS		20	200
	1660	5P			
	1676	6P			
	1685	8P			
	1690	9P			
	1696		24P		
1701-50	1704		27P	75	750
	1710		43P; 5.5G		
	1720	24P			
	1727	23P			
	1730	25P			
	1734		40-43P		
	1738	30P			
	1747		55P		
1751-00	1756	50N		75	750
	1760	28P			
	1775	36P			
	1779	37P			
	1785-1786	35P			
	1789	24S; 2G			
	1790	24S; 5PS; 25SIC; 63I			
	1795	29P			
1801-50	1804	6S; 5 PS; 40SIC; 95I		1802-1814: 155 recruits in Napoleonic Italy alone; we estimate 200 in total	800
	1822-1835	36S; 32SIC; 93I		1815-1850: 100 and wastage 1/6 like contemp. France = 600	
	1841	35S; 45SIC			
1851-00	1850	41S		150 and wastage 1/20 like contemp. France = 250	420
	1855	54S			
	1860	183I; 18PS			
	1865	209I			
	1867	13PS			
	1870	155I			
	1875	179I			
	1880	167I			
	1885	226I		225 and wastage 1/20 like contemp. France = 170	
	1890	257I			
	1895	229I			

Source: **Papal State** 1657-1699 (without militia) after Köchli 2008: 61-62; 1710, 1756, 1789 after Childs 1982: 42; Papal State 1860 and 1867 after Karamanoukian 1978: 87; **Piemont/Savoy**: all figures after Storrs 2005: 206 except 1734 (40,000, including "miliciens") and 1738 after Cor-

visier 1976: 126 ('*effectifs*'); **All data 1790** after Schnitter & Schmidt 1987: 17-18 (after Krünitz 1790: Sardinia 24, Sicily 25, Papal States 5, Tuscany 3 and Venice 6); All data 1804 after Hassel 1805: volume 1, part 1, 3: Sicily 40, Italo-Lombardy 25, Papal State 5, Etruria 5, Liguria 4, Lucca 15, Sardinia 6); All data 1822-1835 after Wap 1835: volume II, 89 (Sardinia 1822): 102 (Parma 1835: 1.5), 104 (Modena 1835: 1.9), 104-105 (Lucca no data), 108 (Tuscany 1835: 5.5), 115 (Papal State 16), 130, volume 5 (1837), 480, volume 6 (1838), 189-190 (Sicily 1835; 30,350 active service plus 2,000 marines); All data 1841 after Schnitzler 1846: volume 2, 178; All data 1850-1900 in Flora 1983: 249-250 (NB Sardinia 1851-1860, Italy 1861-1899).
Legend: G=Genoa; I=Italy; N=Naples; P = Piemont/ Savoy; PS=Papal State; S = Sardinia; SIC = Sicily.

Table 7.44: Soldiers fighting for Venice (supplementary) 1501-1550 (000s)

	Strength Venice		Average strength Venice	Wastage rate Venice	Recruited individuals
Initially					20
1501-1508W	1495	40	20	20%	32
	1499	13.3 (1.3 cE, 12 W)			
	1503	4.8 cW			
	1507	10cW			
	1508 autumn	18 (8 c; 10 i)			
	1509	29			
1509-1530W				20%	82
1531-1536P			4	20%	4
1537-1540W					29
1541-1549P			4	20%	7
1500-1549 Venice					174
1500-1549 Italy	We suppose that Venice's adversaries in Northern Italy and the centre (i.e. 3000 Swiss mercenaries fighting for the Papal State in 1506) had as many soldiers as the Serenissima. We leave out the south of the peninsula, because it is included in the Spanish figures				350

Source: Mallett & Hale 1984: 1500-1508: pp. 55, 61, 63, 64, 79; 1509-1530: pp. 213 (starting point in 1509), 437 (our reconstruction on the basis of annual strength data); 1531-1536: for average strength see p. 477); 1537-1540: p. 479 (annual data of new recruitments; sum is ours); 1541-1549: our estimate for average strength; Karamanoukian 1978: 190 (Papal State 1506).
Legend: c=cavalry; i=infantry; E=east; W=west.

Table 7.45: Soldiers fighting for Venice (supplementary) 1551-1600 (000s)

	Strength Venice		Average strength Venice	Wastage rate Venice	Recruited individuals
1551-1569P			6	20%	24
1570-1573W	1572		20		62
1574-1599P	aim	9 / 10	10	20%	50
	1583	7 i			
	1599 existing contracts	13			
1551-1599 Venice					136
1551-1599 Italy	We suppose that Venice's adversaries in Northern Italy (i.e. strength Tuscany 8,000 in 1554) and the centre (i.e. strength Papal State 3,000 in 1572) had nearly as many soldiers as the Serenissima. We have left out Milan and the south of the peninsula because they have been included already in the Spanish forces				250

Source: Mallett & Hale 1984: 1550-1569: p. 477 (average strength); 1570-1573: p. 481 (annual data of new recruitments; sum is ours); 1574-1599: pp. 325-326; Tuscany 1554 after Mallett & Hale 1984: 487 (Cosimo against Siena); 1572 Venice after Parker 1979, 123, 128, 130 (Philipp II raises 25,000 troops for the Lepanto fleet, of which 80% paid for by Venice. This is consistent with Lane 1973: 364-374; see also above with sailors); 1572 Papal State after Parker 1979: 123.

Table 7.46: Soldiers fighting for Venice (supplementary) 1601-1650 (000s)

	Strength Venice		Average strength Venice	Wastage rate Venice	Recruited Individuals
1601-1614P			10?	20%	30
1615-1617W	1617	26			29
1618-1649P/W			5?	20%	30
1601-1649 Venice					90
1601-1649 Italy	We suppose that Venice's adversaries in Northern Italy (i.e. Mantua during the War of the Mantuan Succession) and the centre (i.e. strength Papal State 3,000 at the start of the century and 4,000 in 1635) had nearly as many soldiers as the Serenissima. We have left out Milan and the south of the peninsula because they have been included already in the Spanish forces.				175

Source: Venice after Mallett & Hale 1984: 213 (strength 1617), 326-327 (crisis 1606-1607), 477 (strength 1615), 482 (recruitments 1615-1617); Papal State after Köchli 2008: 61-62.

Austria-Hungary[176]

The Habsburg standing army was formally founded in 1649 and it really took off from the end of the century during the simultaneous wars against the French and the Turks.[177] Next to this there were the so-called 'Grenzer', also called '*uscocs*' (literally: escapees, i.e. from the Ottoman Empire). These escapees from the Turkish lands agreed to lifetime

[176] Stone 1966 about professional soldiers in the Austrian army. In general, see Adams 1990.
[177] Ágoston 2005: 23; Hochedlinger 2009: 64.

military service as a sort of border patrol or militia in exchange for land grants.[178] Finally, there was a reserve of peasant-militia, from which the regiments could recruit.[179]

Table 7.47: Soldiers fighting for Austria-Hungary 1651-1900

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	peacetime	wartime	Average strength	Individuals Involved
1501-1550				Included in Hispano-Habsburg figures	0
1551-1600					0
1601-1650					0
1651-1700	1649	37		65	650
	1650	33			
	1655	13			
	1660	30			
	1667		60		
	1670-1672		60		
	1672		65		
	1673		45-60		
	1675-1678		60		
	1682-1683		80		
	1688-1690		70		
	1690		97		
	1695-1697		95		
1701-1750	1702-1705		109	150	1500
	1703		133		
	1705		100		
	1706		133		
	1710		130		
	1714		137		
	1730	113-130			
	1735		150-206		
	1740		108-140-160		
	1745		200-204		
1751-1800	1756	157		250	2500
	1758		211		
	1760-1761		201		
	1764		202		
	1770	152			
	1776	244			
	1782	241			
	1786	225			
	1787		222		
	1788		364		
	1789-1790		498		
	1790		297		
1801-1850	1800		495	1800-1814: 350; wastage 20% = 1050	2000
	1802		461		
	1804	356			
	1812/14		250		

[178] Boerke 2009: 68-79.
[179] Hochedlinger 2009: 85

	1816	220		1815-1850; 275; wastage 10% = 962	
	1828	271			
	1830	273			
	1841	324			
1851-1900	1850	434A	600	400; wastage 1/6 = 1200	1200
	1854	350A			
	1858	403A	618		
	1860	306A / 236	530		
	1868	256A	800	No war after 1866	
	1870	252A			
	1880	273A			
	1890	332A			

Source: 1649, 1655, 1740 (140,000) after Boerke 2009: 69-70; 1650, 1660, 1667, 1670-1672, 1675-1678, 1682-1683, 1688-1690, 1695-1697, 1702-1705, 1710, 1714, 1730 (130,000), 1735 (205,700), 1740 (108,000), 1745 (203,600), 1756, 1760-1761, 1770, 1787, 1789-1790 after Wilson 2007: 429-430; 1672, 1730 (113,000), 1740 (160,000 of whom only 100,000 available) after Redlich 1965: 227; 1673 (60,000), 1690, 1706, 1735 (150,000), 1745 (200,000), 1788, after Hassel 1805: volume 1, part 2, 31-32; 1673 (45,000), 1703, 1758, 1764, 1776 after Luh 2000: 11-13; 1705 and 1786 (including 35,000 Hungarian soldiers, but excluding 15,000 troops in the Southern Netherlands and 72,000 '*hommes des confins militaires*') for all Hapsburg states after Corvisier 1976: 126 ('*effectifs*'); 1782 after Wilson 1993: 374; 1790 after Schnitter & Schmidt 1987: 17-18 (after Krünitz 1790); 1800, 1802, 1804 after Hassel 1805: volume 1, part 1, 3 and volume 1, part 2, 31-32; 1812/14, 1816, 1830 after Kennedy 1988: 128 (CHECK 1812/14 IN Childs), 197; 1841 after Schnitzler 1846: volume 2, 178; 1850-1868: peace and war time exigencies by Schmidt-Brentano 1975: 93, 114, 133, 146; 1854 after Curtiss 1965: 108; 1870, 1880, 1890 Flora 1983: 249-250.
Legend: A: Austria alone.

Poland

Poland was a large country before it was wiped off the map in three partitions in 1772, 1793 and 1795. From the Late Middle Ages onwards its armies were involved in many wars with Sweden, Russia, Turkey and Prussia. At the height of the Russo-Polish War in 1663, for example. it had to face an enemy with 200,000 troops, of whom 60,000 were foreigners.[180]

[180] Parker 1988: 38.

Table 7.48: Soldiers fighting for the Polish Kingdom 1501-1900

	Strength of the troops x 1000			Our estimates (000s)	
	Year of source	peacetime	wartime	Average strength	Individuals involved
1501-50	1410		39	25	250
	1471		21		
	1508		16		
	1514		36		
1551-00	1581		32	25	250
1601-50	1621		30-55	25	250
	1633		C 25		
	1635	6			
1651-00	1676		20	20	200
	1683		25		
1701-50	1717		24	20	200
	1740	17			
1751-00	1756	17		1750-1795: 30	300
	1758		39		
	1764		57		
	1788	19			
	1790	17			
	1794		26		
1801-50					0
1851-00					0

Source: 1410, 1471, 1508, 1514, 1581, 1633 after Wimmer 1970: 81, 85; 1621, 1635 after Teodorczyk 1970: 111, 113; 1621 (30,000 Polish-Lithuanian troops and 25,000 Cossacks), 1676 after Nowak 1976: 57; 1683, 1717, 1740, 1756 after Childs 1982: 41-42; 1758, 1764 after Luh 2000: 13; 1788 after Ratajczyk 1976: 311;312 1790 after Schnitter & Schmidt 1987: 17-18 (after Krünitz 1790); 1794 after Ratajczyk 1970: 136.

Turkish Empire and the Balkans

The Ottoman troops formed the most important army in the Balkans until the very end of the nineteenth century. An important section was the *janissaries*, recruited from Christian children, raised as professional Muslim soldiers. Hammer estimated that, in total, half a million Christian children were seized for the Ottoman army.[181] If we assign this number predominantly to the sixteenth and seventeenth centuries, distribute these numbers equally over the period and suppose that most boys came from the Balkans, these three assumptions together would result in the recruitment of some 100,000 European professional soldiers for the sub periods 1501-1550, 1551-1600, 1601-1650, and 1651-1700.

David Nicolle distinguishes for the early centuries between the *Kapikulu Corps* (consisting of infantry units of Janissaries, elite cavalry and artillery) and the provincial *Sipahi* cavalry. Besides, there were auxiliary cavalry, called *akincis* and vassal's troops from the Balkans, Southern Russia, and the Kurdish and Arab parts of the Empire.[182] For example, when the French conquered Algeria in 1830 they were able to recruit imme-

[181] Todorov 1983: 51, 503 (footnote 11, after J. Hammer, *Geschichte des osmanischen Reiches*, 10 vols., Budapest 1827-1835, volume 1: 98); see Ágoston 2005: 22-23, footnote 28 for the recruitment.
[182] Nicolle 1983; Nicolle 1998.

diately soldiers from the tribal confederation of Kabylia, called *Zouaouas* ('*Igawawen*' in the local Berber language), who had been fighting for the Ottoman Empire before.[183]

Finally, under Mehnet II (1451-1481) the *Kapikulu* corps numbered 12,000 and under Süleyman I (1520-1566) 48,000, including 20,000 Janissaries. In the fifteenth and sixteenth centuries the Sipahi cavalry numbered around 40,000 men, half of whom came from 'Rumelia', i.e. the European provinces, and the others from Anatolia.[184] From a total sum of 90,000 Ottoman soldiers in the first half-century of our migration statistics, 40,000 men at least will have originated from Europe.

Late eighteenth and early nineteenth century figures are hard to interpret.[185] In 1807 conscription was introduced, originally with a twelve-year term, changed into five years in 1839, four years in 1869, three years in 1879 and two years in 1914.[186] The janissary corps at its dissolution in 1826 counted 14,000 persons.[187] Besides the shortening of the conscription terms and thus lessening the migration experiences, some parts of the empire also had the privilege not to serve outside the own province, like the Bosnians in 1864-1865.[188] A difficult problem is how to split the soldiers into those originating from the Balkans and those from outside (without entering the European part of the Empire). The 100,000 *miri levendat* (local irregular bands) part of the army, brought together in 1769 at the Danubian battlefront is said to have been 'from the countryside of the Balkans and Anatolia, less so from the Arab provinces of the empire'.[189]

We do not know how to distinguish easily between soldiers of the Ottoman forces of 'European', 'Asian' and 'African' geographical stock. At the end of the Empire this problem is a bit more limited, because then we seem to have the choice mainly between Turks from Anatolia and from the Balkans. As one author remarks: 'All Musulmans are liable to service. Christians and certain sects are exempt on paying a tax. Nomad Arabs and Kurds are liable, but the Arabs escape service, and so do many of the Kurds. Hence the conscription falls heavily on the Turks'.[190]

In order to come up with at least an order of magnitude, based on the indications give here, we have decided to assign half of the soldiers in the period up to 1850 as originating from the Balkans, and – given the shrinking of the Empire – one quarter in the period 1850-1900.

[183] The French called them '*Zouaves*', but soon afterwards they created the '*Turcos*' (*tirailleurs*), changing the origins of the *Zouave*-corps, which became predominantly of European origin. See also Audy 2003.
[184] Nicolle 1983: 11; see 29 (85,000 for the Turkish army in 1402).
[185] Nicolle 1998 provides many, but it is difficult to distill totals from these.
[186] Aksan 1999: 32-33; Zürcher 1999: 81-82.
[187] Wap 1836: volume IV, 234.
[188] Van Oss 1999: 131.
[189] Aksan 1999: 28, see also 26.
[190] Jerram 1899: 290

Table 7.49: Soldiers fighting for the Turkish Empire 1501-1900

	Strength of the troops x 100,000			Our estimates (000s)	
	Year of source	peacetime	wartime	Average strength	Individuals involved
1501-50	1389		2j	90	900 of whom 400 'Europeans' (including 100 janissaries)
	1514		10j, 1a		
	1520-1525		12j		
	1526 / 1527		8j, 2a		
	1532		10j		
1551-00	1567-1568		13j, 3a	100	1000 of whom 500 'Europeans' (including 100 janissaries)
	1574		2a		
	1598		7a		
1601-50	1609	38j	8a	100	1000 of whom 500 'Europeans' (including 100 janissaries)
1651-00	1660-1661	54j	6a	100	1000 of whom 500 'Europeans' (including 100 janissaries)
	1665	50j			
	1669	51j	8a		
	1670	50j			
	1676		100		
	1680	54j			
	1687		9a		
	1696 / 1698-1699		21j, 15a		
1701-50	1702		4a	100	1000 of whom 500 'Europeans'
	1738-1739		100 (incl. 19a)		
1751-00	1769		130-160 (incl. 5a)	250	2500 of whom 1250 'Europeans'
	1788		300		
	1790	150			
	1792	23.600			
1801-50	1804	100		200	2000 of whom 1000 'Europeans'
	1806	24,275			
	Early 1800s	40			
	1836	124/220			
	1841	278			
1851-00	1869	150		200	2000 of whom 500 "Europeans"
	1899	200			
	1904	230			

Source: Janissaries 1389-1696 after Ágoston 2005: 23-26 (we have decided to classify the Janissaries-figures in the seventeenth century as peace time figures because according to him 'only a fraction […] was actually mobilized for campaigns'); artillery 1514-1769 after Ágoston 2005: 30, 33 (the majority stayed in fortresses, and only a minority took part in campaigns); 1501-1550,

1739 after Nicolle 1983: 11 (see introductory text), 33 (100,000 in Bulgaria against the Austrian invasion); 1676 after Nowak 1976: 57 (Turkish invasion force in Poland); 1769, 1792, early 1800s after Aksan 1999: 28-33; 1788 after Ratajczyk 1976: 307; 1790 after Schnitter & Schmidt 1987: 17-18 (after Krünitz 1790); 1804 after Hassel 1805: volume 1, part 1, 3; 1806 and 1869 after Zürcher 1999: 79, 82; 1836 after Wap 1836: volume IV, 234 (124,000 plus irregular cavalry 220,000); 1841 after Schnitzler 1846: volume 2, 178; 1899 after Jerram 1899: 290-295 (4 armies of each 50,000 men); 1904 after Woodward 1978: 89.
Legend: j= Janissaries; a= the artillery corps.

Soldiers originating from the Balkans only become clearly visible with the secession of states, cut off from the Ottoman Empire. Greece was first. It started with Bavarian troops, supplemented with indigenous troops: 5,148 in 1835.[191] In 1879 18,521 Greeks were under active military service.[192] This number had grown to 23,000 in 1899.[193] On the eve of the First World War the combined armies of Romania, Serbia, Bulgaria and Greece (Albania had no army yet, and Montenegro only militiamen) counted some 300,000 soldiers, all serving under short-term conscription terms: Romania 98,000 (2-3 year term), Serbia 80,000 (1-1.5 year term), Bulgaria 60,000 (2-3 year term), and Greece also 60,000 (two years active service).[194]

Summary for Europe
Well-founded estimates of the total strength of armies in Europe are rare. Geoffrey Parker estimates the armed forces maintained by the leading European states by the 1630s at perhaps 150,000 each[195], which might add up to one million soldiers for the continent – many more than in the late Middle Ages.[196] By 1710 he gives an estimation of 1.3 million 'total number of troops simultaneously on foot in Europe'.[197] Jürgen Luh provides us with an estimate for the continent on the eve of the French Revolution: two million men in military service, equaling up to five per cent of the entire male population between the ages of twenty and 60.[198] We think that we have collected sufficient data (above) to come up with estimates which are more detailed. After all our summations we may conclude that our results are consistent with the rough estimates provided by the specialists in military history. As our criteria differs – all individuals migrating during half a century – from cross-sections, our final figures are higher of course.

[191] Wap 1836: volume IV: 260 and 1838: volume VI: 197.
[192] Todorov 1983: 331.
[193] Jerram 1899: 185.
[194] Rottmann 1914: 5, 10-11, 31, 49, 63, 74-76; see Jerram 1899: 31.
[195] Parker1988: 24. See Adams 1990 for average strength c. 1500-1650.
[196] Parker 1988: 172, footnote 4 (after Contamine 1984: 11, 28, 64, 306-307).
[197] Parker 1988: 46; see Parker 1979: 102.
[198] Luh 2000: 13; Parker (1979: 102) supposes, however, that there is no growth in the eighteenth century.

Table 7.50: Soldiers fighting for the main European states 1501-1900 (our estimates of the individuals involved) (000s)

	UK	NL	FRA	GER	DEN	SWE	RUS	Sp/P	ITA	AUS-HUN	POL	BAL-KANS	TOTAL
1501-50	200	0	300	250	50	100	500	1000	350	0	250	400	3400
1551-00	200	100	600	250	50	150	1000	1500	250	0	250	500	4850
1601-50	300	500	750	1500	150	800	500	2000	180	0	250	500	7430
1651-00	500	595	2000	1000	300	700	1000	1200	200	650	200	500	8845
1701-50	1000	810	1620	2000	300	500	1000	700	750	1500	200	500	10880
1751-00	1000	500	1990	2200	500	100	1250	800	750	2500	300	250	13140
1801-50	1250	100	3860	2500	180	50	4000	1430	800	2000	0	1000	17170
1851-00	1340	100	1000	2000	30	0	5000	1500	420	1200	0	500	13090

Table 7.51: Soldiers (with and without the army train) and sailors as migrants in Europe 1501-1900 (000s)

	European individuals with high-sea experience (A)	Migrant soldiers (B)	Plus army train (C)[199]	Maritime and army migrant labor (A+B)	Plus army train (A+C)
1501-50	740	3400	(+50%) 5100	4140	5840
1551-00	960	4850	(+50%) 7275	5810	8235
1601-50	880	7430	(+50%) 11145	8310	12025
1651-00	1080	8845	(+25%) 11056	9925	12136
1701-50	1240	10880	(+5%) 11424	12120	12664
1751-00	1592	13140	(+5%) 13797	14732	15389
1801-50	2128	17170	(+5%) 18028	19298	20156
1851-00	2420	13090	(+0%) 13090	15510	15510

To sum up, migratory laborers are a category to be reckoned with in migration history: we counted more than 85 million sailors and soldiers over these four centuries alone. If we were to have data on domestics and tramping artisans these figures would certainly encompass more than 100 million Europeans.

[199] The percentages of the share of the army train are based on the average of the figures presented in table 7.30.

8: POPULATION FIGURES AND MIGRATION RATES IN EUROPE 1500-1900

As explained in our 2009 article on p. 370, we related our absolute migration figures to the total population of Europe. In this paragraph we present a number of tables which form the basis of the numbers presented in table 5 of our original 2009 paper. As will become clear, there are some minor readjustments (esp. for the average number of Europeans in the period 1850-1900). For Europe without Russia and South Eastern Europe we relied on the estimates given by Jan de Vries, Paul Bairoch and Angus Maddison. We then added estimates for European Russia and South Eastern Europe. Before we present the total European figures we will first elaborate the estimates for Russia (table 8.1).

Table 8.1: Population of Russia (without Siberia) 1601-1897 (millions)

	Rozman 1976 (empire without Siberia)	Fedor 1975	Moon 1997	Spulber 2003: 7
1601			7	
1678			11.2	
1719	15.6		15	
1744	16.3			
1762	21			
1782	25.1			
1795	33.6		37.2	
1811	42.7 (with Si)	41.5 (with Si)		
1850	56.9 (with Si)	57.6 (1856)	74 (1858)	
1897		93.4 + 9.2 (Caucasus)	124	94.2 + 9.4 (Caucasus)

This leads to the following table in which we calculated the total population of Europe (table 8.2).

Table 8.2: Total population Europe 1500-1900 (millions)

	De Vries 1988 (without Russia and SE Europe)	Bairoch 1988 (without Russia)	Maddison (without Russia and SE Europe)	Ottoman Europe estimates[200]	Russian estimates	Total (De Vries/ Maddison + Ottoman and Russian estimates)
1500	61.6	76	57.2	4.7	5 (?)	71.3
1550	70.2			5.2 (?)	5.5 (?)	81
1600	78	95	73.8	12.5	7	97.5
1650	74.6			12.6 (?)	7 (?)	94.2
1700	81.4	102	81.4	13.6	12	107
1750	94.2	120		14.5	16	124.7
1800	122.7	154		16.3	38	177
1850	177	203	166	18	56	251
1900			277	27	97[201]	401

[200] We assume that in this part of Europe only 10 per cent of the population lived in cities in the period 1500-1800 and 15 per cent in the period 1800-1900.
[201] Spulber 2003: 7. On the basis of his figure for European Russia in 1897 (94.2 million), we estimated 97 million inhabitants of the European part of Russia in 1900.

9: CONCLUSION

By way of conclusion we have summarized our major findings and readjustments in this final paragraph. First, in table 9.1 we have brought together the total number of migrants in Europe in the period 1501-1900.

Table 9.1: Total number of migrants 1501-1900 (000s)

	Emigration (table 2.12)	Immigra-tion (table 3.1)	Coloniza-tion (table 4.1)	To cities (table 5.17)	Seasonal (table 6.7)	Soldiers and sailors (table 7.51)	Total
1501-50	849	250		2940		5840	9879
1551-00	824	200		3942		8235	13201
1601-50	1440	395	127	4599	444	12025	19030
1651-00	1635	125	1761	2209	974	12136	18840
1701-50	1243	50	1628	3203	1640	12664	20428
1751-00	1162	20	3025	4622	1940	15389	26158
1801-50	4378		3006	17774	3164	20156	48478
1851-00	26609		2924	43105	12250	15510	100398
Total	38140	1040	12471	82394	20412	101955	256412

This then leads to the following averages, which we used in table 5 of our original 2009 article and combined with the total number of migrants, resulting in the migration rates per 50-year period.

Table 9.2: Total migration rates in Europe 1501-1900

	Total average population (millions)	Total migrations (millions)	Migration rate %	*Initial rates (2009 article)*
1501-50	76	9.9	13.0	*11.4*
1551-00	89	13.2	14.8	*12.5*
1601-50	95	19.0	20.0	*14.2*
1651-00	101	18.9	18.7	*15.7*
1701-50	116	20.4	17.6	*17.7*
1751-00	151	26.2	17.3	*15.6*
1801-50	214	48.5	22.7	*21*
1851-00	326	100.4	30.8	*35.3*

This table diverges somewhat from our original table 5, especially for the period 1851-1900. This is partly explained by the lowering of the number of seasonal migrants, and minor changes in the number of rural to urban moves, but primarily by adding the army train to the soldiers proper, thanks to new information about the numbers of women and others who followed the many armies that criss-crossed Europe, especially in the early modern period.[202]

The major effect of adding the army train is that mobility in the period 1501-1700 reaches significantly higher levels than those calculated in our 2009 article. Furthermore it highlights the importance of a gendered perspective, as an important part of the army

[202] See tables 7.30 and 7.51.

train consisted of women. When we look at the share of women in all six categories of cross-community migration, we arrive at a rather mixed picture (table 9.3)

Table 9.3: The share of women in European migration 1501-1900

	Share of women
Emigration	Free: balanced; unfree predominantly male
Immigration	Free: balanced; unfree predominantly male
Colonization	Balanced
To cities	Balanced
Seasonal	Predominantly male
Soldiers	Until 1700 30-40% women (as part of the army train). After 1700 marginal
Sailors	Almost entirely male

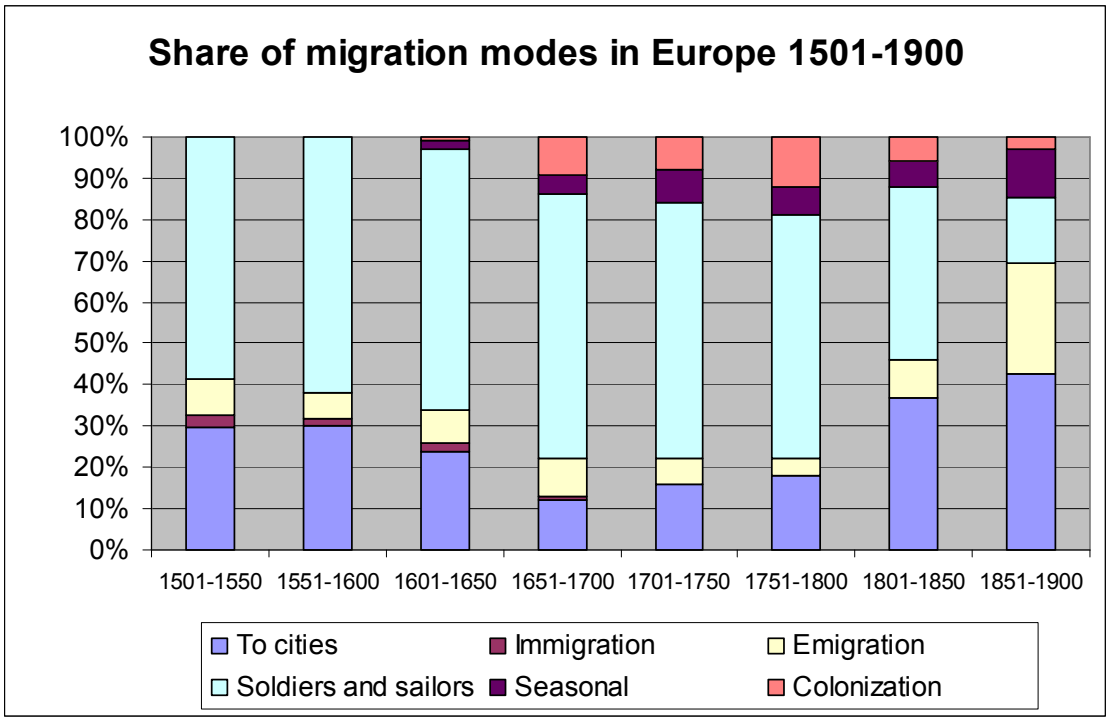
The new rates in table 9.2 support our contention even more firmly than in our 2009 article, as the rate in the second half of the nineteenth century went down significantly from 35.3 to 30.8. All our numbers are open to critique and will undoubtedly change in the near future. That is the main reason for publishing this research paper. We do hope, however, that further readjustments will take us to more solid ground.

Finally, we also present the readjusted share of the six different types of migration through time for Europe as a whole, which even more sharply show that what was perceived as the mobility transition in the nineteenth century was predominantly caused by a spectacular increase in two of the six forms of migration that we have distinguished, emigration and migration to cities. As table 9.4 and figure 9.1 make clear, what Zelinsky and others missed was the importance of migrations by soldiers and sailors, and to a lesser extent that by seasonal migrants and colonists. In fact, what they perceived was only emigration and rural to urban moves.

Table 9.4: Share of the six different modes of migration in Europe 1501-1900 (%)

	Emigration	**Immigration**	**Coloniza-tion**	**To cities**	**Seasonal**	**Soldiers and sailors**	**Total**
1501-50	8	3		30		59	**100**
1551-00	6	2		30		62	**100**
1601-50	8	2	1	24	2	63	**100**
1651-00	8	1	9	12	5	65	**100**
1701-50	6	0	8	16	8	62	**100**
1751-00	4	0	12	18	7	59	**100**
1801-50	9		6	37	6	42	**100**
1851-00	27		3	43	12	15	**100**

Figure 9.1: Share of the six different modes of migration in Europe 1501-1900 (%)



Seen from 1651 onwards, this explains why these scholars – implicitly limiting their definition of migration to only emigration and rural to urban moves – came to the conclusion that a major jump took place in the nineteenth century. Because, if we take their restricted definition the migration rate increases dramatically from 4 (1751-1800) to 21 per cent (1851-1900),[203] while we – including all six forms – established a much less dramatic increase from 17 to 31 per cent.

Much clearer than our initial 2009 article, our new calculations show three distinct periods in the development of cross-community migration: an increase until the first half of the seventeenth century, followed by a stabilization until the end of the eighteenth century and an accelerating increase in the nineteenth century with a jump after 1850. The first increase may suggest that the growth already started in the late Middle Ages. As for the fast increase in the second part of the nineteenth century, it leaves us wondering how this developed in the twentieth century and whether the growth leveled off (due to the ample possibilities to commute to work for example, as suggested by Steven Hochstadt, and the decrease in colonization seasonal and maritime migrations) or that the two world wars, decolonization and global refugee streams made up for the shrinking of these forms of migration.

[203] 1751-1800: 1,152,000 emigrants and 4,622,000 urban migrants versus 27,707,000 emigrants and 31,105,000 urban migrants in 1851-1900 (table 9.1).

10: REFERENCES

Adams, S. (1990). 'Tactics or politics? 'The Military Revolution' and the Hapsburg Hegemony, 1525-1648', in *Tools of War. Instruments, Ideas, and Institutions of Warfare, 1445-1871*. Urbana and Chicago, University of Illinois Press: 28-52.

Ágoston, G. (2005). *Guns for the Sultan. Military power and the weapons industry in the Ottoman Empire*. Cambridge, Cambridge University Press.

Aksan, V. (1999). 'Ottoman military recruitment strategies in the late eighteenth century', in *Arming the state: military conscription in the Middle East and Central Asia, 1775-1925*, edited by E-J. Zürcher. London, Tauris**:** 21-39.

Almeida Mendes, A. de (2008). 'Les réseaux de la traite ibérique dans l'Atlantique nord (1440-1640)'. *Annales HSS* (4, juillet-août): 739-768.

Amersfoort, J. H. (1988). *Koning en kanton. De Nederlandse staat en het einde van de Zwitserse krijgsdienst hier te lande, 1814-1829*. 's-Gravenhage, Sectie Militaire Geschiedenis Landmachtstaf.

Asche, M. (2008). 'Krieg, Militär und Migration in der Frühen Neuzeit. Einleitende Beobachtungen zum Verhältnis von horizontaler und vertikaler Mobilität in der kriegsgeprägten Gesellschaft Alteuropas im 17. Jahrhundert', in *Krieg, Militär und Migration in der Frühen Neuzeit*, edited by Mathias Asche et al. Münster, LIT Verlag**:** 11-36.

Audy, D. (2003). *Les zouaves de Québec au XXe siècle*. Québec, Presses de l'Université Laval.

Bade, K. J. (2003). *Migration in European history*. Oxford, Blackwell Publishing.

Baganha, M. I. B. (2003). 'Portuguese transatlantic migration', in *Mass migration to modern Latin America*, edited by S. L. Baily and E. J. Migues. Wilmington, Scholarly resources**:** 51-68.

Bairoch, P. (1976). 'Population urbaine et taille des villes en Europe de 1600 à 1970. Présentation de séries statistiques'. *Revue d'histoire économique et sociale* 54: 304-335.

Bairoch, P. (1988). *Cities and economic development. From the dawn of history to the present*. Chicago, Chicago University Press.

Bairoch, P., J. Batou, et al. (1988). *La population des villes Européennes: banque de données et analyse sommaire des résultats, 800-1850 = The population of European cities: data bank and short summary of results, 800-1850*. Genève, Publications du Centre d'Histoire Economique Internationale de l'Université de Genève.

Barbier, J.A. (2007). 'Indies revenues and naval spending: The cost of colonialism for the Spanish Bourbons, 1763-1805', in: *Warfare in Europe, 1792-1815*, edited by F.C. Schneid. Aldershot, Ashgate: 3-20.

Bardet, J-P. (1983). *Rouen aux XVIIe et XVIIIe siècles. Les mutations d'un espace social*. Paris, SEDES.

Behar, C. (1996). *Osmanlı İmperatorluğu'nun ve Türkiye'nin nüfusu, 1500-1927 = The population of the Ottoman Empire and Turkey*. Ankara, T.C. Başbakanlık Devlet İstatistik Enstitüsü.

Bengtsson, T., C. Campbell, et al., Eds. (2004). *Life under pressure: mortality and living standards in Europe and Asia, 1700-1900*. Cambridge Mass., MIT Press.

Bevaart, W. (2003). 'Vormende jaren (1815-1870)', in: *Met man en macht. De militaire geschiedenis van Nederland 1550-2000*, edited by J. R. Bruijn and C. B. Wels. Amsterdam, Balans**:** 287-312.

Boerke, A. M. (2009). 'Conscription in the Habsburg Empire to 1815', in *Conscription in the Napoleonic era. A revolution in military affairs?,* edited by D. Stoker, F.C. Schneid and H.D. Blanton. London and New York: Routledge: 66-83.

Bölsker-Schlicht, F. (1987). *Die Hollandgängerei im Osnabrücker Land und im Emsland. Ein Beitrag zur Geschichte der Arbeiterwanderung vom 17. bis zum 19. Jahrhundert*. Sögel, Emsländische Landschaft.

Bono, S. (1999). *Schiavi musulmani nell'Italia moderna. Galeotti, vu' cumpra', domestici*. Napoli, Edizioni Scientifiche Italiane.

Bosma, U. (2007). 'Sailing through Suez from the South: The emergence of an Indies-Dutch migration circuit, 1815-1940'. *International Migration Review* 41 (2): 511-536.

Bosma, U. (2009). 'European colonial soldiers in the nineteenth century: their role in white global migration and patterns of colonial settlement'. *The Journal of Global History* 4 (2): 317-336.

Bossenbroek, M. (1992). *Volk voor Indië: de werving van Europese militairen voor de Nederlandse koloniale dienst 1814-1909*. Amsterdam, Van Soeren.

Bottin, J., G. Buti, and A. Lespagnol (2005). 'Les moyens de l'échange maritime', in *Les Francais, la Terre et la Mer. XIIIe - XXe Siècle,* edited by A. Cabantous, A. Lespagnol and F. Péron. Paris, Fayard: 260-99.

Boucher, M. (1981). *French speakers at the Cape in the first hundred years of Dutch East India Company rule: the European background*. Pretoria, University of South Africa.

Bouëdec, G. le (2005). 'Gens de mer et acteurs portuaires', in *Les Francais, la terre et la mer. XIIIe - XXe Siècle*, edited by A. Cabantous, A. Lespagnol and F. Péron. Paris: Fayard: 525-65.

Boxer, C. R. (1969). *The Portuguese seaborne empire, 1415-1825*. London, Hutchinson.

Brewer, J. (1989). *The sinews of power: war, money and the English State, 1688-1783*. London, Taylor and Francis.

Bruijn, J. R. (1997). 'Career Patterns', in *"Those emblems of hell"? European sailors and the maritime labour market, 1570-1870*, edited by P. C. v. Royen, J. R. Bruijn and J. Lucassen. St. Johns, Newfoundland**:** 25-34.

Bruijn, J.R., and F. Gaastra (1993). *Ships, sailors and spices. East India companies and their shipping in the 16th, 17th and 18th centuries*. Amsterdam, NEHA.

Burds, J. (1991). 'The social control of peasant labor in Russia: the response of village communities to labor migration in the Central Industrial Region, 1861-1905', in *Peasant economy, culture and politics of European Russia, 1800-1921*, edited by E. Kingston-Mann and T. Mixter. Princeton, Princeton University Press**:** 52-100.

Canny, N., Ed. (1994). *Europeans on the move. Studies on European migration, 1500-1800*. Oxford, Clarendon Press.

Canny, N. (2007). 'Englische und schottische Siedler in Irland seit der frühen Neuzeit', in *Enzyklopädie Migration in Europa. Vom 17. Jahrhundert bis zur Gegenwart*, edited by K. J. Bade, P. Emmer, J. Oltmer and L. Lucassen. Paderborn and Munich, Schöningh and Fink**:** 548-553.

Cattaruzza, M. (2002). 'Population dynamic and economic change in Trieste and its hinterland, 1850-1914', in: *Population and society in Western European port-cities c. 1650-1939*, edited by R. Lawton and R. Lee. Liverpool, Liverpool University Press**:** 176-211.

Chaline, O. (2001). 'L'Adriatique, De la guerre de Candie à la fin des empires (1645-1918)', in *Histoire de l'Adriatique,* edited by P. Cabanes, et al. Paris, Seuil: 313-505.

Chapman, G. (1957). 'France, the French army and politics', in: *Soldiers and governments. Nine studies in civil-military relations*, edited by M. Howard. London, Eyre and Spottiswoode**:** 51-72.

Chatelain, A. (1976). *Les migrants temporaires en France de 1800 a 1914* Villeneuve d'Ascq, PUL.

Chevalier, L. (1949). *La formation de la population Parisienne au XIXe siècle*. Paris, Presses Universitaires de France.

Chevalier, L. (1950). *La formation de la population Parisienne au XIXe siècle. Travaux et documents*. Paris, Presses Universitaires de France.

Childs, J. (1982). *Armies and warfare in Europe 1648-1789*. Manchester, Manchester University Press.

Clarence-Smith, W. G. (2006). *Islam and the abolition of slavery*. London, Hurst.

Coale, A. J., and P. Demeny (1966). *Regional model life tables and stable populations*. Princeton, Princeton University Press.

Corvisier, A. (1964). *L'armée francaise de la fin du XVIIIe siècle au ministère de Choiseul. Le soldat*. Paris, PUF.

Corvisier, A. (1976). *Armées et sociétés en Europe de 1494 à 1789* Paris, PUF.

Costello, V., and M. Glozier (2008). 'Huguenots in European armies', in *Krieg, Militär und Migration in der frühen Neuzeit*, edited by M. Asche. Berlin, LIT Verlag**:** 91-104.

Creveld, M. van (1977). *Supplying war. Logistics from Wallenstein to Patton*. Cambridge, Cambridge University Press.

Cullen, L.M. (1994). 'The Irish Diaspora of the seventeenth and eighteenth centuries', in *Europeans on the move. Studies on European migration, 1500-1800*, edited by N. Canny. Oxford, Clarendon Press: 113-152.

Curtin, P. D. (1989). *Death by migration: Europe's encounter with the tropical world in the nineteenth century*. Cambridge, Cambridge University Press.

Curtiss, J. S. (1965). *The Russian army under Nicholas I, 1825-1855*. Durham, Duke University Press.

Darquenne, R. (1970). 'La conscription dans le départment de Jemappes (1798-1813)'. *Annales du Cercle Archéologique de Mons* 67: 1-425.

Daunton, M. J. (1978). 'Towns and economic growth in eighteenth century England', in *Towns in societies: essays in economic history and historical sociology*, edited by P. Abrams and E. A. Wrigley. Cambridge, Cambridge University Press**:** 245-277.

Davis, R. C. (2001). 'Counting slaves on the Barbary coast'. *Past and Present* (172): 87-124.

Davis, R. (2003). *Christian slaves, Muslim masters: white slavery in the Mediterranean, the Barbary Coast, and Italy, 1500-1800.* New York, Palgrave Macmillan.

Doumerc, B. (2001). 'L'Adriatique du XIIIe au XVIIe siècle', in *Histoire de l'Adriatique*, edited by P. Cabanes, et al. Paris, Seuil: 203-312.

Dufraisse, R. (1999). 'Confédération du Rhin', in *Dictionnaire Napoléon*. Edited by J. Tulard. Paris, Fayard.

Ehmer, J. (2003). *Vor- und frühindustrielle Arbeitsmigration: Massenmigrationen in Zentraleuropa im 18. und 19. Jahrhundert*. Gütersloh, Eimer, Olaf.

Ehmer, J. (2004). *Bevölkerungsgeschichte und historische Demographie, 1800-2000*. München, Oldenbourg.

Eisenbach, A., and B. Grochulska (1965). 'Population en Pologne (fin XVIIe Début XIXe siècle)'. *Annales de Démographie Historique*: 105-125.

Eiynck, A., Ed. (1993). *Wanderarbeit jenseits der Grenze. 350 Jahre auf der Suche nach Arbeit in der Fremde* Assen.

Elliott, J.H., and H.G. Koenigsberger (1984). *The military organization of a Renaissance state. Venice c. 1400 to 1617*. Cambridge, Cambridge University Press.

Engerman, S. L., and J. C. de Neves (1997). 'The bricks of an empire 1415-1999: 585 years of Portuguese emigration'. *The Journal of European Economic History* 26 (3): 471-510.

Esdaile, C.J. (2009). 'Conscription in Spain in the Napoleonic era', in *Conscription in the Napoleonic Era. A revolution in military affairs?*, edited by D. Stoker, F.C. Schneid and H.D. Blanton. London and New York, Routledge: 102-21.

Esmonin, E. (1964). 'Statistiques du mouvement de la population en France de 1770 à 1789'. *Études et chronique de démographie Historique*: 27-130.

Fabbro, R. del (1996). *Transalpini: italienische Arbeitswanderung nach Süddeutschland im Kaiserreich*. Osnabrück, Rasch.

Fairchild, H. P. (1911). *Greek immigration to the United States*. New Haven and London, Yale University Press.

Fedor, T. S. (1975). *Patterns of urban growth in the Russian empire during the 19th century*. Chicago, University of Chicago, Department of Geography.

Ferenczi, I., and W. F. Willcox (1929). *International migrations*. New York, National Bureau of Economic Research.

Fertig, G. (1994). 'Transatlantic migration from the German-speaking parts of Central Europe, 1600-1800', in *Europeans on the move. Studies on European migration 1500-1800*, edited by N. Canny. Oxford, Clarendon Press**:** 192-235.

Fisher, A. (1972). 'Muscovy and the Black Sea trade'. *Canadian-American Slavic Studies* **6**(4): 582-593.

Fleege-Althoff, F. (1928). *Die lippischen Wanderarbeiter*. Detmold, Meyersche Hofbuchhandlung.

Flora, P. (1983). *State, economy and society in Western Europe 1815-1975. A data handbook in two volumes*. Frankfurt am Main, Campus.

Fonseca, J. (2005). 'Black Africans in Portugal during Cleynarts's visit (1533-1538)', in *Black Africans in Renaissance Europe*, edited by T. F. Earle and K. J. P. Lowe. Cambridge, Cambridge University Press**:** 113-121.

Forrest, A. (1989). *Conscripts and deserters. The army and French society during the Revolution and empire*. New York and Oxford, Oxford University Press.

Forrest, A. (1990). *Soldiers of the French Revolution*. Durham and London, Duke University Press.

François, E. (1978). 'Mortalité urbaine en Allemagne au XVIIIe siècle'. *Annales de Démographie Historique*: 135-165.

Gaastra, F. S., and J. R. Bruijn (1993). 'The Dutch East India Company's shipping, 1602-1795, in a comparative perspective'. in *Ships, sailors and spices. East India companies and their shipping in the 16th, 17th and 18th centuries*, edited by J. Bruijn and F. S. Gaastra. Amsterdam, NEHA**:** 177-208.

Gabaccia, D. R. (2000). *Italy's many diasporas*. London, UCL Press.

Gabriëls, J. (2003). 'Tussen Groot-Brittannië en Frankrijk. De Landstrijdmachten van een onmachtige mogendheid', in *Met man en macht. De militaire geschiedenis van Nederland 1550-2000*, edited by J. R. Bruijn and C. B. Wels. Amsterdam, Balans**:** 143-178.

Glete, J. (2000). *War at Sea, 1500-1650. Maritime conflicts and the transformation of Europe*. London, Routledge.

Glete, J. (2002). *War and the state in Early Modern Europe: Spain, the Dutch Republic and Sweden as fiscal-military States, 1500-1660*. London, Routledge.

Godinho, V. M. (1992). 'Portuguese emigration from the fifteenth to the twentieth century: constants and changes', in *European expansion and migration: essays on the intercontinental migration from Africa, Asia, and Europe*, edited by P. C. Emmer and M. Mörner. New York, Berg**:** 13-48.

Goff, A. le (1974). 'Bilan d'une étude de démographie historique: Auray au XVIIIe siècle (vers 1740-1789)'. *Annales de Démographie Historique*: 197-229.

Goff, T. J. A. le (1997). 'The labour market for sailors in France', in *"Those emblems of hell"? European sailors and the maritime labour market, 1570-1870*, edited by P. C. van Royen, J. R. Bruijn and J. Lucassen. St. Johns, Newfoundland**:** 287-328.

Gooren, R. H. E. (1987). *Krijgsdienst en krijgsmacht in de Nederlandse politiek 1866-1914*. Utrecht, Utrechtse Historische Cahiers.

Gorshkov, B. (2000). 'Serfs on the move: peasant seasonal migration in pre-reform Russia, 1800-61'. *Kritika: Explorations in Russian and Eurasian History* 1 (4): 627-656.

Gorski, R. (2007). 'Health and safety aboard British merchant ships. The case of first aid instruction, 1881-1908', in *Maritime labour: contributions to the history of work at sea 1500-2000*, edited by R. Gorski. Amsterdam, Aksant.

Gould, J. D. (1979). 'European inter-continental emigration 1815-1914. Patterns and causes'. *Journal of European Economic History* VIII (3): 593-677.

Grab, A. (2007). 'Army, state and society. Conscription and desertion in Napoleonic Italy (1802-1814)', in *Warfare in Europe, 1792-1815* edited by F.C. Schneid. Aldershot: Ashgate: 283-312.

Grab, A. (2009). 'Conscription and desertion in Napoleonic Italy, 1802-1814', in *Conscription in the Napoleonic Era. A revolution in military affairs?*, edited by D. Stoker, F.C. Schneid and H.D. Blanton. London and New York, Routledge: 122-34.

Halley, E., and L. J. Reed (1942). *Degrees of mortality of mankind [1693]*. Baltimore.

Hassel, G. (1805). *Statistischer Umriss der sämtlichen Europäischen Staaten in Hinsicht Ihrer Grösse, Bevölkerung, Kulturverhältnisse, Handlung, Finanz- und Militärverfassung und Ihrer aussereuropäischen Besitzungen*. Braunschweig,Vieweg.

Hellie, R. (1990). 'Warfare, Changing Military Technology, and the Evolution of Muscovite Society', in *Tools of War. Instruments, Ideas, and Institutions of Warfare, 1445-1871*. Urbana and Chicago, University of Illinois Press: 74-99.

Hellie, R. (2002). 'Migration in Early Modern Russia, 1480s-1780s', in *Coerced and free migration. Global perspectives*, edited by D. Eltis. Stanford, Stanford University Press**:** 292-323.

Heuvel, D. van den (2005). '*Bij uijtlandigheijt van haar man': echtgenotes van VOC-zeelieden, aangemonsterd voor de kamer Enkhuizen (1700-1750)*. Amsterdam, Aksant.

Hochedlinger, M. (2009). 'The Habsburg monarchy: From 'military-fiscal state' to militarization', in *The fiscal-military state in eighteenth-century Europe. Essays in honour of P.G.M. Dickson,* edited by Christopher Storrs. Farnham, Ashgate: 55-94.

Hoerder, D. (2002). *Cultures in contact. World migrations in the second Millennium*. Durham and London, Duke University Press.

Hourcade, B. (2008). 'The demography of cities and the expansion or urban space', in *The urban social history of the Middle East, 1750-1950*, edited by P. Sluglett. Syracuse, Syracuse University Press**:** 154-181.

Inalcik, H. (1994). 'The Ottoman state: economy and society, 1300-1600', in *An economic and social history of the Ottoman Empire, 1300-1914*, edited by H. Inalcik and D. Quataert. Cambridge, Cambridge University Press**:** 9-380.

Jerram, C. S. (1899). *The armies of the world*. London: Lawrence and Bullen.

Jobson de Andrade Arruda, J. (1991). 'Colonies as mercantile investments: the Luso-Brazilian empire, 1500-1808', in *The political economy of merchant empires*, edited by J. D. Tracy. Cambridge, Cambridge University Press**:** 360-420.

Johansen, H. C. (1997). 'Danish sailors in Spain, 1570-1870', in *"Those emblems of hell"? European sailors and the maritime labour market, 1570-1870*, edited by P. C. van Royen, J. R. Bruijn and J. Lucassen. St. Johns, Newfoundland**:** 233-252.

Karamanoukian, A. (1978). *Les étrangers et le service militaire*. Paris: Pedone.

Karpat, K. H. (1985). 'The Ottoman emigration to America'. *International Journal of Middle East Studies* 17: 175-209.

Keep, J. L. H. (1985). *Soldiers of the tsar. Army and society in Russia 1462-1874*. Oxford, Clarendon Press.

Kennedy, P. (1989). *The rise and fall of the great powers. Economic change and military conflict from 1500 to 2000*. London, Fontana Press.

Kenny, K. (2000). *The American Irish. A history*. Harlow, Longman.

Kintz, J. P. (1970). 'La mobilité humaine en Alsace. Essai de présentation statistique XIV-XVIIIe siècles'. *Annales de Démographie Historique*: 157-183.

Köchli, U. (2008). ‘Zusammensetzung und Organisation des päpstlichen Heeres im 17. Jahrhundert’, in *Krieg, Militär und Migration in der frühen Neuzeit*, edited by M. Asche. Berlin, LIT Verlag**:** 59-69.

Kolchin, P. (1987). *Unfree labor. American slavery and Russian serfdom*. Cambridge Mass., Harvard University Press.

Krünitz, J.G. (1790). *Oeconomisch-technologische Encyklopädie oder allgemeines System der Staats-, Stadt-, Haus- und Land-Wirtschaft, und der Kunstgeschichte, in alphabetischer Ordnung*. Berlin.

Küpker, M. (2008). *Weber, Hausierer, Hollandgänger. Demografischer und wirtschaftlicher Wandel im ländlichen Raum*. Frankfurt am Main, Campus.

Küpker, M. (2009). ‚Migrationen im vorindustriellen Westfalen: das Beispiel von Hausierhandel, Hollandgang und Auswanderung in Tecklenburg 1750-1850’. *Westfälische Forschungen* 59: 45-78.

L[…]n, R. (1902). ‘Flot’, in *Entsiklopedicheskii Slovar*, edited by F. A. Brokgauz and I. A. Efron. St. Petersburg: 175-179.

Lampard, E. E. (1973). ‘The urbanizing world’, in *The Victorian city. Past and present*. H. J. Dyos and M. Wolff.

Lane, F. (1973). *Venice: a maritime republic*. Baltimore, Johns Hopkins University Press.

Leeuwen, M. H. D. van, and J. E. Oeppen (1993). ‘Reconstructing the demographic regime of Amsterdam 1681-1920’. *Economic and Social History in the Netherlands,*: 61-104.

Lenman, B.P. (1990). ‘The Transition to European Military Ascendancy in India, 1600-1800’, in *Tools of War. Instruments, Ideas, and Institutions of Warfare, 1445-1871*. Urbana and Chicago, University of Illinois Press: 100-130.

Levasseur, E. (1891). *La population française: histoire de la population avant 1789 et démographie de la France, comparée à celle des autres nations au XIXe siècle, précédée d'une introduction sur la statistique*. Paris, Rousseau.

Linderkamp, H. (1992). *"Auf Ziegelei" an der Niederelbe. Zur saisonalen Wanderarbeit lippischer Ziegler im 19. Und 20. Jahrhundert*. Stade, Stader Geschichts- und Heimatverein.

Lloyd, C. (1968). *The British seaman 1200-1860. A social survey*. London, Collins.

Lot, F. (1962). *Recherches sur les effectifs des armées Francaises des guerres d’Italie aux guerres de religion 1494-1562*. Paris: SEVPEN.

Lottum, J. van, and J. Lucassen (2007). ‘Six cross-sections of the Dutch maritime labour market: a preliminary reconstruction and its implications (1610-1850)’, in *Maritime labour: contributions to the history of work at sea 1500-2000*, edited by R. Gorski. Amsterdam, Aksant**:** 13-42.

Lourens, P., and J. Lucassen (1999). *Arbeitswanderung und berufliche Spezialisierung. Die lippische Ziegler im 18. und 19. Jahrhundert*. Osnabrück, Rasch Universitätsverlag.

Lourens, P., and J. Lucassen (2006). 'Karrieren lipischen Ziegler: Das Beispiel Delfzijl 1855'. *Lippische Mitteilungen aus Geschichte und Landeskunde* 76: 63-80.

Lourens, P., and J. Lucassen (2011). 'Lippe brickmakers in Central, Western, and Northern Europe from the 17th to the 20th century', in *The Encyclopedia of European Migration*, edited by K. J. Bade, P. C. Emmer, L. Lucassen and J. Oltmer. New York, Cambridge University Press.

Lucassen, J. (1984). *Naar de kusten van de Noordzee. Trekarbeid in Europees perspektief 1600-1900*. Gouda.

Lucassen, J. (1987). *Migrant labour in Europe. The drift to the North Sea*. London, Croom Helm.

Lucassen, J. (1993). Dutch long distance migration. A concise history 1600-1900. *IISG Research Papers*. Amsterdam.

Lucassen, J. (1994). The Netherlands, the Dutch, and long-distance migration in the late sixteenth to early nineteenth centuries. *Europeans on the move. Studies on European migration, 1500-1800*, edited by N. Canny. Oxford, Clarendon Press**:** 153-191.

Lucassen, J. (1995). 'Emigration to the Dutch colonies and the USA', in *The Cambridge survey of world migration*, edited by R. Cohen. Cambridge, Cambridge University Press**:** 21-27.

Lucassen, J. (2004). 'A Multinational and its Labor Force: The Dutch East India Company, 1595-1795'. *International Labor and Working-Class History* 66 (Fall): 12-39.

Lucassen, J., and L. Lucassen (2009). 'The mobility transition revisited, 1500-1900: what the case of Europe can offer to global history'. *The Journal of Global History* 4 (4): 347-377.

Lucassen, J., and R. Unger (2000). 'Labour productivity in ocean shipping'. *International Journal of Maritime History* 12: 127-41.

Lucassen, J., and E. J. Zürcher (1999). 'Introduction: conscription and resistance. The historical context', in *Arming the state. Military conscription in the Middle East and Central Asia 1775-1925*, edited by E. J. Zürcher. London and New York, I.B. Tauris: 1-20.

Luh, J. (2002). *Ancien Régime warfare and the military revolution. A study*. Groningen, INOS.

Lynn, J.A. (1990). 'The Pattern of Army Growth, 1445-1945', in *Tools of War. Instruments, Ideas, and Institutions of Warfare, 1445-1871*. Urbana and Chicago, University of Illinois Press: 1-27.

Lynn, J.A. (1994). 'Recalculating French army growth during the Grand Siècle, 1610-1715'. *French Historical Studies* 18: 881-906.

Lynn, J.A. (1996). 'The evolution of army style in the modern West 800-2000'. *International History Review* 18: 505-45.

Lynn, J.A. (1997). *Giant of the "Grand Siècle": the French army, 1610-1715* Cambridge, Cambridge University Press.

Lynn, J.A. (2008). *Women, Armies, and Warfare in Early Modern Europe*. Cambridge: Cambridge University Press: 1-17.

Magelhaes Godinho, V. (1993). 'The Portuguese and the 'Carreira da India' 1497-1810', in *Ships, sailors and spices. East India companies and their shipping in the 16th, 17th and 18th centuries*, edited by J. R. Bruijn and F. S. Gaastra. Amsterdam, NEHA**:** 1-47.

Mallet, M. E., and J. R. Hale (1984). *The military organization of a Renaissance state: Venice, c. 1400 to 1617*. Cambridge, Cambridge University Press.

Manning, P. (2006). 'Cross-community migration: A distinctive human pattern'. *Social Evolution and History* 5 (2): 24-54.

McCranie, K. (2009). 'The recruitment of seamen for the British navy, 1793-1815', in *Conscription in the Napoleonic Era. A revolution in military affairs?*, edited by D Stoker, F.C. Schneid and H.D. Blanton. London and New York, Routledge: 84-101.

McGowan, B. (1994). 'The age of the Ayans, 1699-1812', in *An economic and social history of the Ottoman Empire, 1300-1914*, edited by H. Inalcik and S. Faroqhi. Cambridge, Cambridge University Press**:** 639-758.

Meijide Pardo, A. (1960). *La emigracion gallega intrapeninsular en el siglo 18*. Madrid, Monografias historico-sociales. Instituto Balmes de sociologia. Departamento de historia social. Consejo superior de investigaciones cientificas.

Mendes, A. A. (2008). 'Les réseaux de la traite ibérique dans l'Atlantique nord (1440-1640)'. *Annales HSS* 63 (4): 739-768.

Menning, B. W. (1992). *Bayonets before bullets. The imperial Russian army, 1861-1914*. Bloomington, Indiana University Press.

Meyer, J. (1980). 'Forces navales et puissances économiques', in *Seamen in society*, edited by P. Adam. Bucuresti.

Mikaberidze, A. (2009). 'Conscription in Russia in the late eighteenth and early nineteenth centuries. For faith, tsar and motherland', in *Conscription in the Napoleonic era. A revolution in military affairs?*, edited by D. Stoker, F.C. Schneid and H.D. Blanton. London and New York, Routledge: 46-65.

Mitchell, B. R. (1992). *International historical statistics. Europe 1750-1988*. Basingstoke, MacMillan.

Moch, L. P. (1992). *Moving Europeans. Migration in Western Europe since 1650*. Bloomington, Indiana University Press.

Mols, R. (1956). *Introduction à la démographie historique des villes d'Europe du XIVe au XVIIIe siècles*. Louvain, Bibliothèque de l'Université de Louvain.

Moltmann, G., Ed. (1976). *Deutsche Amerikaauswanderung im 19. Jahrhundert. Sozialgeschichtliche Beiträge*. Stuttgart, J.B. Metzlersche Verlagsbuchhandlung.

Moogk, P. (1994). 'Manon's fellow exiles: emigrants from France to North America before 1763', in *Europeans on the Move. Studies on European Migration 1500-1800*, edited by N. Canny. Oxford, Clarendon Press**:** 236-260.

Moon, D. (1997). 'Peasant migration and the settlement of Russia's frontiers 1550-1897'. *The Historical Journal* 40 (4): 859-893.

Moon, D. (2002). 'Peasant migration, the abolition of serfdom, and the internal passport system in the Russian empire, c. 1800-1914', in *Coerced and free migration. Global perspectives*, edited by D. Eltis. Stanford, Stanford University Press**:** 324-357.

Mörner, M. (1995). 'Spanish historians on Spanish migration to America during the colonial period'. *Latin America Research Review* 30 (2): 251-267.

Morrison, D. (1987). *"Trading peasants" and urbanization in eighteenth century Russia: the Central Industrial Region*. New York and London, Garland.

Natale, M. (1982). 'Les bilans démographiques des villes Italiennes de l'unité d'Italie à la première guerre mondiale'. *Annales de Démographie Historique*: 213-229.

Nicolle, D. (1983). *Armies of the Ottoman Turks 1300-1744*. Oxford, Osprey Publishing.

Nicolle, D. (1998). *Armies of the Ottoman Empire 1775-1820*. Oxford and New York, Osprey.

Nimwegen, O. van (2003). 'De Republiek der Verenigde Nederlanden in oorlog met Frankrijk (1650-1750)', in *Met man en macht. De militaire geschiedenis van Nederland 1550-2000*, edited by J. R. Bruijn and C. B. Wels. Amsterdam, Balans**:** 65-104.

Nolte-Schuster, B., J. Vogel, et al. (2001). *Zur Arbeit nach Holland. Naar de Nederlanden om te werken*. Osnabrück and Enschede.

North, M. (1997). 'German sailors, 1650-1900', in *"Those emblems of hell"? European sailors and the maritime labour market, 1570-1870*, edited by C. van Royen, J. R. Bruijn and J. Lucassen. St. Johns, Newfoundland**:** 253-266.

Nowak, T. M. (1976). 'Polish warfare technique in the 17th century, theoretical conceptions and their practical applications', in *Military technique, policy, and strategy in history* edited by W. Bieganski. Warsaw: MON: 11-94.

Nugent, W. (1992). *Crossings: the great transatlantic migrations, 1870-1914*. Bloomington, Indiana University Press.

Nusteling, H. (1998). 'De bevolking: van raadsels naar oplossingen', in *Geschiedenis van Dordrecht van 1572 tot 1813*, edited by W. Frijhoff, E. Nusteling and M. Spies. Hilversum, Verloren**:** 73-108.

Ogden, P.E. (1989). 'International migration in the nineteenth and twentieth centuries', in *Migrants in Modern France. Population mobility in the later 19th and 20th centuries*, edited by P. E. Ogden and P.E. White. London: Unwin Hyman: 34-59.

Oomens, C.A. (1989). 'Emigratie in de negentiende eeuw', in *De loop der bevolking van Nederland in de negentiende eeuw*. Den Haag, CBS.

Os, N. A. N. M. van (1999). 'Taking care of soldiers' families: the Ottoman state and the Muinsiz alle Maasi', in *Arming the state: military conscription in the Middle East and Central Asia, 1775-1925*, edited by E.-J. Zürcher. London, Tauris**:** 95-110.

Palmer, S., and D. M. Williams (1997). 'British sailors, 1775-1870', in *"Those emblems of hell"? European sailors and the maritime labour market, 1570-1870*, edited by P. C. van Royen, J. R. Bruijn and J. Lucassen. St. Johns, Newfoundland**:** 93-118.

Panzac, D. (1999). *Les corsaires barbaresques: la fin d'une épopée, 1800-1820*. Paris, CNRS.

Papathanassiou, M. (2008). 'Kindesmigration und Arbeit in der Spätphase der Habsburgermonarchie. Aspekte, Ansätze, Überlegungen', in *Übergange und Schnittmengen. Arbeit, Migration, Bevölkerung und Wissenschaftsgeschichte in Diskussion*, edited by A. Steidl, T. Buchner, W. Lauseckeret al. Wien, Böhlau**:** 19-44.

Papoulia, B.D. (1963). *Ursprung und Wesen der 'Knabenlese' im Osmanischen Reich*. München, Oldenbourg 1963.

Parker, G. (1972). *The army of Flanders and the Spanish road 1567-1659. The logistics of Spanish victory and defeat in the Low Countries' wars*. Cambridge, Cambridge University Press.

Parker, G. (1979). *Spain and the Netherlands, 1559-1569. Ten studies*. London, Collins.

Parker, G. (1988). *The military revolution. Military innovation and the rise of the West, 1500-1800*. Cambridge, Cambridge University Press.

Pavkovic, M.F. (2009). 'Recruitment and conscription in the kingdom of Westphalia. 'The Palladium of Westphalian Freedom', in *Conscription in the Napoleonic Era. A revolution in military affairs?*, edited by D. Stoker, F.C. Schneid and H.D. Blanton. New York: Routledge: 135-48.

Peller, S. (1920). 'Zur Kenntnis der städtischen Mortalität im 18. Jahrhundert mit besonderer Berücksichtigung der Säuglings- und Tuberkulosesterblichkeit (Wien zur Zeit der ersten Volkszählung)'. *Zeitschrift für Hygiene und Infektionskrankheiten* 90 (2): 227-262.

Pérez-Mallaína, P.E. (1998). *Spain's men of the sea: daily life on the Indies fleets in the sixteenth century*. Baltimore, MD Johns Hopkins University Press.

Perrenoud, A. (1979). *La population de Genève du seizième au début du dix-neuvième siècle: étude démographique* Genève.

Perrot, J.-C. (1975). *Genèse d'une ville moderne. Caen au XVIIIe siècle*. Paris, Mouton.

Petersen, K.S (2009). 'Filling the ranks. Recruitment and conscription for the Danish-Norwegian army during the Napoleonic Era', in *Conscription in the Napoleonic Era. A revolution in military affairs?*, edited by D. Stoker, F.C. Schneid and H.D. Blanton, 149-61. London and New York: Routledge.

Pfister, C. (1984). *Bevölkerungsgeschichte und historische Demographie 1500-1800*. Munich: Oldenbourg.

Pfister, C. (1994). *Bevölkerungsgeschichte und historische Demographie 1500-1800*. Munich, Oldenbourg.

Phillips, W. D. (2007). ‚Afrikanische Sklaven auf der Iberischen Halbinsel in der frühen Neuzeit', in *Enzyklopädie Migration in Europa. Vom 17. Jahrhundert bis zur Gegenwart*, edited by K.J. Bade, P. C. Emmer, L. Lucassen and J. Oltmer. Paderborn**:** 364-366.

Pietschman, H. (2007). ‚Spanien und Portugal', in *Enzyklopädie Migration in Europa vom 17. Jahrhundert bis zur Gegenwart*, edited by K. J. Bade, P. C. Emmer, L. Lucassen and J. Oltmer. Paderborn and München, Schöningh and Fink**:** 220-242.

Pomeranz, K. (2000). *The Great Divergence. China, Europe, and the making of the modern world economy*. Princeton, Princeton University Press.

Puell de la Villa, F. (1996). *El soldato desconocido. De la leva a la 'mili'(1700-1912).* Madrid: Editorial Biblioteca Nueva.

Quataert, D. (2000). *The Ottoman empire 1700-1922*. Cambridge, Cambridge University Press.

Rahn Phillips, C. (1990). 'The growth and composition of trade in the Iberian empires 1450-1750', in *The rise of merchant empires. Long-distance trade in the early modern world 1350-1750*, edited by J. D. Tracy. Cambridge, Cambridge University Press.

Rahn Phillips, C. (1997). 'The labour market for sailors in Spain, 1570-1870', in *"Those emblems of hell"? European sailors and the maritime labour market, 1570-1870*, edited by P. C. van Royen, J. R. Bruijn and J. Lucassen. St. Johns, Newfoundland**:** 329-348.

Ratajczyk, L. (1970). 'La defense territoriale pendant l'insurrection de Kosciuszko', in *Histoire militaire de la Pologne. Problèmes choisies*, edited by W. Bieganski, P. Stawecki and J. Wojtasik. Warsaw, MON: 133-48.

Ratajczyk, L. (1976). 'Problems of the defense of Poland in view of the threat of loss of independence in the late 18th century', in *Military technique, policy, and strategy in history*, edited by W. Bieganski. Warsaw, MON: 295-346.

Redlich, F. (1954). ‚Der Marketender'. *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 41: 227-252.

Redlich, F. (1964). *The German military enterpriser and his work force. A study in European economic and social history (vol. 1 (1964) and vol 2 (1965).* Wiesbaden, Steiner.

Richards, E. (2004). *Britannia's children: emigration from England, Scotland, Wales and Ireland since 1600*. London.

Riley, J. C. (1981). 'Mortality on long-distance voyages in the eighteenth century'. *The Journal of Economic History* 41: 651-656.

Ritter, G. (1954). *Staatskunst und Kriegshandwerk. Das Problem des "Militarismus" in Deutschland. Volume 1: Die altpreussische Tradition (1740-1890)*. Munich, Oldenbourg.

Ritter, G. (1960). *Staatskunst und Kriegshandwerk. Das Problem des "Militarismus" in Deutschland.Vol. 2: Due Hauptmächte Europas und das wilhelminische Reich (1890-1914)*. Munich, Oldenburg.

Roberts, M. (1979). *The Swedish imperial experience, 1560-1718*. Cambridge, Cambridge University Press.

Rossum, M. van (2009). *Hand aan Hand (Blank en Bruin). Solidariteit en de werking van globalisering, etniciteit en klasse onder zeelieden op de Nederlandse koopvaardij, 1900-1945*. Amsterdam, Aksant.

Rottmann, H. (1914). *Heere und Flotten aller Staaten der Erde*, XIII Jahrgang 1914. Berlin, Verlag von Zuckschwerdt & Co.

Rozman, G. (1976). *Urban networks in Russia, 1750-1800, and premodern periodization* Princeton, Princeton University Press.

Saetra, G. (1997). 'The international labour market for seamen, 1600-1900', in *"Those emblems of hell"? European sailors and the maritime labour market*, edited by P. C. van Royen, J. R. Bruijn and J. Lucassen. St. Johns, Newfoundland**:** 173-210.

Sanchez-Albornoz, N. (1994). 'The first Transatlantic transfer. Spanish migration to the new world, 1493-1810', in *Europeans on the move. Studies on European migration, 1500-1800*, edited by N. Canny. Oxford, Clarendon Press; 26-38.

Saunders, A.C. (1982). *A social history of black slaves and freedmen in Portugal, 1441-1555*. Cambridge: Cambridge University Press.

Scammell, G. V. (1970). 'Manning the English merchant service in the sixteenth century'. *The Mariner's mirror* 56: 131-154.

Scammell, G. V. (1981). *The world encompassed: the first European maritime empires, c. 800-1650* Berkeley, University of California Press.

Scammell, G. V. (1995). 'European shipowning in the Estado da India', in *Ships, ocean and empire. Studies in European maritime and colonial history, 1400-1750*, edited by G. V. Scammell. Aldershot, Variorum: 119-134.

Schiaffino, A. (1982). 'Un aspect mal connue de la démographie urbaine: l'émigration'. *Annales de Démographie Historique*: 231-241.

Schmidt-Brentano, A. (1975). *Die Armee in Österreich. Militär, Staat und Gesellschaft 1848-1867*. Boppard am Rhein, Harald Boldt.

Schmoller, G. (1921). *Preussische Verfassungs-, Verwaltungs- und Finanzgeschichte*. Berlin, Verlag der Tägliche Rundschau.

Schneid, F.C. (2009). 'Napoleonic Conscription and the Militarization of Europe?', in *Conscription in the Napoleonic Era. A Revolution in Military Affairs?*, edited by D. Stoker, F.C. Schneid and H.D. Blanton. London, Routledge: 189-206.

Schnitter, H., and T. Schmidt (1987). *Absolutismus und Heer. Zur Entwicklung des Militärwesens im Spätfeudalismus*. Berlin, Militärverlag der Deutschen Demokratischen Republik.

Schnitzler, J.H. (1846). *Statistique générale méthodique et complète de la France, comparée aux autres grandes puissances de L'europe*. Paris, H. Lebrun.

Schulten, K. (2003). 'Ontstaan van de Republiek en het Staatse leger', in *Met man en macht. De militaire geschiedenis van Nederland 1550-2000*, edited by J. R. Bruijn and C. B. Wels. Amsterdam, Balans**:** 13-43.

Sewell, W. H. (1985). *Structure and mobility. The men and women of Marseille, 1820-1870*. Cambridge, Cambridge University Press.

Smout, T. C., N. C. Landsman, et al. (1994). 'Scottish emigration in the seventeenth and eighteenth centuries', in *Europeans on the move. Studies on European migration 1500-1800*, edited by N. Canny. Oxford, Clarendon Press**:** 76-112.

Soboul, A. (1974). *La France à la veille de la Révolution*. Paris, Société d'Édition d'Enseignement Supérieur.

Spiers, E. M. (1980). *The army and society 1815-1914*. London and New York, Longman.

Spiss, R. (2007). 'Tiroler und Vorarlberger "Schwabenkinder" in Württemberg, Baden und Bayern von der frühen Neuzeit bis zum Ersten Weltkrieg', in *Enzyklopädie Migration in Europa. Vom 17. Jahrhundert bis zur Gegenwart*, edited by K. J. Bade, P. Emmer, L. Lucassen and J. Oltmer. Paderborn and München, Schöningh and Fink**:** 1036-1039.

Spulber, N. (2003). *Russia's economic transitions: from late tsarism to the new millennium*. Cambridge, Cambridge University Press.

Stapelkamp, H. (2003). 'Van varen en vechten, soms. De Koninklijke Marine (1813-1949)', in *Met man en macht. De militaire geschiedenis van Nederland 1550-2000*, edited by J. R. Bruijn and C. B. Wels. Amsterdam, Balans**:** 341-379.

Starkey, D. (2007). 'Quantifying British seafarers, 1789-1828', in *Maritime labour: contributions to the history of work at sea 1500-2000*. R. Gorski. Amsterdam, Aksant**:** 83-103.

Stone, N. (1966). 'Army and society in the Habsburg Monarchy, 1900-1914'. *Past and Present* 33: 95-111.

Storrs, C. Ed. (2009). *The fiscal-military state in eighteenth-century Europe. Essays in honour of P.G.M. Dickson*. Farnham: Ashgate.

Storrs, C. (2009). 'The Savoyard fiscal-military state in the long eighteenth century', in *The fiscal-military state in eighteenth-century Europe. Essays in honour of P.G.M. Dickson*, edited by C. Storrs. Farnham, Ashgate: 201-35.

Subrahmanyam, S., and L. F. F. R. Thomaz (1991). 'Evolution of empire: the Portuguese in the Indian Ocean during the sixteenth century', in *The political economy of merchant empires*, edited by J. D. Tracy. Cambridge, Cambridge University Press**:** 298-331.

Sugar, P. (1977). *Southeastern Europe under Ottoman Rule, 1354-1804*. Seattle, University of Washington Press.

Sundhaussen, H. (2007). 'Südosteuropa', in *Enzyklopädie Migration in Europa. Vom 17. Jahrhundert bis zur Gegenwart*, edited by K. J. Bade, P. Emmer, L. Lucassen and J. Oltmer. Paderborn and München, Schöningh and Fink**:** 285-313.

Tack, J. (1902). *Die Hollandsgänger in Hannover und Oldenburg. Ein Beitrag zur Geschichte der Arbeiter-Wanderung* Leipzig, Jäh und Schuncke.

Taylor, P. K. (1994). *Indentured to liberty. Peasant life and the Hessian military state, 1688-1815*. Ithaca and London, Cornell University Press.

Teodorczyk, J.(1970). 'L'armée Polonaise dans la première moitié du XVIIe siècle', in *Histoire militaire de la Pologne. Problèmes choisies*, edited by W. Bieganski, P. Stawecki and J. Wojtasik. Warsaw, MON: 95-113.

Thisner, F. (2009). 'Manning the armed forces. The Swedish solution', in *Conscription in the Napoleonic Era. A revolution in military affairs?*, edited by D. Stoker, F.C. Schneid and H.D. Blanton, 162-74. London, Routledge.

Tilly, C. (1990). *Coercion, capital and European states, AD 990-1992*. Cambridge, Cambridge University Press.

Todorov, N. (1983). *The Balkan City 1400-1900*. Seattle and London, University of Washington Press.

Todorov, N. (1998). 'La situation économique de la Grèce au cours de deux décennies de vie indépendante dans l'optique d'un diplomate Russe', in *Society, the city and industry in the Balkans, 15th-19th Centuries*, edited by N. Todorov. Aldershot, Ashgate/Variorum: 225-36.

Toledano, E. (1998). *Slavery and abolition in the Ottoman Middle East*. Seattle, University of Washington Press.

Unger, R. W. (1992). 'The tonnage of Europe's merchant fleets 1300-1800'. *American Neptune* 52: 247-261.

Vogel, W. (1915). 'Zur Grösse der europäischen Handelsflotten im 15., 16. und 17. Jahrhundert', in *Forschungen und Versuche zur Geschichte des Mittelalters und der Neuzeit : Festschrift Dietrich Schäfer zum siebzigsten Geburtstag dargebracht von seinen Schülern,* edited by S. Dietrich. Jena**:** 268-333.

Vries, J. de (1984). *European urbanization 1500-1800*. London, Methuen.

Vries, J. de, and A. van der Woude (1997). *The first modern economy. Success, failure, and perseverance of the Dutch economy*. Cambridge, Cambridge University Press.

Vuilleumier, M. (2007). 'Schweiz', in *Enzyklopädie Migration in Europa vom 17. Jahrhundert bis zur Gegenwart*, edited by K. J. Bade, P. C. Emmer, L. Lucassen and J. Oltmer. Paderborn and München, Schöningh and Fink**:** 189-204.

Walter, D. (2009). 'Meeting the French challenge. Conscription in Prussia, 1807-1815', in *Conscription in the Napoleonic Era. A revolution in military affairs?*, edited by D. Stoker, F. C. Schneid and H.D. Blanton. London and New York, Routledge: 24-45.

Wap, J.F. (1834-1838). *Leerboek der aardrijkskunde naar 't Hoogduitsch van J.G.F. Cannabich* Breda, Oukoop, 6 volumes.

Weber, E. (1976). *Peasants into Frenchmen: the modernization of rural France, 1870-1914*. Stanford, Stanford University Press.

Welten, J. (2007). *In dienst voor Napoleons Europese droom: de verstoring van de plattelandssamenleving in Weert*. Leuven, Davidsfonds.

Wessels, P. (2004). *Ziegeleien an der Ems. Ein Beitrag zur Wirtschaftsgeschichte Ostfrieslands* Aurich, Ostfriesische Landschaft.

Willcox, W. F. (1931). *International migrations. Volume II Interpretations*. New York, National Bureau of Economic Research.

Willemsen, R. (1988). *Enkhuizen tijdens de Republiek. Een economisch-historisch onderzoek. Naar stad en samenleving van de 16e tot de 19e eeuw*. Amsterdam, Amsterdamse Historische Reeks.

Williams, B. G. (2001). *The Crimean Tatars: the diaspora experience, and the forging of a nation*. Leiden, Brill.

Wilson, P. H. (2003). 'Prusso-German social militarisation reconsidered', in *Preussen, Deutschland und Europa 170-12002*, edited by J. Luh, V. Czech and B. Becker. Groningen, INOS**:** 355-384.

Wilson, P.H. (2007). 'German military preparedness at the eve of the revolutionary wars', in *Warfare in Europe, 1792-1815*, edited by F.C. Schneid. Aldershot, Ashgate: 415-30.

Wimmer, J. (1970). 'L'infanterie dans L'armée Polonaise aux XVe-XVIIIe siècles', in *Histoire militaire de la Pologne. Problèmes choisies*, edited by W. Bieganski, P. Stawecki and J. Wojtasik. Warsaw, MON: 78-94.

Wolf, J. B. (1979). *The Barbary coast: Algiers under the Turks, 1500 to 1830*. New York, Norton.

Woodward, D. (1978). *Armies of the World 1854-1914*. London, Sidgwick & Jackson.

Wrigley, E. A. (1978). 'A simple model of London's importance in changing English society and economy 1650-1750', in *Towns in societies: essays in economic history and historical sociology*, edited by P. Abrams and E. A. Wrigley. Cambridge, Cambridge University Press**:** 215-244.

Zanden, J. L. van (2009). *The long road to the Industrial Revolution. The European economy in a global perspective 1000-1800*. Leiden and Boston, Brill.

Zeitlhofer, H. (2008). 'Zwei Zentren temporärer kontinentaler Arbeitsmigration im Vergleich. Der Böhmerwald und das Friaul um 1900', in *Übergänge und Schnittmengen. Arbeit, Migration, Bevölkerung und Wissenschaftsgeschichte in Diskussion*, edited by A. Steidl. Vienna, Böhlau**:** 45-74.

Zeitlhofer, H. (2009). 'Bohemian migrants: internal, continental and transatlantic migrants in Bohemia at the beginning of the twentieth century', in *European Mobility. Internal, international, and transatlantic moves in the 19th and 20th Centuries*, edited by A. Steidl. Göttingen, V&R Unipress**:** 189-206.

Zelinsky, W. (1971). 'The hypothesis of the mobility transition'. *The geographical review* 61(2): 219-249.

Zürcher, E. J., Ed. (1999). *Arming the state: military conscription in the Middle East and Central Asia, 1775-1925*. London, Tauris.

ABOUT THE AUTHORS

Jan Lucassen (1947) is Senior Researcher at the International Institute of Social History ((IISH) in Amsterdam and professor at the Free University of Amsterdam. jlu@iisg.nl

Leo Lucassen (1959) is professor of Social History at the University of Leiden. L.a.c.j.lucassen@hum.leidenuniv.nl

IISH Research Papers

1. Tony Saich, Frank Pieke, *The Chinese People's Movement Spring 1989: Some Initial Impressions*. Amsterdam, 1989
2. Ursula Langkau-Alex, *"Der Kampf für die Demokratie und den Frieden". Die Debatte in der Sozialistische Arbeiter-Internationale 1938/1939*. Amsterdam, 1991. Zweite, um Literatur erweiterte Auflage 1992.
3. Jan Lucassen, *Dutch Long Distance Migration. A Concise History 1600-1900*. Amsterdam, 1991
4. Jan Lucassen (red.), *Symposium Racisme en Arbeidsmarkt: IISG september 1991*. Amsterdam 1992.
5. C.H. Wiedijk (in samenwerking met L.J. Altena, J.M. Peet, G.J. Schutte en H.E.S. Woldring, *Kalendarium "Honderd jaar sociaal 1891–1991"*. Amsterdam, 1992.
6. Marcel van der Linden en Jan Willem Stutje, *De Nederlandse vakbeweging, haar basis en de staat. Een lange-termijnperspectief*. Amsterdam, 1992.
7. Tjebbe van Tijen, *Je bevrijden van de drukpers. Jongeren en hun eigen pers in Nederland: 1945-1990. Met een bibliografisch aanhangsel over de tijdschriften van Provo, Kabouter, de culturele underground- en kraakbeweging, vrije stadskranten en punkfanzines*. Amsterdam 1993.
8. Emile Schwidder, *Selected Bibliography on "Labour and the Law in Historical Perspective"*. Amsterdam 1993.
9. Jan Gielkens, *Books and articles on German labour law. Selected Bibliography*. Amsterdam 1993.
10. Larry Peterson, *The Free Labor Unions and Arbeiter-Unionen in Rhineland-Westphalia, 1920-1924: Statistical Sources*. Amsterdam, 1993.
11. Gijs Kessler, *Vakbonden in verandering. Een verkennende studie naar de vakbondsontwikkeling in Rusland na 1985*. Amsterdam 1994.
12. Ursula Langkau-Alex, *Asiel en ballingschap in Nederland*. Amsterdam 1994.
13. Marcel van der Linden. *Social Democracy and the Agrarian Issue, 1870-1914: Notes for discussion*. Amsterdam 1994.
14. Reinier Deinum, *'Verenigd door Vaart'. Gids van de bronnen betreffende watertransport en havenbedrijven in het IISG en NEHA*. Amsterdam 1994.
15. Jacques van Gerwen and Jan Lucassen, *Mutual Societies in the Netherlands from the Sixteenth Century to the Present*. Amsterdam 1995.
16. Sander Vis, *Survey of the Archival Sources Concerning Migration and Settlement Held at the IISH*. Amsterdam 1995.
17. Gijs Kessler, *Trade Unions in Transition. Moscow 1994, a case study.* Amsterdam 1995.
18. Patricia Kennedy Grimsted, *Displaced Archives on the Eastern Front: Restitution Problems from World War II and its Aftermath*. Amsterdam 1995.
19. Kees Mandemakers, *Negen classificaties voor 19e en 20e eeuwse beroepstitels*. Amsterdam 1995.
20. Marcel van der Linden, *Marx and Engels, Dutch Marxism and the "Model Capitalist Nation of the Seventeenth Century"*. Amsterdam 1995.
21. Adam Conroy, *Christiania: the Evolution of a Commune*. Amsterdam 1996.

22. Flemming Mikkelsen, *Working-class formation in Europe: In search of a synthesis*. Amsterdam 1996
23. Gijs Kessler, *The "schools of communism" under neo-liberal reform. Russia's traditional trade union movement in the transition to a free market.* Amsterdam, 1996.
24. Alfons Fransen, *Verzekering tegen Seerovers en Godts weer. Een onderzoek naar de geschiedenis van de zeevarende beurzen, circa 1635-1815*. Amsterdam, 1996.
25. *Port Reports prepared for the Conference Comparative International History of Dock Labour, c. 1790-1970, Amsterdam, 13–15 November 1997*. 3 vols. Amsterdam, 1997.
26. Patricia Kennedy Grimsted, *Archives of Russia Five Years After: 'Purveyors of Sensations' or 'Shadows Cast to the Past'?* Amsterdam, 1997.
27. Leo van Rossum, *The Former Communist Party Archives in Eastern Europe and Russia: A Provisional Assessment*. Amsterdam, 1997.
28. *Het Italiaanse complex. Crisis in de Europese politiek: de gevallen Italië en België*. Amsterdam, 1997.
29. Ursula Langkau-Alex, *The International Socialist Labor Movement and the Elimination of the "German Problem". A comparative view on ideas, politics, and policy of the French, English, Swedish and US Labor Movement.* Amsterdam, 1998.
30. Klaus Misgeld, *Trade Union Neutrality? The Swedish Trade Union Confederation (LO) and the Trade Union International at the Beginning of the Cold War*. Amsterdam, 1998.
31. Marcel van der Linden, *Producer Cooperatives:The Historical Logic of Workers' Organizations (I)*. Amsterdam, 1998.
32. Marcel van der Linden, *Consumer Cooperatives:The Historical Logic of Workers' Organizations (II)*. Amsterdam, 1998.
33. *A Working Guide to Sources on Historical Utopian Experiments in the Western World at the Internationaal Instituut voor Sociale Geschiedenis, Amsterdam*. Compiled by Nienke van Wijk. Edited by Huub Sanders. Amsterdam, 1998.
34. Marcel van der Linden, *Metamorphoses of European Social Democracy*. Amsterdam, 1998.
35. Jan Gielkens, *Maranga mai te hunga mahi. De Internationale internationaal*. Amsterdam, 1998.
36. Simone Goedings, *EU Enlargement to the East and Labour Migration to the West. Lessons from previous enlargements for the introduction of the free movement of workers for Central and East European Countries.* Amsterdam, 1999.
37. Nicola Hille, *Zur Darstellung und dem Wandel von Gewalt auf russischen und sowjetischen Plakaten der Jahre 1917-1932*. Amsterdam, 1999.
38. Hein Wiedijk, *Het 'nieuwe socialisme' van de jaren dertig. Frans en Nederlands neo-socialisme gedurende de grote depressie*. Amsterdam, 2000.
39. Jan Lucassen, *In Search of Work*. Amsterdam 2000
40. *Free Love and the Labour Movement. Papers presented at the workshop 'Free Love and the Labour Movement', International Institute of Social History, Amsterdam, 6-7 October 2000.* Amsterdam, 2001

41. Marcel van der Linden and Jan Lucassen, *Work Incentives in Historical Perspectives. Preliminary Remarks*. Amsterdam, 2001.
42. Patricia Kennedy Grimsted, *The Odyssey of the Turgenev Library from Paris, 1940-2002. Books as Victims and Trophies of War*. Amsterdam 2003.
43. Jelle van Lottum, *Immigranten in Nederland in de eerste helft van de 19e eeuw. Een onderzoek op basis van de Utrechtse volkstellingen van 1829 en 1839* . Amsterdam 2004.
44. Sergey Afontsev, Gijs Kessler, Andrei Markevich, Victoria Tyazhel'nikova and Timur Valetov, *Urban Households in Russia and the Soviet Union, 1900-2000. Size, Structure and Composition*. Amsterdam, 2005.
45. Klaus Misgeld, *A Complicated Solidarity. The Swedish Labour Movement and Solidarność*. Amsterdam, 2010.
46. Jan Lucassen and Leo Lucassen, *The mobility transition in Europe revisited, 1500-1900: Sources and methods*. Amsterdam, 2010.