

# Overseas Passenger Fares and Emigration from Germany in the Mid-Nineteenth Century

Raymond L. Cohn and Simone A. Wegge

*Mid-nineteenth-century German immigrants who settled in the United States and other faraway destinations faced the formidable hurdle of crossing an ocean and coming up with the resources to pay for it. Using new data from German emigrant newspapers we provide more concrete information on the fares to various international ports, and how they varied seasonally and by method of transport (sail or steam). We do not observe fares declining in the late 1840s and 1850s. Unskilled German workers could not easily afford such a voyage, providing perspective on why German immigration to the United States was positively self-selected.*

[I]t is surprising how little we know about the cost of moving people, when we know so much about the cost of moving goods. (Hatton and Williamson 2005: 35)

Substantial knowledge exists concerning antebellum immigration from Europe with one exception. Little is known concerning the oceanic fares paid by immigrants or, in fact, any passengers. In this article, we present new estimates of the intercontinental fares paid between 1846 and 1857 by German passengers to East Coast, Gulf Coast, and West Coast US and Canadian ports, as well as to those in South America and Australia. We also econometrically investigate the differences that existed in the fares among destinations. Though a few other estimates of fares for crossing the Atlantic exist, no other researchers have provided data on fares to other places nor have explained their differences. Here, fares are provided not only for adults but also for children, and often are presented for first class, second class, and steerage. They are given for travel from various European ports because Germans could leave from Hamburg, Bremen, Rotterdam, Antwerp, or Le Havre. The period we cover is interesting because it encompasses a range of events. First, German immigration to the United States increased by a substantial amount, from 57,500 in 1846 to 215,000 in 1854 (Carter et al.: 2006, Series Ad111).<sup>1</sup> Second, gold rushes occurred in both California and Australia. Third, steamships became more common for ocean voyages and they began to carry steerage passengers by the latter part of our period, at least from certain ports. The only comprehensive data that currently exist on intercontinental antebellum fares are provided by Killick (2014) for voyages between Liverpool and

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1. Between 1845 and 1860, Germans comprised one-third of all immigrants to the United States.

Philadelphia.<sup>2</sup> Killick's study is quite valuable but does not apply to ships leaving from German ports nor does his data source allow him to examine routes to other world ports, though competition suggests fares were probably similar to other East Coast US ports. Thus, the data and analysis presented here substantially broadens our knowledge concerning the cost of intercontinental travel for individuals in the 1840s and 1850s.<sup>3</sup>

Though networks that developed between previous immigrants and potential immigrants were an important factor in immigration, we show in this article that during the 1840s and 1850s, fares relative to incomes were such that few Germans could afford to emigrate to anywhere other than the eastern part of North America. Our argument can be explained using a simple economic model. Information on fares was critical for emigrants because economists view the migration decision as being affected by the expected income in the destination country relative to the expected income at home (present and future). Important to this decision is the total cost of moving from one place to the other. If this cost was sufficiently large to outweigh the gain from moving, then individuals would choose not to move. For other travelers, a similar idea held. An otherwise beneficial journey might not be undertaken if the cost of the journey was too high. Similarly, a journey would not be undertaken if the cost was such that a potential emigrant could not afford it, even if otherwise the benefits exceeded the costs. We find this latter factor to be of importance for explaining the characteristics of antebellum German emigration. We argue that many Germans, but not all, could afford the journey to the East Coast of North America, but fares to other ports relative to incomes kept most Germans from going to any other destination. In short, our data on intercontinental fares explain key features of antebellum German emigration.

## Description of the Data

The data for this article come from two German newspapers, which as a service for their readers published fare information. One obvious issue is the accuracy of these data. This section shows how thorough the newspapers were in investigating and discussing every aspect of emigration, whether positive or negative. To us, this trait implies that the fare information published in the newspapers was accurate. In addition, the published fares varied over time, a factor that suggests the newspapers were presenting current data on actual fares.<sup>4</sup> In any case, fares based on newspaper data are likely the best that can be developed. Company records, which would provide

2. Specifically for German emigrants, Grubb (1992: 184) finds very high fares for those traveling to Philadelphia in the years between 1815 and the early 1820s, a period when Germans were trying to escape widespread crop failures. Wegge (1998: 975) finds lower fares from Bremen to New York City between 1832 and 1857, averaging about 30 Thalers (Engelsing 1961). Other researchers provide fare data for later periods, for specific years, or for cabin passengers. See Galenson (1984: 18, table 1), Dupont et al. (2016), and Keeling (2012: xviii, 3).

3. More complete information exists for freight rates; e.g., see Harley (1988).

4. No proof exists that any migrant paid the published fares. In fact, anecdotal information has been presented that migrants could sometimes show up at the ship and obtain low last-minute fares, though it

detailed fare data and which Killick (2014) used, are not known to have survived for sailing ships from Germany. Emigrant letters could be examined but any sample of fares that could be obtained would be small and of unclear accuracy. In fact, almost all the information we currently have on fares during this period is taken from either a newspaper issue or from an emigrant guide, both of which relate to a specific point in time.<sup>5</sup> We believe that presenting and analyzing the data published by the German newspapers over a period of about 10 years represents a substantial improvement over what is currently available.<sup>6</sup>

In Germany, in 1846, Günther Fröbel, a printer, publisher, and emigration agent, began publishing one of the main emigration newspapers, the *Allgemeine Auswanderungs-Zeitung* (AAZ; General Emigration Newspaper). Though he published this newspaper out of the city of Rudolstadt, an interior city located in the current German state of Thuringia, roughly 250 kilometers east of Frankfurt, Fröbel was known as a well-informed emigrant agent.<sup>7</sup> Throughout its 26 years of circulation, the AAZ provided advice, lists of ships that were traveling overseas, articles on emigrants' experiences, information on what to expect at different destinations, and reports on all sorts of regions around the world in which Germans were settling. Regular readers of this newspaper were primarily people involved in the business of migration including agents, shipping brokers, business people, and government authorities.

For this study, we have gone through the AAZ issues for the years from 1846 to 1856 and then through the *Deutsche Auswanderer-Zeitung* (German Emigrant Newspaper) for 1857. This second newspaper appeared between 1852 and 1875 and was published in Bremen.<sup>8</sup> We recorded any mention we could find of passenger ship fares. Most of the routes started in Hamburg or Bremen, but we also have information on journeys beginning in inland cities and going through Le Havre, Antwerp, and Rotterdam. Much of the information on ship fares that we recorded came through advertisements

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is unclear how typical this type of activity was. See the AAZ paper from August 9, 1847, No. 45, p. 348. Also see the discussion in Hansen (1940: 194–98). We further consider this issue in the following text.

5. For examples, see Hansen (1940: 198) and the fare data in Adams (1932).

6. This approach is supported by the work of Dupont, Keeling, and Weiss (2016) who investigate for cabin fares the relationship between the advertised fare (they use the minimum fare advertised for cabin travel) and the fare calculated based on average revenue from all cabin passengers for late in the nineteenth century. They find that both types of fares yield similar trends. Because a range of first-class fares existed during the later period, they are not able to determine whether the advertised fares were essentially identical to the revenue-based fares.

7. E.g., many times Fröbel accompanied emigrants to the ports of Bremen and Hamburg (Schäfer 2004: 49; Taszus 2003: 60). Besides the AAZ, his publishing house was very involved in the publication of books on migration and the destinations of migrants, issuing 380 titles in German between 1842 and 1852 (Schäfer 2004: 48). The editors he employed for the AAZ newspaper were very familiar with the United States (Taszus 2003: 59). Subscription to the AAZ was widespread, with about 580 subscribers in cities in northern Europe (outside Rudolstadt) and the United States (Schäfer 2004: 52–53). For more details about the remarkable life of Günther Fröbel, see Taszus (2003) and Schäfer (2004).

8. The use of one year of the second newspaper increases the amount of data we have because ads in the AAZ became very sparse after 1857. At least six other emigrant publications originating out of Germany existed between the 1840s and 1880s, but none of them lasted for more than six years, unlike the two we are using that were each in print for more than 20 years.

[14] **Dampfschiff nach New-York.**

Da das Dampfschiff **HELENA SLOMAN** zur contractlich bestimmten Zeit von dem Gräner und Fabrikanten nicht abgeliefert worden ist, so wird es nicht am 6. April, wie angezeigt, sondern wahrscheinlich erst gegen Ende April von hier expedirt werden können.

**Knorr & Janssen.**

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**Passagier-Annahme bei G. Froebel in Rudolstadt.**  
**Uebersicht der billigsten (Segelschiff-Zwischendeck-) Ueberfahrtspreise für April 1850.**

	nach	Newyork	New-Orleans	Quebec	Galveston	Baltavia.	Rio Grande	Abelaide (Südaustral.)	Francisco (Californien)
<b>Hamburg</b>	(incl. Proviant) 61. 50%	40 34	40 34	30 24	48 40	80 40	54 27	76 38	160
(incl. Proviant) Dampfschiff	,,	50 44	,,	,,	,,	,,	,,	,,	,,
<b>Bremen</b>	(incl. Proviant) 57. 50%	31 26	35 30	33 28	36 31	60	—	70 35	150

**Bemerkungen.**

Küper den hier mitgetheilten billigsten Gelegenheiten, die es zur Zeit gibt, stehen dem Unterzeichneten noch eine Reihe anderer zu Gebote, welche bei etwas höherer Haltung ungeleiblichere Verpflegung zuzusetzen. — Von allen hierbei gebhörigen Mittelsungen wird nur mit strengster Discretion Gebrauch gemacht. Die Redaction der Ausw. Ztg. nennt keinen Einseuder, und Unterzeichnetes überläßt die Wahl unter den vorliegenden Offerten (incl. der höheren) freis den Passagieren selbst.

**Allg. Ausw. Bureau in Rudolstadt.**

FIGURE 1. 1850 advertisement for the steamship Helena Sloman.



[1] **Post-Dampf-Schiffahrt**  
zwischen  
**NEW-YORK UND BREMEN.**

Für die Passagiere in der ersten Kajüte der amerikanischen Dampfschiffe **WASHINGTON & HERMANN** sind vorläufig nachstehende Abänderungen getroffen worden.

Im Salon ist der Passage-Preis 190, (es befinden sich daselbst Schlafzimmer, Staterooms mit zwei Schlafstellen.)

In der Kajüte unter dem Salon 160, (Zimmer enthaltend 3 und 6 Schlafstellen.)

An Gepäck haben die Passagiere der ersten Kajüte 20 Cubikfuß Fracht frei, Kinder unter 12 Jahren zahlen die Hälfte und Domestiken 10. Gepäck für dieselben 10 Cubikfuß.

Passage-Preis in der zweiten Kajüte 100, Kinder die Hälfte.

Den Passagieren der zweiten Kajüte sind nach Juli nur 10 Cubikfuß Fracht frei erlaubt. Kindern die Hälfte. Ueberfracht 25 Doll. pr. 40 Cubikfuß.

Wegen Fracht und Passage beliebe man sich zu melden bei **C. A. Heineken & Comp.** in Bremen. **Jos. Rodn. Croskey** in Southampton. **Wm. Iselin** in Havre.

Fernere Auskunft sind zu ertheilen bereit: Herren **Kühn & Comp.** in Köln; **C. Fay** in Aachen; **J. H. Albers** in Barmen; **G. H. Goundie** in Basel; **F. A. Sieland** in Leipzig; **Wih. Löwenthal** in Berlin; **Phaland & Dietrich** in Berlin.

Die verschiedenen Administrationen übernehmen die Beförderung von Gütern und Besorgung der Asscuranz auf dieselben, sowie Nachnahme der Speesen. — Nähere Auskunft für Mitteldeutschland ertheilt das **Allg. Auswanderungs-Bureau** in Rudolstadt.

Plätze der zweiten Kajüte sind in der Regel schon 2 Monate vor der Abfahrt sämmtlich vergeben.

FIGURE 2. 1850 advertisement for the postal steamships Washington and Hermann.

on the last page of the newspaper, where different shipping companies and/or agents listed passage fare amounts for various routes. For several years, the editor of the AAZ newspaper also provided a table listing all sorts of different routes and the cheapest fares available on them, and these tables serve as a second source of information on fares. Figures 1 and 2 provide pictures of some of these advertisements. Figure 1 shows an ad for the steamship *Helena Sloman* along with a table on the cheapest fares from Hamburg and Bremen going to different destinations in April 1850. Figure 2

shows a firm's advertisement for travel in 1850 on the postal steamships *Washington* and *Hermann*.<sup>9</sup>

Reading through these emigration newspapers is a bit like bearing witness to the development of an expanding business and activity, namely the transportation of people east to west and/or south. In 1846, the first year of publication, regular and consistent passenger service from the European continent was still not quite established, and the AAZ newspaper explained that captains needed to fill their empty ships with passengers.<sup>10</sup> By 1847, there were many ads showing that regular service had been established. In 1850, there was a noticeable uptick in the number of advertisements announcing regularly scheduled sailings between Europe and the United States. At this point, there were also more ads claiming passage on "fast" sailing ships, presumably trying to compete with the new steamships. Over the 1850s, more and more ads were placed regarding passage on steamships. By 1855, advertisements for fares on sailing ships dropped off and the paper no longer printed a fare table. Articles in January and April 1855 explained that fewer shipping companies were inclined to offer the prices published in the tables. By 1858, there were only a few ads for sailing ships, so we stopped our data collection after that year.<sup>11</sup>

Despite any possible conflicts of interest that arose from the publisher Günther Fröbel's work as an agent, the paper seemed ready to educate emigrants on all the various aspects of moving overseas. Ports were a new challenge for most emigrants, many of whom had never ventured very far from their home village. One ad from December 1, 1846, gave information about where to stay in ports, when the cost of staying in the ports was included in the passage price, and how to survive cheaply before setting sail.<sup>12</sup> While in 1846 detailed advice was being provided about what emigrants were paying for provisions separately from the passenger fare, by the middle of 1847 there was no mention of the money for provisions; it seems that provisions had been subsumed in the total price.<sup>13</sup> The newspaper also discussed the issues concerning prepurchase. Various factors on the supply side or the demand side could make the actual price at the port of embarkation quite different from the price

9. The ads for [figure 1](#) were published in the March 23, 1850, No. 36 issue of the AAZ. The ad in [figure 2](#) was published in the October 19, 1849, No. 84 issue of the AAZ.

10. See the AAZ edition from December 1, 1846, p. 72. Here the article lists also the exact contents of provisions passengers would get on board.

11. The decline in ads may be related to the steep drop in German immigration to the United States after 1854: 215,009 Germans entered the United States in 1854, with a drop to 71,918 in 1855. See Carter et al. (2006, vol. 1: 560–62, series Ad111) and Grubb (2011: 377).

12. See AAZ issue for December 1, 1846, section titled "Intelligenzblatt zur Auswanderungszeitung," Ad #4.

13. By 1848, provisions were clearly included in the price. See the AAZ paper for February 21, 1848, *Intelligenz Blatt* #8, pp. 121–24. In the ports controlled by the Hanse city of Bremen, ship owners had to provide enough food and water for 90 days, something mandated already in 1832, in the Emigration Act of the city of Bremen, "largely copied from the American Passenger Act of 1819" (Armgorst 1991: 42). In the short run these regulations may have contributed to Bremen's growing popularity over the 1840s and 1850s as a port of embarkation for emigrants. Other port cities gradually followed suit; Hamburg, for instance, a competitor to Bremen in terms of passage to New York only after 1850, passed protective legislation in 1837 (Assion 1991: 23).

emigrants had expected, so prepurchase was recommended for those wanting a stable passage price.<sup>14</sup>

Besides data on fares, the German newspapers contained a wide variety of other information for potential emigrants. The AAZ had information on the cost of getting to an embarkation port by steamship and railroad. Similarly, potential emigrants were given information on travel options in their destination countries, especially the United States. Advice on maintaining personal safety in getting to the port, on the ships, and in the United States was provided. Specific groups, such as unaccompanied women, potential farmers, and those wishing to settle in California after the gold rush began, were given guidance as well. The papers also contained ads for many immigrant advice books for a variety of destinations in both North and South America. In sum, the German newspapers covered not only fares but all other aspects of the immigrant experience. For the purposes of this paper, we believe the comprehensive and detailed nature of the advice and information presented in the newspapers provide further evidence that the published fare data are reasonably accurate.

### Construction of Monthly Fare Data

We obtained the following information from the German newspapers: the date of the newspaper, the location of the item in the paper, the type of information (such as advertisement, article, etc.), the year and month of the voyage referenced, the route, the type of ship (sail or steam), the class and age of travel, and the fare. The latter item also included the currency in which the fare was expressed and whether the fare included factors such as provisions and head taxes. Thus, one ad or article usually gave rise to several pieces of data because multiple embarkation and destination ports were often listed as were various classes of travel. Most of these data were for ships leaving from Hamburg or Bremen but some provided fare information for ships leaving from Rotterdam, Le Havre, or Antwerp. Several entries listed fares where the immigrant's journey started in an interior city, mainly Mainz or Cologne, and ended in one of the destination ports. Destination ports were New York City, Valdivia (Chile), Rio Grande (Brazil), South Brazil, Adelaide (Australia), Quebec, San Francisco, New Orleans, Galveston, and Indianola (Texas). Fares were given for adults, children, and "average," which we take as being the average adult fare. The fares were given in the currency used at the embarkation port.<sup>15</sup> In total, we have 3,120 pieces of data. These run from 1846 into 1857, though most data cover 1848 through 1853.

We used these raw data to construct monthly fares by route, mode of travel, class, and age. In doing so, we encountered three issues that needed to be addressed. First, while most data were in Prussian Thalers, a few fares were quoted in other currencies because Germany was not yet unified. We converted all the currencies to the Reich

14. See AAZ papers for April 20, 1847, and August 9, 1847, No. 45, p. 348.

15. If the money cost for provisions and head tax were provided separately, they were combined with the basic fare to develop an overall figure.

Thaler (“Preussische Cour. Thaler”) or simply Thalers, as we will refer to it.<sup>16</sup> Then, one Thaler equaled \$0.67. A second issue concerns two facts: numerous issues of the newspapers published fares and more than one ship left each month, especially when considering voyages to the United States. Thus, it was not unusual for our data to contain different published fares for the same route during the same month of travel. When this occurred, we used the average of all the fare data we had. For example, nine different issues of the newspaper advertised the adult steerage fare from Hamburg to New York City for May 1850. In four issues, the advertised fare was 36 Thalers, in two issues it was 40 Thalers, and in one issue each, the fare was 42, 45, and 48 Thalers. The average of these nine advertised fares is 39.89 Thalers, which is the fare we use for the Hamburg to New York route for May 1850.<sup>17</sup> The final issue involves the specific route traveled. Suppose a migrant wished to travel from Hamburg to New York City. Some individuals embarked on a ship in Hamburg and sailed directly to New York City. Others went from Hamburg to an English port and then on to New York City. Because none of the ships leaving Bremen stopped in England, for consistency we only included the direct Hamburg to New York ships. With these issues in mind, we developed average monthly fares from the information provided in the German newspapers. Table 1 provides our calculated monthly fares for travel on the most popular routes, those from Hamburg and Bremen to New York City.

## Fares for German Travelers, 1846 to 1857

This section examines the average fares by route for the entire 1846 to 1857 period by class of travel. These figures are shown in tables 2 and 3 for routes from Hamburg and Bremen, respectively, the cities for which we have the most data. The listed fares should be treated with some caution because they are the simple average of the monthly fares described in the previous section of this article.<sup>18</sup> For

16. As noted in the text, most of the fares we recorded were in Prussian Thalers. A few fares were in other currencies, and we converted these into Prussian Thalers. These are the conversion rates we used: (1) 1 Louis d’or Thaler = 1.1 Prussian Thalers, see Rittman (1975: 410), Seyd (1868: 319); (2) \$1 (US) = 1.5 Prussian Thalers, see AAZ, July 27, 1849, No. 60, p. 1; (3) 1 Thaler Gold (Bremen) = 1.1 Prussian Thalers, see Seyd (1868: 319–20); (4) 1 Florin (German) = 0.5714 Prussian Thalers, see Seyd (1868: 313–15), esp. p. 315; (5) 1 £ Sterling = 7.24 Prussian Thalers, see Officer (2017), where a British £ ranged in value between \$4.79 and \$4.91 from 1845 to 1857. We took the midpoint of \$4.85. Then we calculated the following: £1 = \$4.85 = 4.85/0.67 Pr. Thaler = 7.24 Pr. Thaler. Alternatively, Seyd (1868: 29) values the pound sterling at 6.81 Thaler; (6) 1 Florin (British) = 2 shillings, whereas 2 shillings = 1 tenth of a £ Sterling, whereas 1 tenth of a £ Sterling = 0.724 Prussian Thalers. See Wikipedia, “Two Shilling Coin”; Seyd (1868: 29) states that the pound sterling is 6.81 Thaler; (7) 1 Franc = 0.286 Prussian Thalers, see AAZ, July 27, 1849, No. 60, p. 1.

17. To the best of our knowledge, no accepted method of calculating the “correct” monthly fare exists when one has varying fare data from several newspaper issues. We have examined how our monthly estimates change if other methods are used, such as simply averaging the high and low fare or using the minimum fare or using the modal fare. In all cases, the monthly fares change by no more than one to two Thalers.

18. Note that the estimates provided in tables 2 and 3 likely understate the actual average fare paid by all passengers. Because we do not have monthly volume figures, the summer months—where passenger

**TABLE 1.** *Monthly adult sailing-ship steerage fares from Hamburg and Bremen to New York City, 1846–55 (Thalers)*

<i>Year and Month</i>	<i>Hamburg</i>	<i>Bremen</i>
Mar. 1846	40.00	
Feb. 1847		30.80
Apr. 1847		38.00
Oct. 1848	32.00	25.85
Nov. 1848	35.00	24.20
Mar. 1849	32.00	32.15
Apr. 1849	42.00	36.85
May 1849	42.50	40.70
June 1849	43.50	40.70
Aug. 1849	40.00	37.40
Sept. 1849	32.00	30.80
Oct. 1849	26.50	26.40
Mar. 1850	34.00	34.65
Apr. 1850	38.33	35.75
May 1850	39.89	34.65
June 1850	39.17	
July 1850	32.67	30.25
Aug. 1850	31.67	28.60
Sept. 1850	30.00	28.60
Oct. 1850	30.00	28.60
Jan. 1851	35.00	30.80
Feb. 1851	32.00	29.70
Mar. 1851	30.67	
Apr. 1851	34.13	35.75
May 1851	36.60	36.30
June 1851	35.57	33.00
July 1851	35.53	31.90
Aug. 1851	34.00	
Sept. 1851	33.25	
Oct. 1851	32.75	30.80
Nov. 1851	30.00	28.60
Dec. 1851	30.00	
Feb. 1852	32.00	32.00
Mar. 1852	32.14	31.90
Apr. 1852	35.67	39.60
May 1852	35.90	41.80
June 1852	36.50	37.40
July 1852	34.67	33.00
Sept. 1852	34.00	
Oct. 1852	33.33	30.80
Nov. 1852	32.00	28.60
Feb. 1853	34.50	
Mar. 1853	33.50	40.70
Apr. 1853	39.20	42.90
May 1853	40.00	44.00
June 1855	36.00	
Oct. 1855	36.00	

example, the average adult steerage fare given in [table 2](#) for the Hamburg to New York City route is 34.8 Thalers. Fares for specific months varied from this figure, as is

numbers were greater and fares were also greater (see following text)—receive lower weight than they should in calculating the averages.



**TABLE 2.** Average fares from Hamburg, by route and class (Thalers)

Destination	Years and Ship Type	First-Class Adult	Second-Class Adult	Adult Steerage	Child Steerage
New York City	Sail	93.1	48.2	34.8	29.3
	1846–55	(18.2) (16)	(8.2) (13)	(3.8) (45)	(3.7) (43)
New York City	Steam	147.4	80.5	60.8	46.3
	1846–57	(13.6) (14)	(15.1) (14)	(10.1) (26)	(4.7) (20)
New Orleans	Sail	104.0	48.8	39.2	33.2
	1846–53	(8.9) (5)	(1.1) (5)	(4.1) (29)	(3.7) (27)
Galveston	Sail	120.0	68.0	42.7	36.5
	1846–53	(0.0) (1)	(0.0) (1)	(2.9) (16)	(2.6) (15)
Indianola	Sail	—	—	44.6	38.7
	1851–53			(3.8) (8)	(4.4) (7)
Quebec	Sail	48.0	36.0	32.4	26.5
	1849–53	(0.0) (1)	(0.0) (1)	(2.4) (19)	(2.4) (17)
San Francisco	Sail	380.0	325.0	150.6	80.0
	1849–51	(25.8) (10)	(0.0) (10)	(15.7) (16)	(0.0) (12)
Adelaide	Sail	220.0	160.0	79.7	40.6
	1847–53	(0.0) (8)	(0.0) (8)	(12.4) (25)	(6.1) (24)
S. Brazil	Sail	150.0	75.0	54.1	28.2
	1846–53	(0.0) (2)	(0.0) (2)	(2.6) (28)	(1.3) (26)
Valdivia	Sail	—	—	77.5	41.0
	1849–50			(5.6) (5)	(2.1) (5)

Note: Each entry is the simple average of the monthly fares constructed as described in the text. The first number in parentheses below each entry is the standard deviation. The second is the number of months for which fares are available.

apparent from the data shown in [table 1](#). The variation in fares is considered in the next section.

The most common destination for German emigrants was New York City, and getting there was expensive for many Germans. For an adult traveling in steerage on a sailing ship, the average fare was 33 to 35 Thalers, about \$23. Given the longer distance, it is not surprising that this number is somewhat higher than the £3.5 to £4 figure (equivalent to 25 to 29 Thalers) found by Killick (2014: [table 2](#)) for passengers traveling from the United Kingdom to Philadelphia during the late 1840s and early 1850s. A child's steerage fare on the German ships was five to six Thalers (about \$4) lower.<sup>19</sup>

19. No consistent age limit denoted a child. Children were most frequently defined as those either under 10 years of age or under eight years of age. In a few cases, different fares were given for children of different ages. In some cases, a different fare was listed for infants younger than one year, and sometimes this fare was zero.

**TABLE 3.** *Average fares from Bremen, by route and class (Thalers)*

<i>Destination</i>	<i>Years and Ship Type</i>	<i>First-Class Adult</i>	<i>Second-Class Adult</i>	<i>Adult Steerage</i>	<i>Child Steerage</i>
New York City	Sail	83.0	37.8	33.6	27.7
	1847–53	(1.7) (10)	(3.7) (6)	(5.1) (37)	(4.5) (25)
New York City	Steam	174.9	100.2	61.8	47.0
	1847–57	(37.3) (32)	(15.4) (23)	(12.5) (11)	(2.0) (10)
New Orleans	Sail	85.8	40.7	35.5	29.5
	1847–53	(3.0) (5)	(0.0) (3)	(4.1) (31)	(3.2) (21)
Galveston	Sail	88.0	41.8	38.3	31.6
	1848–53	(0.0) (5)	(0.0) (3)	(2.5) (24)	(1.6) (15)
Indianola	Sail	—	—	41.0	33.0
	1851–53			(4.4) (9)	(1.7) (7)
Quebec	Sail	—	—	33.9	28.5
	1849–53			(2.2) (14)	(1.4) (10)
San Francisco	Sail	275.0	—	162.4	82.5
	1849–52	(0.0) (9)		(12.0) (21)	(0.0) (1)
Adelaide	Sail	172.0	—	77.3	40.6
	1847–52	(14.8) (10)		(2.8) (27)	(2.6) (26)
Rio de Janeiro	Sail	—	—	69.3	—
	1849			(2.2) (5)	
Valdivia	Sail	—	—	66.9	—
	1850			(2.1) (5)	

Note: Each entry is the simple average of the monthly fares constructed as described in the text. The first number in parentheses below each entry is the standard deviation. The second is the number of months for which fares are available.

These fares explain why most of the Germans who emigrated were positively self-selected, that is, they were not poor farm laborers or servants but were somewhat better off (Cohn 2009: 114–15; Wegge 2002). A farm laborer in an average rural village in the Hesse-Cassel principality, for example, made on average 24 Thalers a year.<sup>20</sup> Few of them could afford to emigrate to the United States. Around 1850, even a master farm laborer in the Rhine area earned only about 60 Thalers per year in cash in addition to various in-kind goods, worth probably at least another 20 Thaler (Henning 1988: 104–5). While little information exists on the relative value of cash wages to in-kind payments for laborers, this bit of data may be a decent estimate, as other calculations show.<sup>21</sup> Wages had perhaps increased somewhat by 1858 when a wage survey on artisans and laborers in the city of Kassel was taken. Laborers in this

20. This is calculated from a village survey done in Hesse-Cassel around 1856 to 1858. See Hesse-Cassel, Bestand H3. All the wage figures in this paragraph ignore the in-kind portion of a laborer's income because this could not be used to help them emigrate.

21. Using village data from the principality of Hesse-Cassel for the Kreis (District) of Witzzenhausen, we examined information on in-kind payments and cash wages for farmhands on annual contracts. Detailed

city of 30,000 who ventured out to nearby farms made 70 Thalers annually whereas masons and carpenters made between 60 and 100 Thalers in cash.<sup>22</sup> Even for these latter individuals, paying for one transatlantic fare would have cost between one-third and one-half of their yearly income. Individuals could afford to emigrate at these prices, but these ratios were apparently near the limit of what was affordable.<sup>23</sup> For those who could come close to raising the funds, paying for the voyage was made more feasible in that they would typically liquidate all their goods and property before leaving and/or make use of an inheritance. Still, moving to the United States was not a cheap endeavor for Germans during the middle of the nineteenth century, and our analysis ignores the costs of getting to the coast and then reaching their American destination. By contrast, some individuals' ability to emigrate was increased due to remittances from abroad, though it is unclear how common these were for Germans then (Cohn 2009: 65–66). Because few poor Germans could ever afford to emigrate, however, it is quite possible that only a small amount of remittances were sent to the poorer Germans. Overall, the high cost of the fare relative to income explains why several (mainly) young adults traveled alone, why the main emigrant stream contained a relatively small number of children, why few poor Germans could leave, and why chain migration was so important.<sup>24</sup>

The data in [tables 2](#) and [3](#) yield additional insights. Traveling in first class was out of the range of most individuals as these fares averaged two to three times those of steerage. Even second-class travel was about 40 percent higher than steerage.<sup>25</sup> In general, travel from Bremen to New York City appears somewhat cheaper across the board, although we show later the difference is not statistically significant. Not shown in the tables is that fares for travel from the German ports to Baltimore and Philadelphia were the same as those to New York City. In the advertisements, these cities are seldom listed separately; instead, the listing is usually “NY/Phil/Bal” or “NY or Baltimore” with one fare listed. Similarly, fares from the German ports to Quebec were similar, or perhaps slightly lower, than those to New York City.<sup>26</sup>

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compensation was available for 33 of the 65 villages in this district. The median cash portion was 21 Thaler, and the total annual median compensation was 30 Thaler, with the percentage of in-kind thus 30 percent (Hesse-Cassel, Bestand H3, Kreis of Witzenhausen).

22. For the wage survey see Daube (1861: 33–39). Henning (1988: 104–5) contends that wages increased in the second half of the nineteenth century, so that by the 1870s the cash part of compensation for a master servant in the Rhine area was 90 Thalers.

23. Galenson (1984: 18, [table 1](#)) finds that fares from Great Britain and Ireland then were less than one-half of per capita incomes and frequently around 20 percent. For Germany, not only was the transatlantic fare higher than from Britain or Ireland, but the per capita income was lower (at least compared to Great Britain). German per capita GDP was 63 percent of that in Britain in 1850 and 60 percent in 1860 (calculated from Crafts 1984: 440, [table 1](#)).

24. On the prevalence of chain migration in German emigration, see Wegge (1998). The higher the cost of migration relative to incomes and savings meant that families or groups of siblings were less likely to migrate all at once and had to do so in smaller groups, with the earlier migrant groups sending money back to pay for tickets.

25. Due to the small number of monthly observations for travel from Bremen to New York City in second class, this percentage is based solely on the Hamburg to New York City data in [table 2](#).

26. This finding differs somewhat from that for Irish immigrants, who it is thought paid consistently less to travel to Canada than to the United States. See Jones (1973: 16) and Adams (1932: 154).

Though a few steamships left with Germans earlier, the Hamburg-American Line introduced steerage travel (initially from both Hamburg and Bremen) on steamships only in 1856. Our data show it was much more expensive to travel by steamship than by sailing ship. Fares for all three classes of travel for adults—first class, second class, and steerage—were up to twice as high on steamships as on sailing ships. Even the limited data for child steerage rates indicate these were two-thirds higher on steamships. Except for one very large steerage fare listed for June 1856, adult steerage fares on steamships averaged 57.7 Thalers (about \$39) throughout 1857, about 60 percent higher than the sailing-ship fare. Crossing the Atlantic Ocean on a steamship reduced the length of the voyage—and thus the opportunity cost associated with lost work days—from about 44 days to about 14 days, a reduction of nearly 70 percent. The benefit to those who could afford the higher steamship fare in the form of a much faster voyage appears to have slightly outweighed the higher fare. By contrast, the many emigrants who could not afford the higher steamship fare continued to provide a demand for sailing ships and these continued to cross the Atlantic with passengers until 1873. The steep differential in steerage fares between sailing ships and steamships thus helps to explain the slow transition that occurred to the steamship as the main passenger carrier in transatlantic travel (Cohn 2005).

Compared with other immigrant groups, Germans going to the United States were more likely to settle in the West and Southwest.<sup>27</sup> Ports on the southern coast of the United States were therefore of interest to the Germans. Individuals could sail to New Orleans and travel up the Mississippi River to reach cities such as St. Louis. Those heading to Texas could go through New Orleans or directly land at one of the Texas ports—Galveston or Indianola.<sup>28</sup> Steerage fares on sailing ships to these ports for both adults and children were consistently higher than those to New York City. In fact, the further west one traveled—and thus the longer the voyage—the higher the fare. New Orleans was two to five Thalers more expensive, Galveston another three Thalers, and Indianola another two to three Thalers. Thus, compared with an adult steerage fare of 33 to 35 Thalers fare to New York City, those adults going directly to Indianola paid 41 to 45 Thalers. The same relationship held for children sailing in steerage—28 to 30 Thalers to New York City, but 33 to 39 Thalers to Indianola. The evidence available on first-class and second-class fares again shows the same pattern—those sailing directly to New Orleans and Galveston paid more than those going to New York City.<sup>29</sup> The higher fares for the more western ports does not mean the demand

27. See Cohn (2009: 167–84). See also Wätjen (1932: 190–93), as the number of Germans entering the port of New Orleans was substantive. Using Wätjen's figures, in 1853–54 (a 12-month period) more than 35,000 entered New Orleans, compared to the average of 208,000 Germans entering New York during this same period.

28. Indianola was a port further west from Galveston, located on Matagorda Bay in Texas. Indianola was hit by a hurricane in 1875 and then destroyed by another in 1886. It is now a ghost town.

29. Thus, Germans going to the southern US ports may have been more strongly positively selected than those going to New York. "May have" because a German immigrant could reach the southern or western cities not only by sailing directly to, say, New Orleans, but also by landing at New York and then traveling internally in the United States. Whether Germans landing at the southern ports were more strongly positively selected cannot be tested without comprehensive data on where Germans located in

would necessarily be lower on these routes because it is possible the higher fares were offset by lower costs of internal travel upon reaching the United States.

Except for travel to Quebec, where fares were comparable or slightly lower than to New York, sailing fares for Germans going to ports other than the east and south coasts of the United States were substantially higher. South Brazil was next cheapest followed in ascending order by Valdivia (Chile) and Rio de Janeiro, Adelaide, and San Francisco. Adult steerage fares to South Brazil were about 50 percent higher than those to New York City.<sup>30</sup> While some Germans could have afforded this fare, previous emigration to Brazil was minor. Thus, remittances and assistance upon arrival from family and friends were possibly available to only a small group of Germans back home. In addition, the length of the voyage was longer than to the United States. All these factors made the total cost for this journey even more than the fare differential with the eastern United States. Fares to Valdivia and Rio de Janeiro were about twice as high, while those to Adelaide were more than twice as high, and those to San Francisco were about four times higher.

In most cases, first-class fares to the more distant ports were more than twice as high as steerage fares, a relationship similar to that for voyages to the eastern and southern United States. It is difficult to say anything concerning second-class fares due to limited data. Of interest is that child steerage fares to these distant ports were generally just more than half the adult steerage fare, a much smaller ratio than for voyages to the United States.<sup>31</sup> The reasons for this larger differential are not clear, but may indicate that demand was more elastic for child travelers than for adults. Thus, some adults might have been willing to pay a much higher fare for their own travel (because they were receiving the direct benefits of migrating) but were unwilling to pay much more to take along children. The generally higher fares to the non-North American ports also indicate that subsidies from governments or other organizations were often needed to attract Europeans to South America or Australia.<sup>32</sup>

We have only a small amount of data on fares from non-German ports to New York City. These ports also declined in importance for German emigrants over the 1850s (Wätjen 1932: 192–93). Our limited data show generally higher fares from Le Havre, Antwerp, and Rotterdam. The reason is that the listings for the fares from these cities included the cost of getting from a city in the interior of Germany to Le Havre, Antwerp, or Rotterdam. In most cases, when one of these ports is listed, the advertisement includes a city in the interior of Germany. For example, a listing might be “Mainz-Antwerp-New York” or “Koeln-Havre-New York.” The higher fares from these ports would then include the cost of the journey to the port of embarkation,

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the United States—and not just where they landed. Data on the final location of Germans relative to their arrival ports do not exist.

30. The advertisements are for either “South Brazil” or “Rio Grande,” both of which we assume to be the port of Rio Grande do Sul.

31. It may reflect that for these more distant ports, where passenger travel was not yet as standardized, space was allocated more in relation to the space that freight took up and thus more aligned with the opportunity cost of freight.

32. See the discussions in Hansen (1940: 112–15, 227–37), Walker (1964), and Fitzpatrick (1994: 9–11).

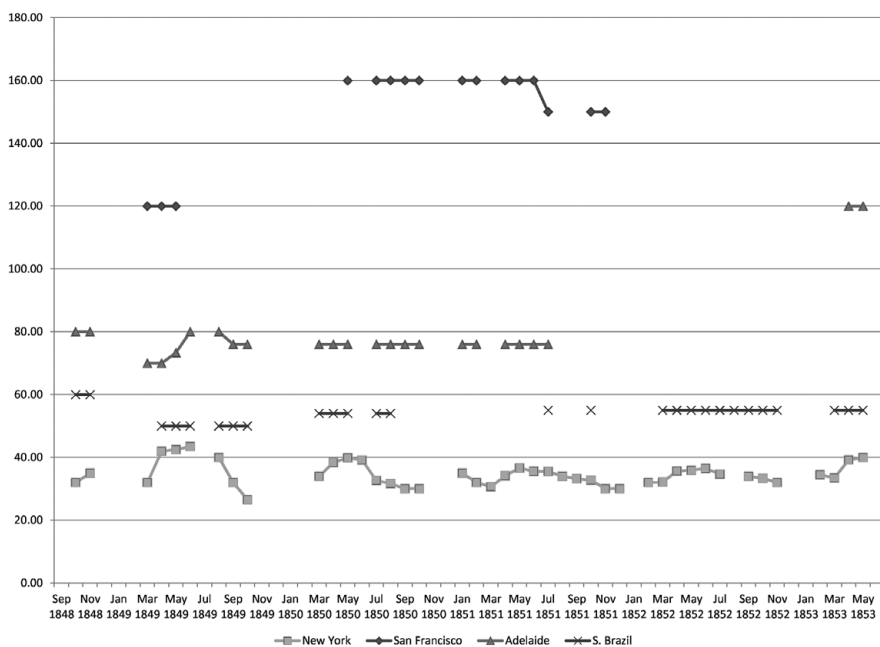


FIGURE 3. *Fares from Hamburg to various world ports (in Thalers).*

lodging and food in the embarkation port waiting for the ship to leave, and then the cost of the ocean voyage. This discussion emphasizes that the estimates provided in this section for Hamburg and Bremen are just for the ocean journey. The total cost of the journey for an emigrant would have included the costs incurred in getting to the embarkation port and waiting for the ship to leave; the traveler would also have the extra expense of getting to their destination after arrival. Thus, the total cost of the intercontinental journey from Germany would have been even more difficult for potential emigrants to afford than previously discussed.

## Explaining the Differences in Fares

The data in tables 2 and 3 show that fares varied among ports, and those in table 1 show that fares varied over time. This section examines the variation econometrically and explains the factors leading to the differences in fares. Figure 3 provides a visual example of fares for voyages from Hamburg to selected ports over about a five-year period for which we have the most data.<sup>33</sup> This figure suggests certain factors were

33. As discussed earlier, fares to Quebec were similar to those to New York. The figure for Bremen is very similar.

important. First is the length of the voyage, as ports further away from Germany have higher fares. Traveling to more distant ports required more time and thus larger expense for various items, for example, higher pay for the crew and larger expense for provisions. Second is the month of travel, especially for those going to the United States. Most US immigrant travel occurred during the spring months, that is, demand was higher at this time of year. Leaving during the spring allowed passengers to arrive in the United States in the late spring or the early summer months, a period when jobs were most available.<sup>34</sup> A third factor may be the year of the voyage, though [figure 3](#) does not show any trend common to all the ports over the years of our sample. A few ports do, however, show an increase in fares beginning in certain years. Fares from Hamburg to San Francisco, for example, rose from 120 Thalers in the middle of 1849 to 160 Thalers in 1850 and 1851. The cause of the increase is likely the gold rush in California, a development that increased the demand for travel to this area. A similar effect is observed with voyages to Australia a few years later after a gold rush began there. These gold rushes are thus a fourth factor affecting fares. A fifth factor, not shown in [figure 3](#), is the origination point of the fare—whether it was Hamburg, Bremen, or an interior city. As noted in the preceding text, ships departing from the Belgian and Dutch ports usually included in the listed fare travel to the coast from a city in the interior.<sup>35</sup>

Thus, the econometric model we estimate is as follows:  $\text{Fare} = f(\text{Distance, Month, Year, Gold Rush, Origination Point})$  where the Month, Year, Gold Rush, and Origination Point are dummy variables. Distance is measured in nautical miles.<sup>36</sup> For Month, we omitted three months—November, December, and January—instead of one because there were only a few observations for each of these months; partial F tests also guided our choice of dummies to include.<sup>37</sup> For Year, a dummy variable was set up for each year, except for 1846, the first year of our data. For Gold Rush, two separate variables are included. The first takes on the value of unity for voyages to San Francisco beginning in 1850, and the other takes on the value of unity for voyages to Adelaide beginning in 1853. In each case, the year or so lag after the discovery of gold accounts for the slow spread of information at the time. Origination Point consists of two dummy variables: Bremen and all journeys where the fare was

34. More ships on which to get passage were also available during the spring months. In addition, trying to travel from the interior of Germany to the coast during the winter months would not be easy. See the discussions in Cohn (2009: ch. 6) and Hansen (1940: 185–95). Killick (2014: 177–78), in his figure 4 and the accompanying discussion, shows the same seasonal variation in fares to the United States.

35. One might also believe that the volume of emigration from a port would affect the fare. We do not, however, have monthly data on the number of passengers leaving each port. In any case, we would expect much of the effect of volume would be picked up by including the month of travel.

36. Nautical miles were taken from the website [www.sea-distances.org](http://www.sea-distances.org). This site not only provides data on the nautical miles for the direct route but also for alternative routes. The distances to San Francisco and Valdivia were calculated through the Cape of Horn, while the distance to Adelaide was calculated through the Cape of Good Hope.

37. When we included 11 seasonal dummies in the regression and excluded the December dummy, a partial F test could not reject that the hypothesis that the coefficients on both the January dummy and the November dummy are equal to zero. Similar results were found for the other two cases when January and November, respectively, were the excluded months.

**TABLE 4.** Regressions of average monthly adult steerage fares on sailing ships, 1846–55

<i>Independent Variables</i>	<i>Est. (1): All Ports</i>	<i>Est. (2): All Ports</i>	<i>Est. (3): All Ports</i>	<i>Est. (4): Bremen Only</i>	<i>Est. (5): Hamburg Only</i>	<i>Est. (6): US, Canada only, no SF</i>
Distance	0.00619**	0.00626**	0.00624**	0.00678**	0.00565**	0.0036**
Bremen	−0.3405					
Interior Origin	9.733**	10.884**	12.246**			9.570**
Gold Rush US	67.779**	64.376**	65.000**	68.883**	66.291**	
Gold Rush Aus.	28.727**	33.422**	30.551**		33.917**	
Feb. Dummy	2.106		1.792	1.607	0.381	2.196
Mar. Dummy	3.032		5.734**	0.277	0.755	3.369**
Apr. Dummy	5.032*		7.264**	2.830	2.843	6.195**
May Dummy	7.136**		9.355**	4.346	4.370*	8.942**
June Dummy	5.761*		7.858**	2.348	3.863	8.771**
July Dummy	3.411		3.420	1.944	1.582	4.131**
Aug. Dummy	4.081		5.785**	3.042	1.286	4.326**
Sept. Dummy	2.885		5.518*	2.017	−0.785	3.574**
Oct. Dummy	1.101		2.580	−0.632	−0.711	2.086
1847 Dummy	0.995				−4.323	2.255
1848 Dummy	−4.916			−4.510	−0.388	−4.097*
1849 Dummy	1.816			11.612*	−1.941	−1.652
1850 Dummy	−3.764			0.0560	−3.278	−2.237
1851 Dummy	−5.953			−1.078	−6.339	−3.630*
1852 Dummy	−2.308			2.316	−1.982	−1.606
1853 Dummy	0.265			9.246	−2.149	1.186
1855 Dummy	0.556				−1.941	−0.905
Adj. R <sup>2</sup>	93.49%	92.32%	92.72%	92.89%	97.11%	54.90%
F Statistic	254.43**	1238.5**	404.8**	119.2**	294.1**	16.5**
Observations	413	413	413	173	196	278

Notes: The dependent variable is fares in Prussian Thalers. Statistical significance: \* indicates significance at the 5 percent level, and \*\* at the 1 percent level. Note that there are no Australian-bound ships in our sample that left from Bremen after the gold rush began.

given from a location interior in Germany; Hamburg is the excluded Origination Point.

Though we have data on steerage fares for children, on adult and child fares in first and second class, and fares on steamships, the majority of our data are for adults traveling in steerage on sailing ships, so this fare is used as the dependent variable in the regressions. Our approach follows in spirit the hedonic pricing literature used in real estate economics and in the calculation of the Consumer Price Index, where the prices of a good (a house) or service are regressed on a variety of factors that might affect the price. Our file contains 413 monthly observations on adult steerage fares on sailing ships. Given that some of the explanatory variables may be important mainly on specific routes (such as month of travel for voyages to the United States), we run a series of regressions. The results are shown in [table 4](#).

Consider first the complete sample of fares for the entire model (Estimation 1). The Bremen variable is insignificant so fares did not differ significantly between Hamburg and Bremen. All the Yearly dummy variables are also insignificant, which



indicates that fares from Germany did not decline over our time period.<sup>38</sup> In contrast, Hatton and Williamson (2005: 38–39) argue, based mostly on anecdotal evidence, that passenger fares between Britain and New York dropped significantly between 1800 and 1860, with part of the decline occurring during the 1840s and 1850s: “Between the early 1840s and the late 1850s, passenger fares from Britain to New York fell by 71 percent.”<sup>39</sup> Killick (2014: 175, 191) provides data on various measures of fares for the route from Liverpool to Philadelphia, and most of his measures also show a decline for the same period. Killick (ibid.: 183) explains the fall in fares as being because “more ships were built and packet services organized,” probably in response to the huge rise in famine emigration from Ireland. Such was not the case, at least to the same extent, for emigration from Germany.<sup>40</sup> It is likely the different trend in fares was caused by the different timing of the increase in emigration from Europe. Irish and British emigration to the United States rose from almost 48,000 in 1844 to almost 273,000 in 1851 but then declined to 160,000 in 1854. The volume from Germany was only about 21,000 in 1844, rose to only 79,000 in 1850 but then increased substantially, peaking at 215,000 in 1854 (Carter et al. 2006: Series Ad111). In the Irish case, supply increased so much in response to the huge demand increase in the late 1840s that fares fell in the early 1850s when demand fell. In contrast, demand from Germany increased more continually over our period. Apparently, the supply of immigrant shipping from Germany was only able to keep up with the continually increasing demand, leading to relatively constant fares.

Not surprisingly, fares were positively related to the distance traveled. According to our estimates, an extra 1,000 nautical miles increased the fare by about 6.2 Thalers (a little more than \$4). The Interior variable is similarly significant and positive, as those who traveled from interior cities traveled further as well. The coefficient of the Interior variable provides some indication of the total cost to the migrant of reaching the coast from the interior cities of Germany, and thus provides a more complete figure of the total cost of getting from the interior of Germany to New York or another destination. We estimated this cost to be about 10 to 12 Prussian Thalers, which may be a bit on the high side, but it most likely includes room and board on the local ship as well as at the ocean port and possibly river tolls.<sup>41</sup>

As discussed, our period encompasses two gold rushes, one in California and one in Australia. Both gold rush dummy variables are positive and significant in Estimations (1) and (2) (as well as in the other estimations), showing that fares were higher during these gold rushes. The higher demand to go to the gold fields led to an increase in passenger fares of 30 to 65 Thalers (\$20–\$44). We do not know why the coefficient

38. The dummy for 1851 is significant at the 10 percent level but this appears to be due to some correlation between it and the US gold rush variable. If the latter variable is removed from the regression, the 1851 dummy becomes insignificant.

39. They refer readers to Dole (2003), a senior honors thesis written at Harvard University.

40. In fact, Killick (2014: 183) has a quote from the *Sunday Times* of April 4, 1852, saying that fares from Liverpool at that time were substantially lower than those from the German ports.

41. Traveling down the Rhine River posed the issue of tolls, as one passed through several different nations and states, all of whom wanted their own cut (Hansen 1940: 186).

is higher for the US gold rush, but we will note that the coefficient for the Australian gold rush is based on only two monthly observations.

Estimation (1) indicates that fares showed some tendency to rise during the Spring months. The size and significance of the Month variables become larger when the Year variables are excluded (Estimation 3), so when we use smaller samples (Estimations 4 through 6), the Year variables are retained, even though they are seldom significant. We have more to say on the effect of seasons on fares in the following text. Finally, note that the size and significance of the Distance, Interior, and Gold Rush variables are not much affected when the Bremen, Month, and Year variables are deleted from the regression (Estimation 2), showing the values of the former coefficients are not dependent on those of the latter variables.

Because the majority of our data are for Bremen and Hamburg, we also estimated separate regressions for these ports, which are Estimations (4) and (5), respectively. The coefficients for distance and the gold rush variables are little changed. Compared with Estimation (1), where a few of the coefficients of the monthly dummies are statistically significant, only one month is for Hamburg. We are not sure why this differential occurs but we note that many of the observations do not pertain to voyages to the United States, where the monthly variation seems to be the largest. Finally, the dummy variable for 1849 for Bremen is large for reasons that are unclear, though it is barely significant.

As another robustness check on the values of many of the variables, we ran a regression including only fares to the eastern and southern US ports and Quebec (thus excluding all other non-US ports as well as San Francisco) and these results are shown in Estimation (6). Now the coefficients on most of the monthly dummies are statistically significant, a not surprising result given that our previous discussion on the monthly variation in fares centers on immigration to the United States. Fares to the United States began to rise in March, peaked in May and June at a level about 9 Thalers higher than at the start of the year, and then fell through September. Fares appear to have fallen in 1848 and 1851 but neither decline was permanent, so no trend is evident. Though the coefficient of the Interior variable does not change much, the distance variable is not as important as in the other four estimations; for the US and Canadian ports (exclusive of San Francisco) an extra 1,000 nautical miles translates into a price that is 3.6 Thalers higher, about half as much as for the entire data set. It appears that any extra miles traveled more than 6,000 nautical miles cost a great deal more, and this may have to do with the necessary stops sailing ships had to make for water and provisions when traveling a longer distance than just across the Atlantic.<sup>42</sup> In summary, distance, whether the journey began in an interior city, the outbreak of the gold rushes, and—especially for voyages to the United States—the month of

42. A plot of fare versus distance demonstrated that there could be a nonlinear relationship between these two variables. We thus also estimated regressions fitting the data to distance, distance-squared, and distance-cubed. The overall results were not changed, with one exception; once we accounted for a quadratic relationship between fares and distance the US gold rush dummy decreased down to the size of the coefficient on the Australian gold rush dummy in Estimation (2).

travel were all important determinants of the fare that German ocean passengers paid in the mid-nineteenth century.

A final empirical issue to consider is whether the fares to different ports changed in a similar fashion over time. Evidence exists that they did for the east and south coast US ports. The correlation coefficient between the fares from Hamburg (Bremen) to New York City and those to New Orleans is 0.76 (0.93) and the correlation between fares to New York City and Quebec is 0.40 (0.08).<sup>43</sup> Not surprisingly, because the journeys were in the same direction (so ships could easily change their route) and carried some passengers who could treat these ports as substitutes, fares to these ports tended to move up or down at the same time. For the fares to New York City and those to the more distant ports, no consistent positive relationship is apparent. The correlation coefficient between fares from Hamburg (Bremen) to New York City and to San Francisco is -0.49 (-0.26), mainly reflecting the huge rise in fares to the latter port in 1850 when fares to New York City were relatively steady. For Hamburg (Bremen) to New York City and to Adelaide, the correlation coefficient was -0.04 (0.29), and for Hamburg to New York City and to South Brazil, it was -0.31. Thus, where fares to the main US ports moved together, those to other ports either moved in no relationship to New York City fares or sometimes in an opposite direction. Here gold rushes were a relevant factor and these occurred far away from the east and south coast ports of the United States. Overall, these findings are supported by a strongly positive correlation between fares from Hamburg to New York and Bremen to New York of 0.74.

## Conclusions

This paper provides the first systematic evidence on intercontinental fares for German emigrants (and other passengers) during the 1840s and 1850s, a period when both the volume of emigration and the demand for information concerning the journey were rapidly growing. Using data published by German newspapers, three factors were examined: how large fares were to different destinations, how fares varied with distance traveled and other factors, and how fares related to the income of potential emigrants. Adults leaving Germany between 1846 and 1853 typically paid 33 to 35 Thalers (about \$23) to sail to New York City in steerage—somewhat higher than that paid by those sailing from Liverpool to Philadelphia—and children paid five to six Thalers less. Steerage fares were similar to Quebec and the same to other ports on the East Coast of the United States while fares to the more distant southern US port cities were 3 to 10 Thalers higher, depending on the specific port. Poorer

43. Correlations in this situation are somewhat problematic because the only data included are those where there are monthly fares from both ports. The months where fare data are available for only one of the ports are excluded from the analysis. In this case, the correlation is done on only 26 months for each calculation from Hamburg and 27 months for Bremen to New York/New Orleans but only 13 months for Bremen to New York/Quebec. For the latter case, many of the fares to Quebec are the same, thus leading to the small correlation coefficient.

Germans could not afford to pay these fares that, in contrast to studies of British ports, did not fall over our short period. In addition, the estimated fares do not include the costs of getting to the port of embarkation and from the landing port to their destination, factors that would make it even more difficult for poorer Germans to emigrate. First-class fares, which were about twice as large, were even more prohibitive. Thus, most German emigrants had incomes no lower than those earned by the lower middle class, creating an emigrant population from German states that was positively self-selected in the 1840s and 1850s. There may have been further positive self-selection by destination port, with the German emigrants who paid their own way and went to more distant locations more positively selected than the Germans who went to the East Coast of the United States, a possible topic of future research.

Fares to ports more distant than the east or south coasts of the United States were much larger. South American ports had fares 50 to 100 percent higher than those to New York City, the fare to Adelaide was even higher, and that to San Francisco was about four times as large. In addition, the small amount of previous emigration to areas other than the eastern part of the United States limited any assistance potential emigrants could receive from remittances, something that helped some Germans to be able to afford the journey to the United States. The result of all these factors was that few Germans emigrated to anywhere other than the eastern part of the United States. Though fares could change due to changes in demand over the course of the year or because of some event, such as the California gold rush, the major reason fares to ports other than those on the east and south coasts of the United States were higher was the longer distance traveled. In short, the technology of ocean travel was not sufficiently advanced to reduce fares to other ports to an affordable level for most individuals. Over time, the development of the steamship and increased incomes among potential migrants changed this situation.

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