Appendix 2: Detailed Price and Wage Sources

The following is a detailed overview of the sources of price quotes in individual years and provinces. Some sources are abbreviated. The abbreviations and the full titles are given in the Reference section at the end of Appendix 2.

Wheat, Rye, Oats

Versuch for 1827/28; Darstellung for 1829; TSOM for 1830–1865, SJOM 1862–1881 (only Cisleithania from 1867 on); Ljetopis for 1871–1874 for Croatia and Military frontier; USJ for 1874–1914 for Transleithania; OSH 1882–1914 for Cisleithania; Marian Gorkiewicz (1950) for Krakow; Hoszowski (1934) for Lviv; Valenčič (1977) for Ljubljana; Kőrösi (1873) for Budapest up to 1872; Schebek (1873) for Prague up to 1872 (wheat only); Währungs-Frage (1892) for 1830–1840; MSK (1895) for Transleithania in 1893; HSK for Transleithania in 1870/71.

As mentioned, the TSOM-SJOM-OSH series provide the main source of prices. Prices were usually quoted as annual averages in each province until 1877. From then on until 1882, prices were quoted separately for each provincial capital and for the rest of each province ("das übrige Land"). From 1882 onward only capitals were listed. From 1894, OSH also quoted a list of cereal prices in various small local marketplaces in each province. I take a simple average of those as the provincial cereal price and use the capital price to bridge the gap from 1882 to 1894, adjusting for the capital-city markup. The Transleithanian government in Budapest published separate series in USJ for 45 marketplaces all over Transleithania from 1870s onward. In 1894 they limited their series to only a few cities (Budapest, Arad, Debreczen, Košice, Cluj, Oradea, Pécs, Bratislava, Szabadka, Szeged, and Timisoara). For these 11 cities, I can construct a (moreless) continuous series of prices from 1870 to the First World War and they form the core of my regional prices for the Kingdom of Hungary. For Croatia, I have no information on prices from 1874 until 1898 when USJ added Zagreb to their roster of cities.

Bread (Wheat and Rye)

MSW for Vienna, Graz, Innsbruck, and Linz; Matějček (1986) for Prague (rye bread only); OSH for Cisleithanian provinces 1898–1909; USJ for Transleithanian provinces 1894–1912; Gorkiewicz (1950) for Krakow; Hoszowski (1934) for Lviv; bread prices for all other provinces and time periods were estimated using Allen's (2001) bread equation using available prices of bread, the local price of wheat (resp. rye) and local day wage. I used a fixed-effects model with AR(1). For completeness' sake, I report the location fixed effects below together with all other regression coefficients (Appendix Table 1).

Rice

MSW for Vienna in 1827–1910; for all other western provinces, TSOM-SJOM-OSH are the main source for 1827–1909, OSH (1912, p. 349) in particular provides provincial time series on rice price spanning 1902–1912; for Transleithania, USJ provides rice prices from 1894 onward; for Hungary, Croatia, and Transylvania,

APPENDIX TABLE 1 BREAD EQUATION REGRESSION REPORT

Wheat / Rye price (per 100 kg) 0.0079 0.00 Day wage 0.0198 0.01 Period fixed effects 1834–1838 0.0310 0.0 1839–1843 0.0307 0.01 1844–1848 0.0491 0.01 1844–1848 0.0491 0.01 1844–1848 0.0491 0.01 1844–1853 0.0538 0.01 1854–1858 0.0781 0.04 1859–1863 0.1349 0.01 1859–1863 0.1433 0.01 1869–1873 0.1617 0.00 1864–1868 0.1433 0.01 1879–1883 0.1705 0.1 1879–1883 0.1617 0.00 1884–1888 0.1629 0.10 1889–1893 0.1610 0.11 1899–1903 0.1514 0.1 1909–1912 0.1518 0.1 Location fixed effects U 0.0000 Budapest -0.0243 -0.00 Brno 0.00	Bread
Day wage 0.0198 0.01 Period fixed effects 1834–1838 0.0310 0.0 1839–1843 0.0307 0.0 1844–1848 0.0491 0.0 1849–1853 0.0538 0.0 1854–1858 0.0781 0.0 1859–1863 0.1349 0.0 1859–1863 0.1433 0.0 1869–1873 0.1617 0.00 1869–1873 0.1356 0.14 1879–1883 0.1705 0.1 1884–1888 0.1629 0.14 1899–1903 0.1610 0.14 1899–1903 0.1514 0.1 1909–1912 0.1518 0.1 Location fixed effects U 0.0000 0.00 Budapest -0.0243 -0.00 0.000 Brno 0.0000 0.00 0.000 0.00 Cramowitz -0.0234 -0.00 0.000 0.00	063
Period fixed effects $1834-1838$ 0.0310 0.0 $1839-1843$ 0.0307 0.0307 $1844-1848$ 0.0491 0.0307 $1849-1853$ 0.0538 0.001 $1854-1858$ 0.0781 0.061 $1859-1863$ 0.1349 0.071 $1864-1868$ 0.1433 0.071 $1869-1873$ 0.1617 0.0316 $1874-1878$ 0.1356 0.1143 0.1705 0.11 $1874-1878$ 0.1629 0.11610 $1899-1883$ 0.1610 0.11610 $1894-1898$ 0.1430 0.11 $1894-1908$ 0.1381 0.11 $1909-1912$ 0.1518 0.1518 Location fixed effects -0.0243 -0.00 Broo 0.0000 0.00 Cramounitz -0.0534 -0.07	277
1834-1838 0.0310 0.0 $1839-1843$ 0.0307 0.01 $1844-1848$ 0.0491 0.01 $1849-1853$ 0.0538 0.01 $1854-1858$ 0.0781 0.06 $1859-1863$ 0.1349 0.07 $1864-1868$ 0.1433 0.07 $1869-1873$ 0.1617 0.03 $1874-1878$ 0.1356 0.11 $1879-1883$ 0.1705 0.11 $1884-1888$ 0.1629 0.11610 $1899-1903$ 0.1610 0.11610 $1894-1898$ 0.1430 0.11 $1909-1912$ 0.1518 0.11518 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.000 0.000 Cramowitz -0.0233 -0.00	
1839-1843 0.0307 0.0107 $1844-1848$ 0.0491 0.0101 $1849-1853$ 0.0538 0.011 $1854-1858$ 0.0781 0.011617 $1859-1863$ 0.1349 0.011617 $1864-1868$ 0.1433 0.011617 $1869-1873$ 0.1617 $0.00011869-1873$ $1874-1878$ 0.1356 0.11617 $1879-1883$ 0.1705 $0.111889-1893$ 0.1610 0.1610 0.11610 $1894-1898$ 0.1430 $0.111899-1903$ 0.1514 0.11311 $0.1111909-1912$ $1909-1912$ 0.1518 0.1121160000 $Location fixed effects$ -0.0243 -0.0000 Bruno 0.0000 0.0000 $Cluj$ -0.0534 -0.0222 0.0222 0.0222 0.0222	182
1844-1848 0.0491 0.01 $1849-1853$ 0.0538 0.01 $1854-1858$ 0.0781 0.06 $1859-1863$ 0.1349 0.07 $1864-1868$ 0.1433 0.07 $1869-1873$ 0.1617 0.00 $1869-1873$ 0.1617 0.00 $1874-1878$ 0.1356 0.116 $1879-1883$ 0.1705 0.11 $1884-1888$ 0.1629 0.1430 $0.189-1893$ 0.1610 0.1430 $1899-1903$ 0.1514 0.11 $1909-1912$ 0.1518 0.12518 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.000 Cluj -0.0534 -0.0222 0.0222 0.0222 0.0222	213
1849-1853 0.0538 0.01 $1854-1858$ 0.0781 0.06 $1859-1863$ 0.1349 0.07 $1864-1868$ 0.1433 0.07 $1869-1873$ 0.1617 0.02 $1874-1878$ 0.1356 0.11617 $1879-1883$ 0.1705 0.11 $1884-1888$ 0.1629 0.101 $1889-1893$ 0.1610 0.11610 $1894-1898$ 0.1430 0.11610 $1899-1903$ 0.1514 0.11610 $1909-1912$ 0.1518 0.12518 Location fixed effects -0.0243 -0.000 Bruo 0.0000 0.0000 0.0000 Cluj -0.0534 -0.0222 0.0222	310
1854-1858 0.0781 0.04 $1859-1863$ 0.1349 0.07 $1864-1868$ 0.1433 0.07 $1869-1873$ 0.1617 0.03 $1874-1878$ 0.1356 0.14 $1879-1883$ 0.1705 0.11 $1884-1888$ 0.1629 0.16 $1889-1893$ 0.1610 0.116 $1894-1898$ 0.1430 0.11 $1899-1903$ 0.1514 0.116 $1909-1912$ 0.1518 0.121 $Location fixed effects$ -0.0243 -0.00 Budapest -0.0243 -0.00 $Brno$ 0.0000 0.000 $Cluj$ -0.0534 -0.02 $Cramowitz$ -0.0222 0.0222	380
1859-1863 0.1349 $0.0'$ $1864-1868$ 0.1433 $0.0'$ $1869-1873$ 0.1617 $0.0'$ $1874-1878$ 0.1356 $0.14'$ $1879-1883$ 0.1705 $0.1'$ $1884-1888$ 0.1629 $0.10'$ $1889-1893$ 0.1610 $0.10'$ $1894-1898$ 0.1430 $0.1'$ $1899-1903$ 0.1514 $0.1'$ $1904-1908$ 0.1381 $0.1'$ $1909-1912$ 0.1518 $0.1'$ Location fixed effects -0.0243 $-0.0'$ Budapest -0.0243 $-0.0'$ Brno 0.0000 $0.0'$ Cluj -0.0534 $-0.0'$ Cramowitz -0.0222 $0.0'$	499
1864-1868 0.1433 $0.0'$ $1869-1873$ 0.1617 $0.0'$ $1874-1878$ 0.1356 $0.14'$ $1879-1883$ 0.1705 0.1 $1884-1888$ 0.1629 $0.10'$ $1889-1893$ 0.1610 $0.16'$ $1894-1898$ 0.1430 0.1 $1899-1903$ 0.1514 0.1 $1904-1908$ 0.1381 0.1 $1909-1912$ 0.1518 $0.1'$ Location fixed effects -0.0243 $-0.0'$ Budapest -0.0243 $-0.0'$ Brno 0.0000 $0.0'$ Cluj -0.0534 $-0.0'$	732
1869-1873 0.1617 0.03 $1874-1878$ 0.1356 0.14 $1879-1883$ 0.1705 0.1 $1884-1888$ 0.1629 0.16 $1889-1893$ 0.1610 0.16 $1894-1898$ 0.1430 0.1 $1899-1903$ 0.1514 0.1 $1904-1908$ 0.1381 0.1 $1909-1912$ 0.1518 0.13 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.000 Cluj -0.0534 -0.02 Cramowitz -0.0222 0.02	720
1874-1878 0.1356 0.11 $1879-1883$ 0.1705 0.1 $1884-1888$ 0.1629 0.10 $1889-1893$ 0.1610 0.10 $1894-1898$ 0.1430 0.1 $1899-1903$ 0.1514 0.1 $1904-1908$ 0.1381 0.1 $1909-1912$ 0.1518 0.12 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.000 0.000 Cluj -0.0534 -0.0222 0.0222	838
1879-1883 0.1705 0.1 $1884-1888$ 0.1629 0.16 $1889-1893$ 0.1610 0.16 $1894-1898$ 0.1430 0.1 $1899-1903$ 0.1514 0.1 $1904-1908$ 0.1381 0.1 $1909-1912$ 0.1518 0.13 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.000 Cluj -0.0534 -0.0222 Cramowitz -0.0222 0.0222	099
1884-1888 0.1629 0.16 $1889-1893$ 0.1610 0.16 $1894-1898$ 0.1430 0.1 $1899-1903$ 0.1514 0.1 $1904-1908$ 0.1381 0.1 $1909-1912$ 0.1518 0.12 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.000 Cluj -0.0534 -0.0222 0.0222 0.0222 0.0222	140
1889–1893 0.1610 0.14 1894–1898 0.1430 0.1 1899–1903 0.1514 0.1 1904–1908 0.1381 0.1 1909–1912 0.1518 0.13 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.00 Cluj -0.0534 -0.00 Czarnowitz -0.0222 0.02	054
1894–1898 0.1430 0.1 1899–1903 0.1514 0.1 1904–1908 0.1381 0.1 1909–1912 0.1518 0.1 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.00 Cluj -0.0534 -0.00 Czarnowitz -0.0222 0.02	004
1899–1903 0.1514 0.1 1904–1908 0.1381 0.1 1909–1912 0.1518 0.1 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.000 Cluj -0.0534 -0.00 Czarnowitz -0.0222 0.00	123
1904–1908 0.1381 0.1 1909–1912 0.1518 0.1 Location fixed effects -0.0243 -0.00 Brno 0.0000 0.00 Cluj -0.0534 -0.00 Czarnowitz -0.0222 0.00	135
1909–1912 0.1518 0.15 Location fixed effects -0.0243 -0.00 Bruo 0.0000 0.00 Cluj -0.0534 -0.01 Czarpowitz -0.0222 0.02	171
Location fixed effects Budapest -0.0243 -0.00 Brno 0.0000 0.00 Cluj -0.0534 -0.00 Czarnowitz -0.0222 0.00	353
Budapest -0.0243 -0.00 Brno 0.0000 0.00 Cluj -0.0534 -0.00 Czernowitz -0.0222 0.00	
Brno 0.0000 0.00 Cluj -0.0534 -0.0 Czarnowitz -0.0222 0.00	074
Cluj -0.0534 -0.0222 0.0222	000
-0.0222 0.02	334
	215
Graz –0.0777 –0.0	105
Innsbruck 0.1145 0.02	299
Klagenfurt 0.0569 -0.00	017
Kosice -0.0423 -0.02	243
Krakow 0.0483 0.02	356
Ljubljana 0.0238 0.02	330
Lwiw 0.0446 –0.00	061
Linz –0.0983 0.02	521
Nitra –0.0557 –0.02	362
Prague 0.1928 –0.0	111
Salzburg -0.0297 -0.00	086
Timisoara -0.0394 -0.0	196
Trieste 0.0283 0.02	531
Opava (Troppau) 0.0617 -0.0	162
Vienna –0.0088 –0.0	155
Zagreb -0.0071 0.00	006
Zara –0.0081 0.00	004

	Wheat Bread	Rye Bread
Constant	0.0045	0.0175
N Groups R^2	455 21 0.51	569 21 0.75

APPENDIX TABLE 1 — continued

Notes: Bread equation was estimated using Allen (2001) as a fixed-effects model with AR(1). *Source*: See the text of this Appendix.

TSOM-SJOM provide prices intermittently for 1827–1869 and for Banat in 1849– 1859; for all other provinces and time periods, prices were interpolated using existing series from a neighboring province or Vienna, using the price differential between the two locations from periods when both provincial series are available.

Butter

MSW for Vienna, Lower Austria (Vienna series), Upper Austria (Linz series), Styria (Graz series), and Tyrol (Innsbruck series); OSH for Cisleithanian provinces for 1901–1909; USJ for Transleithanian provinces in 1898–1913; von Jankovich (1923) for Littoral in 1867–1909; SH Prague for Bohemia in 1874–1899; for Galicia, Gorkiewicz's (1950) Krakow prices from 1829 to 1855 and Hoszowski's (1934) Lviv prices from 1856 to 1910; Körösi's (1873) Budapest prices for Hungary in 1829– 1851; for other periods of time, I interpolate using prices neighboring province (Viennese prices for Lower Austria, Moravia, Banat, Western Slovakia, Eastern Slovakia, Croatia-Slavonia, Transylvania, and Hungary; Linz prices for Salzburg; Graz prices for Carinthia, Carniola, and Littoral; Krakow prices from Gorkiewicz (1950) for Silesia; Galician prices for Bukowina; Littoral prices for Dalmatia).

Milk

MSW for Vienna, Lower Austria (Vienna series), Upper Austria (Linz series), Styria (Graz series), and Tyrol (Innsbruck series); Prague prices for Bohemia from SH Prague in 1874–1903; Hoszowski's (1934) Lviv prices for Galicia in 1832–1841 and 1867–1910; USJ for Transleithanian provinces from 1894 onward; Kőrösi's (1873) Budapest prices for Hungary in 1827–1851; for all other time periods and provinces, I interpolate using prices neighboring province (Vienna prices for Moravia, prices for Salzburg and Bohemia; Graz prices for Carinthia, Carniola, Littoral, and Dalmatia; for Silesia and Bukowina I combine Hoszowski's (1934) Lviv prices and the Vienna prices from MSW).

Potatoes

Versuch for 1827/28; Darstellung for 1829; TSOM-SJOM-OSH for 1830–1914 (Cisleithanian provinces only from 1867 on); MSW for Vienna; Ljetopis for Croatia and Military frontier in 1871–1874; USJ for Transleithania from 1874 onward; for all other time periods and provinces, I interpolate using prices neighboring province

(Military frontier prices for Banat and Croatia; Hungarian prices for Eastern and Western Slovakia; Bukowina prices for Transylvania in 1860–1871; Lower Austrian prices for Hungary when Hungarian prices are missing in the period 1849–1870).

As with cereals, provincial potato prices were replaced, in the Cisleithanian publications, with prices from provincial capitals in 1882 and were not resumed until 1898. I use the prices from capitals to bridge the gap in 1882–1898 in reconstructing the provincial prices. Also, my series differ from those in MSW for Upper Austria and Styria because I consistently report the price of the (cheaper) old potatoes while MSW switch from old to new potatoes at various points in their series, which instantaneously doubles the price of this item (this has become apparent when I compared their potato prices with those quoted in Steiermark (1899, p. 146).

Peas, Beans, and Lentils

TSOM-SJOM-OSH for 1827–1914 (Cisleithania only from 1867 on); MSW for Vienna, Lower Austria (Vienna series), Upper Austria and Salzburg (Linz series), Styria (Graz series), and Tyrol (Innsbruck series) from 1882 onward; Ljetopis for Croatia and Military frontier in 1871–1874; for the period from 1830 to 1840, I interpolate using prices neighboring province (Vienna series for Moravia, Vienna lentils and beans prices for Silesia, Galicia, Bukowina, Western Slovakia from 1882 to 1898; Linz series for Salzburg, Bohemia; Graz series for Carniola, Littoral, and Dalmatia; Gorkiewicz's (1950) Krakow pea series for Silesia, Bukowina, Western Slovakia—up to 1848; Military frontier prices and Kőrösi's (1873) Budapest prices for Banat and Croatia-Slavonia in 1829–1848; Galician and Kőrösi's (1873) Budapest prices for Eastern Slovakia; Budapest and Bukowina prices for Transylvania); for Hungary in 1860–1871, I use Lower Austrian prices.

Wine and Beer

From 1827 onwards Versuch-Darstellung-TSOM-SJOM-OSH quote highest and lowest price in each year for both wine and beer, I use the midpoint; after 1900 OSH publishes the average; MSW prices for Vienna, Linz, Graz, and Innsbruck which are compared with the provincial prices and used for local interpolation when local provincial prices are not available; Ljetopis for Croatia and Military frontier in 1871–1874; for 1830–1840, I interpolate using prices from neighboring provinces (Moravian wine price for Silesia before 1849 and for Galicia in 1827/28; Lower Austrian series for Salzburg; Military frontier and Kőrösi's (1873) Budapest prices for Banat and Transylvania; Kőrösi's (1873) Budapest prices for Hungary and Croatia/Slavonia); for period 1860–1871, I use Lower Austrian prices for Western and Eastern Slovakia and Vienna prices for Hungary and Military frontier prices for Banat.

Beef

Versuch for 1827/28; Darstellung for 1829; TSOM-SJOM-OSH for 1830–1914 (Cisleithanian provinces only from 1867 on); MSW for Vienna; USJ for Transleithania from 1874 onward; Kőrösi's (1873) Budapest prices for Hungary; Ljetopis for Croatia and Military frontier in 1871–1874; for all other time periods and provinces, I interpolate using prices neighboring province (Military frontier prices for Banat and Croatia; Hungarian prices for Eastern and Western Slovakia; Bukowina prices for Transylvania in 1860–1871; Lower Austrian prices for Hungary when Hungarian prices are missing in the period 1849–1870).

Sugar

TSOM-SJOM-OSH series include the provincial prices of sugar only for years 1900–1910, all other years had to be collected or interpolated from other sources; USJ published sugar prices from 1897 onward; for the whole period, I rely on MSW for Vienna, Lower Austria, Upper Austria (Linz series), Styria (Graz series), and Tyrol (Innsbruck series); for 1874–1909 I rely on SJ Prague for the price of sugar in Bohemia; I interpolate Salzburg, Bohemian prices using Linz series from MSW; Carinthian, Carniolan, Littoral, and Dalmatian prices using Graz series from MSW; Moravian, Silesian, Galician, Bukowinan prices from Vienna series in MSW; for Transleithanian provinces, I interpolate the pre-1897 prices using Viennese prices in all of Transleithania.

Salt

No provincial salt prices were quoted in TSOM-SJOM-OSH series throughout the period (except wholesale price charged by the state monopoly); USJ published local salt prices from 1894 onward; I use Kőrösi's (1873) Budapest prices for Hungary for the period 1829–1851; for the whole period, I rely on MSW for Vienna, Lower Austria, Upper Austria (Linz series), Styria (Graz series), and Tyrol (Innsbruck series); for provinces where no local salt prices are available, I equate Salzburg, Bohemian prices with Linz series from MSW; Carinthian, Carniolan, Littoral, and Dalmatian prices with Graz series from MSW; Moravian, Silesian, Galician and Bukowinan prices with Vienna series in MSW; for Transleithanian provinces, I interpolate the pre-1894 prices using Viennese prices in Banat, Transylvania, and Croatia-Slavonia; I also use Kőrösi's (1873) Budapest prices on salt in 1829–1851 and MSW Viennese prices in 1852–1893 to interpolate prices in Eastern and Western Slovakia and in Hungary.

Tobacco

Versuch for 1828; Darstellung for 1829; TSOM for 1830–1859 (no data for 1860); Tabak-Monopol for the period 1861–1879; USJ from 1875 onward (one series for Hungary, one for Croatia-Slavonia).

Hardwood and Softwood

Versuch vor 1827/28; Darstellung for 1829; TSOM-SJOM-OSH for 1830–1910 (Cisleithania only after 1867 on); for Hungarian hardwood, I use Kőrösi's (1873) Budapest oak prices for 1831–1870; Ljetopis for Croatia and Military frontier in 1871–1874; I also use MSW Vienna series to interpolate Moravian prices in 1830–1840, Linz series to interpolate Salzburg and Bohemian prices in 1829–1848, Graz series to interpolate Styrian, Carniolan, Littoral, and Dalmatian prices in 1830–1840, Carinthian prices in 1829–1848, Gorkiewicz's (1950) Krakow prices to interpolate Silesian and Bukowina prices in 1829–1848; from TSOM-SJOM-OSH, Military frontier prices are used to interpolate Banat and Croatian-Slavonian prices in 1829–1849 and 1860–1871, MSW Vienna series to interpolate East and West Slovakian prices in 1829–1840 and 1860–1871, Bukowina prices to interpolate Transylvanian prices in 1829–1840 and 1860–1871.

Exact wood prices are difficult to obtain because of the inconsistent (both across time and space) measurements of the unit of consumption. Most sources quote the price per "1 nieder-österreichische Klafter," i.e., one Lower Austrian fathom which is a volume 6 feet in length (approx. 1.86 m) and 6 feet in width but with height varying by province. MSW argue that the most usual practice was for the wood to be 3 feet (36 inches) high. Local variations persisted, however, so it is important to ensure that, whatever the local height, the eventual price series are properly converted into comparable units. For example, SJOM (1874) notes that the Carinthian wood price is quoted for wood that was "zwölfzölliges," i.e., 12 inches high when sold. The publication does not make clear whether the quoted price was for an already converted, more regular 36-inch fathom or not. MGS (1852, p. 18) suggests that the conversions had already taken place because it reproduces the table of prices from TSOM (1850) practically verbatim, except for the label on the wood prices, which it specifically describes as quotes for a 36-inch fathom for all provinces.

Coal

I use TSOM-SJOM-OSH for provincial coal prices in 1900–1908; USJ has coal data from 1894 onwards; MSW is the source for coal prices for Vienna for the whole period, for Linz in 1860–1914 (with gaps), for Graz in 1846–1914 (with gaps); I also use Schebeks' (1873) Prague prices for 1829–1870 and SJ Prague for period 1874–1900; Hoszowski's (1934) Lviv coal prices in 1866–1910; von Jankovich's (1923) Budapest coal prices for Hungary in 1866–1890; for all other periods, I interpolate coal prices using prices from neighboring provinces (Viennese series for Moravia; Linz series for Salzburg, Tyrol; Graz series for Carinthia, Carniola, Littoral, and Dalmatia; Gorkiewicz's (1950) Krakow series for Silesia; Hoszowski's (1934) Lviv series for Bukowina; Hungarian series for Eastern and Western Slovakia).

Heat

The hardwood, softwood, and coal prices, described above, are used as inputs in calculating the overall price of heat in millions of British thermal units (1 BTU = 1055 J). The rates of conversion are as follows:

1 m BTU = 0.157 m³ hardwood = 0.241 m³ softwood = 41.23 kg coal

In my calculations of the cost of living, I consider these three fuels to be perfect substitutes and so the price of heat is whichever is the lowest, cheapest way to buy 1 BTU.

Light (Tallow Candles and Petroleum)

For most provinces (specifically for Lower Austria, Salzburg, Styria, Carinthia, Carniola, Littoral, Tyrol, Moravia, Dalmatia, Banat, Eastern and Western Slovakia, Croatia-Slavonia, and Transylvania), I use (without any further adjustments) MSW Vienna series or I combine the Viennese data with scattered local prices; other than that, for Bohemia in 1883–1908 I use Prague prices of petroleum in SJ Prague; for Galicia, I use Hoszowski's (1934) petroleum prices from Lviv from 1869 onwards; Kőrösi's (1873) Budapest tallow prices for Hungary in 1829–1850, and Währungsfrage tallow series for Budapest in 1866–1876.

Soap

Only scattered information is available about the local price for soap in Cisleithania; MSW offer continuous series of soap prices for Vienna, covering the whole period, which I use (without any adjustments) in Lower Austria, Styria, Carinthia, Carniola, Littoral, Moravia, and Dalmatia; for Upper Austria and Salzburg, I use MSW Linz series from 1876 onwards and Vienna series before that; for Tyrol, I combine MSW Vienna series with scattered price quotes for Innsbruck in MSW; for Bohemia, I use the Prague soap price from SJ Prague in 1874–1897 and MSW Vienna prices in all other years; for Silesia, Galicia, and Bukowina, I use Gorkiewicz's (1950) Krakow soap prices for 1829–1868, MSW Vienna series until 1875 and MSW Linz series thereafter; I also use Kőrösi's (1873) Budapest soap prices for Hungary, Eastern Slovakia, and Western Slovakia in 1829–1850, combined with MSW Vienna prices in 1851–1893 and then local prices for 1829–1893 and local price from USJ from 1894 onward; for Croatia, I use MSW Vienna prices until 1897 and local price for USJ from 1898 onwards.

Textiles

I use the same MSW series for the whole period and for every province. It is an equally weighted index of the price of loden, cotton, and linen.

Rent (Housing)

MSW for Vienna, Graz, Linz, and Innsbruck; Protokoll (1904, p. 767) for Vienna this source contains data on total rent revenue for the I.–X. and XX. District which MSW use to calculate their rent per capita; for Prague, I use SH Prague to obtain similar statistic—total rental revenue in a given year and divide it by population to obtain per capita rent; for all other provincial capitals, I get total rental return for 1856 and 1858 from Steuerwesens (1858) and Denkschrift (1860) respectively and from MFM in years 1903–1906; all other years are interpolated (see below).

Expenses on living quarters represent the most important single item in the budget while at the same time being the most elusive among the price series. Housing has historically been a very heterogeneous good, a problem that is compounded by the immense technological changes that housing construction underwent during the nineteenth century (e.g., indoor plumbing). Needless to say, the constructed price indices will not be able to make justice to that. In addition, housing is perhaps the quintessential non-tradable good, which means that prices can differ considerably across markets.

MSW proxy for housing costs by calculating, for each of the four cities they consider, the rental revenue per capita. They rely on the fact that all provincial capitals (as well some other towns) were subject to a tax on rents. In any of the towns, more than 90 percent of houses were taxed and since not all of these were actually rented out, the law required government officials to construct estimated rent revenues based on the going market rate. Continuous series of this "officially ascertained rental return" that span the entire period are only available for Vienna. For Graz and Linz, they are only available continuously between 1872 and 1894. In addition, I have constructed analogical series for Prague from the city's annual statistics,

spanning 1821–1903.¹ Apart from these four series, rental data on all other provincial capitals are only available (by fortunate historical coincidence) for 1856, 1859, and 1903–1906. Since two of these data points are relatively close to the beginning of the period and the rest close to the end of it, they provide some information about the relative rents in various towns and about the long-term trend. Throughout the nineteenth century, rents rose in line with the growing population but the rate of growth differed from place to place, with large cities experiencing the fastest growth. I use the scattered data points to estimate the long-term growth rate of rents in each individual city, interpolate the trend in rents, and then I superimpose year-to-year fluctuations from the series for Vienna, Graz, Linz, and Prague. This, of course, leaves much to be desired but at least it provides some indication of relative value of rents across time and space. I consider this a better course of action than either leaving the rents out altogether or using the same Viennese rent series in all places.² Given that housing costs represent about 10–20 percent of the household budget, overestimating rents by, say, a factor of three (as would be the case, for example, if the Linz series were replaced by the Viennese ones in the index for Upper Austria) would bias the index upward by as much as 40 percent.

Nominal Wages

Versuch 1827/28; Darstellung for 1829; Währungs-Frage for 1830–1840; TSOM-SJOM-OSH for 1841–1910 (after 1867 Cisleithanian provinces only); USJ for Transleithania from 1874 onward; Ljetopis for Croatia and Military frontier in 1871–1874; Sandgruber (1982, p. 125) and Mesch (1982) for Vienna, Salzburg, Graz, Trieste, Brno, Lviv for 1891–1914 (these are industrial wages in large cities); Hoszowski's (1934) skilled and unskilled wages for Lviv for 1829–1910; for Transleithania in 1893, I used MSK (1895)—Mezőgazdasági Termelése, and for 1896 I used Matlekovits (1900); for all other periods (particularly 1882–1910) and provinces, I interpolate nominal wages for Upper Austria, Graz wages for Carinthia, Brno wages for Silesia, Lwiw wages for Bukowina, and Trieste wages for Carniola and Dalmatia.

Like all other prices in the TSOM-SJOM-OSH series, the wage rate, too, was first (in 1827–1877) reported for the whole province, from 1877 to 1881 separately for the province at large and for the provincial capital, and from 1882 onward for the capital alone. This change did produce a break in the series with the provincial capitals clearly paying higher wages than the countryside. The readings for these individual cities tend to be fairly constant, with the same one value being quoted sometimes for more than a decade. Rauchberg (1895, p. 127) notes that the 1887 law on worker insurance required local authorities to determine the local "customary day wage" (der übliche Taglohn) as a basis for calculating the various social transfers and that

¹ Both the rental return and the city population (as well as the per capita rent calculated from them) change abruptly (and lose comparability across time) when growing cities incorporate their suburbs. For that reason, the series mentioned above pay attention to city borders and report rental tax revenues pertaining to the same consistent territorial units throughout the nineteenth century.

 $^{^{2}}$ Allen (2009) constructs his historical price index by avoiding any estimation of rents altogether. Instead, he mentions that such costs amounted to no more than 5 percent of overall spending (p. 38) and accordingly augments the cost of his consumption basket by a factor of 1.05.

these were then used by the Statistical Commission in its reports. The constancy of reported wage rates could therefore be a product of bureaucratic inertia. A comparison with other sources, such as payroll records from individual companies (an admittedly unrepresentative data set but a useful corroborative material), suggests however, that from late 1870s to early 1890s the nominal wages were in fact fairly constant and moving within only a narrow interval. The period was one of stagnating or declining prices and so employers could pay higher real wages by keeping nominal wages relatively constant.

In those few years, when the wage rates from provincial capitals and provincial countryside overlap, the wage rates in provincial capitals are (not too surprisingly) higher. In order to provide a consistent measure, I adjust the city wages down by whatever is the city premium in year 1877–1881, when the two series are co-reported. As a result, the wage rates in the paper are the TSOM-SJOM-OSH series in 1827–1877 and the 1891 values from OSH (1892, p. 139), while in the remaining years, the wage rates are downward-adjusted (industrial) wage rates from provincial capitals. There were a few unrealistically high outlier readings for wage rates "ohne Kost" in the early 1870s and in those cases I corrected the trend by looking at the wage rates "mit Kost." Finally, I smoothed the wage rates somewhat by turning the wage series into a weighted 5-year centered moving average where values two years out (in either direction) were given a 0.05 weight each and values one year out a 0.2 weight each.

The calculations for Transleithania were somewhat different because USJ did not split statistics by provinces but by districts (Comitats), which have to be aggregated to add up to the geographical areas defined in this article. Moreover, prior to the publication of USJ, data were published only for Hungary as a whole, with separate entries only for Transylvania (from 1845), for Banat (from 1850), for Croatia (from 1850), and for Military Frontier (from 1827 but wage rate only from 1830). This means that the pre-1850 wage rates are largely interpolated from the Hungarian series and from the Military Frontier series. From 1874 the wage information becomes much more plentiful and even detailed geographically, with some regions, e.g., Western Slovakia, offering five separate agricultural wage series (from Nitra, Nove Zamky, Lucenec, Banska Bystrica, and Bratislava). In addition, in regions with any mining sector, we also have the min-max range for wages of miners (male, female, and children). I combine these to produce a wage rate for the whole region, taking the agricultural male day wage as the main source, using the others as guide in case a missing year here or there requires interpolation. As with the Cisleithanian wages, I apply the same weighted centered 5-year moving average to the raw series.

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