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International Resource Flows and Construction Movements in the Atlantic Economy: The Kuznets Cycle in Italy, 1861–1913

STEFANO FENOALTEA

Nineteenth-century Italy experienced the long swings in migration, capital flows, and construction characteristic of the international Kuznets cycle, but in an unusual combination: its external migration swing may have resembled Britain's, but its capital flows and construction swing resembled America's. Construction in Italy was finance-sensitive rather than population-sensitive, and reacted primarily to exogenous shifts in the supply of foreign capital. The Italian experience suggests that changes in perceived risk altered the relative supply of capital in Britain and abroad and thereby induced the opposite swings in construction and the swing in migration.

The "Atlantic economy" of the later nineteenth century was characterized by long swings in international resource flows, accompanied by largely opposite swings in construction activity in Britain on the one hand and in its overseas counterparts on the other. The transoceanic movement of European migrants and capital displayed long-swing peaks in the early 1870s, the late 1880s, and again on the eve of the First World War, with intervening troughs in the late 1870s and near the turn of the century. In the New World, including Canada, Argentina, and Australia as well as the United States, construction displayed this very same long swing; in Britain, the dominant exporter of capital as well as a major source of migrants, construction displayed

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its mirror image, peaking when transoceanic resource flows and New World construction were weakest and vice versa.¹

The literature on these long swings or Kuznets cycles offers the usual variety of interpretations. H. J. Habakkuk, P. J. O'Leary and W. Arthur Lewis, and S. B. Saul, for example, dismiss the entire pattern as mere happenstance.² But theirs is a minority view; the authoritative tradition represented by Moses Abramowitz, Alec Cairncross, Allen Kelley, Brinley Thomas, Jeffrey Williamson, and Simon Kuznets himself sees a systematic relationship between the inverse construction movements and the transoceanic resource flows, even if it doubts that the long swing was a true self-perpetuating cycle. Migration is here the key element, causing opposite variations in the demand for construction—"population-sensitive capital formation," in Kuznets's telling phrase—in the source and destination areas; the parallel capital flows are similarly derivative, as they are themselves induced by (and of course facilitate the continuation of) the divergent rates of infrastructure investment.³

Newly available evidence obtained as part of an ongoing recalculation of Italian industrial production indicates that construction in Italy also followed the characteristic Kuznets cycle—with the peaks and troughs typical of the New World *recipients* of international migration. As is well known, Italy was also heavily involved in the international flows of labor and capital; and while the available time series are hardly what one would hope for, the evidence strongly suggests that the construction

¹ See, for example, Brinley Thomas, *Migration and Urban Development: A Reappraisal of British and American Long Cycles* (London, 1972), p. 4.

² H. J. Habakkuk, "Fluctuations in House-Building in Britain and the United States in the Nineteenth Century," this JOURNAL, 22 (June 1962), pp. 213, 227; P. J. O'Leary and W. Arthur Lewis, "Secular Swings in Production and Trade, 1870-1913," *The Manchester School of Economic and Social Studies*, 23 (May 1955), p. 127; S. B. Saul, "House Building in England, 1890-1914," *Economic History Review*, 2nd ser., 15 (Aug. 1962), p. 136.

³ Moses Abramowitz, "The Nature and Significance of Kuznets Cycles," *Economic Development and Cultural Change*, 9 (Apr. 1961), p. 248, and "The Passing of the Kuznets Cycle," *Economica*, n. s., no. 140 (Nov. 1968), p. 366; Alec Cairncross, *Home and Foreign Investment, 1870-1913: Studies in Capital Accumulation* (Cambridge, 1953), pp. 195, 209, and "Economic Growth and Stagnation in the United Kingdom before the First World War," in Mark Gersovitz et al., eds., *The Theory and Experience of Economic Development: Essays in Honor of Sir W. Arthur Lewis* (London, 1982), p. 293; Allen C. Kelley, "Demographic Change and Economic Growth: Australia, 1861-1911," *Explorations in Entrepreneurial History*, 2nd ser., 5 (Spring/Summer 1968), pp. 207-77; Brinley Thomas, *Migration and Economic Growth: A Study of Great Britain and the Atlantic Economy* (Cambridge, 1954), pp. 174-75, and *Migration and Urban Development*, pp. 24-41; Jeffrey G. Williamson, *American Growth and the Balance of Payments, 1820-1913: A Study of the Long Swing* (Chapel Hill, 1964), p. 11; Simon S. Kuznets, *Capital in the American Economy: Its Formation and Financing* (Princeton, 1961), p. 327ff. See also J. Parry Lewis, "Growth and Inverse Cycles: A Two-Country Model," *Economic Journal*, 74 (Mar. 1964), pp. 109-18. Some authors stress the role of primary product prices and the terms of trade in determining the long swing in migration; see the early analysis in Cairncross, *Home and Foreign Investment*, pp. 189-195, the evidence in W. Arthur Lewis, *Growth and Fluctuations, 1870-1913* (London, 1978), p. 59, and especially C. Knick Harley, "Transportation, the World Wheat Trade, and the Kuznets Cycle, 1850-1913," *Explorations in Economic History*, 17 (July 1980), pp. 218-50.

cycle in Italy was related not to demographic developments but to financial ones.

Specifically, the long swings in Italian construction seem tied to changes in the supply of foreign capital, and thus to changes in British foreign investment—themselves attributable, it would appear, less to variations in domestic British investment opportunities than to changes in investors' perception of the relative safety of investment in Britain and abroad. An examination of the Kuznets cycle in Italy thus suggests that the forces generating the inverse long swings of the Atlantic economy were primarily financial rather than demographic, and that the fundamental distinction was between the exporters and importers of capital rather than between the exporters and importers of labor.

THE LONG SWING IN CONSTRUCTION

The new series documenting the long swing in construction in Italy are presented in Table 1 and illustrated in Figure 1.⁴

Column 1 is an index of urban construction, obtained by chaining the geometric average of year-to-year growth rates in a sample of cities (five at the very beginning, quickly rising to fifteen to twenty; most are in the North, the rest in the Center). These city-specific growth rates are calculated from data on the consumption of binders (plaster, lime, cement) subject to consumption tax; that tax was levied as the goods crossed the urban consumption-tax perimeter, which normally coincided with the city walls. Since binders are bulky and not easily smuggled, the data are intrinsically of relatively high quality.

This index displays a clear long swing, with peaks in 1862–65, 1873, 1887, and 1912, and intervening troughs in 1868, 1877–79, and 1895 (Figure 1, line 5). That long swing is apparent in the basic series, and does not need to be teased out by taking long moving averages or otherwise manipulating the data in a way that risks creating the phenomenon one is investigating; it is also diffused through the sample, and not the result of a few outliers.⁵

Columns 2 through 5 are estimates of actual new construction at 1911 prices. Column 2 refers to railway construction. These estimates are obtained as weighted sums of quantity series tracing the length of new rail and tramway lines entering service (distributed over the relevant construction period) on the one hand, and rail consumption in excess of that absorbed by network extensions (to represent improvements and

⁴These series are derived in Stefano Fenoaltea, "Public Works Construction in Italy, 1861–1913," *Rivista di storia economica*, 3 (International issue, 1986), pp. 1–33, and "Construction in Italy, 1861–1913," *Rivista di storia economica*, 4 (International issue, 1987), pp. 21–53; see also "Railway Construction in Italy, 1861–1913," *Rivista di storia economica*, 1 (International issue, 1984), pp. 27–58.

⁵While the spectrum of growth rates across cities is always very wide, the entire spectrum moves as the index does; see Fenoaltea, "Construction in Italy," table 1.

TABLE 1
CONSTRUCTION: NEW SERIES

Year	Index of Urban Construction (1911 = 100) (1)	New Construction (million lire at 1911 prices)			
		Social Overhead Capital		Private Buildings (4)	Total ^a (5)
		Railways (2)	Other (3)		
1861	30.6	188	109	100	396
1862	40.3	210	114	158	482
1863	35.9	214	143	134	492
1864	38.5	191	145	153	490
1865	37.9	182	179	128	490
1866	31.8	157	132	98	387
1867	33.3	113	114	110	337
1868	30.4	111	127	89	327
1869	32.4	96	116	107	320
1870	32.4	106	140	95	341
1871	34.2	114	128	122	364
1872	36.4	122	153	126	401
1873	38.3	136	167	174	476
1874	38.1	141	149	212	502
1875	36.4	111	140	152	404
1876	35.6	97	140	139	376
1877	34.2	83	166	137	387
1878	34.2	89	172	127	388
1879	34.2	123	156	120	399
1880	36.8	147	167	126	440
1881	37.5	168	154	147	469
1882	39.0	211	171	178	559
1883	42.3	236	196	175	607
1884	46.6	231	219	183	632
1885	48.9	234	218	207	659
1886	55.4	223	238	209	671
1887	56.4	198	277	160	635
1888	56.7	205	298	116	619
1889	52.0	176	286	124	585
1890	45.9	175	247	164	586
1891	42.7	181	210	181	572
1892	38.6	179	182	163	524
1893	38.9	151	166	186	503
1894	36.1	165	151	183	498
1895	35.7	73	143	177	393
1896	36.4	43	142	177	361
1897	36.0	46	141	176	363
1898	40.9	36	143	176	356
1899	44.1	34	154	177	365
1900	42.3	43	165	183	391
1901	44.3	51	173	204	428
1902	47.6	60	191	239	490
1903	49.9	58	202	274	533
1904	54.7	70	198	306	573

TABLE I—continued

Year	Index of Urban Construction (1911 = 100) (1)	New Construction (million lire at 1911 prices)			
		Social Overhead Capital		Private Buildings (4)	Total ^a (5)
		Railways (2)	Other (3)		
1905	56.9	73	226	335	635
1906	70.8	83	278	329	690
1907	72.1	91	302	349	742
1908	78.6	95	337	373	805
1909	84.6	116	413	444	973
1910	89.3	141	477	519	1,137
1911	100.0	150	495	555	1,201
1912	100.9	155	506	564	1,225
1913	91.6	151	501	547	1,199

^a Numbers need not add, due to rounding.

Sources: Columns 1, 4, and 5 from Stefano Fenoaltea, "Construction in Italy, 1861-1913," *Rivista di storia economica*, 4 (International issue, 1987), pp. 21-53. Columns 2 and 3 from Stefano Fenoaltea, "Public Works Construction in Italy, 1861-1913," *Rivista di storia economica*, 3 (International issue, 1986), pp. 1-33.

the like) on the other; the weights are the corresponding unit values at 1911 prices.

Column 3 refers to other social overhead capital formation. Its smaller component is a sum of quantity series tracing the additions to privately financed gas, power, water, and irrigation works, again weighted by the corresponding unit values at 1911 prices; its larger one traces the deflated expenditure on public buildings and on other non-railway projects (including those financed from private sources).

Column 4 refers to private building construction. The larger component of this series refers to taxable (basically, non-farm) buildings. From the early 1870s, it is calculated by deflating the reported or estimated increments in buildings-tax assessments attributable to new construction, allowing for public buildings, and then scaling the result to convert deflated assessments into actual construction values. This series is then extrapolated back to 1861 with the aid of the urban construction index in column 1, allowing for public works. The complementary estimates for exempt (farm) buildings are extrapolated from the preceding series, allowing primarily for the relative intercensal movements of the relevant populations (including those induced by demolitions) and secondarily for the discrepancies between urban and non-farm construction.

Column 5 is the estimate of aggregate construction, obtained as the sum of columns 2 through 4. It too displays a clear long swing in the raw series, with peaks in 1862-65, 1874, 1886, and 1912, and intervening troughs in 1869, 1876, and 1898; and as can be seen in Figure 1, this

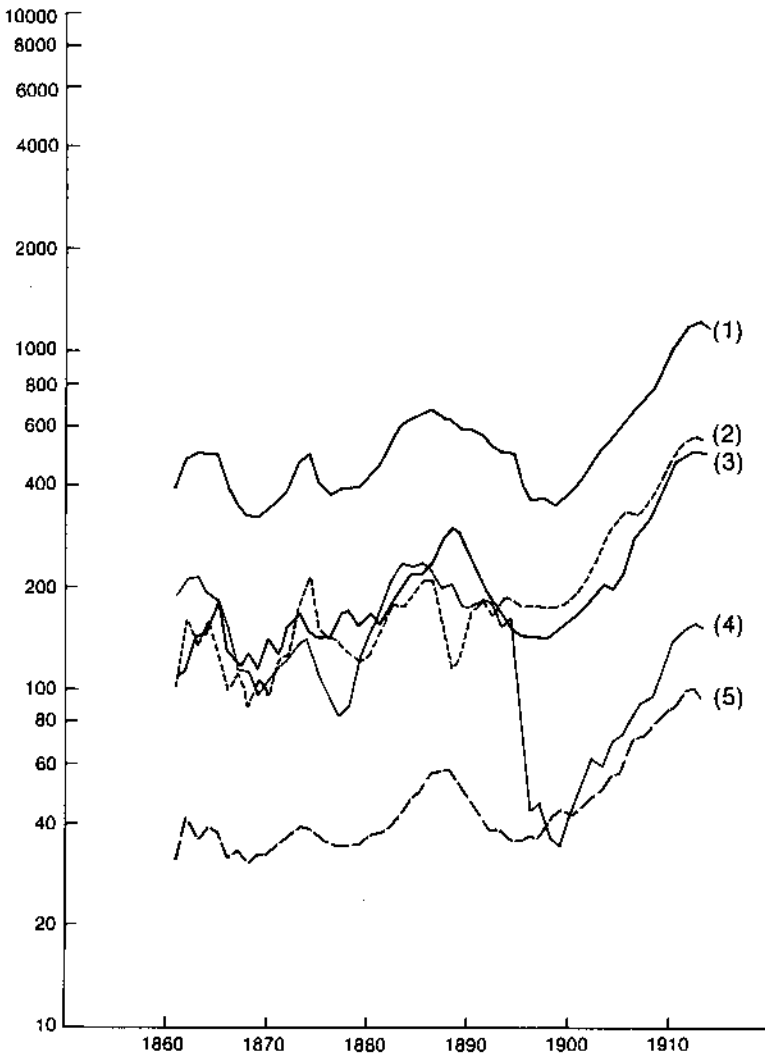


FIGURE I
CONSTRUCTION

- (1) Aggregate value of new construction (Table 1, column 5: million lire at 1911 prices).
- (2) Value of new construction: private buildings (Table 1, column 4: million lire at 1911 prices).
- (3) Value of new construction: non-railway social overhead capital (Table 1, column 3: million lire at 1911 prices).
- (4) Value of new construction: railways (Table 1, column 2: million lire at 1911 prices).
- (5) Index of urban construction (Table 1, column 1: 1911 equals 100).

pattern was largely common to all three major components of the aggregate.

The direct estimates of aggregate construction and the index of urban construction thus display much the same cyclical pattern. There are differences between them, of course, most noticeably in the last full cycle between the late 1870s and the late 1890s; but these too are readily

explained. Indeed, urban construction seems to be closely tied to two of the three major components of aggregate construction—private buildings and non-railway public works—but not to the third; this stands to reason, as railway construction alone was overwhelmingly extra-urban.⁶

Construction in Italy thus appears to have followed a typical Kuznets cycle. Apart from the peak in the early 1860s, in the immediate aftermath of Unification, the peaks and troughs of that long swing largely parallel those characteristic of the overseas lands, which were in turn inverse to the British ones.

CONSTRUCTION AND MIGRATION

As recalled in the opening paragraphs of this article, the authoritative tradition on the Kuznets cycle in the Atlantic economy attributes construction movements to migration flows: construction surged in the overseas lands when migration from Britain (and other European lands) was strong, and in Britain when it was weak. The Italian case seems to be an exception to this pattern; but the evidence is weak, as the time path of emigration is very poorly established.

The official gross emigration series published by the Istituto centrale di statistica ("Istat") is transcribed in Table 2, column 1.⁷ It points to rough stability in 1869–1880, 1888–1898, and 1906–1913, and rapid growth in 1880–1888 and 1898–1906; as Arthur Bloomfield has pointed out, it displays a long swing around its positive trend, and that long swing is positively correlated with domestic (and transoceanic) construction.⁸

The Istat series is only an approximate measure of gross emigration: it reflects the number of passports authorized (but not necessarily issued) from 1869 to 1903, and of passports issued from 1904.⁹ A more significant discontinuity dates from early 1901, as passports became

⁶ *Ibid.*, pp. 26–27 and fn. 14.

⁷ Istituto centrale di statistica, *Sommario di statistiche storiche italiane, 1861–1955* [henceforth *Sommario*] (Rome, 1957), p. 65.

⁸ Arthur I. Bloomfield, *Patterns of Fluctuation in International Investment Before 1914* (Princeton, 1968), p. 32 fn., asserts that "Italian emigration shows clear long-swing movements that tended to have a positive relation to the swings in the domestic variables but to be even more closely related to and influenced by the Kuznets cycle in the United States." The domestic variables are railway track added and industrial production, as measured in my own early work, while emigration is measured by the series at hand (pp. 32, 49). In a similar vein, Francesco Lauricella, "Emigrazione italiana di massa in Argentina e in Brasile e ciclo agricolo (1876–1896)," in Franca Assante, ed., *Il movimento migratorio italiano dall'Unità nazionale ai giorni nostri* (Geneva, 1978), vol. 2, p. 372, plots an 11-year moving average of the absolute changes in gross overseas migration; his series displays a long swing with high levels in the 1880s and 1896–1909, with an intervening trough in the early 1890s (and another very sharp one after 1910, as the war years get averaged in). His interpretation stresses the push of declining grain prices in the 1880s, and the pull of overseas labor markets in the later surge (pp. 379, 382–383).

⁹ *Sommario*, p. 5.

TABLE 2
DEMOGRAPHIC VARIABLES: EXISTING SERIES

Year	Gross Emigration (000s) (1)	Net Emigration (000s) (2)	Number of Marriages (000s) (3)	Marriage Rate (per 1000) (4)
1861			211	
1862		30	213	16.4
1863		25	214	16.4
1864		20	210	16.0
1865		15	241	18.2
1866		10	149	11.2
1867		3	180	13.4
1868		4	195	14.4
1869	135	5	218	16.0
1870	107	5	200	14.6
1871	122	6	204	14.8
1872	146	32	208	15.0
1873	152	33	221	15.8
1874	108	29	213	15.2
1875	103	31	237	16.8
1876	109	33	233	16.4
1877	99	31	223	15.6
1878	96	32	207	14.4
1879	120	43	220	15.2
1880	120	47	204	14.0
1881	136	51	237	16.2
1882	162	55	230	15.6
1883	169	60	241	16.2
1884	147	66	248	16.6
1885	157	71	241	16.0
1886	168	76	240	15.8
1887	216	82	245	16.0
1888	291	111	243	15.8
1889	218	96	239	15.4
1890	216	103	228	14.6
1891	294	123	236	15.0
1892	224	118	237	15.0
1893	247	126	236	14.8
1894	225	119	237	14.8
1895	293	143	236	14.6
1896	307	147	231	14.2
1897	300	162	235	14.4
1898	284	172	227	13.8
1899	308	183	242	14.6
1900	353	178	240	14.4
1901	533	117	241	14.4
1902	532	118	246	14.6
1903	508	120	243	14.4
1904	471	106	256	15.0

TABLE 2—continued

Year	Gross Emigration (000s) (1)	Net Emigration (000s) (2)	Number of Marriages (000s) (3)	Marriage Rate (per 1000) (4)
1905	726	131	263	15.4
1906	788	138	268	15.6
1907	705	130	270	15.6
1908	487	109	293	16.8
1909	626	124	275	15.6
1910	651	124	277	15.6
1911	534	124	269	15.0
1912	711	298	275	15.2
1913	873	449	272	15.0

Sources: Column 1 from Istituto centrale di statistica, *Sommario di statistiche storiche italiane, 1861-1955* (Rome, 1957); column 2 from Franco Giusti, "Bilanci demografici della popolazione italiana dal 1861 al 1961," in Istituto centrale di statistica, *Sviluppo della popolazione italiana dal 1861 al 1961* (Rome, 1965); columns 3 and 4 from Stefano Somogyi, "Nuzialità," in *Sviluppo della popolazione italiana dal 1861 al 1961*.

free, so that an increased proportion may have been issued to people who did not in fact depart; on the other hand, their validity was extended to three years, so that seasonal migrants could well exit Italy a number of times without being counted more than once.¹⁰ Moreover, significant numbers of individuals departed without any passport, especially to or through other European countries. Transoceanic immigration figures thus exceed the corresponding Italian data by about one quarter between 1879 and 1900; after 1901, when passports became compulsory for transoceanic migrants, the discrepancy is much reduced (Argentina) or changes sign (Brazil, United States).¹¹

In any case the conceptually relevant variable is not gross emigration but net emigration; and the former is a poor guide to the latter, as the return flow was high, variable, and documented only in part (the transoceanic component, based on ships' passenger lists, from 1902).¹² On the other hand, net emigration is reasonably well established between successive censuses as the difference between the natural increase and the actual increase. The relevant census dates are December 31, 1861, 1871, and 1881; February 10, 1901; and June 10, 1911. No

¹⁰ Francesco Coletti, "Dell'emigrazione italiana," in R. Accademia dei Lincei, *Cinquanta anni di storia italiana* (Milan, 1911), vol. 3, pp. 10-11.

¹¹ J. D. Gould, "European Inter-Continental Emigration. The Road Home: Return Migration from the USA," *Journal of European Economic History*, 9 (Spring 1980), pp. 88-90; see also Ercole Sori, *L'emigrazione italiana dall'Unità alla seconda guerra mondiale* (Bologna, 1979), p. 55.

¹² Gould, "European Inter-Continental Emigration," pp. 79, 84-85; *Sommario*, pp. 65, 67. The transatlantic return flow figures, compiled by the Commissariato dell'emigrazione, are not comparable to the outflow data; see Coletti, "Dell'emigrazione," pp. 14-15, 38, 74.

census was taken in 1891; for present purposes, this omission is a critical deficiency.

The intercensal changes yield annual net emigration rates rising from 0.1 per thousand in the 1860s to 1.3 in the 1870s, 3.8 in the 1880s and 1890s together, and 4.7 in the 1900s.¹³ Taken at face value, these suggest at a minimum that construction and emigration peaked together after the turn of the century; but a case can fairly be made that the June date of the 1911 census tends to overstate net migration, as the different seasonal pattern of departures and returns led to a disproportionately greater counting of the former.¹⁴

Annual estimates of net migration on a consistent calendar-year basis have been compiled by Franco Giusti (Table 2, column 2).¹⁵ These were calculated by taking the year-end population in the census years (as reported or estimated ad hoc), and then distributing the intercensal totals over the intervening years with an eye to the path of gross migration. Giusti's figures yield annual rates of net migration equal to 1.3 per thousand in 1872–1881 (as above), 2.8 in 1882–1891, 4.6 in 1892–1901 (3.8 for the two decades together), and 3.6 in 1902–1911—suggesting, against the crude figures obtained directly from the censuses, that the peak in net emigration coincided not with the peak but with the trough in domestic construction.¹⁶

This conclusion seems questionable, on two separate grounds. In the first place, Giusti's estimate of the population at the end of 1911 seems too high, as it implies an implausibly high level of net immigration in the months after the census; he thus seems to have underestimated net emigration in 1911 and therefore in the 1902–1911 decade as a whole. In the second place, his allocation of the total net migration between 1882 and 1901 seems to allow too little to the 1880s and too much to the 1890s, as it implies an implausible variation in the repatriant ratio from decade to decade. As detailed in the Appendix, prudent corrections would increase Giusti's net migration figures for 1902–1911 (and reduce his end-1911 population figure) by some 100,000 souls, and reallocate some 257,000 of the net migrants between 1882 and 1901 from 1892–1901 to 1882–1891.

These revisions imply that the annual net migration rate per thousand rose from 1.3 in 1872–1881 to 3.7 in 1882–1891, 3.8 in 1892–1901, and 3.9

¹³ Massimo Livi Bacci, "I fattori demografici dello sviluppo economico," in Giorgio Fuà, ed., *Lo sviluppo economico in Italia* (2nd edn, Milan, 1975), vol. 2, p. 21.

¹⁴ Gould, "European Inter-Continental Emigration," p. 82.

¹⁵ Franco Giusti, "Bilanci demografici della popolazione italiana dal 1861 al 1961," in Istituto centrale di statistica, *Sviluppo della popolazione italiana dal 1861 al 1961. Annali di statistica*, series 8, vol. 17 (Rome, 1965), p. 116.

¹⁶ Gould, "European Inter-Continental Emigration," pp. 79–87, investigates and explains the differences between the Livi Bacci and Giusti figures. While not unaware of the weaknesses of the latter, particularly as an annual series, he accepts Giusti's implication that "the Italian net population loss through emigration peaked in the 1890s" (p. 87).

TABLE 3
CONSTRUCTION AND DEMOGRAPHIC VARIABLES: DECADAL VALUES

	1862-1871	1872-1881	1882-1891	1892-1901	1902-1911
1. Total construction ^a	4.030	4.242	6.125	4.182	7.779
2. Rate of net emigration ^b	0.01	0.13	0.37	0.38	0.39
3. Population growth rate ^b	0.69	0.60	0.69	0.70	0.71
4. Population increment ^c	1.784	1.659	2.011	2.192	2.383
5. Ratio of row 1 to row 4	2.3	2.6	3.0	1.9	3.3
6. Marriages ^c	2.031	2.147	2.316	2.293	2.578
7. Ratio of row 1 to row 6	2.0	2.0	2.6	1.8	3.0

^a Billion 1911 lire.

^b Percent per year.

^c Millions.

Sources: Row 1 from Table 1, column 5; rows 2, 3, 4, and 6 from the text.

in 1902-1911. The differences in the net migration rates across these last three decades, in short, appear to be insignificant. On a decadal basis, therefore, the Italian case does not fit the pattern of the "Atlantic economy," in which surges in construction are associated with higher immigration or lower emigration. In Italy the rise in construction from the 1870s to the 1880s is associated with a rise in net emigration; the subsequent decline in construction in the 1890s, and its recovery in the 1900s, are not associated with opposite movements in net emigration (Table 3, rows 1 and 2).

One would of course prefer to examine the correlation of construction and net migration with more numerous data points; but pending a revision of Giusti's annual figures the Italian evidence cannot be taken to reveal net migration over periods shorter than a decade. On the other hand, the shorter-term movements of net migration from Italy presumably paralleled those of aggregate migration to the New World (not least because of the unifying impact of the business cycle in the receiving areas); and the latter was closely correlated with local construction, which as noted was closely correlated with construction in Italy.¹⁷ Presumably, therefore, the generally positive association of construction in Italy and net migration from Italy revealed by the decadal figures would appear even stronger with more fine-grained data.

CONSTRUCTION AND POPULATION GROWTH

In a sense, of course, the relation between migration and construction is a secondary issue. The Kuznetsian description of construction is after all not "migration-sensitive" but "population-sensitive" capital formation; migration matters to the extent that it alters the growth rate of

¹⁷ As indicated in the Appendix, the impact of conditions in the receiving areas on Italy's net emigration is clearly apparent in the available figures for transoceanic repatriation after the turn of the century.

population in general and household formation in particular. The Italian experience could thus still fit the Kuznetsian view, whatever the path of net migration, if the long swing in construction was positively related to domestic demographic variables.

Once again, however, this does not appear to be the case. At decade intervals, the year-end population within the borders of 1871 to 1913 equaled 25.017 million in 1861 (census figure), 26.801 in 1871 (census figure), 28.460 in 1881 (census figure), 30.471 in 1891 (my figure, from the Appendix), 32.663 in 1901 (Giusti's figure), and 35.046 in 1911 (my figure, from the Appendix). These yield the population growth rates and absolute increments transcribed in Table 3, rows 3 and 4, which can be compared with the corresponding cumulations of total construction in row 1. Except for the dip in the 1870s, the decadal population growth rate is virtually constant; clearly, the long swing is not in population growth but in construction per additional person (row 5).¹⁸

Comparisons based on particularly significant subsections of the population are unfortunately possible only for intercensal periods, and thus fail to separate the 1880s from the 1890s. The number of men aged 25 to 65, which may be a fair proxy for the number of households, increased by 49,900 per year in the 1860s, 33,700 in the 1870s, 19,100 in the 1880s and 1890s, and 24,000 in the 1900s.¹⁹ Comparing these intercensal changes to the construction recorded in the corresponding decades, one obtains a construction-per-additional-man equal to 8.1 constant lire in the 1860s, 12.6 in the 1870s, 27.0 in the 1880s and 1890s together, and 32.4 in the 1900s. The strong trend is apparent; the long swing, if any, is lost within the intercensal periods.

A limited but telling comparison is that between the population living in dispersed rural housing and the population engaged in agriculture. From 1861 to 1901, the censuses suggest that both these populations grew relatively smoothly, the dispersed population increasing by 2.9 million as the agricultural population increased by 3.8 million. From 1901 to 1911, on the other hand, the dispersed population grew by a further 0.7 million while the agricultural population declined by 0.3 million.²⁰ In this last decade whatever construction accompanied the movement of the agricultural population was clearly independent of its ostensible demographic base: new farmhouses were built not because

¹⁸ A long swing similarly appears in the real per capita stock of private buildings. That stock is indexed, with a short lag, by the estimates of the corresponding maintenance at 1911 prices; the maintenance figures for the six population benchmark years yield successive decadal increases in the per capita stock equal to -0.4, 1.4, 2.1, 0.8, and 5.1 percent. See Fenoaltea, "Construction in Italy," table 4 and pp. 34, 37-39.

¹⁹ Stefano Somogyi, "Evoluzione della popolazione attraverso il tempo," in Istituto centrale di statistica, *Sviluppo della popolazione italiana*, p. 55.

²⁰ The dispersed rural population grew from 6.3 million in 1861 to 9.2 million in 1901 and 9.9 million in 1911; the agricultural population, from 13.5 million in 1861 to 17.3 million in 1901, declining to 17.0 million in 1911. See Fenoaltea, "Construction in Italy," table 3.

there was a growing pool of farmers, but because the farmers in the existing, shrinking pool were improving their location patterns and style of life.

Annual series are available for the number of marriages and the marriage rate (Table 2, columns 3 and 4, and Figure 2, lines 7 and 8).²¹ From January 1, 1866, the State recognized only the marriages performed by the civil authorities. This caused a surge of (religious) weddings in advance of that deadline, and a consequent drop-off in its aftermath. In addition, from 1866 until about 1872 religious marriages exceed those recorded here by about 20,000 per year, while in 1874–1876 there is a difference of about 10,000 per year in the opposite direction—apparently as marriages contracted earlier before the religious authorities alone were regularized before the civil authorities.²² From the late 1870s these jurisdictional differences appear to have been resolved; the marriage rate then displays a mild long swing, averaging 7.84 in 1882–1891, 7.24 in 1892–1901, and 7.65 in 1902–1911, and the number of marriages correlates well with the level of construction (+0.775, from 1878 to 1913).²³

The marriage swing is so mild, however, that the swing in construction appears again as a swing in construction per unit: this is made clear by Table 3, rows 6 and 7, which transcribe total marriages over the usual decades (including the corrections suggested by the reported differences between religious and civil ceremonies) and compare them to total construction. From 1901 to 1911, in particular, construction nearly trebled, both in toto and in the component devoted to private buildings; the parallel increase in the number of marriages was just 12 percent (29 percent from the trough in 1898 to the peak in 1908).²⁴

It is accordingly difficult to interpret the correlation between marriages and construction as evidence that the movements of the former account for the larger part of the movements of the latter, for the implied elasticity is implausibly high. The more reasonable views are that the

²¹ Stefano Somogyi, "Nuzialità," in Istituto centrale di statistica, *Sviluppo della popolazione italiana*, p. 375. The geographic basis of the early figures is not clear: contrast Somogyi, "Nuzialità," p. 320, and *Sommario*, pp. 4, 43. The rate figures are based on the population estimates which are challenged above; but for these purposes the errors should be minor.

²² Somogyi, "Nuzialità," pp. 322–24.

²³ The correlation between the reported number of marriages (table 2, column 3) and the level of construction (table 1, column 5) falls to +0.724 if it is calculated over the full period from 1861 to 1913, that is, without shedding the defective marriage figures for the early period.

²⁴ The relation between marriages and household formation in Italy is in any case moot, as it was common practice to marry before emigrating, leaving the bride at home; see Gould, "European Inter-Continental Emigration," p. 71. The emigration-related marriages would not result in the formation of a new household in Italy unless and until the migrant returned home to stay; they could nonetheless be correlated with domestic construction because the latter was itself correlated with overseas construction and transoceanic migration. Marriages were also related to return migration, and the 1908 marriage peak is attributed precisely to the large number of repatriants from the New World in that year; see Sori, *L'emigrazione italiana*, pp. 189, 195.

small swing in marriages accounts for a small part of the much larger swing in construction, leaving most of the latter to be explained by other influences; that the small swing in marriages was itself the result of the larger swing in construction, with a plausibly low elasticity of the one to the other; or of course that marriages and construction both reacted, with different elasticities, to some common external influence.

The conclusion remains that the construction swing in Italy does not appear traceable to demographic factors, whether migration, population growth, or household formation. In contrast to the pattern of the Atlantic economy, construction in Italy does not appear to be particularly population-sensitive: the long swing in construction appears as a long swing in amenities per capita against a background demographic trend, rather than in the demographic variables against a background trend in amenities per capita.

CONSTRUCTION AND CAPITAL FLOWS

The Atlantic economy displayed a long swing in international capital flows, mainly from Britain, parallel to that in European migration: British capital exports rose as construction rose in the New World and fell in Britain, and fell as construction fell in the New World and rose in Britain (Table 4, column 1, and Figure 2, line 1).²⁵ As noted above, the Kuznets cycle in Italy paralleled that of the overseas lands; and the parallel here extends to the association of the long swing in construction with a long swing in capital imports.²⁶

Once again the Italian data are weaker than one might wish. The official estimate of the balance of merchandise trade is transcribed in Table 4, column 2.²⁷ This series is relatively reliable, as it was obtained from the product of recorded quantities and the corresponding average values established annually, ex post, by a committee of experts; the only correction of note concerns the transformation of import values from c.i.f. to f.o.b. The time path of this series closely matches that of the construction cycle: it displays major peaks in 1864–1865, 1874, 1887, and 1912, and intervening major troughs in 1871, 1878, and 1899 (Figure 2, line 2).

The official estimate of capital imports is transcribed in Table 4,

²⁵ See Williamson, *American Growth*, p. 11; Thomas, *Migration and Urban Development*, pp. 77 ff., 124; Michael Edelstein, *Overseas Investment in the Age of High Imperialism: The United Kingdom, 1850–1914* (New York, 1982). Williamson sees the long swing in capital flows as induced by, and in turn permitting, that in infrastructure growth; Thomas, in this second book, suggests that the actions of the Bank of England generated the long swing in capital flows and thereby the common construction cycle in the recipients of British capital and European migrants. The British capital export series in table 4, column 1 is from Edelstein, *Overseas Investment*, pp. 313–14.

²⁶ This association also is noted in Bloomfield, *Patterns of Fluctuation*, p. 32.

²⁷ Istituto centrale di statistica, *Indagine statistica sullo sviluppo del reddito nazionale dell'Italia dal 1861 al 1956. Annali di statistica*, series 8, vol. 9 [henceforth *Reddito nazionale*] (Rome, 1957), p. 253.

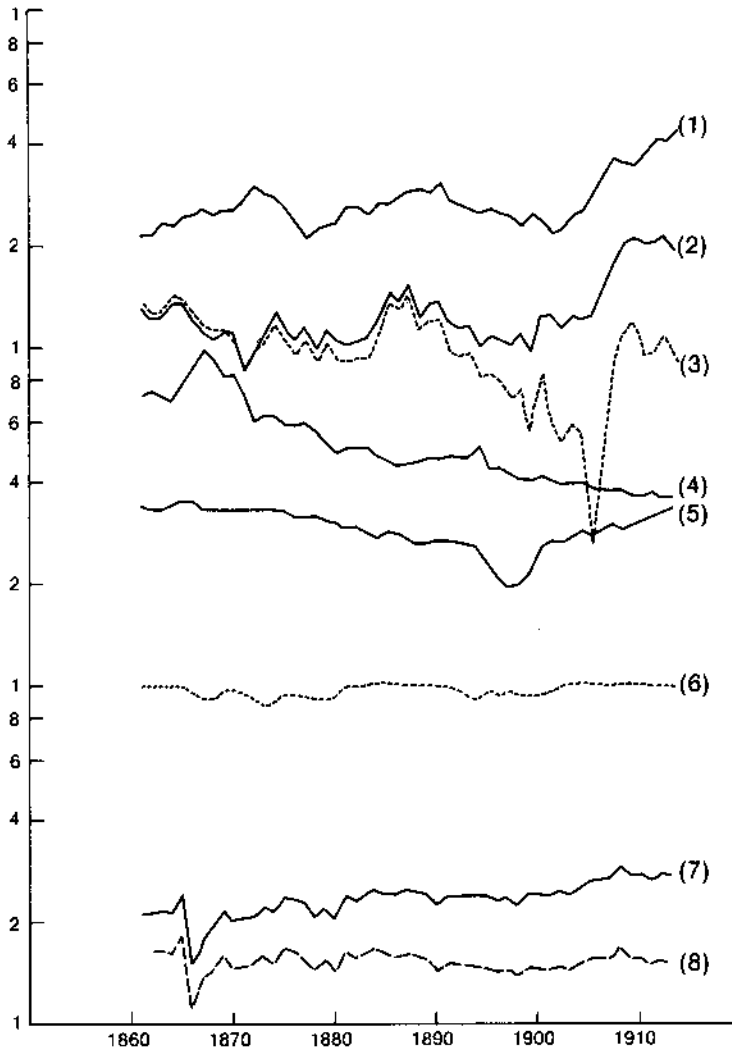


FIGURE 2

FINANCIAL AND DEMOGRAPHIC VARIABLES

- (1) British capital exports (Table 4, column 1), augmented by 200 million pounds to limit vertical variation (near 200 million pounds).
- (2) Italian trade deficit (Table 4, column 2), augmented by 1,000 million lire to limit vertical variation (near 1,000 million lire).
- (3) Italian capital imports (Table 4, column 3), augmented by 1,000 million lire to limit vertical variation (near 1,000 million lire).
- (4) Italian consol yield (Table 4, column 5; between 1 and 10 percent per year).
- (5) British consol yield (Table 4, column 6; between 1 and 10 percent per year).
- (6) Italian exchange rate (Table 4, column 4; near 1.00).
- (7) Number of marriages (Table 2, column 3; near 200,000).
- (8) Marriage rate (Table 2, column 4; near 10 per 1,000).

TABLE 4
FINANCIAL VARIABLES: EXISTING SERIES

Year	British Capital Exports (million pounds) (1)	Italian Trade Deficit ^a (million lire) (2)	Italian Capital Imports (million lire) (3)	Italian Exchange Rate (gold lire per paper lira) (4)	Italian Consol Yield (percent per year) (5)	British Consol Yield (percent per year) (6)	Italian Yield Premium ^b (7)
1861	L. 12	L. 313	L. 325	1.000	7.17%	3.32%	.537
1862	14	223	244	1.000	7.39	3.27	.558
1863	31	231	255	1.000	7.22	3.28	.546
1864	28	367	410	1.000	7.08	3.37	.524
1865	41	367	392	1.000	8.00	3.39	.576
1866	46	219	262	.943	8.91	3.45	.613
1867	52	109	158	.932	9.90	3.27	.670
1868	42	71	116	.913	9.54	3.24	.660
1869	51	101	113	.964	8.32	3.27	.607
1870	55	101	95	.958	8.35	3.28	.607
1871	76	-152	-144	.953	7.34	3.27	.554
1872	97	-35	-44	.923	6.07	3.28	.460
1873	86	96	37	.867	6.35	3.28	.483
1874	78	264	182	.902	6.35	3.28	.483
1875	57	132	20	.934	5.96	3.24	.456
1876	31	62	-58	.933	5.93	3.16	.467
1877	10	171	72	.919	5.97	3.14	.474
1878	23	-6	-101	.918	5.68	3.15	.445
1879	31	121	31	.907	5.22	3.08	.410
1880	33	35	-88	.929	4.92	3.05	.380
1881	60	27	-88	.990	4.97	2.90	.416
1882	61	36	-68	.984	5.03	2.94	.416
1883	49	51	-72	1.003	5.05	2.83	.440
1884	70	204	77	1.007	4.67	2.72	.418
1885	62	452	358	1.001	4.61	2.85	.382
1886	78	373	293	1.007	4.46	2.81	.370
1887	88	524	452	.994	4.51	2.72	.397

1889	83	363	195	.999	4.64	2.63	.433
1890	107	362	203	.990	4.65	2.67	.426
1891	72	194	-26	.988	4.77	2.68	.438
1892	63	161	-58	.977	4.71	2.65	.437
1893	57	172	-39	.931	4.69	2.60	.466
1894	50	9	-202	.915	5.05	2.55	.495
1895	55	84	-168	.960	4.39	2.29	.478
1896	50	68	-209	.940	4.39	2.06	.531
1897	41	18	-292	.960	4.21	1.96	.534
1898	29	101	-259	.931	4.11	2.00	.513
1899	47	-29	-429	.938	4.06	2.18	.463
1900	34	244	-192	.946	4.09	2.53	.381
1901	19	246	-393	.968	4.03	2.67	.337
1902	24	166	-467	.997	3.94	2.66	.325
1903	43	240	-414	1.009	3.97	2.75	.307
1904	52	214	-442	1.009	3.96	2.84	.283
1905	88	234	-742	1.013	3.88	2.78	.284
1906	121	494	-550	1.003	3.80	2.83	.255
1907	162	813	-129	1.001	3.73	2.97	.204
1908	150	1,059	103	1.013	3.69	2.91	.211
1909	142	1,098	217	1.009	3.66	2.98	.186
1910	174	1,028	-31	1.001	3.66	3.09	.156
1911	204	1,035	-22	.999	3.71	3.15	.151
1912	203	1,155	106	.994	3.64	3.28	.099
1913	234	991	-95	.986	3.62	3.40	.061

^a Merchandise only.

^b Column 5 minus column 6, divided by column 5.

Sources: Column 1 from Michael Edelstein, *Overseas Investment in the Age of High Imperialism: The United Kingdom, 1850-1914* (New York, 1982); columns 2 and 3 from Istituto centrale di statistica, *Indagine statistica sullo sviluppo del reddito nazionale dell'Italia dal 1861 al 1956. Annali di statistica*, series 8, vol. 9 (Rome, 1957); column 4 from Istituto centrale di statistica, *Sommario di statistiche storiche italiane, 1861-1955*, column 5 (1862-1913) from Bruno Bianchi, "Appendice statistica: il rendimento del consolidato dal 1862 al 1946," in Fausto Vicarelli, ed., *Capitale industriale e capitale finanziario* (Bologna, 1979), (1861) extrapolated using Mario Da Pozzo and Giuseppe Felloni, *La borsa valori di Genova nel secolo XIX* (Turin, 1964), p. 469; column 6 (1873-1913) from C. Knick Harley, "The Interest Rate and Prices in Britain, 1873-1913: A Study of the Gibson Paradox," *Explorations in Economic History*, 14 (Jan. 1977), pp. 69-89, (1861-1872) extrapolated using Sidney Homer, *A History of Interest Rates* (New Brunswick, 1963), p. 196.

column 3; it was obtained by adding to the balance of merchandise trade the corresponding estimates of the balance on services, labor and capital income, and unilateral transfers.²⁸ Through the 1880s the level and movements of these capital imports are quite close to those of the trade balance; they then diverge, opening up a gap that reaches about one billion lire per year in 1905–1913. This gap implies that Italy's capital imports declined almost steadily from the peak in 1887 to a trough in 1905 (at which time capital exports were supposedly nearly twice capital imports at the previous peak), only to rise dramatically to a new (positive) peak in 1909 (Figure 2, line 3); it further implies that Italy was a net long-term capital exporter—rather implausibly, in view of Italy's labor abundance and relatively low income levels, not to mention the evidence of substantial direct and portfolio foreign investment in Italy that does not seem counterbalanced by Italian investment abroad.

In fact, all the major components of the balance of payments series other than the balance of merchandise trade are extremely weak and tentative, and neither the level nor the time path of the capital import series (from the 1890s on) inspires confidence. For example, almost nothing is known about the tourist trade, which is estimated to have yielded net exports rising from under 100 million lire per year at the start of the period at hand to some 600 million at the end. Private, and therefore total, interest and dividends are similarly unknown. They are estimated to have yielded a net outflow rising quickly from 57 million lire in 1861 to about 100 to 150 million lire per year, with a peak in excess of 200 in the late 1880s and early 1890s, and a terminal (1913) value of 140 million lire; given the long-term decline in interest rates, this increase from 1861 to 1913 is hardly compatible with net capital exports.

Perhaps the most questionable estimates are those concerning the remittances of Italy's emigrants. These rise relatively smoothly from under 15 million lire per year in the early 1860s to about 440 in 1900, jumping to about 660 in 1901 and again beyond 900 in 1905; about 90 percent are attributed to temporary migrants and counted as the earnings of current labor services, with the residual attributed to permanent migrants and counted as unilateral transfers.

One notes, first of all, that the terminal level of these figures seems to be much too high: well-informed contemporary experts writing in 1911 estimated current remittances—including the cash brought back by returning migrants—at something over 500 million lire per year.²⁹

²⁸ *Ibid.*, pp. 159–177, 253–59, whence the following discussion is drawn.

²⁹ Bonaldo Stringher, "Gli scambi con l'estero e la bilancia dei pagamenti italiana," in R. Accademia dei Lincei, *Cinquanta anni di storia italiana*, vol. 3, pp. 120–22. Stringher was then head of the Banca d'Italia. His estimate of earnings from tourists is under 500 million lire per year (*ibid.*, pp. 122–25), again below the figure entering the balance of payments series. An estimate of remittances similar to Stringher's is provided in Coletti, "Dell'emigrazione," pp. 238–44.

Second, the jumps in 1901 and 1905 are suspect, to say the least. The source of these jumps, it seems, is the jump in gross emigration in those years, as the time path of remittances was estimated with an eye to the migration figures.³⁰ This estimating procedure would make perfect sense if all migrants were seasonal, as the stock of Italians abroad remitting funds would then coincide with the annual flow; but if all migrants were permanent, then the stock of Italians abroad would coincide with the *cumulation* of the annual flow (minus some depreciation, as individuals die or lose their emotional connections to their country of origin), and after decades of substantial emigration the annual flow of remittances would have only a tenuous relation to the annual flow of new emigrants. Reality, of course, was between these polar cases; but even if most migrants were temporary, the bulk of remittances seems to have come from the United States, where even temporary migrants remained, on average, a good number of years.³¹ In 1909, in particular, the flow of annual emigrants, as reported, was close to 600 thousand; the stock of Italians abroad was estimated at 5.5 million, up from 0.5 million in 1871, 1.0 in 1881, 2.0 in 1891, and 3.3 in 1901.³² The actual flow of remittances thus almost certainly exhibited a much smoother time path than the official estimates would have us believe.

In sum, the balance of merchandise trade is reasonably well established; but the aggregate gap between that balance on the one hand and capital imports on the other appears to have grown more smoothly, and to a considerably smaller total, than the existing series would indicate. The level and cyclical path of actual capital imports were thus presumably altogether closer to the level and cyclical path of the merchandise deficit than the existing series allows: confirming that in Italy, as in the United States, the long swing in construction was accompanied by a long swing in the deficit on current account and in capital imports.

³⁰ *Reddito nazionale*, p. 175. Francesco Balletta, "Emigrazione italiana, cicli economici e rimesse (1876-1976)," in Gianfausto Rosoli, ed., *Un secolo di emigrazione italiana, 1876-1976* (Rome, 1978), p. 81, provides a graph illustrating annual gross emigration and deflated remittances (as per the official balance of payments series; p. 66). Until 1940 these move very much together, confirming the indication in the *Reddito nazionale*. In later years, when the series were obtained independently, their movements appear uncorrelated.

³¹ Coletti, "Dell'emigrazione," pp. 240-42; Stringher, "Gli scambi," p. 121; Gould, "European Inter-Continental Emigration," pp. 55-56. These considerations further suggest that the balance of payments series' allocation of total remittances between temporary and permanent migrants is grossly biased toward the former, particularly if "temporary" is identified with "seasonal."

³² Coletti, "Dell'emigrazione," p. 80. These figures include those temporarily abroad as well as long-term migrants, and presumably include migrants' children even if born abroad. One notes the deceleration in the growth of this stock in the 1890s, and its acceleration in the 1900s; but these totals are not precisely dated, as they are collations from a variety of non-contemporaneous sources. See also Direzione generale della statistica, *Annuario statistico italiano*, 1912, pp. 31-32.

CAPITAL FLOWS: DEMAND PULL VERSUS SUPPLY PUSH

Williamson's pioneering analysis of the American experience argues that the swings in the deficit on current account were caused by those in capital imports, which were themselves caused by those in domestic construction.³³ The path of the exchange rate of the lira indicates that the swings in capital imports caused those in the deficit on current account, and not vice versa, in the Italian experience as well; but the path of interest rates and related evidence on crowding out suggest that the swings in Italy's capital imports were also the cause, and not the effect, of the swings in domestic construction.³⁴

The lira was defined by its metallic content (equivalent to that of the French franc), but convertibility was readily and repeatedly suspended; in practice, therefore, Italy found itself with a semi-pegged exchange rate, free to float below par, but with an upper limit at the gold-import point.³⁵ Given a floating currency, capital flows induced by the balance on current account will be inversely related to the exchange rate: an increase in domestic activity attributable to an autonomous surge in export demand, for example, will be associated with an appreciating exchange rate but reduced capital imports (a lower trade deficit); an increase in the demand for imports attributable to an autonomous surge in domestic activity will be associated with increased capital imports (a higher trade deficit) but a depreciating exchange rate. Capital flows and the exchange rate will instead move together if the capital flows are causally prior to the balance of trade: as in the recent American experience, capital imports induced by financial disequilibrium will themselves induce an appreciation of the currency and a rise in the deficit on current account.³⁶

The exchange of the paper lira is transcribed in Table 4, column 4.³⁷ Except for a brief episode in the very early 1870s, the lira was strong when the trade deficit and capital imports were high, and weak when they were low (Figure 2, line 6).³⁸ The correlation of the exchange rate and the trade deficit is +0.517 (Table 5); and it would have been considerably higher, judging from the relevant price movements, had

³³ Williamson, *American Growth*.

³⁴ In the absence of evidence sufficient fully to identify the relevant demand and supply curves, the analysis here seeks to identify only the dominant autonomous shifts. For example, an increase in price and quantity together establishes that demand increased; supply may have moved in either direction, but if it increased at all its shift was less than that in demand.

³⁵ Michele Fratianni and Franco Spinelli, "Currency Competition, Fiscal Policy and the Money Supply Process in Italy from Unification to World War I," *Journal of European Economic History*, 14 (Winter 1985), pp. 473-99.

³⁶ Robert A. Mundell, *International Economics* (New York, 1968), chap. 18.

³⁷ This series appears in the *Sommario*, p. 166.

³⁸ For the reasons given above, the path of capital imports (up to a trend correction) seems best represented by that of the merchandise deficit; for simplicity, the present discussion ignores the differences between them.

TABLE 5
CONSTRUCTION AND FINANCIAL VARIABLES: CORRELATION COEFFICIENTS

Italian Construction (1)	British Capital Exports (2)	Italian Trade Deficit (3)	Italian Exchange Rate (4)	Italian Consol Yield (5)	British Consol Yield (6)	Italian Yield Premium (7)	Year (8)
1. 1.000							
2. .890	1.000						
3. .898	.817	1.000					
4. .529	.334	.517	1.000				
5. -.534	-.432	-.411	-.361	1.000			
6. .158	.165	.212	-.047	.591	1.000		
7. -.854	-.755	-.769	-.468	.797	.039	1.000	
8. .635	.600	.562	.349	-.879	-.513	-.827	1.000

Sources: Variable 1: Table 1, column 5; variables 2, 3: Table 4, columns 1, 2; variables 4 through 7: Table 4, columns 4 through 7.

the upward variation of the exchange not been limited by the currency's par value.³⁹

With the exception noted, therefore, the trade deficits were clearly the effect, and not the cause, of the capital imports.⁴⁰ As in the American case analyzed by Williamson, the swings in capital imports cannot be attributed to the swings in construction through induced swings in domestic activity and the trade deficit; the swings in construction and in capital imports were linked (if at all) through the international market for financial assets rather than for goods.

What remains to be seen is whether the swings in construction induced those in capital imports (as Williamson argues occurred in the United States), or the swings in capital imports induced those in construction. The relevant evidence here concerns the interest rate and crowding out. An autonomous surge in domestic construction increases the supply of domestic bonds, and puts upward pressure on domestic interest rates; this pressure leads to capital imports and (unless these are sufficient actually to prevent an upward movement in interest rates) the crowding out of other domestic borrowing and investment. An autonomous surge in capital imports increases the demand for domestic bonds, and puts downward pressure on domestic interest rates; this increase in the supply of capital induces parallel increases in construction and in other domestic borrowing and investment.⁴¹

The path of the nominal yield on Italian consols is transcribed in Table 4, column 5 (Figure 2, line 4).⁴² It is negatively correlated with construction and capital imports (Table 5): rising construction and capital imports are clearly associated with falling interest rates, and falling construction and capital imports are (somewhat less clearly) associated with stagnant or rising interest rates. Consol yields were thus

³⁹ With the nominal exchange at par, the equilibrating variations in the real exchange rate occur through changes in the price level; and since the prices of tradable goods are constrained by their international values, the variations will be concentrated in the prices of nontradable goods and services. The evidence on the latter provided by the wage and rent series in Fenoaltea, "Public Works Construction," table 4, "Construction in Italy," table 2, points to a strong swing in step with that in construction and the trade deficit; the rent swing would presumably have been even stronger but for the small parallel swing in the real per-capita stock of buildings noted in fn. 18.

⁴⁰ While capital imports and the exchange rate were both higher in the mid-1870s than in the neighboring years, the trough in capital imports in 1871 was also associated with a temporarily high exchange rate. That appears to be the one clear case in which the exchange and capital flows were dominated by the market for goods rather than by that for financial assets, as exports surged in response to the Franco-Prussian war; see Stringher, "Gli scambi," p. 16.

⁴¹ This discussion assumes that capital is rationed by the interest rate. A more complete view would recognize that access to capital is rationed directly as well as by price; the evidence on crowding out thus provides information additional to that provided by the interest rate.

⁴² Italian consol rates are reported in Bruno Bianchi, "Appendice statistica: il rendimento del consolidato dal 1862 al 1946," in Fausto Vicarelli, ed., *Capitale industriale e capitale finanziario* (Bologna, 1979), pp. 156-58; they are here extended to 1861 with the aid of the comparable series in Mario Da Pozzo and Giuseppe Felloni, *La borsa valori di Genova nel secolo XIX* (Turin, 1964), p. 469.

near 7 percent in the early 1860s, with high construction and capital imports, and rose to nearly 10 percent in the later 1860s, as construction and capital imports declined. From the late 1860s to the early 1870s, as construction and capital imports recovered, yields declined by a third, to about 6 percent.⁴³ Yields remained near that level for half a decade, as construction and capital imports again declined; yields then fell by a quarter, to 4.5 percent, as construction and capital imports surged in the decade to 1886–87. The subsequent decline in construction and capital imports was accompanied by a slight rise in yields, to a peak of 5 percent in 1894; and the final long boom in construction and capital imports occurred in the context of steadily declining yields, which fell to some 3.6 percent by 1913. In this last period, in particular, the likely drift from deflationary to inflationary price expectations suggests that the real interest rate was cut approximately in half.⁴⁴ The path of interest rates thus suggests that the periodic capital flows were not pulled into Italy by episodes of domestic scarcity; rather, capital appears to have been periodically pushed into Italy by episodes of foreign abundance.

The evidence on crowding out, or rather the lack of it, quite supports this interpretation. Within construction, as noted, investment in railways, other social overhead capital, and private buildings all tended to move together. A partial exception might be found in the collapse of investment in private buildings in 1887–88, as public works reached their peak; but that collapse appears to be due to the bursting of a speculative building bubble fueled—tellingly—by bank credit, and not to crowding out, as other privately financed construction (minor railways, other public works) moved with (publicly financed) public works.⁴⁵ Nor did construction as a whole crowd out other sectors. Industrial investment in plant and equipment also surged from the late 1870s to the late 1880s, fell back to the mid-1890s, and then surged again until the eve of the Great War; indeed, in Rosario Romeo's seminal interpretation of Italy's industrialization those periods of strong industrial growth are attributed precisely to the loosening of a capital-supply constraint.⁴⁶ Finally, government borrowing and spending, on defense

⁴³ This discussion ignores the war-induced blip in capital flows in 1871; see fn. 40.

⁴⁴ The change in price expectations is plausible not only because prices stopped falling and started rising, but because that change could be associated with the gold discoveries at the end of the nineteenth century. Price expectations during the inflation of the early 1870s are more difficult to pin down, as the price level may then have been expected to revert to its "natural" level; but some evidence that the real interest rate moved inversely to capital imports and construction before the turn of the century as well as after it is provided by the Genoa stock price index calculated in Da Pozzo and Felloni, *La borsa valori*, pp. 499–508. That index, equal to 34 in 1861, exhibits peaks in 1863 (46), 1873 (93), and 1887 (98), and troughs in 1867 (33), 1877 (72), and 1896 (44, the terminal value of the series).

⁴⁵ See Fratianni and Spinelli, "Currency Competition," pp. 490–91; Fenoaltea, "Railway Construction," table 2, "Public Works Construction," table 3.

⁴⁶ See Stefano Fenoaltea, "Decollo, ciclo, e intervento dello Stato," in Alberto Caracciolo, ed., *La formazione dell'Italia industriale* (Bari, 1969), pp. 95–114, and "Riflessioni sull'esperienza

in particular, also followed a long swing similar to that of construction, with peaks in the 1860s, 1880s, and 1910s.⁴⁷

The time paths of the various components of construction, other capital formation, and public borrowing and spending were thus largely parallel; they accompanied similar movements in stock prices, and opposite movements in the interest rate.⁴⁸ All this strongly suggests that swings in the supply of capital were causally prior to those in construction, and incidentally confirms that the latter were not generated by demographic change.⁴⁹ Since capital imports were *positively* correlated with domestic capital formation, moreover, the dominant swings in the supply of capital were clearly imported rather than domestic.⁵⁰ In short, only an autonomous increase in the supply of foreign capital seems capable of accounting for the association of rising trade deficits and capital imports with rising public and private construction, rising other investment and other public borrowing, appreciating exchange rates, and falling interest rates. Construction in Italy followed a typical Kuznets cycle, but on the basis of the evidence reviewed here construction should be labeled finance-sensitive, rather than population-sensitive, capital formation.

THE LONG SWING IN THE SUPPLY OF FOREIGN CAPITAL

The Kuznets cycle in Italy thus appears attributable *in primis* to a long swing in the supply of foreign capital. Britain's capital exports were much the largest single component of aggregate international lending at this time, and the only ones to display a clear long swing.⁵¹ It is

industriale italiana dal Risorgimento alla prima guerra mondiale," in Gianni Toniolo, ed., *Lo sviluppo economico italiano 1861-1940* (Bari, 1973), pp. 121-56; Massimo Warglien, "Nota sull'investimento industriale in macchinari e altre attrezzature meccaniche: Italia, 1881-1913," *Rivista di storia economica*, n.s., 2 (Feb. 1985), pp. 125-46; Rosario Romeo, *Risorgimento e capitalismo* (Bari, 1959), and *Breve storia della grande industria in Italia* (Bologna, 1961). Romeo thought that investment was constrained by domestic saving, and oddly attributed the industrial expansion from the 1880s to a putative decline in infrastructure investment. For a brief presentation and evaluation of the Romeo hypothesis, see Stefano Fenoaltea, "Italy," in Patrick K. O'Brien, ed., *Railways and the Economic Development of Western Europe* (London, 1983), pp. 54-60.

⁴⁷ Antonio Pedone, "Il bilancio dello Stato e lo sviluppo economico italiano: 1861-1963," *Rassegna economica*, 31 (Mar.-Apr. 1967), pp. 285-341.

⁴⁸ On stock price movements see fn. 44.

⁴⁹ Had the swings in construction been set in motion by population growth or household formation, they would have put upward pressure on interest rates and crowded out other domestic borrowing and capital formation. As noted in fn. 34, the evidence reviewed here reveals only the dominant shifts in the underlying schedules; it thus supports the exact range of hypotheses advanced in the penultimate paragraph of the section on construction and population growth.

⁵⁰ An autonomous increase in the domestic demand for bonds (supply of capital) would similarly put downward pressure on domestic interest rates and lead to increased domestic borrowing and investment across the board; but it would lead as well to capital exports or reduced imports, and thus to a *negative* correlation of capital imports with domestic capital formation.

⁵¹ Bloomfield, *Patterns of Fluctuation*, pp. 8, 47; Albert Fishlow, "Lessons from the Past:

accordingly reasonable to look to Britain as the source of the Kuznets cycle in Italy, even though foreign investment in Italy was primarily French, Belgian, and German rather than British: because continental capital competed with British capital at local margins throughout the world, more foreign capital from *all* sources would flow into Italy when Britain pushed more capital out into the world.

Sample regression equations exploring the correlations between construction in Italy and sundry financial variables are reported in Table 6. Interestingly, a relative abundance of capital in Italy seems tied not only to abundant capital flows out of Britain and into Italy, but to a relative scarcity of capital within Britain: the long swing in capital flows was apparently due less to changes in relative investment opportunities and returns than to changes in the relative premium required by investors to set those flows in motion.

Equation 1 regresses construction in Italy on measures of capital flows, Italy's exchange rate and consol rate, and a time trend. Both British capital exports and the Italian trade deficit appear highly significant, despite their strong intercorrelation (Table 5), presumably because they are both close but imperfect indices of Italy's actual capital imports. The Italian consol rate is also significant, with the expected negative sign; not unreasonably, given the gestation period of construction projects, it seems to do somewhat better if introduced with a lag. All three of these variables are of course measures of the abundance of capital in the Italian market; their simultaneous significance may be taken to indicate that capital was rationed by quantity as well as by price, or, as before, that the available series are all imperfect proxies for more directly relevant variables.⁵²

Equation 2 includes the British consol yield (Table 4, column 6, and Figure 2, line 5), also with a one-year lag.⁵³ Like British capital exports, the British consol yield is statistically significant despite the presence of the corresponding Italian variable; unlike British capital exports, however, the British consol yield does not appear to act primarily as a duplicate of the corresponding Italian variable. Its regression coefficient is positive rather than negative, as indeed is its simple correlation to construction (0.158, against -0.534 for the Italian yield, ignoring lags: Table 5); and while its impact on the regression coefficients of the other

Capital Markets during the 19th Century and the Interwar Period." *International Organization*, 39 (Summer 1985), pp. 388-89, 393-95.

⁵² Since the capital-flow variables do not perform better if lagged, one may surmise that the interest rate affected the decision to build, while quantitative restrictions influenced construction as the project proceeded. The nominal consol rate is of course a proxy both for other nominal (mortgage) rates, and for the relevant real rates.

⁵³ The British consol yield is taken as reported in C. Knick Harley, "The Interest Rate and Prices in Britain, 1873-1913: A Study of the Gibson Paradox," *Explorations in Economic History*, 14 (Jan. 1977), p. 87, for 1873 ff., and extended to 1861 in proportion to the comparable series in Sidney Homer, *A History of Interest Rates* (New Brunswick, 1963), p. 196.

TABLE 6
CONSTRUCTION AND FINANCIAL VARIABLES: REGRESSION RESULTS

Equation	Constant (1)	British Capital Exports (2)	Italian Trade Deficit (3)	Italian Exchange Rate (4)	Italian Consol Yield ^a (5)	British Consol Yield ^a (6)	Italian Yield Premium ^a (7)	Year (8)	MA(1) ^b (9)	AR(1) ^c (10)	\bar{R}^2 (11)	Durbin- Watson Statistic (12)
1863-1913												
1.	4,909 (1.4)	2.26 (6.1)	.243 (4.3)	655 (2.0)	-40.7 (-2.9)			-2.65 (-1.5)	.479 (1.9)	.294 (1.4)	.940	1.96
2.	-8,787 (-1.8)	1.36 (3.2)	.157 (2.9)	-21.6 (-0.1)	-37.7 (-2.3)	173 (3.0)		4.72 (1.8)	.401 (1.9)	.599 (4.2)	.954	1.96
3.	4,113 (1.9)	1.63 (5.1)	.168 (3.3)	561 (2.0)			-787 (-4.9)	-2.09 (-1.9)	.522 (2.1)	.282 (1.5)	.955	1.96
1863-1887												
4.	-151 (-0.0)	1.29 (4.3)	.155 (2.7)	925 (5.1)	-39.0 (-4.9)			-.059 (-0.0)	.716 (0.8)	-.426 (-0.5)	.859	1.92
5.	19,053 (2.9)	1.36 (5.6)	.134 (3.0)	343 (1.3)	-44.0 (-6.5)	-370 (-3.1)		-9.36 (-2.9)	.589 (0.1)	-.544 (-0.1)	.893	1.91
6.	-2,133 (-0.4)	1.14 (2.4)	.162 (1.8)	883 (3.1)			-581 (-2.7)	1.04 (0.4)	.295 (0.4)	.089 (0.1)	.838	1.88
1888-1913												
7.	-8,328 (-0.8)	1.64 (2.7)	.331 (3.1)	73.7 (0.1)	-30.2 (-0.3)			4.60 (0.9)	1.03 (3.1)	.228 (1.1)	.960	1.75
8.	5,248 (0.5)	1.62 (2.6)	.202 (1.9)	-952 (-1.4)	-122 (-1.3)	283 (3.4)		-2.18 (-0.4)	.783 (1.9)	.084 (0.2)	.954	1.94
9.	11,609 (1.7)	1.50 (2.4)	.192 (1.8)	-1,028 (-1.5)			-1,217 (-3.6)	-5.13 (-1.5)	.739 (1.8)	.047 (0.1)	.954	1.94

^a Lagged one period.

^b Parameter of the first-order moving-average component of the error process.

^c Parameter of the first-order autoregressive component of the error process.

Notes: The dependent variable is construction in Italy (Table 1, column 5); the independent variables (2-8) are the same as in Table 5; the estimation procedure is non-linear least squares with ARMA(1,1) error process; the figures in parentheses are *t*-statistics.

variables is clearly perceptible, the variable least affected is precisely the Italian yield. The positive relation of Italian construction to the British consol yield thus seems to be real enough—primarily, one presumes, because both display a sharp fall and subsequent recovery over the mid and later 1890s.

This rules out the simple attribution of the periodic abundance of capital (and high construction activity) in Italy to a corresponding abundance of capital in Britain; for if this were so the differences in the time paths of the British and Italian interest rates would be comparatively insignificant, and British capital exports, Italian capital imports, and Italian construction would all vary inversely to the British interest rate as well as to the Italian interest rate.⁵⁴ The apparently meaningful difference in the signs of the coefficients of the British and Italian yields in equation 2 suggests, rather, that Italian construction was sensitive not only to the domestic interest rate but to the relation between the Italian and the British yields.

Since investors could readily switch between Italian and British consols, the Italian yield premium (Table 4, column 7) was presumably required to equilibrate *ex ante* risk-discounted yields. An equilibrium yield premium is of course at one and the same time a measure of the inducement to hold the higher-yielding bond, and of investors' reluctance to hold it.⁵⁵ Since Italy's capital imports varied inversely with the yield premium (Table 5), they were governed by changes in foreign investors' reluctance to hold Italian bonds at given levels of inducement more than by changes in the inducements at given levels of reluctance.⁵⁶

Construction in Italy may have been sensitive to that premium for at least two reasons. The first, again, is the fact that capital is not rationed by price alone: a falling yield premium indicates a greater willingness of investors to hold Italian assets, and therefore, plausibly, a loosening of quantitative restrictions on credit in Italy. The second is that construc-

⁵⁴ Edelstein, *Overseas Investment*, argues that the swing in British capital exports resulted from the interaction of a relatively steady rate of accumulation by British savers and an autonomous long swing in domestic investment opportunities (tied to internal demographic and productivity movements) in Britain (p. 232). If British capital exports were thus essentially a residual, they should be high when low domestic investment made for low interest rates; but that seems to be the opposite of what actually occurred, at least from the 1880s. The correlation of British capital exports and the British consol yield from 1880 to 1913 is +0.680, and the cyclical paths of the real and nominal rates seem to have been quite similar (Harley, "The Interest Rate," p. 85). See also H. W. Richardson, "British Emigration and Overseas Investment, 1870-1914," *Economic History Review*, 2nd ser., 25 (Feb. 1972), pp. 102, 106.

⁵⁵ If the British yield is risk-free, and the only risk attached to the Italian yield is a probability p of permanent default, then the British yield will equal $(1 - p)$ times the Italian yield, and the relative yield premium calculated here is exactly the perceived probability of default p . In actuality, of course, the perceived risks include those of currency depreciation and changes in tax treatment as well as of the simple suspension of interest payments.

⁵⁶ In light of this, Fratianni and Spinelli's claim that "net capital inflows . . . were responding to a high interest-rate differential" ("Currency Competition," p. 483) and their contempt for contemporary economists' stress on investors' attitudes (*ibid.*) both seem unwarranted.

tion was sensitive to the (unobserved) real interest rate rather than to the nominal rate; and since national real rates plausibly varied more than their international average, a rising yield premium was plausibly associated with a rise in the real interest rate in Italy.

In fact, construction was far more closely correlated with the consol yield premium than with the Italian or British yields (Table 5). The lagged yield premium is used in lieu of the separate yields in equation 3; the increase in the sum of squared residuals is small enough to suggest that the substitution need not be considered inappropriate.⁵⁷

Equations 4 through 9 repeat equations 1 through 3 over the two halves of the period in question. The coefficients of the capital flow variables are gratifyingly stable across specifications and time periods. The coefficients of the national interest rates are instead relatively unstable; but this is hardly surprising, as the nominal British yield in the earlier period and the nominal Italian yield in the later period both lack strong cycles, even though these may have been present in the corresponding real rates.⁵⁸ More significantly, the yield premium performs relatively similarly in both subperiods (equations 6 and 9), and in this specification at least there is no strong evidence of structural change from one quarter-century to the other.⁵⁹

The upshot of all this is that the primary cause of the long swing in the supply of capital and therefore construction activity in Italy appears to be the variation in the relative premium required to attract foreign investment. In the 1860s, when Italy's construction movements were out of phase with British foreign investment and construction overseas, the variations in the yield premium and in capital imports appear to reflect changes in the perceived risk of investing specifically in Italy when that country faced war and massive public deficits.⁶⁰ Over the last three decades to the World War, when the swing in Italian construction closely paralleled that in British foreign investment and construction

⁵⁷ The corresponding *F* statistic equals just 0.58.

⁵⁸ Harley, "The Interest Rate," p. 85, suggests that the real consol rate in Britain rose from the mid-1870s to the late 1880s, in opposition to the movement of the nominal rate; the negative coefficient on the British yield in equation 5 is thus not particularly troublesome. In the Italian case, deflationary price expectations in the 1890s may have temporarily raised the real rate above the nominal rate.

⁵⁹ The value of the *F* statistic comparing the sum of squared residuals in equations 6 and 9 together to that in equation 3 is just 0.25. To return to an earlier topic, the regressions in equations 1 through 9 were repeated with the addition of the number of marriages (Table 2, column 3). Whether introduced contemporaneously or with a one-year lag, this variable never comes close to having a significantly positive impact on construction; even in the later subperiod, when the marriage data seem generally accurate, its *t* statistic varies from -0.1 to -1.6.

⁶⁰ The sharp blip in the yield of the *consolidato* in 1894 similarly seems tied to the nervousness caused by major bank failures in Italy. Italy's exchange rate may also be a measure of country risk, considered lower when the exchange was at par than when it was floating below par; since the first suspension of convertibility was no doubt that of greatest symbolic significance, it stands to reason that the exchange rate seems to matter more in the earlier decades.

overseas, the inverse swing in the yield premium appears instead to reflect a much more general variation in attitudes toward investment in the capital-importing periphery: the temporary surge in the yield premium in the later 1890s appears to be common to the non-British world, as in the wake of the Baring crisis nominal rates declined across the board on British securities but remained high on foreign ones.⁶¹

Over the half-century at hand, indeed, the inverse association between the yield premium and construction in Italy seems to break down only in the later 1870s, when the former fails to display a cyclical peak in connection with the trough in the latter (and in British capital exports). This may mean that a (supply-induced) scarcity of capital in Italy at that time was temporarily tied to a parallel (demand-induced) scarcity of capital in Britain; but it may mean only that the effective yield premium is poorly measured in those years, as the temporary elimination of the budget deficit over the later 1870s may have kept the Italian consol rate from peaking along with the rates faced by private borrowers.⁶²

SUMMARY AND EXTENSIONS

Construction in Italy displayed clear cyclical movements. Apart from a short-lived boom in the early 1860s, in the immediate aftermath of Unification, Italian construction followed the characteristic long swing of the international Kuznets cycle; but the Italian swing paralleled that of the overseas lands, rather than the opposite British one.

Construction movements in Italy are in no way attributable to the ebb and flow of international migration. On a decadal basis, construction and emigration rose together to a peak in the 1880s; emigration rates then remained roughly constant through the decline of construction in the 1890s and its surge in the 1900s. The Italian data do not reveal net migration over shorter periods; but if it can be inferred from the swing in overseas immigration, construction in Italy was higher, in general, when *more* people were leaving Italy.

To the extent that domestic construction can be associated with internal migration, it would seem that internal and external migration moved together, producing a strong cycle in departures from the rural

⁶¹ Edelstein, *Overseas Investment*, unpublished appendix 7. I am grateful to the author for making this material available to me. "The extreme discredit which overtook foreign investment after the . . . crises of the early nineties" is noted, for example, by H. J. Habakkuk, "Fluctuations in House-Building," p. 226. The distinction between changes in attitudes and changes in objective conditions at that time is stressed by Lewis, *Growth and Fluctuations*, p. 180: "There was a large bandwagon effect in foreign lending . . . With lending to the USA, Australia and Argentina out of fashion, all other countries would find themselves deprived of loans beyond any point that objective economic analysis of their own economic solutions could justify."

⁶² See Pedone, "Il bilancio dello Stato," p. 333, and fn. 44. Perhaps not coincidentally, the decline in construction over the later 1870s was concentrated in railways and private buildings.

sector. In Britain, in contrast, the rural sector seems to have lost emigrants at a relatively constant rate, and the strong cycle was in the alternation between internal and external destinations.⁶³ In the overseas lands, external migration was of course an inward movement rather than an outward one; but there too internal and external migration seem to have moved together as they did in Italy.⁶⁴

The association of the long swing in transoceanic migration with the opposite swings in transoceanic and British construction has led to the view that construction was specifically population-sensitive. The Italian experience would still fit that view, had there been a cycle in the natural rate of reproduction sufficient to yield a positive association between population growth and construction despite the impact of migration. But that does not seem to be the case: whether one looks at the total population or at specific components of it, the long swing in construction shows up primarily as a swing in capital formation per unit.

Construction in Italy seems not population-sensitive but finance-sensitive; and the specific cause of its long swing appears to be a cycle in the supply of *foreign* capital, as construction, other borrowing and investment, stock prices, capital imports, and the exchange rate all moved together and in opposition to the interest rate. The long swing in the supply of foreign capital, in turn, seems related to the long swing in British capital exports; but these were clearly not a mere vent for savings surplus to domestic British investment needs, as British capital exports did not move inversely to the interest rate in Britain. Over most of the period at hand, the critical swing seems to have been in the attitude of investors: as they were increasingly disenchanted with non-British investment, for example, the wedge between British and foreign rates increased, and capital became more abundant in Britain and less abundant abroad. In Britain itself, construction appears to have been as finance-sensitive as it was in Italy: there too, unprecedentedly low interest rates led to unprecedentedly high levels of capital formation, in a cycle far too sharp to be attributed to demographic change.⁶⁵

The Italian experience is thus not merely an exception to, and therefore destructive of, the unified interpretation of the Atlantic economy which attributes construction to migration, and capital flows to construction. It suggests an alternative and equally unified interpretation, in which capital flows caused construction, and construction—that employer of the unskilled par excellence—caused migration. In this alternative view the critical distinction is no longer that between old

⁶³ Thomas, *Migration and Urban Development*, pp. 20–58.

⁶⁴ Richard A. Easterlin, *Population, Labor Force, and Long Swings in Economic Growth: The American Experience* (New York, 1968), p. 31.

⁶⁵ Charles H. Feinstein, *National Income, Expenditure and Output of the United Kingdom, 1855–1965*, Studies in the National Income and Expenditure of the United Kingdom, vol. 6 (Cambridge, 1972), pp. 192, T88–89.

lands and new, but that between capital exporters (Britain) and importers (Italy and the New World). When non-British investment was out of favor, capital was relatively abundant in Britain and relatively scarce abroad, construction boomed in England and collapsed abroad, Britons migrated within Britain and non-Britons postponed migration to better days; when investors favored non-British investment, capital was relatively scarce in Britain and relatively abundant abroad, construction collapsed in Britain and boomed abroad, Britons migrated abroad and non-Britons migrated—within the old lands, within the new, and of course within the broader non-British world from the old to the new. Should further investigation of the international Kuznets cycle bear out this hypothesis, the Italian case will appear not as the exception to the rule, but as its first clear expression: the first case to have been examined, that is to say, in which demographic and financial variables are sufficiently uncorrelated to allow the identification of the causes of the long swing in construction.

Appendix

THE ESTIMATES OF NET MIGRATION

Giusti's annual estimates of net migration and year-end population seem to overstate the numbers present at the end of 1911, and correspondingly to understate net migration in that year.⁶⁶

The 1911 census counted 34.671 million people on June 10; Giusti allows 35.146 at year-end, for an increase of 0.475 million. The natural increase equaled 0.351 million for the whole year, and thus perhaps 0.196 million for the 204 days after June 10; Giusti therefore implies a net immigration over the last 204 days of 1911 equal to 0.279 million. This figure seems much too high. Of the 0.534 million recorded departures in 1911, no more than some 60 percent (0.320 million) are likely to have occurred in the first 161 days of the year, leaving a balance of 0.214 million for the last 204 days.⁶⁷ The number of returnees in those same 204 days is in turn unlikely to reach 80 percent of the year's sum of recorded departures for Old World destinations (0.271 million, on the extreme assumption that all were temporary migrants) and overseas returnees (0.217 million, from ships' passenger lists), or 0.390 million; deducting the estimated 0.214 million departures, the net immigration in those 204 days is unlikely to have reached 0.176 million. A prudent correction would thus reduce Giusti's end-1911 population figure by some 0.100 million, to 35.046 million, and correspondingly increase the decade's net emigration to 1.324 million, for an annual rate of 3.9 per thousand (instead of 3.6, as implied by Giusti, or 4.7, as computed from the raw census data).

A separate question concerns the allocation of the net migration in 1882–1901 over the two decades concerned. In the absence of more immediate constraints that can be imposed a priori, that allocation is here approached by focusing on the repatriant ratio (and its complement, the ratio of permanent to total emigrants). Assume, for simplicity, that all migrations within the Old World were temporary, and consider overseas migration alone. The recorded overseas departures totaled 0.286 million in 1872–1881,

⁶⁶ Giusti, "Bilanci demografici," p. 116.

⁶⁷ The seasonal pattern of departures is documented in Coletti, "Dell'emigrazione," p. 70.

1.097 million in 1882–1891, 1.639 million in 1892–1901, and 3.498 million in 1902–1911.⁶⁸ As noted above, the bias in these figures varies over the decades; correcting them as suggested by the overseas countries' data, "true" overseas departures are here estimated at 0.372 million in 1872–1881, 1.371 in 1882–1891, 2.049 in 1892–1901, and 3.218 in 1902–1911.⁶⁹ The corresponding net migration figures equal 0.362 million in 1872–81 (calculated directly from the census data and the natural increase), 2.308 million in 1882–1901 (taking Giusti's year-end figure for 1901), and 1.324 million, as corrected, in 1902–1911; the ratio of permanent to total overseas emigrants thus works out to 0.97 in 1872–1881, 0.67 in 1882–1901, and 0.41 in 1902–1911, confirming the secular rise in the share of temporary migrants in overseas migration.⁷⁰

The trend in the mix of temporary and permanent overseas migrants was due primarily to technical change and the concomitant decline in the real cost of an ocean passage; it was thus presumably relatively uniform, and one would expect the separate ratios for the 1880s and 1890s to interpolate those for the 1870s and 1900s. In any group of years, to be sure, cyclical factors could loom large, as the repatriant ratio rose sharply in years of crisis in the receiving countries.⁷¹ But from this perspective also there do not appear to be more crisis years in the receiving countries in 1882–1891 than in 1892–1901; so the presumption that the decadal repatriant ratio rose relatively smoothly can be allowed to stand.

Against this, Giusti's figures for net migration over 1882–1901 would imply that the ratio of permanent to total overseas migrants declined from 0.97 in 1872–1881 to 0.62 in 1882–1891, only to rise to 0.71 in 1892–1901 before declining sharply to 0.42 (0.38 using his figures for 1911) in 1902–1911. This suggests that he underestimated net migration in 1882–1891 and overestimated it in 1892–1901. A more reasonable allocation of the 2.308 million net emigrants in 1882–1901 would attribute say 1.100 million (rather than 0.843 million) to 1882–1891, and 1.208 million (rather than 1.465 million) to 1892–1901; with these estimates, the ratio of permanent to total overseas migrants drops smoothly over the four decades from 0.97 to 0.80 to 0.59 to 0.41.⁷²

These revised estimates imply that year-end population grew from the census figure of 28.460 million in 1881 to Giusti's figure of 32.663 million in 1901 through 30.471 million, rather than 30.728 million, in 1891.⁷³ The corresponding annual rates of net migration equal 3.7 per thousand in 1882–1891 and 3.8 in 1892–1901.

Giusti's year-to-year figures appear to be even less reliable than his decadal totals. Their path is one of near-monotonic growth from the late 1870s to 1900, followed by a sudden drop to a plateau maintained in 1901–1911, and by a very sharp rise in 1912–13 (Table 2, column 2); one suspects that his technique for distributing the total net migration between census years overemphasized continuity between census years, at

⁶⁸ *Sommario*, p. 65.

⁶⁹ The correction factors are 1.30 in 1872–81 (somewhat higher than in later years, as suggested by Sori, *L'emigrazione italiana*, p. 54), 1.25 in 1882–1901 (as suggested by Gould's figures cited in the text; the discrepancy includes people leaving without passports, and people leaving for Old World destinations but then moving overseas), and 0.92 in 1902–1911 (again from Gould's figures; the discrepancy reflects people obtaining passports but not departing).

⁷⁰ Sori, *L'emigrazione italiana*, p. 337ff.

⁷¹ See, for example, the spectacular rise in return migration from the United States in 1908, *Sommario*, p. 67; and Argentina in 1890, Sori, *L'emigrazione italiana*, p. 56.

⁷² Gould, "European Inter-Continental Emigration," p. 87, asserts that the repatriant ratio was "probably higher in the '80s than in the '90s." Since he gives no reason as to why this should be expected a priori, the most likely basis for his claim is simply the pattern thrown up by Giusti's estimates.

⁷³ The present calculations accept Giusti's estimate of the year-end population in 1901, even though it is no more reliable than his corresponding figure for 1911; given the lack of data on repatriants, and the discontinuity in the gross emigration series, its bias is not easy to evaluate.

the cost of severe and implausible discontinuities in the census years themselves (the fact that the break is between 1900 and 1901 suggests that the February 10, 1901 census figure was used initially to calculate the population at the end of 1900, rather than 1901). The transoceanic repatriant figures available from 1902, which Giusti does not appear to have used, suggest much greater variations from year to year, with sharp outflow peaks in 1905–06 and 1909–10 (as well as 1912–13), and significant net *immigration* in 1908.⁷⁴ The influence of the cycle in the receiving areas is readily apparent.

⁷⁴ *Sommario*, p. 65; Coletti, "Dell'emigrazione," p. 74.