BANCA D'ITALIA

EUROSISTEMA

Quaderni di Storia Economica

(Economic History Working Papers)

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of Industrial Growth in Post-Unification Italy

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Abstract

In post-Unification Italy industrialization was ever sharply sub-regional. Initially industry was largely artisanal, and located in the former political capitals; factory industry was instead attracted by the waterfalls of the subalpine Northwest. From the 1880s, as modernization accelerated, industry concentrated: in the Lombard and Piedmontese subalpine provinces with the late-nineteenth-century boom in (protected) textiles, then particularly in Turin and Milan with the engineering boom, and novel energy-transmission, of the *belle époque*; and in Liguria's Genoa, which captured (subsidized) civil and naval shipbuilding. The only significant diffusion came as (newly protected) beet-sugar-extraction spread throughout Emilia.

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1.   Introduction

Italy's *Mezzogiorno* has notoriously failed to keep pace with the Northwest -- and, more recently, the Center/Northeast -- on the road to industrial growth and modern economic development. The attendant "Southern question" has been vigorously debated for over a century; but surprisingly little effort was devoted to documenting the actual history of Italy's geographic imbalances, and the quantitative literature is comparatively recent.[1]

The first estimates of regional industrial production, for 1911 alone, were pioneered some three decades ago by Vera Zamagni (Zamagni 1978). Analogous estimates for c. 1891 were subsequently compiled by Alfredo Esposto (Esposto 1992); but these two sets of figures were derived from very different sources and methods, heir to different and not insignificant biases, and correspondingly of doubtful comparability (Fenoaltea 2003). In the absence of better measures diachronic change was investigated by comparing the regional labor-force data in the successive national censuses; this was done first by Ornello Vitali (Vitali 1970), and again, later, by Vera Zamagni (Zamagni 1987) and by Giorgio Fuà and Samuele Scuppa (Fuà and Scuppa 1988).

The first homogeneous diachronic benchmark estimates of regional industrial production were generated, under the auspices of the Bank of Italy, just a decade ago (Fenoaltea 2001a; 2003). They sprang from the union, as it were, of the two preceding strains: they relied on the 1871, 1881, 1901 and 1911 census data to document the regional distribution of the labor force, sector by sector, but weighted the reported workers by the corresponding year- and sector-specific national average 1911-price value added per worker. Intrasectoral, interregional productivity differences were thus overlooked, but the very considerable intertemporal and intersectoral differences were automatically allowed for; and the harvest obtained from this simple exercise was well worth the effort.

That done, and thanks to the Bank's continuing support, the project moved on to attack its second and far more ambitious objective: the reconstruction not just of benchmark sectoral aggregates, but of annual industry- and where possible product-specific regional time series. This work is far from completed, but well along: the detailed regional time-series estimates for the extractive, textile, chemical, metalmaking, construction, shipbuilding, and utilities industries are in the public domain (Fenoaltea 2002; Ciccarelli and Fenoaltea 2008a; 2009a; 2009b; 2010), those for the (non-leather) apparel and non-metallic mineral products industries have been compiled, and those for the residual engineering industries are in progress.

This paper develops the initial regional census-year benchmark estimates in a different direction: the primary focus here is not on greater industrial or chronological detail, but on greater geographic detail. The level of aggregation returns to the 15 sectors of the initial exercise (Fenoaltea 2001a, 2003); but the geographic unit of observation shifts from the 16 regions to the 69 provinces into which those regions were subdivided (Figure 1).

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[1] Nothing under the sun is entirely new: cliometric pieces on the regional effects of public policy appeared a century ago, authored by Francesco Saverio Nitti -- a technocrat *avant la lettre* -- and Italy's premier statistician, Corrado Gini. See Nitti (1900) and Gini (1914), and, more broadly on Italy's applied economists of the day, Cassata and Marchionatti (2010).

Carried to this level, the story teased out of the initial regional estimates is much enriched. The provincial estimates confirm that industrial growth was neither necessary nor sufficient for overall growth, and that over the early decades the provinces with the pre-Unification capitals remained centers of (artisanal) manufacturing. The "industrial triangle" appears again to have emerged over the later nineteenth century; but even there industrialization was markedly sub-regional, and a broad swath of provinces was left untouched. In the early twentieth century, during Italy's reputed industrial "take-off," the triangle's industry concentrated even further, as the provinces with the major cities then appear to have attracted factories as they had once attracted artisans; but the fastest rates of industrial growth were achieved outside the triangle altogether. The local bursts of industrial growth are typically tied to sectors favored by policy interventions: at the provincial level, the gains from public subsidies and tariffs are beyond reasonable doubt.

2.   Relative industrialization: the benchmarks

Summary provincial data appear in Table 1.[2] Italy's provinces are the rough equivalent of France's *départements*; but where the latter are named after natural features, *more barbarico*, the former bear the proud names of their principal cities, only a few of which, like Venice, did not date back to classical antiquity. The provinces varied widely in size, reflecting the accidents both of local geography and of local administrative history, but most comprised a few thousand square kilometers. The low-end outliers were the provinces of Naples (the former capital of the Bourbon kingdom) and Porto Maurizio (truncated by the cession of Nice to France), both near a thousand square kilometers, and especially the province of Leghorn, less even than half that (possibly because of the city's special status, before Unification, as a free port). The relatively large provinces instead typically corresponded to, or included, areas of low population density, as in the Alpine and Apennine highlands, and more generally in the South; the provinces of Perugia, Rome, and Potenza (which coincided respectively with Umbria, Latium, and Basilicata), and the two Sardinian provinces (Cagliari and Sassari) all neared or exceeded ten thousand square kilometers. Provincial populations were thus somewhat more homogeneous than areas, and typically near a few hundred thousand. Larger numbers prevailed in the presence of a major city: in 1901 the provinces of Turin, Milan, Rome, and Naples all exceeded one million, nine others -- Alessandria, Novara, Genoa, Florence, Caserta, Bari, Lecce, Palermo, and Catania -- 700 thousand (Ministero di agricoltura, industria e commercio 1902, pp. 396-398).

As detailed in the Appendix, the present first-cut census-year estimates of provincial production are generated much like the first-cut regional estimates (Fenoaltea 2001a, 2003). Specifically, industry is again divided into just 15 sectors (12 manufacturing sectors, and one each for the major non-manufacturing groups), and the census labor force data are again used to allocate aggregate value added, sector by sector. Where the first-cut regional estimates have been superseded, the aggregates allocated to the provinces are the new regional sector totals (obtained from the detailed underlying production series) for the

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[2] Table 1 reports the male population of working age, rather than the total population, as the former is used in the calculations below. These data are taken from the censuses of 1871, 1881, 1901, and 1911 (Ministero di agricoltura, industria e commercio 1876, 1884, 1904, 1915); the 1891 census was never taken. The area data are from Direzione generale della statistica e del lavoro (1912, p. 3). To all intents and purposes, provincial boundaries remained unchanged from 1871 to 1911 (and beyond); see Ferrantini (1965, pp. 213-215).

census years, so that the workers in each province are attributed the year- and sector-specific average value added per worker in the region to which they belong; for the remaining sectors (foodstuffs, tobacco, leather, wood, paper and printing, and manufacturing n.e.c.), where the initial estimates have yet to be revised, the provincial workers are again weighted by the year- and sector-specific average value added per worker in Italy as a whole. The algorithm yields, for each of the 69 province and four census years, the 15 sector-specific estimates, and the corresponding aggregates, collected in Appendix Tables A1 - A5 below.[3]

The analysis here focuses on the provinces' aggregate industrial product, net of construction.[4] This (truncated) aggregate reveals that at the provincial level, too, "deindustrialization" is found only in relative terms: in no province does absolute industrial output decline from one benchmark to another, and the occasional episodes of mere stasis are themselves exceedingly rare.

As in the first-generation regional estimates, the provinces' relative industrialization is measured by an *ersatz* index of concentration obtained as the ratio of the geographic unit's share of national industrial value added to its share of the male population over age fifteen (the male population of working age, or, to a first approximation, the male labor force).[5]

The indices obtained for the census-year benchmarks are collected in Table 2. In the main, the provincial indices above one (the national mean) are more abundant, and the few above two exclusively, in the Northwest (Piedmont, Liguria, Lombardy), while those below one are correspondingly more abundant in the Center/Northeast (the regions from Venetia to Latium) and the *Mezzogiorno* (the regions from the Abruzzi to Sardinia). Of those that display monotonic growth, typically from already above-average initial levels, six are in the Northwest (Novara, Turin, Bergamo, Como, Milan, Sondrio), the other two in the Center/Northeast (Leghorn, Udine). Of those that display monotonic decline, no fewer than ten are in the *Mezzogiorno* (Benevento, Salerno, Bari, Foggia, Potenza, Catanzaro, Girgenti, Palermo, Syracuse, Trapani), another six in the Center/Northeast (Rovigo, Venice, Verona, Lucca, Macerata, Pesaro), just three in the Northwest (Cuneo, Cremona, Mantua). The commonplaces of Italy's uneven development appear broadly confirmed; but to stop there is to sell the new estimates short.

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[3] The new regional totals in Appendix Table A5 broadly confirm the first-generation estimates in Fenoaltea (2001a, 2003). The value added attributed to Liguria has increased, most notably in 1871, for two main reasons. The first is that the new regional series capture the construction of wooden ships, which was essentially missed by the original metal-consumption-based national series for aggregate engineering, and was of major significance, in the early decades, precisely in Liguria (Ciccarelli and Fenoaltea, 2009a). The second is that, as noted in the Appendix, the 1871 census lists only provincial labor-force data, and apparently inverted, on a number of pages, the data for Genoa and Girgenti; this error in the sources has now been caught, and a substantial share of industrial value added in 1871 has correspondingly been transferred from Sicily to Liguria.

[4] Because regional construction displayed short-run volatility, and set in motion temporary migration the censuses appear to have missed, the provincial aggregates gross of construction are at once less reliable and less representative of medium-term levels than the net-of-construction totals considered here; see below, Appendix §2. For obvious reasons of space, the analysis of the sector-level provincial estimates cannot be included here.

[5] Fenoaltea (2001a; 2003). The provinces are more heterogeneous than the regions, and the provincial indices must correspondingly be evaluated with greater care. In particular, the indices for Naples and especially Leghorn tend to be above-average simply because those provinces contain unusually little land and their labor force, correspondingly, unusually few agricultural workers. Porto Maurizio was similarly small, but it lacked a major urban center.

The geographic aspects of the estimates in Table 2 are brought out by the maps in Figure 2. The white areas there are below-average (up to .90), the light grays near-average (over .90 to 1.10), and on from there (over 1.10 to 1.40, over 1.40).

In the large, these provincial maps lend support to some of the revisionist hypotheses suggested by their regional counterparts of a decade ago. In 1871, provinces with average-or-better indices appear in the peninsula and the major islands as well as in Cisalpine Gaul, and the below-average area is again the broad swath along the Adriatic and Ionic coasts. All the provinces with the capitals of the (regional or multi-regional) pre-Unification states -- and a number of those with subordinate regional capitals -- display indices that are average or better than average: industry was artisanal, artisans located next to their customers, and their customers were the élites concentrated in the seats of government.

At the provincial level, too, one sees substantial stability between 1871 and 1881: there is no evidence of significant change tied to Unification itself, to the extension of the low Piedmontese tariff to the once protected South, to the early construction of the peninsular trunk railways that supposedly allowed the industry of the North to capture and exploit the markets of the South.[6] Things change after 1881, with (temporally, and one presumes causally) the increase in the rate of industrial growth, the cyclical upswings of the 1880s and of the *belle époque*. By 1911 seven provinces display indices over 1.6: all but Leghorn are in the industrial triangle, the next highest is Naples with 1.3. After 1881, the South becomes increasingly sub-average: the Neapolitan exception apart, only the mining centers in Sicily are still near average in 1901, by 1911 the map of the South is lily-white. As with the regional estimates, at the outbreak of the European Civil War the (relative) deindustrialization of the South and the corresponding industrialization of the Northwest (and, to a lesser extent, Tuscany) appear to have been comparatively recent developments.

But the provincial estimates tell us much the regional aggregates could not. With apologies to Sidney Pollard (Pollard 1981), one is tempted to say that there are no industrial regions, only industrial provinces. The (multi-province) regions of uniform color in Figure 2 are only those with a *low* index, and all white; the darkest shades appear only in specific provinces, and abut light gray or even white -- merely average or frankly sub-industrial -- provinces of the very same region. Even in 1901 and 1911, when the "industrial triangle" of the three northwestern regions is most sharply defined, the markedly industrial provinces (with an index over 1.40) are but two of four in Piedmont, one of two in Liguria, and but three of eight in Lombardy, the most industrial region of all.

What is striking, in Figure 2, is that even as the once darkened provinces south of the 43d parallel progressively whitened, north of that line the once white provinces did not progressively darken.[7] North of that line, in northern Tuscany, in the industrial triangle, the provincial estimates point overwhelmingly to continuity: the provinces that were relatively

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[6] This last is the thesis of Sereni (1966). Admittedly, even large Unification/tariff effects may have been exhausted before the present observations so much as begin; but even this caveat seems unnecessary in the case of the peninsular trunks. Their construction was also very much a "Unification effect" (Fenoaltea 1983; Ciccarelli, Fenoaltea and Proietti 2010), but it took more than the stroke of a pen to put them in place, and the all-rail route from Naples to the North opened only in the later 1860s.

[7] The exceptions in the extreme northeast may be, for the reasons noted below, a figment of the data.

industrial at the end were already such at the beginning.[8] The regional estimates suggested that the progressive industrialization of the northwestern triangle involved a process of diffusion; the provincial estimates subvert that impression and suggest instead a process of intensification.[9]

A synthetic index of concentration is simply the sum of the absolute deviations of the local index from the relevant mean (Fenoaltea 2003, pp. 1077-1080). Nationally, by construction, the mean index is simply one. The process of provincial concentration, nation-wide, is evident in the growth of the sum of these deviations from one, which increases from 17.5 in 1871 to 18.7 in 1881, 22.7 in 1901, and 23.7 in 1911. One notes that the increase equals some 7 percent in the first intercensal period, 10 percent (on a decennial basis) in the second, and 5 percent in the third: this statistic confirms, as the maps suggest, that the change in the distribution of industry was most significant over the middle period, over the 1880s and 1890s -- and not, as the post-war literature would have led one to expect, over the supposed "take-off" of the *belle époque*.

A parallel measure of *within-region* concentration is the analogous sum of the deviations from the appropriate regional means. Nationally, that sum also rises: from 12.0 in 1871 to 13.0 in 1881, and 16.3 in 1901 -- only to slip back, to 15.0, in 1911. This broad process of within-region concentration is also apparent, and in fact altogether stronger, in the regions of the "industrial triangle": within their 14 provinces the sum of the absolute deviations from the regional means rises from a total of 4.3 in 1871 to 4.8 in 1881, 7.0 in 1901, and 7.3 in 1911.[10]

The "industrial triangle" is not to be understood as a triad of industrial regions.[11] Within the great northern valley of the Po river, the industrial *provinces* were themselves northwestern: the "South of the North" also lagged behind, and even in the early twentieth century the swath of white from southern Piedmont in the west to the Adriatic in the east was as nearly unbroken as that which then engulfed the lower peninsula and the major islands. Industrial growth was marked by changing products, changing processes, changing organizational forms, but the industrial vocation of some locations seems remarkably constant -- as exemplified by Clermont-Ferrand in central France, an industrial center famous now for the Michelin rubber-tire works, famous in the later Roman Empire for its

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[8] From 1871 to 1911, in Figure 2, two northwestern provinces (Novara, Bergamo) move from dark grey to black; but as is clear from Table 2 even in 1871 they were very close to 1.4, and with a marginally lower cutoff even that modest change would disappear altogether.

[9] Intensification does not of course deny diffusion at the sub-provincial level, for as industry grows it will naturally appear in once green-field locations. For a fine account of the rise of industry in once agricultural areas of the province of Milan see Romano (1990). On the apparently high level of relative industrialization in Genoa already in 1871 see above, note 3.

[10] The regional sums of these deviations for the four benchmarks are, respectively, 1.1, 1.3, 1.6, and 1.7 for Piedmont, 1.0. 0.9, 1.1, and 1.0 for Liguria, and 2.1, 2.6, 4.2, and 4.6 for Lombardy; they are not of course comparable across regions, as they are not independent of the number of provinces. Liguria is something of a special case, not least because the province of Genoa all but coincided with the region itself.

[11] The new estimates of sub-regional industrial production here confirm a thesis already advanced by Italy's geographers: on the heterogeneity of the Northwest in particular see Dematteis, Lusso, and Di Meglio (1979). Gambi (1977) famously complained that the (political) regions were not analytically useful concepts; the same could of course be said, *a fortiori*, of the national State.

pottery. In Piedmont and Lombardy in particular, and even as it was itself transformed, industry was more intensely pursued where it already was, in a few particular provinces, essentially where the mountains meet the plain. It was ever favored there, it would appear, by the combination of natural resources (the summer flow from the Alpine snow-melt) and easy communications (the flat lands of the valley, the Alpine passes): the cultural elements emphasized long ago by Edward Banfield (Banfield 1958) here seem altogether secondary, as they did not with regional data alone.[12]

One further novelty is suggested by the provincial estimates, the case of the dogs that didn't bark. Pressed to list Italy's most industrial provinces on the eve of the Great War, a general historian, *a fortiori* a business historian, would surely mention, with the obvious capitals of the "industrial triangle," such provinces as Perugia -- home of the great Terni steel works -- and no doubt Alessandria, home of the Borsalino works, hat-makers to the world. Both these famous centers of industry are ever, on these maps, pure white, with an index of relative industrialization that peaks near 0.8. The good of counting, to coin a phrase, is that it lessens the idea: it is the presence not of the familiar stars, but of the many, anonymous, not-necessarily-supporting actors, that makes a province truly an industrial one.

3.   Gainers and losers: value added

The indices in Table 2 are ratios of the elements collected in Table 3: the numerators are values added shares (cols. 2 - 5), the denominators demographic/labor force shares (cols. 6 - 9). Since the regions are intrinsically heterogeneous the levels of these shares are of little significance *uti singuli*; what is of interest is their variation over time.

Panels (a) and (b) of Figure 3 identify the provinces whose share of industrial value added (*ex* construction, as before) increased, or decreased, from benchmark to benchmark. For each period considered the underlying statistics are simply the ratio of the terminal to the initial share of value added (converted if necessary to a decennial basis), minus one; changes of over 20 percent appear in black, of over 10 to 20 percent in dark gray, and of over 2.5 to 10 percent in light gray. Changes of up to 2.5 percent are deemed insignificant, and some provinces remain unshaded in both period-specific maps.

These maps thus illustrate *relative* movement only. From a low basis even a high rate of increase might leave a province with a low level of relative industrialization, and vice versa; add the possible influence of demographic change, and there is clearly no strong *a priori* relation between Figure 3 and Figure 2. For all that, and as the above-noted evidence of growing provincial concentration would lead us to expect, over the full span from 1871 to 1911 the gainers in Figure 3 are, in the main, a subset of those that stand out in Figure 2. Among these are the leading gainer, Milan, the other provinces of the "northern northwest," and also Genoa, Bologna, Pisa, and Leghorn. Only Ferrara and Grosseto show a strong increase from a low base. There are no other significant gainers: scattered provinces hold their own, but most of those in the *Mezzogiorno* or on the northern Adriatic appear among the losers.

The intercensal periods point to a much more complex story. The relative lack of

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change from 1871 to 1881 in Figure 2 is mirrored in Figure 3 in the geographic dispersion of the gainers and losers over that initial span. The northern northwest gains, but moderately so; Rome (Latium) also gains, as do Naples and Avellino in Campania, Reggio Calabria at the boot's toe, and, across the straits, five of Sicily's seven provinces. The largest relative gain is that of Tuscany's Grosseto, which registered a mining boom, and the next highest were all in the South: Catania (led by foodstuffs and leather), followed by Caltanissetta (also mining), Naples (foodstuffs and engineering), and Syracuse (foodstuffs). Genoa -- second only to Milan, over the full forty years -- is actually among the relative losers, its growth limited by the collapse of the post-Unification shipbuilding boom, the swan song of wood and sail (Ciccarelli and Fenoaltea 2009a).

The maps for the second intercensal period, twenty years long and following the 1881 watershed, are closest to what the general literature would lead one to expect. Not a dozen provinces, half of them in the "industrial triangle," show significant gains; twice as many just hold their own, a majority -- including all but a handful of those in the *Mezzogiorno* -- display relative decline. The leading gainers were two of the already strong capitals of the industrial triangle -- Milan and Genoa -- followed by Como, Milan's northern neighbor, and again Grosseto. Milan and Como rode the tariff-protected textile boom; Genoa, the boom in the construction of warships and (subsidized) merchant steamers; and Grosseto, a further mining boom (Fenoaltea 2001b; 2002; Ciccarelli and Fenoaltea 2009a; 2009b). The second-tier gainers include, again, northern Piedmont (also thanks to textiles), and also Perugia, where growth was led by the development of the Navy's darling, the already-mentioned Terni steel works. Grosseto alone excepted, all these booming provinces were the beneficiaries of tariffs and/or public monies: the State's multifaceted intervention in the economy was arguably the greatest and most consistent obstacle to national development, but its bitter fruit was locally sweet.[13]

The maps for the last intercensal period, the industrial "take-off" of the postwar literature, are instead frankly surprising. Milan and Genoa were strong gainers, Turin a somewhat weaker one, all riding the engineering boom; but that is almost the only element of upside continuity. South of the Po valley, the gainers were Pisa (thanks to the major new steelworks at Piombino), Lecce in the boot's heel, and Sassari in northern Sardinia (both thanks to the foodstuffs industry and thus ultimately, one presumes, to urban growth).[14] Within the Po valley itself, Milan's formerly dynamic neighbors, still tied to textiles, sank into relative stasis. The Po-valley provincial gainers were new kids on the block: the map points to a widespread *diffusion* of industrial growth, to the south of the river, from Alessandria in the west to Ferrara in the east. Alessandria gained thanks to the growth of the engineering and non-metallic mineral products industries, and not even then, as one would have expected, of the (hat-making) apparel industry; Ferrara was in fact the overall relative leader, and owed its spectacular growth to the boom in the then heavily protected sugar industry. The local fruit of public favors was there literally sweet.

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[13] The historians' debate over the merits and demerits of public policy exploded half a century ago, and continues unabated; see Gerschenkron (1955), Romeo (1959), Cohen and Federico (2001) for a review of the subsequent literature, and, more recently, Fenoaltea (2006) and Ciocca (2007).

[14] Fenoaltea (2003). The major foodstuffs industries were tied directly to urban growth, as farmers typically baked their own bread, slaughtered their own animals, and so on.

At the regional level, in this period, the strongest gainers were, in order, Emilia, Liguria, and Lombardy. In Lombardy, overall success was due almost exclusively to the strong performance of Milan, with a small contribution from the other provinces; Liguria is a non-issue, as it is little beyond Genoa; but in Emilia, as the map shows, Ferrara was but the leader of a strong group, with all the others also above the national mean, thanks typically to rapid growth in the foodstuffs and/or engineering industries.[15]

If across the turn of the century upside continuity was the exception, downside continuity was the rule, and the losers' map for the third period much resembles, in even darker hues, that for the second. In the entire *Mezzogiorno* only four provinces at least held their own (Naples, one in Sardinia, two in Apulia). The darkest hues appear in some provinces of the Abruzzi, Campania, Calabria; and they also cover Sicily, then reeling under two major shocks. The literal shock was of course the great earthquake that devastated Messina in 1908; the other, less deadly but economically more significant, was the loss of Sicily's world sulphur monopoly with the discovery of the deposits in Louisiana.[16] The sulphur-mining centers in southern Sicily -- Caltanissetta and Girgenti -- saw their share of industry decline, in a decade, by some 30 percent: the worst performance of all, across all provinces and periods in our sample.

But the losses were not only southern. Grosseto, which posted the best individual performance in the first sub-period (setting a record that would remain unsurpassed), and a strong one in the second, suffered a catastrophic 25 percent share decline in the third: what mining gave, mining took away. Cuneo, in southwest Piedmont, continued its steady decline. Before Unification, one suspects, Cuneo exploited its position astride the road from Turin to Nice -- then Savoy's Nizza, and so Italian that Garibaldi, who was born there, *never* accented the last syllable of his surname. But Nice was ceded to France, and the rail line inland from Genoa was built through Alessandria to the east.[17] Cuneo became a backwater, and steadily fell in rank: a story similar in the small to that of Timbuktu, once the glorious destination of the caravans that crossed the desert to West Africa, reduced to a distant backwater when steam-powered transportation moved the entire region's outlet to the world from the desert edge to the Guinea coast.

That same story reappears in the lower Po valley, in the three provinces of Cremona, Mantua, and Rovigo, also in constant decline from 1871; in the last map in Figure 3, panel (b), they comprise the grey worm-like shape, grey in a sea of white. From the Middle Ages to the mid-nineteenth century cheap inland transportation was water-borne, and the natural outlet of the Po valley's river- and canal-borne trade was the Adriatic. The construction of the rail line inland from Genoa -- prior to Unification, and willed by Cavour -- shifted the trade of the upper Po valley from the Adriatic in the east to Savoy's own Ligurian coast: like Cuneo, like Timbuktu, the provinces on the lower Po lost what had been the privileges of

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[15] The entire region seems to have shared in the sugar boom, much like Ferrara. Sugar extraction was itself tied to the diffusion of beet cultivation, and therefore, in good measure, to the significant land-reclamation projects of the preceding years (Mioni 1978, p. 231).

[16] On the economic aftermath of the earthquake see Mortara (1913).

[17] It has been said that Cavour ceded Nice to France just to spite Garibaldi, but one likes to think that that great statesman was more statesmanlike than that.

their position.[18] The post-Unification peninsular railways do not appear to have unified the domestic market, let alone done so to the detriment of the South; the pre-Unification northern railways appear to have reoriented trade, to the detriment of the lower Po valley (Fenoaltea 1983).

In the large, the only significant industrial diffusion appears over the *belle époque*, with industrial growth especially in the Emilian provinces. The overriding pattern is one of concentration: within Italy, in the later nineteenth century, into the already industrial provinces of the Northwest, and within the Northwest, in the early twentieth century, into its own regional capitals. Industrial concentration was of course furthered by the declining cost of moving goods, for the minimization of total cost is the minimization of (direct) production costs and transportation costs *together* (Isard 1948). As transport costs fell an increasing weight was placed on the production side, increasing trade and specialization; that this process accelerated after 1881 confirms that the (largely northern) minor lines and tramways built after that date proved more useful than earlier the peninsular trunks (Fenoaltea 1983).

But the final, dramatic boost to concentration seems tied to still different developments. One was specific to the Italian context, to the evolving weight of its industries over the business cycle, to that extent impermanent. Around the turn of the century the (tariff-driven) textile boom of the 1880s and 1890s lost momentum, the (Kuznets-cycle) engineering boom got under way; over the *belle époque* the flowing waters of the Alpine valleys were, for the industries that then led Italy's growth, a far weaker magnet than they had been.

The other was instead but the Italian manifestation of a world-wide novelty, the unprecedented decline in the cost of moving energy. Historically, cheap energy had been provided by wind and water, and its transmission, with direct mechanical links, had been limited to a matter of yards. Already in the nineteenth century the spread and increasing efficiency of the steam engine had meant that energy could be moved by moving fuel, that power could be generated anywhere; but only electricity brought the effective separation of generation and use, and by the early twentieth century power could be economically transmitted over previously inconceivable distances. Industrial location pulls were revolutionized: the most energy-intensive industries alone remained tied to the waterfalls, most manufacturing could profitably move closer to the sources of the raw materials, closer to the market, saving on the transportation of goods at a now affordable cost in the transmission of energy. In practice, at the margin industry abandoned the remote sources of power for the major nodes of communication, the centers of trade, in short for the very locations that had already nurtured the largest urban concentrations. The concentration of government and wealth in the major cities had long attracted artisans; over the *belle époque* the very features that had long attracted government and wealth also attracted factory-workers.

4.   Gainers and losers: male population 15 and over

The index of relative industrialization scales local value added shares by the local

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[18] The rail line from Milan to the Adriatic itself followed the northern edge of the Po valley, and did not duplicate, as had at one point been adumbrated, the water route; and with the coming of the railway internal navigation was quickly abandoned. See Carozzi and Mioni (1970), Gambi (2009a, p. 42), Lazzarini, (1981, p. 301).

share of the male population 15 and over: in the first instance simply to correct for size, to allow a direct comparison of provinces large or small. For this purpose, aggregate population would do as well.

In the absence of census-year estimates of local GDP, however, the *male* population *of working age* doubles as a proxy for the aggregate economy: primarily because that age/sex group was much the most mobile segment of the labor force, and thus likely to adapt rapidly to changing equilibria, secondarily because male labor-force participation rates are uniformly high and not clouded, as female rates are, by what appear to be varying local conventions.[19] It is this specific demographic denominator that warrants interpreting the present indices as approximate indices of concentration; and it is this interpretation of the demographic denominator that makes it interesting in its own right.[20]

The demographic maps in Figure 4, drawn from Table 3 (cols. 6 - 9), are the male-labor-force/aggregate-economy equivalent of the industry maps in Figure 3. Panels (a) and (b) identify the provinces whose share of that specific population increased, or decreased, over time. For each period considered the underlying statistics are again the ratio of the terminal to the initial share (converted if necessary to a decennial basis), minus one; because demographic change was altogether milder than industrial change the class limits are here halved. Changes of over 10 percent appear in black, of over 5 to 10 percent in dark gray, and over 1.25 to 5 percent in light gray. Changes of 1.25 percent or less are deemed insignificant, and some provinces again remain unshaded in both period-specific maps. The aggregate male labor force grew relatively steadily at near 5 percent per decade: among the losers, the dark hues correspond to absolute decline.

Three concurrent developments then shaped local demographic change, in Italy as elsewhere. One of course was change in the technology of production, the spread of factory industry, the rise of industrial districts -- little Manchesters -- and of big business. Another is what one is tempted to call the technology of reproduction, in the broadest sense, the rise in age-specific survival rates, the decline in the birth rate, in short the demographic transition. The third and perhaps most significant was the change in the technology of transportation, the general increase in mobility: the fall in the cost of moving goods and of moving people, and eventually also, as seen above, of moving energy as well.

Of these, the first is the closest to our present concerns, the third the richest in implications. The declining cost of moving people meant in general that migration, temporary and permanent, rose to unprecedented levels; in the specific case at hand, as noted, it increasingly undercut the influence of the demographic transition, and essentially severed the link between local birth and death rates and the growth of the local labor force.

The declining cost of moving goods radically boosted human concentration. The city was an agglomeration that met its limits when the gains from further concentration -- the exploitation of economies of scale, possibly in production, certainly in transacting -- were

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[19] See Fenoaltea (2003). Estimates of provincial GDP have not been proposed at all; the extant benchmark estimates of regional GDP in Daniele and Malanima (2007) and Felice (2010) refer only to 1891 and 1911. In the absence of annual local-level data, Daniele and Malanima interpolate the 1891 and 1911 regional shares of agriculture, industry, and the services to obtain best-guess annual estimates.

[20] The local movements of the total population have of course been examined by Italy's historical demographers; see for example Società italiana di demografia storica (1985).

more than balanced by the corresponding incremental costs -- the costs possibly of congestion, certainly of provisioning, of supplying it with food and fuel (Ringrose 1968). Transport technology had been unchanged for centuries, and Italy's land-locked cities had long remained much as the Medieval Renaissance had left them; with the coming of railways and tramways they burst out of their medieval walls and embarked on unprecedented growth -- which would continue, boosted by the coming of cheap road transportation, to our own day (Gambi 2009b). Small cities within an urban hierarchy were of course gainers in their own right but losers in the competition with more important centers; the unambiguous gainers were the pinnacles of those hierarchies, the largest cities of all.

Urbanization as such refers to cities, and not to the entire provinces represented in Figure 4. The provinces containing Italy's three biggest cities -- Naples, Milan, and Rome -- in 1861 and again in 1911 all appear among the overall gainers (upper panel, first map). Turin city was the fourth largest, and grew faster than Naples; but the province of Turin included the Alpine valleys, and over the entire period the net change in its relative share of the male population of working age was insignificant (Del Panta 1996, p. 204).

Among the gainers, from end to end, Milan, Rome, and Naples appear in a sea of white. Genoa and Ferrara also gain, and are similarly isolated, in the North and Center; the other gainers are surprisingly concentrated in the major islands -- half of Sardinia, most of Sicily -- and in the boot's heel, where Apulia stands out as the only multi-province region to register significant relative gains in each of its provinces.[21] Industrial growth was concentrated, diffuse growth was non-industrial.

Among the losers, from end to end (lower panel, first map), four groups can be identified. The first comprises the three provinces in (or including) the central and eastern Alps. The second comprises the four provinces on the right bank of the upper Po, "the South of the Northwest;" the third, the three provinces on the lower river, the worm-like shape already noted on the earlier maps. Lucca is an outlier: the fourth group is an unbroken swath covering the middle Adriatic coast and, Naples and the Apulian provinces apart, the entire continental *Mezzogiorno*.

The division into the three sub-periods again enriches the story. Of the overall gainers Milan stands out as a case, in fact the only case, of consistent and indeed *increasing* gains from period to period. Genoa is also on an upward path, with significant gains at least in the second and third periods; and so in a sense is Ferrara, with its overall gain tied to a strong performance in the third period alone. Naples moved ahead in the first period, fell back in the second, and recovered strongly in the third; Rome was its near mirror-image, gaining in the first period and even more in the second, but not at all in the third. The other overall gainers -- in Sardinia, Apulia, and Sicily -- appear instead on a downward path. Their gains generally weaken from period to period, and in the third period the Sardinian provinces and some of the Sicilian appear among the losers; Trapani and Caltanissetta, in particular, appear as mirror-images of Milan, with progressively poorer performances across all three periods. Within Sicily, in fact, there appears to be an eastward movement: Messina in 1911 was of course a disaster area, but over the final decade Catania and Syracuse continue to gain

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[21] The male labor force is of course an imperfect index of aggregate product, and the employment gains in Sicily and Apulia may have been tied to an intensification of agriculture (a shift from grain to citrus fruit in the one case and to vines in the other), with less-than-proportionate increases in aggregate product.

smartly, riding, it would appear, the citrus-export boom (Lupo 1990, p. 188).

Among the overall losers, Cuneo and the lower continental *Mezzogiorno* appear as consistently poor performers across the decades at hand. The worm-shaped threesome along the lower Po declined instead over the middle period only, and actually recovered its loss, at least in part, in the third. In the extreme North and Northeast, and again along the middle Adriatic, overall decline again appears tied to a particularly poor performance in one period only, the third; and one correspondingly suspects that their decline -- in that period and, derivatively, overall -- may be at least in part a figment of the data, indeed of the dates. The censuses of 1871 and 1881 were taken on New Year's eve, that of 1901 in February, still winter; the 1911 census was taken in June. The areas concerned were centers of out-migration, and in particular of *seasonal* migration; and in summer these temporary migrants were away from home.[22] Much of the decline between the winter of 1901 and the summer of 1911 may thus reflect a decline not from 1901 to 1911, but from winter to summer.

Other provinces that appear neither as gainers nor as losers over the full forty years break even at the end of a chequered history. Turin, no longer the national capital, lost ground in the first period, but recovered smartly in the third; next to it to the east Novara and Como did the exact opposite. The most interesting such case is writ large across the lower Po valley, as most of the provinces of Emilia and their immediate neighbors to the north lost sharply in the first two periods, and as sharply recovered in the third, apparently as major land-reclamation projects bore fruit.[23]

5. Provincial industrialization: a synthesis

The indices of relative industrialization are ratios, and their change over time depends on the relative movement of the numerator (the share of value added) and the denominator (the share of the male population of working age). The scatter diagrams in Figure 5 summarize the diachronic evidence considered, piece by piece, above. The vertical axis measures the growth of value added (end of period divided by start of period, converted to a decennial basis, minus one), again in aggregate industry *ex* construction, with the horizontal line measuring the national mean; the horizontal axis similarly measures the growth of the male labor force, with the vertical line measuring the national mean; and the sloping line (from -1,-1) through the national means is the locus of combinations of value-added and labor-force growth -- *or decline* -- that leave the index unchanged.

A position to the right/left of the vertical line -- the sections identified in graph (a) as *A*, *B*, and *C* on the one hand, and *D*, *E*, and *F* on the other -- thus reveals a growing/declining share of the male labor force; a position above/below the horizontal line -- sections *F*, *A*, and *B* on the one hand, and *C*, *D*, and *E* on the other -- similarly reveals a growing/declining share of industry; and a position above/below the sloping line -- sections *E*, *F*, and *A* on the one hand, and *B*, *C*, and *D* on the other -- reveals a rising/declining index of relative industrialization.

In the order of the preceding sections, that is, index first, value added second, labor

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[22] On the North-East see for example Cosattini (1904) and Lazzarini (1981). The relative gain of the lower Venetian provinces may also reflect seasonal movement from the highlands.

[23] See above, note 15.

force third, in section *A* we have (+++): the index ("the weight of industry in the local economy") rose because above-average industrial growth outstripped the also above-average growth of the male labor force ("the entire local economy"). In section *B* we have (-++): the index fell because the above-average growth of industry was outstripped by the even-further-above-average growth of the male labor force. In section *C* we have (--+): the index fell because the growth of industry was below average, and correspondingly outstripped by the (nonetheless) *above*-average growth of the male labor force. The economies in sections *A*, *B*, and *C* are all prospering, overall; but overall relative growth would appear to be led by industry in section *A*, abetted but not led by industry in section *B*, and due entirely to agriculture or services, the growth of which more than offset relative industrial *decline*, in section *C*.

There is of course pair-wise symmetry here. The economies in sections *D*, *E*, and *F* are all in relative decline, overall, but with differences among them. In section *D* we have (---): the local economy is in relative decline, with industry the "leading" sector in falling behind. In section *E*, in turn, we have (+--): industry is there in relative decline, and the local concentration in industry increases only because the rest of the local economy is doing even worse. In section *F*, finally, we have (++-): it signals a local economy with relative industrial growth more than offset by the relative decline of the other sectors, and, correspondingly, with a rising concentration in industry. Section *E*, in particular, reminds us that a rising index of relative industrialization means that you are becoming more industrial relative only to your own self, and not (necessarily) relative to the others: our stages-of-growth mentality associates a rising share of industry in the local economy with all sorts of good things, but, to coin another phrase, it ain't necessarily so.

Table 4 collects the province-specific relative growth rates that identify the individual observations. The scatter diagrams in Figure 5 include all 69, perforce unlabeled, provincial observations; graph (a) is the end-to-end scatter, graphs (b), (c), and (d) refer to the three intercensal periods. In all four graphs negative values are observed on the horizontal axis, but never on the vertical: as noted, in absolute terms some provinces experienced depopulation, but none experienced deindustrialization, at least between the available benchmarks. In all four, too, the correlations are clearly positive; but it is the *dispersion* of the data points that captures the eye.[24]

In graph (a), spanning four decades, many observations cluster near the intersection of the national means, and the outliers are relatively few. Ten provinces are well to the right of that central cluster, and display significantly-above-average overall (male labor force) growth; but of these only *one* is a clear industry-led success story, well within section *A*. One more is a balanced success, practically on the constant-relative-industrialization line. The others are in sections *B* and *C*, near the mean-industrial-growth (horizontal) line, with a *declining* concentration in industry: not industry, but agriculture or the services, made a comparative success of those local economies. Three more observations are *below* but still to the right of the central cluster: these are local economies with a well-below-average *industrial* performance, and a somewhat above-average *overall* performance all the same. The later nineteenth century may have been the age of industry, but industrial growth was

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[24] The correlation coefficients equal .48 in the first intercensal period, .63 in the second, .50 in the third, and .59 overall.

clearly not *necessary* for local growth.

Almost all the low-overall-growth observations are directly to the left of this last group, in section *D*: these display an equally poor industrial performance, and a much poorer overall performance. There are no outliers within section *E*, but there is one in section *F*, a local economy that did relatively poorly overall despite its above-average industrial growth. The later nineteenth century may have been the age of industry, but industrial growth was clearly not *sufficient* for local growth.

Graphs (b), (c), and (d) span the sub-periods, respectively ten, twenty, and again ten years long. One notes that the vertical line is always pretty much in the same place: from census to census, national population/male-labor-force growth rates were practically constant. The horizontal line instead inches up from the first period to the second -- both include full industrial cycles, and end up pretty much, as they begin, in cyclically indifferent years -- and jumps up in the third, confined to the long expansion of the *belle époque*, the run-up to the pre-War cyclical peak (Ciccarelli and Fenoaltea 2007). Within these graphs, there is more overall dispersion, and a greater number of observations in section *A*, than in graph (a) -- but least so over the central period, twice as long as the others: individual provinces clearly wandered over time from quadrant to quadrant, and the longer the time period the greater the tendency to mean reversion. The dispersion is much the greatest over the last period, the only one which includes only the upswing of the business cycle. There is here at least a hint that some local economies were more cyclically sensitive than others, that absent the War the scatter for a final twenty-year period, including the downturn that never was, might have been altogether closer to that for the middle twenty-year period at hand. The War spoiled our statistical experiment; but this bit of collateral damage is nothing to the misery it caused.

6.   Provincial industrialization: the local experience

The regional scatters are presented in Figure 6; the axes and the straight lines are there ever identical to their counterparts in Figure 5.[25] The observations are again unlabeled, but identified by the data in Table 4.

Moving through Italy with a roughly Allied strategy, one notes that the provinces of the major islands (panels 15 and 16) are all in or very near section *C* -- cases of non-industrial growth -- over the full forty years, and again over the central twenty-year span. The islands' years of industrial glory were the 1870s, with four provinces (Cagliari, Caltanissetta, Catania and Messina) in section *A* (+++), two more (Syracuse and Trapani) in section *B* (-++), one (Girgenti) near both means, and only two (Sassari and Palermo) in section *C* (--+). Over the *belle époque* Sassari is in section *F* (++-), Cagliari, Caltanissetta, Trapani and of course Messina are in section *D* (---), and the other four (Sicilian) provinces again in section *C*.

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[25] These scatters are all defined, like those in Figure 5, over ranges defined by the minimum and maximum variations in the full (intertemporal) sample. Because the (extreme) labor-force movements are far smaller than the (extreme) value-added movements, an equal absolute difference in the two corresponds to a much larger relative deviation from the mean, and correspondingly a larger displacement on the scatter, along the labor-force axis than along the value-added axis. In the text that follows "growth" and "decline" are to be understood as *relative*, unless explicitly described as "absolute."

Section *D*, the inner circle of Hell, is the almost permanent dwelling-place for the four provinces of Calabria and Basilicata (panels 13 and 14); the only exceptions are not much better than that, and all in the first period, when Cosenza was in section *E* (+--), and Reggio Calabria in section *F* (++-). Apulia (panel 12) recalls instead the experience of the islands, with its three provinces consistently in or very near section *C*; the only exception is Lecce, squarely in section *A* during the *belle époque*.

Campania (panel 11) includes Naples -- in section *A* in the first period, in section *D* but with near-mean overall growth in the middle period, and in section *B* in the third period and overall. But apart from its capital Campania resembled Basilicata and Calabria: all the other (16) observations are squarely within section *D*, save only two provinces in the first period alone (Caserta, then in section *E*, and Avellino, then in section *F*). The story of the Abruzzi (panel 10) is similarly dismal: its four provinces cluster in or near section *E* in the first period, but in or very near section *D* in the second and third (excepting only Teramo, in section *C* over the middle period), and over the forty years at hand all four are solidly in section *D*. Things do not improve as we move up the Adriatic coast, out of the *Mezzogiorno*, to the Marches (panel 7). Over the full forty years, and again within each intercensal period, the provincial observations cluster in section *D*; nor are the exceptions particularly felicitous. Ancona, the capital and sea-port, has ever the best industrial performance in the region; but in the first period it is practically (+0-), barely in section *F*, with the worst demographic/overall performance, in the second (0--), between *D* and *E*, in the third in *D* but very near both averages, and overall barely in *E* (+--). The only cases of relative overall growth are Ascoli Piceno and Pesaro, both in section *C* (--+) in the first period -- early enough that labor-force growth may have reflected natural demographics not entirely reequilibrated by migration.

The provinces of Rome and Perugia exhaust their respective regions (Latium, Umbria). In the first period Rome (panel 9) appears in section *A* (+++); in the second, and overall, essentially to the right of the joint means (-0+), with relative demographic/overall but not industrial growth; and in the third, curiously, it scores a near bull's-eye (000), all but dead average on both dimensions. Perugia (panel 8) wanders from under the joint means (--0) in the first period to section *A* in the second (with the creation of the Terni steelworks) and essentially to the left of the means (+0-) in the third; overall it appears in section *F* (++-), but barely so.

The remaining regions of the Center/Northeast all appear idiosyncratic. The eight Tuscan provinces (panel 6) all cluster fairly near the national means, and if anything with somewhat better-than-average industrial performance, over the full forty years; but their paths from end to end vary widely. In the first period there is substantial variation, but most observations are above the sloping line: only Siena and especially Lucca are (---), in section *D*, while Leghorn, Pisa, and especially Grosseto are (+++), in section *A*, and the other three (++-), in section *F*. In the second period the provinces cluster along, and mostly below, the horizontal line: Grosseto is the only outlier, still (+++), while Massa-Carrara is (0++), Leghorn (+0-), with no (relative) overall growth at all, and the others are in sections *C* or *D* but near the means. In the third period there is again considerable variation: Grosseto is still an outlier, but here (---); the others display near-average overall growth with industrial performances varying from Pisa's regional best to Massa-Carrara's regional second-worst.

The eight provinces of Emilia (panel 5) form, over the full period, a tight cluster along the sloping line, with the regional average a perfect bulls-eye, dead on the national means. They form a similar cluster in the middle period, but centered somewhat lower and further left, still near the national means but clearly in section *D*. In the first period the cluster is altogether looser: its center is much where it would remain, in section *D*, but three provinces are barely above the sloping line -- Piacenza (+--), Bologna (++0), and Forlì (+++) -- and Ferrara is well into section *C* (--+). In the third period the observations are again in a loose cluster broadly parallel to the sloping line, but entirely above it; Piacenza is (++-), in *F*, Forlì (++0), the other six, astonishingly, well in section *A*.

The again eight provinces of Venetia (panel 4) also form a cluster over the full period, a loose cluster with slightly-below-average demographic/overall growth and sub-average industrial growth (sections *C* - *D*); the outliers are Udine, (++-), with virtually no labor-force growth in absolute terms, and Belluno, (0--), with an absolute labor-force *decline*. In the first period the cluster is similarly centered but tighter and nearly vertical (reflecting similar demographic, but varying industrial, performances); the single outlier is Belluno, (+--), again with an absolute labor-force decline, and only Vicenza and Udine are barely (++-), in region *F*. In the second period the cluster swings from vertical to diagonal: Udine is near the national means but clearly (+++), in section *A*; sections *B* and *C* are empty; Belluno, Rovigo, Venice, and Verona are well in section *D* (---); Treviso is (+0-); and Padua and Vicenza (a wool-industry leader) are (++-), in section *F*. As in Tuscany, the greatest variation is in the third period, but it is primarily horizontal rather than vertical. Udine (+0-) and Belluno (+--) are again outliers, with a rising index driven by a near 15 percent absolute decline in the provincial labor force; Vicenza is in section *D*, but near the means; Verona alone is in section *A*. The other five provinces are in section *C*, growing smartly overall despite a comparatively poor industrial performance; but these results are clouded by the shift in the reference date from winter to summer, and the possible seasonal shift from the highlands to the lowlands.

Piedmont, Liguria, and Lombardy are the so-called "industrial triangle." In Piedmont (panel 1), in all four scatters, most observations cluster near the intersection of the mean lines. Cuneo is a consistent outlier in section *D* (---); Turin is (++-), in section *F*, in the first two periods, a near (0++) outlier, barely within section *B*, in the third, and the only Piedmontese province in section *A* over the full forty years. In Liguria (panel 2), Porto Maurizio is found in section *C* (--+), but very near the means, in the middle period, and otherwise in section *F* (++-); the far more significant province of Genoa, pushed into section *C* (--+), with barely above-average demographic growth, by the shipbuilding collapse in the first period, rebounded well into section *A* over the following period and, albeit with modest index growth, in the *belle époque* and overall.

Lombardy (panel 3) was by far Italy's leading industrial region, much the largest producer and, from the turn of the century, the most industrial (Tables 2 and 3).[26] But this regional success story is essentially the story of Milan, not the story of the region. Across the intercensal periods Milan is always (+++), the only province in Italy with that record. Its

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[26] The second-generation estimates push Liguria's index past Lombardy's in 1871 and 1881 (Table 1; compare Fenoaltea 2003, Table 3, and see above, note 3), but Lombardy's remains the highest in 1901 and 1911, and it now steals from Liguria the medal for the greatest regional index *gain* over the forty years at hand.

relative gains, already impressive in the first period, roughly doubled in the second, when it rode the cotton boom and expanded its industry faster than anyone else. In the third period it maintained its strong industrial growth, riding the engineering boom; it further doubled its relative gain in male population, perhaps with the rise of urban services, and the attendant growth of its index of relative industrialization was then correspondingly contained.

The performance of the other provinces was very different. In the first two periods these form loose clusters with an industrial and overall performance much inferior to Milan's, though the entire cluster moves up and to the right, as Milan itself did, from the first to the second. Cremona, Mantua, and Pavia, in section *D* (---) in the first period, typically move closer to, and at times surpass, the national means; Milan's more northern neighbors (Como, Bergamo) seem to share the cotton boom, and move into (or higher up within) section *A* (+++); Brescia and lowly Sondrio slip a bit, respectively from (0--) to (---) and from (++0) to (++-). In the third period the pattern is completely different: there is at last at least one province in section *C* (--+), Mantua, but it is very much an outlier; Cremona is still (---), but not far from the national means; and the others are arrayed just above the sloping line, with three (+--), in section *E* (cotton-heavy Como and Bergamo, and also Sondrio, off to the left as the male labor force actually contracted, again perhaps seasonally), one (++-), in section *F* (Pavia), engineering-led Brescia at last (+++), in section *A*, and of course Milan, off as usual above and to the right of the rest.

Over the full forty years Lombardy is in section *A* (+++), but thanks only to the stellar performance of the province of Milan. The other provinces, at the end of their ups and downs, all emerge in overall relative *decline*: Bergamo and Como despite relative industrial gains that place them in section *F* (++-), Sondrio (+0-), with a rising index driven purely by overall decline, Pavia (0--), with balanced industrial and extra-industrial decline, Cremona, Mantua, and, surprisingly, even Brescia, the historic manufacturer of Europe's finest weapons and armor, (---), in section *D*, albeit with a contained overall (male labor force) decline. Compared to Campania's Lombardy's scatter is displaced upward and to the right, with a typically stronger industrial performance and no cases of overall *absolute* decline; but they are otherwise strikingly similar, as only the province of the leading city boasts an overall gain, while all the others are overall relative losers.[27]

The study of the first subnational benchmarks suggested that over the decades at hand, as artisanal production gave way to factory production, location pulls changed: artisans were attracted by their customers, concentrated in (the provinces that contained) the old political capitals, factories were attracted by environmental features (water resources, cheap transportation) that were regionally diffused (Fenoaltea 2003). The provincial evidence seems to confirm the former proposition, but to contradict the second: factory industry too seems to have concentrated in the provinces that were capitals, industrial capitals rather than political capitals, perhaps, but capitals all the same.

To be sure, the growing provincial concentration of industry reflected in part the above-noted quantum jump in the equilibrium size of the largest cities, as some industries

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[27] They are losers, of course, with respect to the *national* means, the entire pool of 69 provinces; the individual success stories obviously raise those means, but they do not force the other provinces of the same region into comparative failure the way, say, Genoa and Porto Maurizio are necessarily on opposite sides of the Ligurian average.

remained artisanal and quintessentially urban, bread-making first and foremost; but that merely qualifies the point, and does not subvert it. Modern industrialization, factory-based industrialization, also appears overwhelmingly to have been not a regional but a provincial phenomenon; and the Emilian exception proves the rule, for Emilia's industrial progress was tied to the processing of a hyper-perishable farm product (the sugar beet), and correspondingly as topographically diffused as its cultivation. To be sure, artisans and factories may again appear different with a yet finer grid, as the former were clearly urban, the latter perhaps predominantly sub-urban or extra-urban; but to verify this last conjecture we should trade in our magnifying glass for a microscope.

7.   Conclusion

A growing corpus of national and regional estimates has much improved our understanding of Italy's development in the decades that followed Unification. To that corpus this paper contributes the first-ever estimates of industrial production in Italy's 69 provinces, here obtained for the census years 1871, 1881, 1901, and 1911.

This further disaggregation reinforces the principal revisionist hypotheses suggested by the regional estimates. The provincial figures thus confirm that a decade after Unification the old political capitals remained centers of (artisanal) manufacturing, that the industrially sub-average areas were then the Adriatic and Ionic peripheries of broader entities, that the industrial backwardness of the South evident on the eve of the First World War had not been inherited from Italy's pre-Unification history.

At the provincial level too, the link between industrial and overall economic success is altogether looser than the earlier literature presumed. From 1871 to 1911 thirteen provinces perceptibly increased their share of Italy's (male) labor force, and twelve their share of Italy's industry, but only *three* belong to both groups: Milan above all, Genoa, and little Ferrara. Overall, and despite their sub-average industrial growth, Catania and Syracuse in eastern Sicily did at least as well as Milan.

The new provincial estimates also provide a battery of novel results. Surprisingly, provinces famous in Italy or even in the world for their industrial products turn out not to have been particularly industrial: the economic historian and the business historian see a very different landscape.

Industrialization, both as a state and as a process, appears as a clearly sub-regional phenomenon: the (ever more intensively) industrial regions were simply those with (ever more intensively) industrial provinces, and even there these contrast sharply with their immediate neighbors. In the upper basin of the Po, in the heart of the "industrial triangle," the southern provinces remained resolutely non-industrial: from the French border to the Adriatic "the South of the North" resembles, in 1911, the South of the country.

At the provincial level the industrial story is essentially one of growing concentration. The distribution of industry changed little over the 1870s, altogether more radically over the 1880s and '90s, when the "industrial triangle" emerged. The subalpine provinces of Piedmont and Lombardy and Genoa on the Ligurian coast became sharply more industrial, the former attracting the rapidly growing, newly protected cotton industry, the latter as the privileged beneficiary of new shipbuilding subsidies and naval construction; elsewhere, relative deindustrialization was the rule.

Patterns changed again over the *belle époque*. This last period witnessed the only significant episode of industrial *diffusion*: the rise of the also protected sugar industry on the newly reclaimed lands of the Emilian provinces, which then achieved spectacular growth rates from a small base. But the main development was that the earlier concentration into the Northwest gave way to concentration *within* the Northwest itself. Then-booming engineering was less attracted than textiles to the Alpine rivers, progress in energy transmission moved the waterfalls themselves into the plains: the triangle's minor industrial provinces grew little if at all, the provinces with its major cities grew explosively. In the last decade of the European peace, the capitals of the North attracted factories as strongly as the capitals of the pre-Unification states had once attracted artisans.

In Italy's industrialization the influence of the State was pervasive, but not exclusive. The overall tendency to concentration stemmed from the diffuse fall in transport costs already in the nineteenth century, the sudden fall in energy-transmission costs early in the twentieth: it reflected the progress of technology, and to that extent the patterns documented for the Italian case should generalize to a wider world.

Table 1

Italy's provinces: area and male population of working age, census years

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(1) name	(2) code	(3) area (000 sq. kms.)	(4) 1871	(5) 1881	(6) 1901	(7) 1911
			Male population over age 15 (thousands)			

_____

(1) name	(2) code	(3) area (000 sq. kms.)	(4) 1871	(5) 1881	(6) 1901	(7) 1911
PIEDMONT						
Alessandria	AL	5.088	233	249	267	270
Cuneo	CN	7.430	212	211	211	217
Novara	NO	6.613	197	213	232	234
Turin	TO	10.236	329	344	372	421
LIGURIA						
Genoa	GE	4.099	237	254	319	368
Porto Maurizio	PM	1.179	44	46	51	53
LOMBARDY						
Bergamo	BG	2.759	125	129	143	146
Brescia	BS	4.679	163	167	179	193
Como	CO	2.861	154	168	181	183
Cremona	CR	1.756	105	105	110	114
Mantua	MN	2.339	101	103	105	116
Milan	MI	3.163	351	384	477	576
Pavia	PV	3.336	152	159	163	167
Sondrio	SO	3.192	36	38	40	39
VENETIA						
Belluno	BL	3.349	53	51	54	47
Padua	PD	2.141	124	133	140	155
Rovigo	RO	1.774	68	72	70	78
Treviso	TV	2.475	117	124	125	139
Udine	UD	6.582	157	163	183	156
Venice	VE	2.420	117	123	130	149
Verona	VR	3.071	130	138	140	155
Vicenza	VC	2.735	124	130	140	145
EMILIA						
Bologna	BO	3.752	152	162	179	195
Ferrara	FE	2.621	74	80	88	97
Forlì	FO	1.879	81	89	94	99
Modena	MO	2.597	93	97	103	114
Parma	PR	3.238	93	93	98	108
Piacenza	PC	2.471	81	81	82	85
Ravenna	RA	1.852	78	82	85	91
Reggio Emilia	RE	2.291	81	83	88	100
TUSCANY						
Arezzo	AR	3.298	81	85	92	95
Florence	FI	5.867	268	278	316	340
Grosseto	GR	4.502	42	46	53	51
Leghorn	LI	.345	42	45	45	49
Lucca	LU	1.445	88	88	94	97
Massa Carrara	MS	1.781	50	52	59	62
Pisa	PI	3.055	94	100	111	118
Siena	SI	3.812	75	76	83	87

Table 1, cont.

(1) name	(2) code	(3) area (000 sq. kms.)	(4) 1871	(5) 1881	(6) 1901	(7) 1911
			Male population over age 15 (thousands)			
MARCHES						
Ancona	AN	1.938	87	90	95	99
Ascoli Piceno	AP	2.063	66	71	77	76
Macerata	MC	2.816	77	81	79	77
Pesaro	PE	2.895	73	78	84	82
UMBRIA						
Perugia	PG	9.709	193	205	229	229
LATIUM						
Roma	RM	12.081	318	348	425	449
ABRUZZI						
Aquila	AQ	6.436	100	105	114	116
Campobasso	CB	4.381	119	118	109	99
Chieti	CH	2.947	114	114	112	105
Teramo	TE	2.765	85	88	100	90
CAMPANIA						
Avellino	AV	3.037	125	131	120	116
Benevento	BN	2.118	80	82	79	74
Caserta	CE	5.268	235	239	242	238
Naples	NA	.908	312	346	376	434
Salerno	SA	4.964	182	180	171	169
APULIA						
Bari	BA	5.350	194	222	258	275
Foggia	FG	6.962	106	118	137	143
Lecce	LE	6.797	165	184	230	250
BASILICATA						
Potenza	PZ	9.962	166	163	144	139
CALABRIA						
Catanzaro	CZ	5.258	138	144	137	133
Cosenza	CS	6.653	135	135	123	128
Reggio Calabria	RC	3.164	116	122	130	131
SICILY						
Caltanissetta	CL	3.273	74	89	113	114
Catania	CT	4.966	161	185	230	264
Girgenti	AG	3.035	93	99	121	128
Messina	ME	3.226	138	151	169	162
Palermo	PA	5.047	210	233	253	268
Syracuse	SR	3.735	91	111	136	158
Trapani	TP	2.457	74	89	117	116
SARDINIA						
Cagliari	CA	13.431	137	149	167	173
Sassari	SS	10.678	82	89	105	109

Source: see text.

Table 2
Provincial indices of relative industrialization, census years[a]

(1) name	(2) 1871	(3) 1881	(4) 1901	(5) 1911
PIEDMONT	1.13	1.17	1.26	1.30
Alessandria	.76	.74	.75	.81
Cuneo	.90	.86	.84	.77
Novara	1.35	1.36	1.54	1.63
Turin	1.41	1.54	1.70	1.69
LIGURIA	1.48	1.40	1.58	1.62
Genoa	1.64	1.54	1.73	1.75
Porto Maurizio	.61	.67	.63	.71
LOMBARDY	1.37	1.39	1.62	1.67
Bergamo	1.36	1.43	1.61	1.64
Brescia	1.30	1.30	1.18	1.21
Como	1.54	1.55	1.99	2.03
Cremona	1.34	1.25	1.19	1.15
Mantova	1.03	.93	.87	.75
Milan	1.69	1.78	2.23	2.26
Pavia	1.00	.93	.97	1.01
Sondrio	.56	.57	.62	.64
VENETIA	.99	.94	.93	.93
Belluno	.90	.96	.84	.91
Padua	.87	.76	.83	.78
Rovigo	.91	.84	.74	.64
Treviso	.92	.76	.82	.78
Udine	.80	.82	.87	1.07
Venice	1.37	1.33	1.22	1.08
Verona	1.03	.94	.86	.88
Vicenza	1.07	1.10	1.17	1.13
EMILIA	.85	.82	.77	.86
Bologna	.95	.97	.95	1.03
Ferrara	.74	.64	.63	.84
Forlì	.84	.86	.67	.71
Modena	.91	.79	.80	.86
Parma	.88	.78	.73	.84
Piacenza	.76	.79	.73	.84
Ravenna	.81	.78	.68	.75
Reggio Emilia	.78	.76	.73	.84
TUSCANY	1.07	1.11	1.09	1.09
Arezzo	.71	.72	.69	.66
Florence	1.22	1.27	1.21	1.15
Grosseto	.53	.68	.78	.64
Leghorn	1.59	1.69	1.87	1.95
Lucca	1.20	1.12	1.10	1.18
Massa Carrara	1.27	1.37	1.38	1.19
Pisa	.99	1.10	1.08	1.26
Siena	.74	.74	.68	.69

Table 2, cont.

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(1) name	(2) 1871	(3) 1881	(4) 1901	(5) 1911
MARCHES	.83	.79	.74	.72
Ancona	.94	.97	.97	.96
Ascoli Piceno	.73	.71	.62	.64
Macerata	.79	.68	.66	.61
Pesaro	.83	.75	.65	.59
UMBRIA	.68	.62	.72	.77
Perugia	.68	.62	.72	.77
LATIUM	.96	.99	.85	.85
Roma	.96	.99	.85	.85
ABRUZZI	.58	.59	.51	.49
Aquila	.63	.64	.55	.49
Campobasso	.57	.61	.53	.46
Chieti	.60	.63	.53	.55
Teramo	.48	.48	.44	.46
CAMPANIA	1.01	1.08	.99	.93
Avellino	.63	.72	.63	.53
Benevento	.69	.62	.56	.46
Caserta	.80	.82	.75	.67
Naples	1.44	1.59	1.42	1.32
Salerno	.95	.93	.83	.75
APULIA	.78	.71	.61	.62
Bari	.76	.71	.62	.61
Foggia	.82	.77	.59	.51
Lecce	.79	.66	.60	.70
BASILICATA	.67	.66	.54	.51
Potenza	.67	.66	.54	.51
CALABRIA	.69	.70	.63	.58
Catanzaro	.78	.76	.72	.62
Cosenza	.60	.61	.54	.52
Reggio Calabria	.70	.73	.62	.59
SICILY	.98	.95	.81	.65
Caltanissetta	1.17	1.23	1.11	.82
Catania	.87	.98	.84	.69
Girgenti	1.22	1.21	1.07	.73
Messina	.70	.74	.63	.56
Palermo	1.21	.99	.80	.65
Siracusa	.79	.78	.64	.51
Trapani	.85	.79	.69	.66
SARDINIA	.80	.81	.68	.65
Cagliari	.96	1.01	.84	.75
Sassari	.53	.48	.43	.47

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[a] share of value added, excluding construction, over share of the male population over age fifteen.

Source: Table 3.

Table 3

Provincial shares of value added, excluding construction, and of the male population over age fifteen, census years (percentages)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	share of value added, excluding construction				share of the male population over age fifteen			
name	1871	1881	1901	1911	1871	1881	1901	1911
PIEDMONT	12.11	12.36	13.04	13.36	10.73	10.60	10.32	10.32
Alessandria	1.95	1.92	1.92	1.99	2.58	2.60	2.55	2.44
Cuneo	2.11	1.90	1.68	1.50	2.34	2.20	2.01	1.96
Novara	2.94	3.02	3.40	3.45	2.18	2.22	2.21	2.11
Turin	5.11	5.53	6.03	6.42	3.63	3.58	3.55	3.80
LIGURIA	4.61	4.39	5.57	6.17	3.11	3.12	3.53	3.81
Genoa	4.31	4.07	5.27	5.82	2.62	2.64	3.04	3.33
Porto Maurizio	.30	.32	.31	.35	.49	.48	.49	.48
LOMBARDY	18.00	18.11	21.63	23.14	13.12	13.04	13.32	13.87
Bergamo	1.87	1.93	2.19	2.16	1.38	1.35	1.36	1.32
Brescia	2.34	2.25	2.01	2.12	1.80	1.74	1.71	1.74
Como	2.63	2.71	3.44	3.36	1.70	1.75	1.73	1.66
Cremona	1.56	1.36	1.25	1.18	1.16	1.09	1.05	1.03
Mantova	1.15	.99	.87	.79	1.12	1.07	1.00	1.05
Milan	6.54	7.11	10.13	11.78	3.88	4.00	4.55	5.21
Pavia	1.68	1.53	1.51	1.53	1.68	1.65	1.55	1.51
Sondrio	.23	.23	.24	.23	.40	.40	.39	.35
VENETIA	9.70	9.11	8.76	8.61	9.83	9.73	9.37	9.26
Belluno	.53	.51	.43	.38	.59	.53	.52	.42
Padua	1.19	1.05	1.11	1.10	1.37	1.39	1.33	1.41
Rovigo	.68	.63	.49	.45	.75	.75	.66	.70
Treviso	1.19	.98	.99	.98	1.30	1.29	1.20	1.26
Udine	1.39	1.40	1.51	1.51	1.73	1.70	1.75	1.41
Venice	1.77	1.70	1.52	1.46	1.29	1.28	1.24	1.35
Verona	1.48	1.35	1.14	1.23	1.44	1.44	1.33	1.40
Vicenza	1.47	1.49	1.56	1.49	1.36	1.36	1.34	1.31
EMILIA	6.86	6.52	5.97	6.92	8.10	7.99	7.79	8.05
Bologna	1.59	1.64	1.62	1.81	1.68	1.68	1.71	1.76
Ferrara	.60	.54	.53	.74	.82	.83	.84	.88
Forlì	.75	.80	.60	.63	.90	.93	.89	.89
Modena	.94	.80	.78	.89	1.03	1.01	.98	1.04
Parma	.90	.76	.68	.82	1.03	.97	.93	.98
Piacenza	.67	.66	.57	.65	.89	.84	.78	.77
Ravenna	.70	.66	.56	.62	.86	.85	.81	.83
Reggio Emilia	.69	.66	.62	.76	.89	.87	.84	.90
TUSCANY	8.74	8.93	8.90	8.86	8.18	8.02	8.14	8.12
Arezzo	.64	.64	.61	.57	.90	.89	.88	.86
Florence	3.61	3.68	3.65	3.55	2.96	2.89	3.02	3.07
Grosseto	.25	.32	.39	.29	.47	.48	.50	.46
Leghorn	.73	.79	.80	.86	.46	.47	.43	.44
Lucca	1.17	1.02	.98	1.04	.98	.91	.90	.88
Massa Carrara	.70	.74	.78	.66	.55	.54	.56	.56
Pisa	1.02	1.15	1.14	1.34	1.04	1.04	1.06	1.06
Siena	.62	.59	.54	.55	.83	.80	.80	.79

Table 3, cont.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	share of value added, excluding construction				share of the male population over age fifteen			
name	1871	1881	1901	1911	1871	1881	1901	1911
MARCHES	2.78	2.61	2.34	2.16	3.34	3.32	3.19	3.03
Ancona	.90	.91	.87	.86	.96	.94	.90	.90
Ascoli Piceno	.54	.53	.45	.44	.73	.74	.73	.69
Macerata	.68	.57	.50	.42	.85	.84	.75	.70
Pesaro	.67	.60	.52	.44	.80	.81	.80	.75
UMBRIA	1.45	1.32	1.56	1.59	2.14	2.14	2.18	2.08
Perugia	1.45	1.32	1.56	1.59	2.14	2.14	2.18	2.08
LATIUM	3.37	3.61	3.46	3.44	3.52	3.63	4.05	4.06
Roma	3.37	3.61	3.46	3.44	3.52	3.63	4.05	4.06
ABRUZZI	2.66	2.63	2.14	1.82	4.62	4.43	4.16	3.71
Aquila	.70	.70	.59	.51	1.10	1.09	1.09	1.05
Campobasso	.76	.75	.55	.41	1.32	1.23	1.04	.89
Chieti	.76	.75	.57	.52	1.25	1.19	1.07	.95
Teramo	.45	.44	.42	.38	.94	.92	.96	.81
CAMPANIA	10.44	11.01	9.32	8.65	10.32	10.19	9.42	9.33
Avellino	.87	.98	.72	.55	1.38	1.36	1.14	1.05
Benevento	.61	.53	.42	.31	.88	.85	.75	.67
Caserta	2.09	2.04	1.73	1.45	2.60	2.49	2.31	2.15
Naples	4.96	5.72	5.10	5.19	3.45	3.61	3.59	3.93
Salerno	1.91	1.74	1.35	1.15	2.01	1.88	1.63	1.53
APULIA	4.02	3.85	3.63	3.77	5.14	5.46	5.96	6.05
Bari	1.62	1.63	1.53	1.53	2.14	2.31	2.46	2.49
Foggia	.97	.95	.77	.66	1.17	1.23	1.30	1.30
Lecce	1.44	1.27	1.33	1.58	1.83	1.91	2.20	2.27
BASILICATA	1.22	1.12	.74	.64	1.83	1.70	1.37	1.26
Potenza	1.22	1.12	.74	.64	1.83	1.70	1.37	1.26
CALABRIA	2.98	2.93	2.35	2.05	4.30	4.18	3.72	3.55
Catanzaro	1.19	1.14	.94	.75	1.52	1.50	1.31	1.21
Cosenza	.89	.86	.64	.60	1.49	1.41	1.18	1.16
Reggio Calabria	.90	.93	.77	.70	1.29	1.27	1.24	1.19
SICILY	9.13	9.49	8.81	7.16	9.30	9.98	10.87	10.95
Caltanissetta	.97	1.14	1.20	.85	.82	.93	1.08	1.04
Catania	1.55	1.89	1.84	1.64	1.77	1.92	2.20	2.39
Girgenti	1.25	1.25	1.24	.84	1.03	1.03	1.15	1.16
Messina	1.07	1.16	1.01	.83	1.53	1.57	1.61	1.46
Palermo	2.80	2.41	1.93	1.58	2.32	2.43	2.42	2.42
Siracusa	.80	.90	.83	.72	1.01	1.15	1.30	1.43
Trapani	.70	.73	.77	.69	.82	.93	1.11	1.05
SARDINIA	1.94	2.02	1.77	1.65	2.42	2.48	2.59	2.55
Cagliari	1.46	1.57	1.34	1.18	1.52	1.55	1.59	1.57
Sassari	.48	.45	.43	.46	.90	.93	1.00	.98

Source: Appendix Tables A1 – A5.

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Table 4
Decadal provincial growth rates: deviations from the national growth rates of the index of relative industrialization (i), of industrial value added, *ex* construction (v), and of the male population over age 15 (m)

(1)	(2) 1871-1911			(3) 1871-1881			(4) 1881-1901			(5) 1901-1911		
name	(i)	(v)	(m)	(i)	(v)	(m)	(i)	(v)	(m)	(i)	(v)	(m)
PIEDMONT	.04	.03	-.01	.03	.03	-.01	.04	.03	-.01	.02	.04	.00
Alessandria	.02	.01	-.01	-.03	-.02	.01	.01	.00	-.01	.08	.05	-.05
Cuneo	-.04	-.11	-.05	-.04	-.12	-.07	-.01	-.07	-.05	-.08	-.16	-.03
Novara	.05	.05	-.01	.01	.04	.02	.06	.07	.00	.06	.03	-.05
Turin	.05	.08	.01	.10	.10	-.01	.05	.06	-.01	-.01	.10	.08
LIGURIA	.02	.10	.05	-.05	-.06	.00	.06	.16	.07	.02	.17	.09
Genoa	.02	.10	.06	-.06	-.07	.01	.06	.17	.08	.01	.16	.10
Porto M.	.04	.05	.00	.09	.09	-.02	-.03	-.03	.00	.14	.20	-.01
LOMBARDY	.05	.08	.01	.01	.01	-.01	.08	.12	.01	.03	.11	.04
Bergamo	.05	.05	-.01	.05	.03	-.03	.06	.08	.01	.02	-.02	-.03
Brescia	-.02	-.03	-.01	.00	-.05	-.04	-.05	-.07	-.01	.03	.08	.02
Como	.07	.08	-.01	.01	.04	.03	.13	.16	.00	.02	-.04	-.05
Cremona	-.04	-.09	-.03	-.07	-.16	-.07	-.02	-.05	-.02	-.04	-.08	-.02
Mantua	-.08	-.12	-.02	-.10	-.17	-.04	-.03	-.08	-.04	-.13	-.14	.05
Milan	.08	.21	.08	.06	.11	.03	.12	.24	.07	.01	.25	.15
Pavia	.00	-.03	-.03	-.08	-.11	-.02	.02	-.01	-.03	.05	.03	-.03
Sondrio	.03	.00	-.03	.02	.02	.00	.04	.02	-.02	.04	-.08	-.10
VENETIA	-.01	-.04	-.02	-.05	-.07	-.01	.00	-.02	-.02	-.01	-.03	-.01
Belluno	.00	-.10	-.08	.07	-.06	-.12	-.07	-.09	-.01	.08	-.18	-.19
Padua	-.02	-.02	.01	-.12	-.14	.01	.05	.03	-.02	-.06	-.01	.06
Rovigo	-.09	-.13	-.02	-.08	-.10	.00	-.06	-.14	-.06	-.14	-.14	.06
Treviso	-.04	-.06	-.01	-.17	-.22	.00	.04	.00	-.04	-.05	-.01	.05
Udine	.08	.03	-.05	.03	.01	-.02	.03	.05	.02	.23	.00	-.20
Venice	-.06	-.06	.01	-.03	-.05	-.01	-.04	-.07	-.01	-.11	-.06	.09
Verona	-.04	-.06	-.01	-.09	-.11	.00	-.04	-.10	-.04	.03	.12	.05
Vicenza	.01	.00	-.01	.02	.02	-.01	.03	.03	-.01	-.03	-.07	-.02
EMILIA	.00	.00	.00	-.04	-.06	-.01	-.03	-.05	-.01	.12	.25	.03
Bologna	.02	.04	.01	.03	.03	.00	-.01	-.01	.01	.08	.18	.03
Ferrara	.03	.07	.02	-.13	-.14	.02	-.01	.00	.01	.33	.60	.04
Forlì	-.04	-.06	.00	.03	.07	.03	-.11	-.16	-.02	.05	.08	.00
Modena	-.01	-.02	.00	-.13	-.17	-.01	.00	-.02	-.02	.08	.22	.06
Parma	-.01	-.03	-.01	-.11	-.20	-.06	-.03	-.06	-.02	.15	.32	.05
Piacenza	.03	-.01	-.04	.05	-.02	-.06	-.04	-.09	-.04	.14	.20	-.01
Ravenna	-.02	-.04	-.01	-.04	-.06	-.01	-.06	-.10	-.02	.09	.17	.01
Reggio E.	.02	.03	.00	-.02	-.06	-.03	-.02	-.04	-.02	.14	.35	.08
TUSCANY	.01	.00	.00	.04	.03	-.02	-.01	.00	.01	.00	-.01	.00
Arezzo	-.02	-.03	-.01	.01	.01	-.01	-.02	-.03	.00	-.04	-.10	-.02
Florence	-.01	-.01	-.01	.04	.04	-.02	-.02	-.01	.02	-.04	-.04	.02
Grosseto	.05	.05	-.01	.27	.35	.02	.08	.13	.03	-.18	-.39	-.09
Leghorn	.05	.05	-.01	.07	.10	.01	.05	.00	-.05	.05	.12	.03
Lucca	.00	-.04	-.03	-.06	-.15	-.07	-.01	-.02	-.01	.08	.08	-.02
Massa C.	-.02	-.02	.00	.08	.07	-.02	.00	.03	.02	-.14	-.22	-.01
Pisa	.06	.09	.01	.12	.15	.01	-.01	.00	.01	.17	.27	.01
Siena	-.02	-.04	-.01	-.01	-.06	-.05	-.04	-.05	.00	.02	.01	-.01

Table 4, cont.

(1)	(2) 1871–1911			(3) 1871–1881			(4) 1881–1901			(5) 1901–1911		
name	(i)	(v)	(m)	(i)	(v)	(m)	(i)	(v)	(m)	(i)	(v)	(m)
MARCHES	-.04	-.08	-.03	-.06	-.07	-.01	-.03	-.07	-.02	-.03	-.12	-.05
Ancona	.00	-.01	-.02	.03	.01	-.02	.00	-.03	-.02	-.01	-.02	-.01
Ascoli P.	-.03	-.06	-.02	-.03	-.02	.01	-.07	-.09	.00	.03	-.05	-.07
Macerata	-.06	-.14	-.05	-.15	-.19	-.02	-.02	-.09	-.06	-.07	-.22	-.08
Pesaro	-.08	-.13	-.02	-.11	-.12	.01	-.07	-.09	-.01	-.10	-.25	-.07
UMBRIA	.03	.03	-.01	-.09	-.11	.00	.08	.11	.01	.07	.03	-.05
Perugia	.03	.03	-.01	-.09	-.11	.00	.08	.11	.01	.07	.03	-.05
LATIUM	-.03	.01	.04	.04	.09	.03	-.07	-.03	.06	-.01	-.01	.00
Rome	-.03	.01	.04	.04	.09	.03	-.07	-.03	.06	-.01	-.01	.00
ABRUZZI	-.04	-.12	-.06	.03	-.02	-.04	-.07	-.12	-.03	-.04	-.23	-.11
Aquila	-.06	-.10	-.01	.01	.00	-.01	-.07	-.10	.00	-.10	-.21	-.04
Campobasso	-.05	-.18	-.10	.06	-.01	-.07	-.07	-.18	-.08	-.12	-.38	-.15
Chieti	-.03	-.12	-.07	.04	-.02	-.05	-.08	-.16	-.05	.03	-.13	-.12
Teramo	-.01	-.06	-.04	-.01	-.04	-.03	-.04	-.02	.02	.05	-.17	-.16
CAMPANIA	-.02	-.06	-.03	.07	.07	-.01	-.04	-.10	-.04	-.06	-.11	-.01
Avellino	-.04	-.14	-.07	.14	.15	-.01	-.06	-.18	-.09	-.16	-.36	-.09
Benevento	-.10	-.21	-.07	-.10	-.16	-.04	-.05	-.13	-.06	-.18	-.42	-.11
Caserta	-.04	-.11	-.05	.02	-.02	-.04	-.04	-.10	-.04	-.10	-.25	-.07
Naples	-.02	.02	.03	.10	.19	.05	-.05	-.07	.00	-.07	.03	.10
Salerno	-.06	-.16	-.07	-.02	-.11	-.07	-.06	-.15	-.07	-.09	-.23	-.07
APULIA	-.06	-.02	.04	-.10	-.05	.06	-.07	-.04	.05	.02	.06	.02
Bari	-.05	-.02	.04	-.06	.01	.08	-.06	-.04	.03	-.01	.00	.01
Foggia	-.11	-.12	.03	-.06	-.02	.05	-.12	-.12	.03	-.14	-.22	-.01
Lecce	-.03	.03	.06	-.16	-.14	.05	-.05	.03	.07	.15	.29	.03
BASILICATA	-.07	-.20	-.09	-.02	-.11	-.07	-.09	-.23	-.11	-.06	-.22	-.09
Potenza	-.07	-.20	-.09	-.02	-.11	-.07	-.09	-.23	-.11	-.06	-.22	-.09
CALABRIA	-.04	-.12	-.05	.01	-.02	-.03	-.05	-.13	-.06	-.09	-.20	-.05
Catanzaro	-.06	-.14	-.06	-.03	-.05	-.02	-.03	-.11	-.07	-.14	-.32	-.08
Cosenza	-.03	-.12	-.06	.02	-.04	-.06	-.06	-.17	-.09	-.05	-.10	-.02
Reggio C.	-.04	-.08	-.02	.05	.04	-.01	-.08	-.11	-.01	-.05	-.13	-.04
SICILY	-.10	-.08	.04	-.03	.05	.08	-.08	-.05	.05	-.19	-.29	.01
Caltanis.	-.09	-.04	.06	.05	.22	.14	-.05	.03	.08	-.26	-.45	-.04
Catania	-.06	.02	.08	.13	.27	.09	-.08	-.02	.07	-.18	-.17	.09
Girgenti	-.12	-.12	.03	-.01	.00	.01	-.06	-.01	.06	-.32	-.49	.01
Messina	-.05	-.08	-.01	.05	.10	.03	-.08	-.08	.01	-.10	-.28	-.10
Palermo	-.14	-.17	.01	-.18	-.17	.05	-.10	-.13	.00	-.18	-.28	.00
Syracuse	-.10	-.03	.09	-.01	.16	.15	-.09	-.05	.06	-.21	-.20	.11
Trapani	-.06	.00	.07	-.07	.06	.14	-.06	.03	.10	-.05	-.16	-.06
SARDINIA	-.05	-.05	.01	.02	.05	.02	-.08	-.08	.02	-.06	-.11	-.02
Cagliari	-.06	-.07	.01	.05	.09	.02	-.09	-.09	.01	-.10	-.18	-.02
Sassari	-.03	-.01	.02	-.09	-.08	.03	-.05	-.02	.04	.09	.11	-.02

Source: see text.

Figure 1
ITALY'S PROVINCES
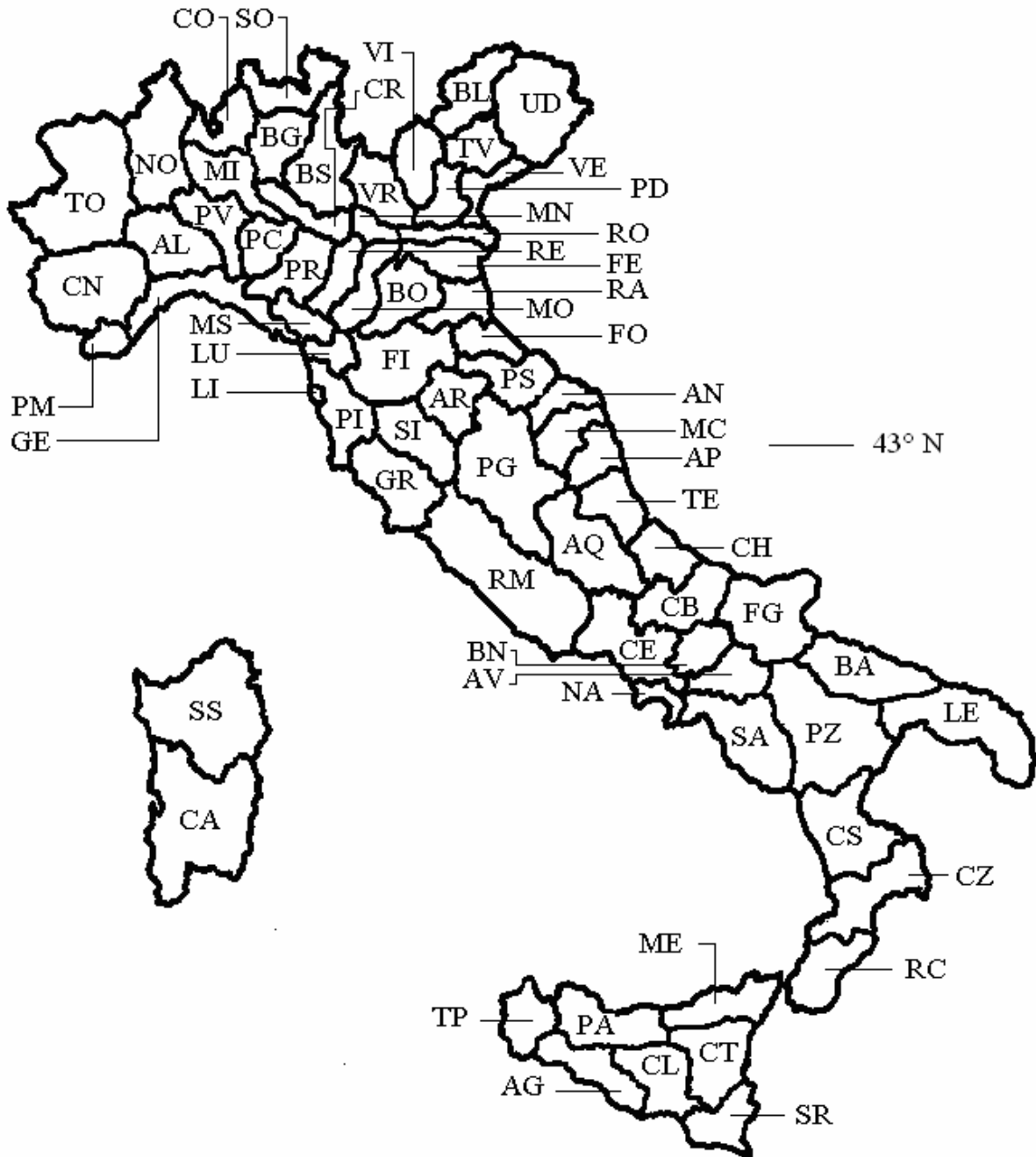
Province codes: see Table 1.

Figure 2
INDICES OF RELATIVE INDUSTRIALIZATION
(ratios of value added shares to shares of the male population over age 15)
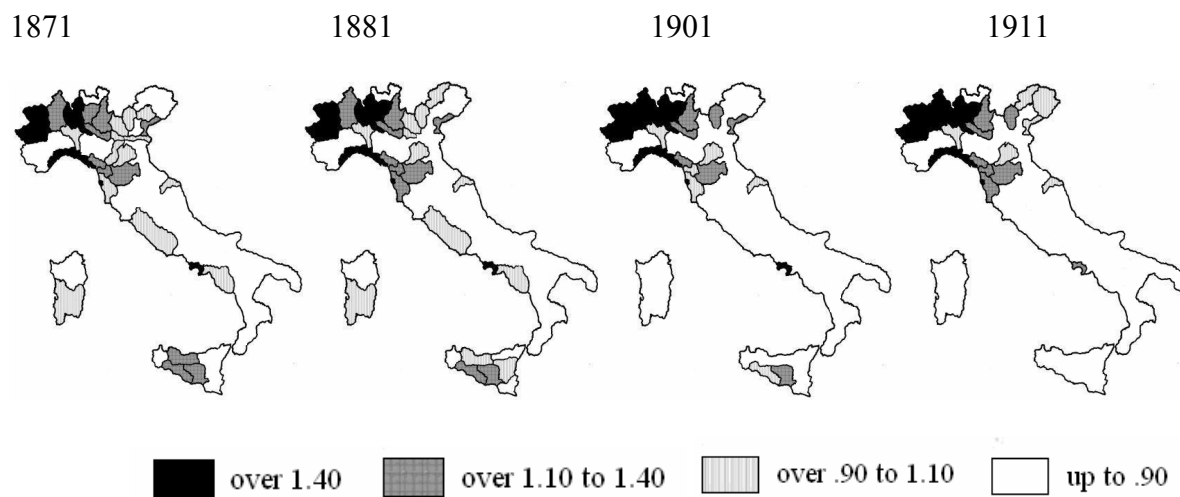
Source: Table 2.

Figure 3
SHARES OF INDUSTRIAL VALUE ADDED: SIGNIFICANT GAINERS AND LOSERS
(decennial growth rates)

(a) GAINERS

| 1871-1911 | 1871-1881 | 1881-1901 | 1901-1911 |
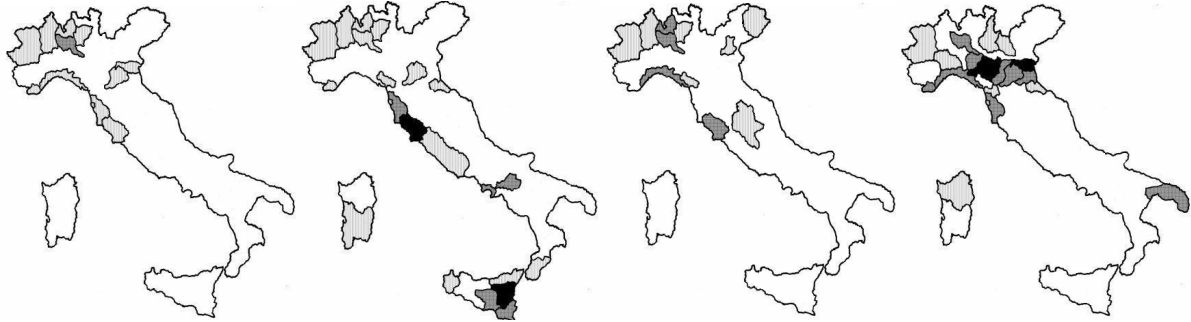
(b) LOSERS

| 1871-1911 | 1871-1881 | 1881-1901 | 1901-1911 |
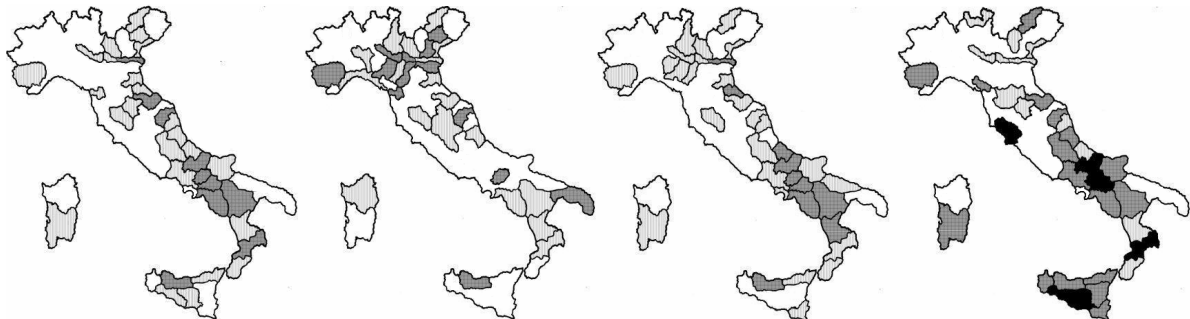
over 20%   over 10% to 20%   over 2.5% to 10%   up to 2.5%

Source: Table 3.

Figure 4
**SHARES OF THE MALE POPULATION OVER AGE 15: SIGNIFICANT GAINERS
AND LOSERS**
(decennial growth rates)

(a) GAINERS

1871-1911   1871-1881   1881-1901   1901-1911

(b) LOSERS

1871-1911   1871-1881   1881-1901   1901-1911

over 10%   over 5% to 10%   over 1.25% to 5%   up to 1.25%
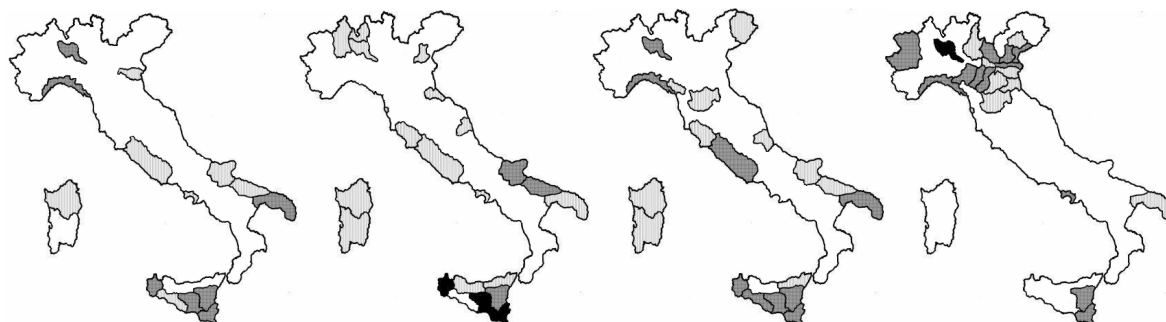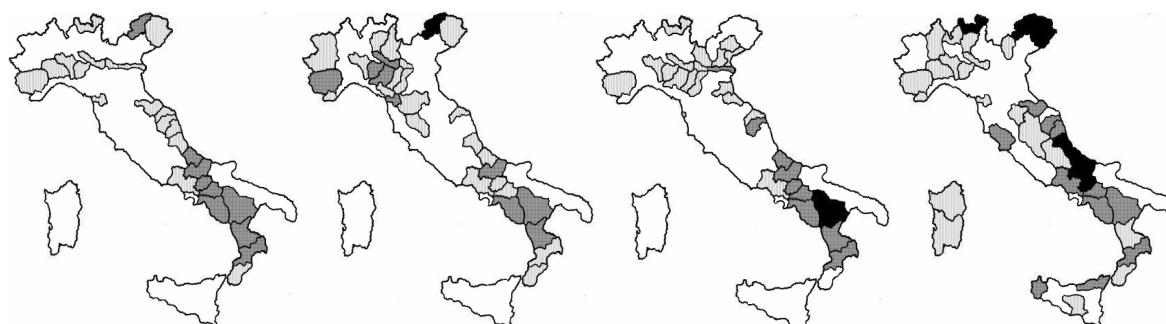
Source: Table 3.

Figure 5
**DECADAL PROVINCIAL GROWTH RATES: INDUSTRIAL VALUE ADDED, *EX*
CONSTRUCTION (iva), AND MALE POPULATION OVER AGE 15 (mlf)**
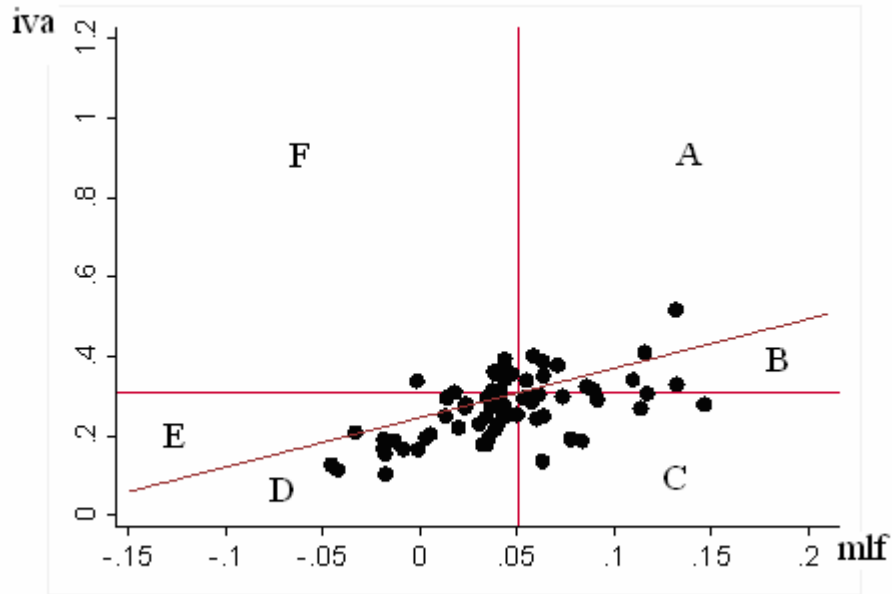
(a) 1871-1911
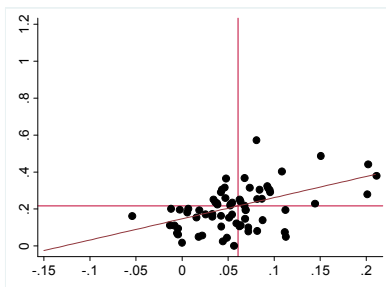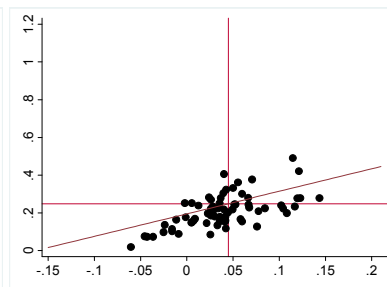
(b) 1871-1881   (c) 1881-1901   (d) 1901-1911
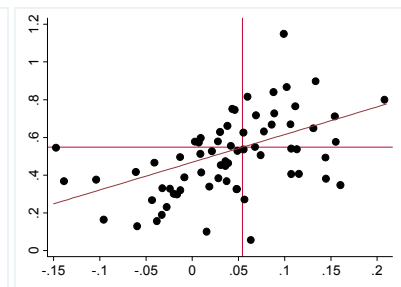
Source: see text.

Figure 6
**DECADAL PROVINCIAL GROWTH RATES, BY REGION: INDUSTRIAL VALUE
ADDED, *EX* CONSTRUCTION (iva) AND MALE POPULATION OVER AGE 15
(mlf)**

(a) 1871-1911   (b) 1871-1881   (c) 1881-1901   (d) 1901-1911

1. Piedmont
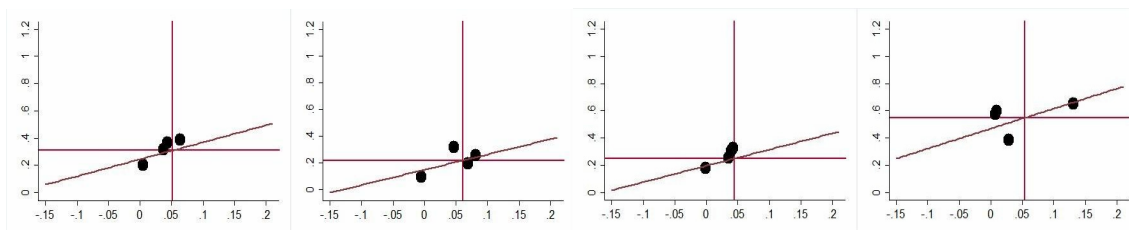
2. Liguria
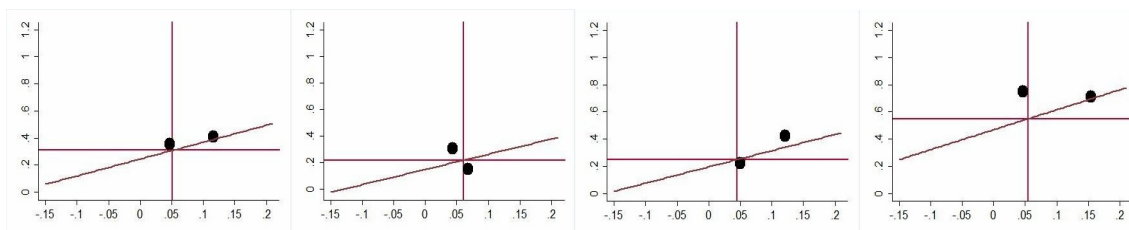
3. Lombardy
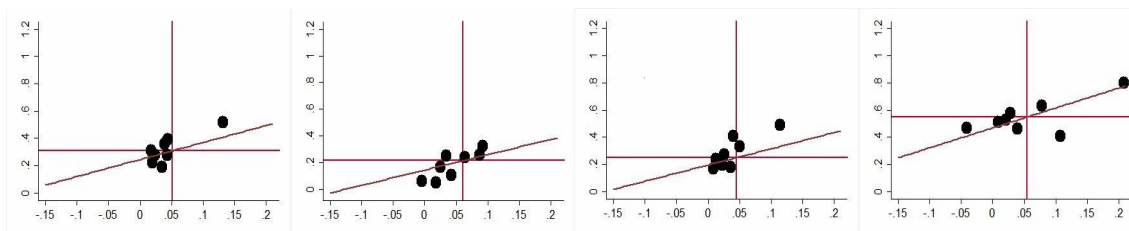
4. Venetia
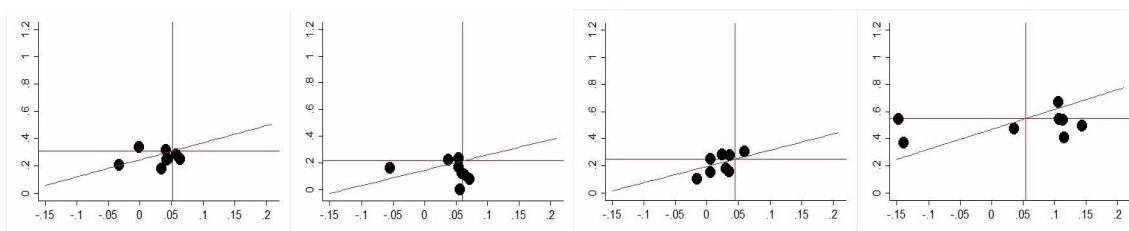
Figure 6, cont.

(a) 1871-1911   (b) 1871-1881   (c) 1881-1901   (d) 1901-1911

5. Emilia
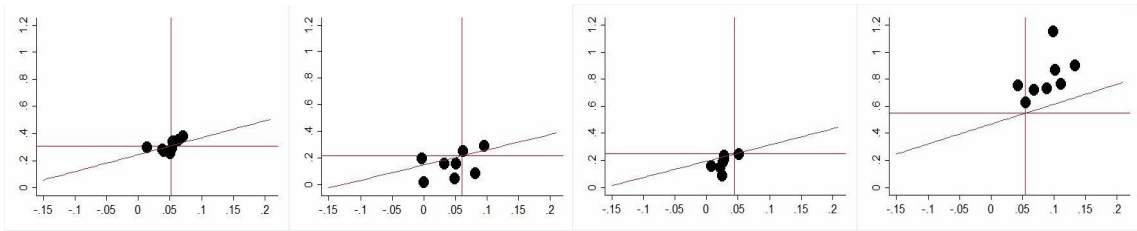
6. Tuscany
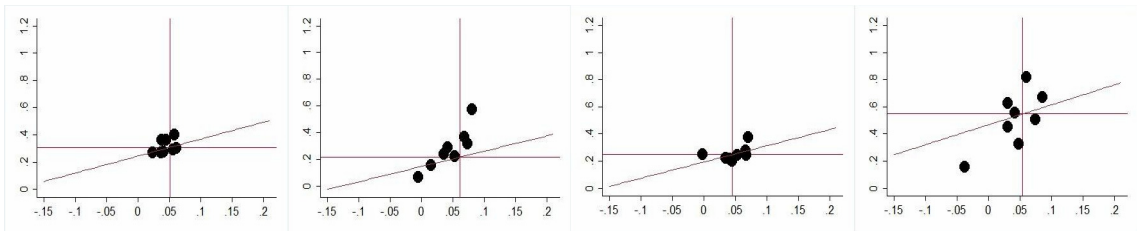
7. Marches
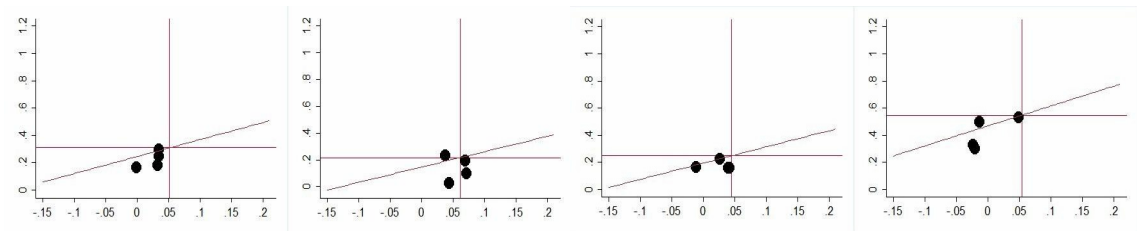
8. Umbria
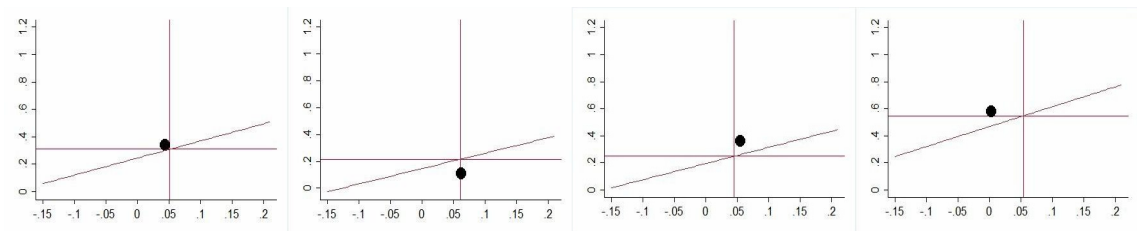
Figure 6, cont.

(a) 1871-1911   (b) 1871-1881   (c) 1881-1901   (d) 1901-1911

9. Latium
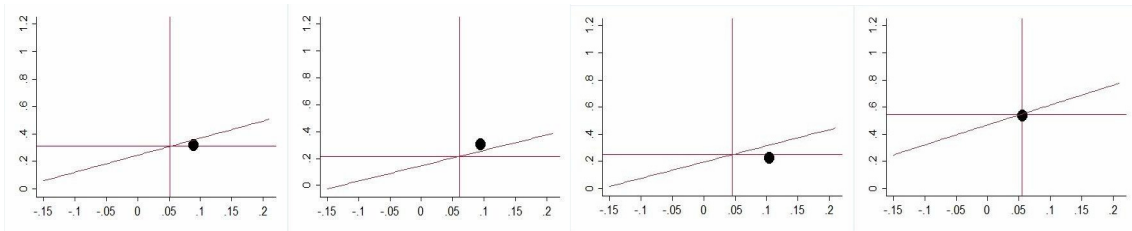
10. Abruzzi
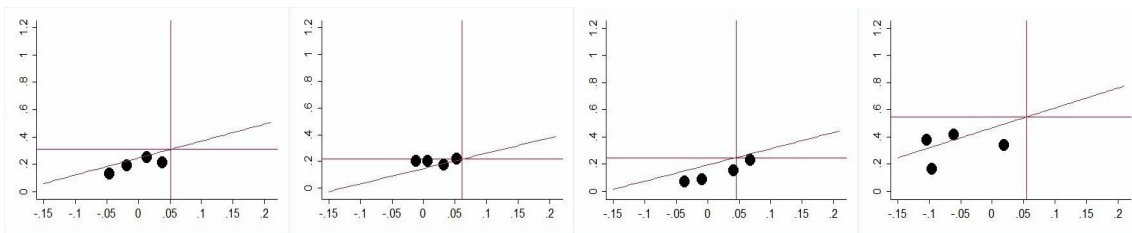
11. Campania
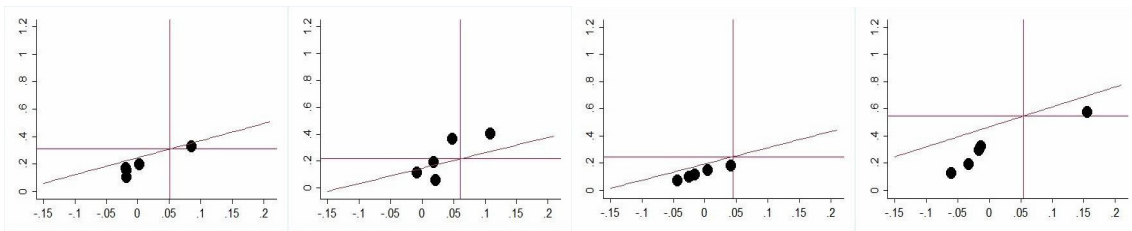
12. Apulia
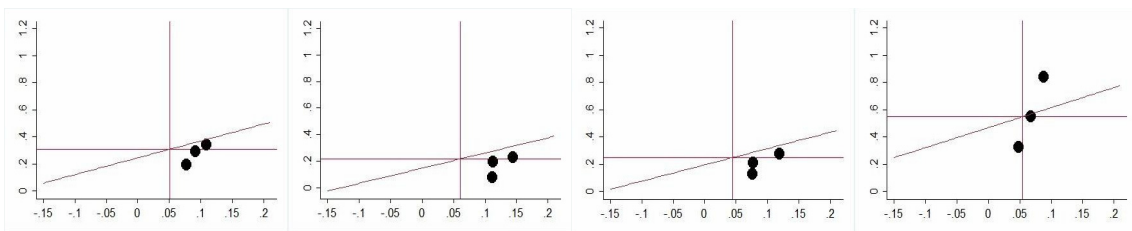
Figure 6, cont.

(a) 1871-1911   (b) 1871-1881   (c) 1881-1901   (d) 1901-1911

13. Basilicata
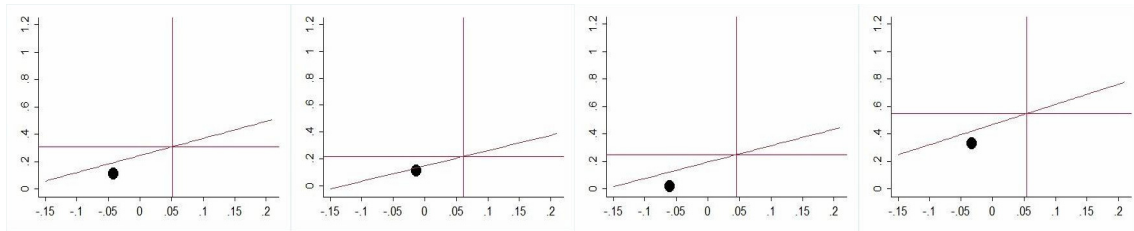
14. Calabria
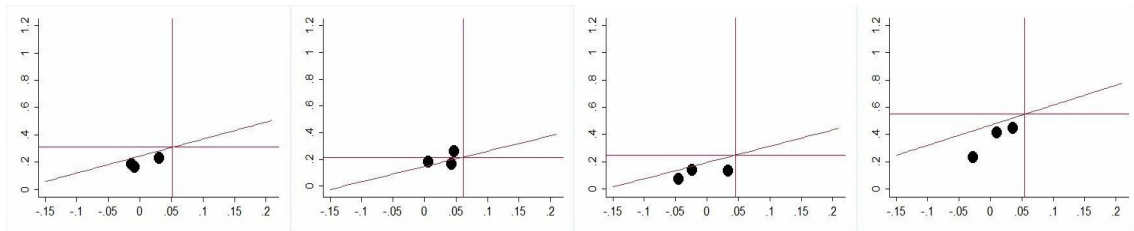
15. Sicily
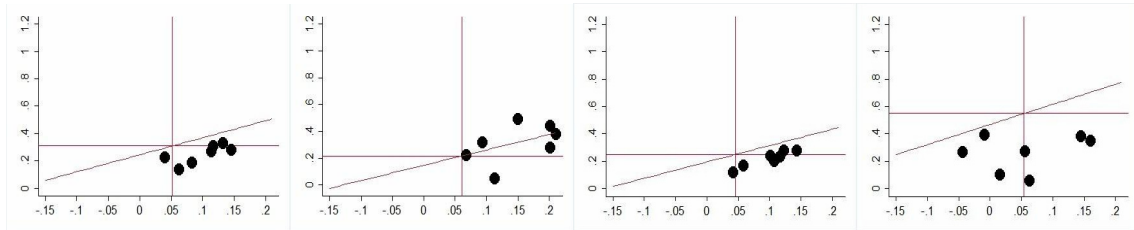
16. Sardinia
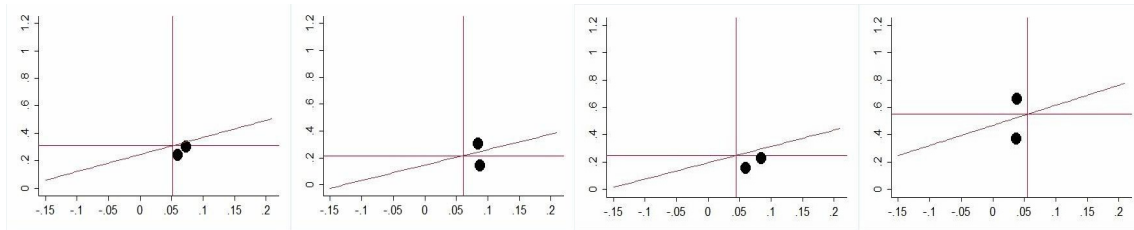
Source and key: see text.

Appendix: The provincial production estimates

1. Sources and methods

The first-generation provincial estimates presented here are obtained from the extant regional figures much as the first-generation regional estimates were obtained from the then extant national figures (Fenoaltea 2001a; 2003). Industrial production is disaggregated into the 15 sectors distinguished in Appendix Tables A1 - A4. In each benchmark year, and sector by sector, each region's product is allocated to its component provinces in proportion to each province's share of the corresponding regional labor force, as documented by that year's census (Ministero di agricoltura, industria e commercio 1876; 1884; 1904; 1915). The census categories that correspond to each sector remain those of the earlier work, and listed therein (Fenoaltea 2001a).

The regional estimates that are thus provincially disaggregated are, wherever possible, second-generation figures. The estimates for the extractive, construction, and utilities industries are those to be found in Ciccarelli and Fenoaltea (2009b); for the chemical, shipbuilding, and metalmaking industries, in Ciccarelli and Fenoaltea (2008a; 2009a and 2010), respectively; for the textile industries, in Fenoaltea (2004). The estimates for the (non-leather) apparel industries and the non-metallic mineral products industries are also second-generation estimates, but still unpublished; those for the (residual) engineering industries are preliminary. The residual estimates -- for foodstuffs, tobacco, leather, wood, paper and printing, and manufacturing n.e.c. -- remain instead the first-generation regional figures in Fenoaltea (2003).

In 1871, 1881, and 1901 the census data for the utilities do not include the water-supply industry; those data are accordingly used to allocate only regional value added in gas (and, in 1901, power) production, while regional value added in water-supply is allocated in proportion to the male-labor-force figures in Table 1. Conversely, no exception is made here, as was made in the original regional estimates, to distinguish male and female textile workers; the heterogeneity of the female labor-force figures seems region-specific, and of little moment to the provincial allocation performed here.

The 1911 census is the easiest to use. One reason is that the male-plus-female labor force for each industry or group is reported at the provincial level, and the only remaining burden is the aggregation of the separate figures for owners, white-collar employees, blue-collar employees, and, where relevant, artisans. Another is that the industrial classification is relatively similar to that used here, so that the shifting of single categories from one sub-aggregate to another is relatively infrequent.

The 1901 census requires the same aggregation across professional levels, and far more. Males and females are reported only separately, and must be summed; worse, the provincial figures are not reported at all, and these totals must be obtained by aggregation over the far more numerous sub-provincial *circondari*. The industrial classification is less similar to that used here, and more individual categories need to be removed from, or added to, the ready-made industry aggregates. In the case of the engineering industry, for example, for 1911 the calculation of the 69 desired provincial labor-force totals requires only 3 province- and category-specific labor-force totals, that is, 207 data points (each built up from

the underlying professional-level-specific data); for 1901, instead, one requires 23 such category-specific data points for each of the 284 *circondari*, for each of 2 sexes, for a total of 13,064 data points (each of which is again built up from the underlying professional-level-specific data).

The 1881 census is similar to that for 1901, and in fact less burdensome to the extent that industry-group aggregates, at least, were reported at the provincial level; for specific categories, however, the provincial data points again need to be built up from sub-provincial gender- and level-specific data.

The 1871 census is still easier to use, as it reports provincial figures, and these already aggregate across professional levels, albeit separately for men and women. For each category, the data are presented on two pages that list the provinces in alphabetical order. On occasion, Forlì precedes Foggia, and Girgenti Genova; the internal evidence suggests that only the names of the provinces were inverted, and that the figures on the *n*th line always refer to the *n*th province in the correct alphabetical order.

2.   *Intermediate estimates*

The benchmark-year sectoral estimates by province are reported in Appendix Tables A1 - A4. Aggregating over sectors, one obtains the benchmark-year aggregate estimates by province in Appendix Table A5.

The industrial value added considered in the analysis above excludes that of the construction industry. This particular exclusion is paradoxically due to the acquisition of new evidence. The new regional construction series, reconstructed from detailed public-works budget data, railway-net data, buildings-tax data, and utility-infrastructure data, are exceptionally sturdy and rich in year-specific detail; and these document violent, short-run, place-specific cycles, tied to such major infrastructure projects as the construction, early on, of the railway trunks, or, later on, of the Apulian aqueduct.[28] In a study built around a few annual benchmarks, the estimates are meaningful to the extent that they represent at least medium-term levels; the inclusion of construction and its year-to-year vagaries would have robbed the aggregates of that representativeness, and the diachronic comparisons of much of their significance.

A further consideration is that the census construction-labor-force figures seem to be poor guides to relative construction-activity levels -- possibly because the sharp local construction cycles induced short-term movements of labor across regional or sector boundaries, and the professional distribution in the census represented ordinary rather then temporary activity (and possibly location, as the censuses were typically taken on public holidays).[29] The new regional construction estimates are immune to contamination from the

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[28] Ciccarelli and Fenoaltea (2008b), Ciccarelli, Fenoaltea and Proietti (2010). The regional construction series illustrated in Ciccarelli and Fenoaltea (2008b) differ in detail from the final estimates in Ciccarelli and Fenoaltea (2009b), but their general pattern is accurate enough to convey the point made here.

[29] There is compelling evidence of this. In Liguria and Basilicata construction in 1911 was far above previous levels. The 1911 census figures yield a value added per construction worker in those two regions that is itself far above the national average, and, in light of the relative technical homogeneity of construction activity across regions and sub-sectors, simply not credible. Given the high quality of the construction figures, the distortion must be due, by default, to the census data, which appear to undercount, if not altogether to exclude, temporary

census errors, but their provincial disaggregation is not. By leaving out the construction sector, the analysis focuses on the magnitudes that are at once more reliable and more representative.

migrants. On construction movements and temporary migration in Genoa see also Doria (1969, pp. 97, 256, 358).

Appendix Table A1

Industrial value added in 1871, by sector (million lire at 1911 prices)

Sector codes
1. Mining	2.04 Clothing
2.01 Foodstuffs	2.05 Leather
2.02 Tobacco	2.06 Wood
2.03 Textiles	2.07 Metalmaking

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sector code	(1) 1	(2) 2.01	(3) 2.02	(4) 2.03	(5) 2.04	(6) 2.05	(7) 2.06	(8) 2.07
PIEDMONT	3.1	55.5	3.2	26.1	9.8	14.4	16.3	.9
Alessandria	.6	8.9	.0	3.7	2.1	3.2	3.3	.1
Cuneo	.4	11.3	.0	5.9	1.7	2.8	2.1	.1
Novara	1.1	12.7	.0	6.4	2.2	3.5	4.8	.2
Turin	1.0	22.5	3.2	10.1	3.9	5.0	6.1	.5
LIGURIA	1.4	13.7	.6	4.5	1.8	4.1	4.7	1.2
Genoa	1.4	12.0	.6	4.4	1.6	3.5	4.3	1.1
Porto Maurizio	.0	1.7	.0	.1	.2	.6	.4	.0
LOMBARDY	2.5	84.4	1.8	50.2	15.8	19.4	23.6	2.1
Bergamo	1.1	8.0	.0	7.4	1.3	1.6	2.1	.2
Brescia	.6	10.3	.0	5.1	2.1	2.7	2.6	.5
Como	.3	8.1	.0	13.3	1.2	1.9	2.8	.2
Cremona	.1	8.5	.0	5.1	1.4	1.8	2.0	.1
Mantua	.0	7.5	.0	.8	.8	1.9	2.0	.1
Milan	.2	28.8	1.8	16.6	6.9	6.7	9.5	.9
Pavia	.0	11.8	.0	1.7	1.8	2.3	2.3	.1
Sondrio	.0	1.4	.0	.2	.2	.4	.3	.1
VENETIA	1.8	45.6	2.3	13.5	9.0	11.3	15.9	.4
Belluno	1.2	2.2	.0	.4	.2	.4	.7	.0
Padua	.0	5.9	.0	1.3	1.2	1.6	3.1	.0
Rovigo	.0	3.7	.0	1.3	.6	1.0	1.2	.0
Treviso	.0	5.8	.0	2.5	1	1.3	1.7	.0
Udine	.1	4.9	.0	2.8	1.2	1.6	2.3	.0
Venice	.1	6.8	2.3	1.5	1.4	1.7	2.8	.1
Verona	.2	9.1	.0	1.4	1.1	2.1	2.1	.1
Vicenza	.3	7.2	.0	2.3	2.4	1.5	1.9	.1
EMILIA	1.9	32.0	3.1	6.9	8.6	11.7	10.4	.2
Bologna	.1	6.6	1.9	1.6	1.8	2.7	2.2	.1
Ferrara	.0	3.2	.0	.5	.7	1.2	1.1	.0
Forlì	1.1	3.1	.0	.6	.9	1.4	.9	.0
Modena	.1	3.6	.4	1.4	1.7	1.5	1.5	.0
Parma	.0	4.9	.6	.9	1.0	1.3	1.2	.0
Piacenza	.0	4.1	.0	.6	.9	1.1	1	.0
Ravenna	.6	2.8	.3	.8	.7	1.3	1.2	.0
Reggio Emilia	.0	3.7	.0	.6	.9	1.2	1.3	.0
TUSCANY	9.3	33.6	1.7	6.8	14.5	10.7	11.3	1.1
Arezzo	.0	2.9	.0	.5	.7	1.1	.9	.0
Florence	.2	13.9	.4	2.7	10.7	4.2	4.9	.5
Grosseto	.2	1.3	.0	.2	.1	.5	.3	.1
Leghorn	1	3.1	.0	.2	.7	.9	1.1	.1
Lucca	1.4	4.3	1.3	.8	.8	1.2	1.3	.1
Massa Carrara	4.7	1.5	.0	.2	.3	.5	.4	.0
Pisa	1.8	3.7	.0	1.9	.7	1.4	1.5	.1
Siena	.0	2.9	.0	.3	.5	1	.9	.2

Appendix Table A1, cont.

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Sector codes
```
2.08  Engineering                      2.12  Sundry manufacturing
2.09  Non-metallic mineral products    2.    Manufacturing
2.10  Chemicals, rubber                3.    Construction
2.11  Paper, printing                  4.    Utilities
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sector code	(9) 2.08	(10) 2.09	(11) 2.10	(12) 2.11	(13) 2.12	(14) 2	(15) 3	(16) 4
PIEDMONT	26.9	5.6	3.3	5.0	1.3	168.3	29.0	1.9
Alessandria	4.3	.6	.6	.3	.1	27.1	5.5	.3
Cuneo	3.6	1.0	.6	.3	.1	29.5	4.2	.3
Novara	6.3	2.9	.2	1.2	.2	40.7	11.5	.3
Turin	12.8	1.2	1.9	3.1	.9	71.1	7.9	1.1
LIGURIA	26.2	2.1	1.3	2.7	.6	63.6	23.8	1.0
Genoa	25.6	2.0	1.1	2.7	.6	59.5	21.1	.7
Porto Maurizio	.6	.1	.1	.1	.1	4.0	2.7	.2
LOMBARDY	35.4	7.7	3.3	8.4	1.6	253.4	27.3	1.6
Bergamo	3.0	1.0	.4	.5	.0	25.6	2.0	.1
Brescia	6.8	.7	.4	1.4	.2	32.7	2.9	.1
Como	5.8	2.9	.1	.9	.0	37.1	9.4	.1
Cremona	2.3	.4	.2	.2	.1	22.2	2.6	.1
Mantua	2.2	.3	.3	.2	.1	16.3	2.5	.1
Milan	11.7	1.9	1.7	4.8	1.1	92.4	5.0	.9
Pavia	3.0	.3	.3	.2	.1	23.9	2.7	.1
Sondrio	.6	.1	.0	.0	.0	3.2	.2	.0
VENETIA	24.0	6.2	2.3	4.2	1.0	135.7	20.8	1.2
Belluno	1.8	.3	.0	.1	.0	6.4	1.2	.0
Padua	2.6	.4	.1	.3	.2	16.8	2.1	.2
Rovigo	1.5	.2	.1	.1	.1	9.7	1.5	.0
Treviso	2.9	.3	.2	1.1	.1	17.0	2.0	.1
Udine	3.8	2.2	.2	.5	.2	19.6	7.1	.1
Venice	4.9	1.6	.8	.8	.3	24.9	2.4	.3
Verona	3.2	.5	.6	.5	.1	20.8	2.6	.2
Vicenza	3.2	.7	.4	.9	.1	20.5	1.8	.2
EMILIA	14.9	2.9	2.0	2.4	.5	95.6	19.9	.6
Bologna	3.6	.8	.6	.7	.1	22.5	5.1	.2
Ferrara	1.6	.1	.0	.1	.0	8.6	1.9	.0
Forlì	1.6	.4	.4	.1	.0	9.5	1.8	.2
Modena	2.0	.4	.1	.5	.1	13.2	2.5	.0
Parma	1.7	.3	.6	.3	.1	12.8	2.3	.1
Piacenza	1.4	.2	.0	.2	.0	9.6	2.3	.0
Ravenna	1.4	.4	.1	.3	.0	9.4	1.7	.0
Reggio Emilia	1.6	.3	.2	.1	.1	9.9	2.3	.0
TUSCANY	17.5	9.8	2.2	4.1	1.2	114.4	24.3	1.4
Arezzo	1.9	.7	.2	.1	.1	9.0	1.9	.1
Florence	6.6	3.8	1.2	1.8	.6	51.1	9.9	.3
Grosseto	.7	.2	.0	.0	.0	3.4	1.3	.1
Leghorn	2.0	.4	.2	.3	.2	9.3	1.9	.3
Lucca	2.1	1.6	.2	1.5	.1	15.1	2.4	.2
Massa Carrara	.8	1.4	.1	.1	.0	5.2	1.2	.1
Pisa	1.6	1.0	.3	.1	.1	12.5	3.3	.3
Siena	1.8	.7	.1	.2	.0	8.7	2.5	.1

Appendix Table A1, cont.

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sector code	(1) 1	(2) 2.01	(3) 2.02	(4) 2.03	(5) 2.04	(6) 2.05	(7) 2.06	(8) 2.07
MARCHES	.9	10.7	1.6	3.5	3.7	5.3	3.7	.1
Ancona	.1	3.1	1.6	1.1	1.0	1.6	1.2	.0
Ascoli Piceno	.0	2.0	.0	.8	1.1	1.1	.6	.0
Macerata	.0	2.7	.0	.8	.8	1.4	1.0	.0
Pesaro	.8	2.8	.0	.8	.7	1.2	.9	.0
UMBRIA	.4	6.8	.0	1.4	1.2	2.8	2.2	.1
Perugia	.4	6.8	.0	1.4	1.2	2.8	2.2	.1
LATIUM	1.8	16.3	1.0	1.2	2.3	5.1	4.8	.3
Rome	1.8	16.3	1.0	1.2	2.3	5.1	4.8	.3
ABRUZZI	1.2	12.8	.0	.8	4.0	5.6	3.3	.0
Aquila	.3	3.7	.0	.4	1.1	1.4	.8	.0
Campobasso	.6	3.5	.0	.1	.9	1.5	1.0	.0
Chieti	.3	3.7	.0	.1	.9	1.7	1.0	.0
Teramo	.0	2.0	.0	.2	1.1	1.0	.5	.0
CAMPANIA	4.6	45.5	1.2	17.3	10.1	16.1	14.8	.8
Avellino	.5	4.1	.0	.6	1.0	1.9	1.4	.0
Benevento	.3	3.1	.0	1.0	.7	1.2	.7	.0
Caserta	.9	9.1	.0	4.3	2.3	3.5	3.0	.0
Naples	2.4	20.7	1.2	6.8	4.4	6.8	7.3	.7
Salerno	.5	8.4	.0	4.6	1.7	2.5	2.4	.0
APULIA	2.3	24.4	.1	1.4	3.6	7.8	5.4	.1
Bari	1.1	9.5	.0	.5	1.5	3.0	2.1	.1
Foggia	.1	7.1	.0	.1	.7	1.7	1.2	.0
Lecce	1.0	7.8	.1	.7	1.3	3.0	2.1	.0
BASILICATA	.4	6.4	.0	.2	1.3	2.7	1.8	.0
Potenza	.4	6.4	.0	.2	1.3	2.7	1.8	.0
CALABRIA	.7	15.7	.0	1.4	3.7	6.2	4.3	.1
Catanzaro	.3	6.7	.0	.5	1.7	2.5	1.6	.0
Cosenza	.4	4.2	.0	.5	1.0	2.0	1.0	.0
Reggio Calabria	.0	4.7	.0	.4	1.0	1.8	1.6	.0
SICILY	15.8	45.4	4.4	4.6	4.3	17.5	11.4	.2
Caltanissetta	5.7	3.7	.0	.4	.3	1.3	.5	.0
Catania	1.2	8.2	.0	.9	.8	3.6	2.3	.0
Girgenti	6.9	5.1	.1	.4	.5	2.2	.8	.0
Messina	.0	5.1	.0	1.5	.7	2.2	1.9	.0
Palermo	1.0	15.2	4.4	.6	1.0	4.6	3.6	.2
Syracuse	.4	4.6	.0	.6	.6	1.9	1.1	.0
Trapani	.5	3.6	.0	.2	.3	1.6	1.3	.0
SARDINIA	10.8	6.5	.0	.1	.6	2.5	2.1	.1
Cagliari	10.4	3.8	.0	.0	.5	1.6	1.4	.1
Sassari	.5	2.6	.0	.0	.2	.9	.7	.0

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Appendix Table A1, cont.

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sector code	(9) 2.08	(10) 2.09	(11) 2.10	(12) 2.11	(13) 2.12	(14) 2	(15) 3	(16) 4
MARCHES	7.6	.8	.8	.9	.3	38.8	6.0	.1
Ancona	2.2	.2	.2	.4	.1	12.7	2.0	.0
Ascoli Piceno	1.5	.1	.2	.1	.0	7.6	1.0	.0
Macerata	2.0	.2	.3	.4	.1	9.7	1.3	.0
Pesaro	1.8	.2	.1	.1	.0	8.7	1.7	.0
UMBRIA	4.2	.6	.3	.4	.1	20.2	5.9	.2
Perugia	4.2	.6	.3	.4	.1	20.2	5.9	.2
LATIUM	7.7	1.9	.9	1.9	.2	43.6	8.5	2.8
Rome	7.7	1.9	.9	1.9	.2	43.6	8.5	2.8
ABRUZZI	7.9	1.3	.7	.3	.1	36.6	12.3	.3
Aquila	1.7	.4	.1	.1	.0	9.6	2.8	.1
Campobasso	2.6	.3	.2	.1	.0	10.2	4.3	.1
Chieti	2.3	.3	.4	.1	.0	10.5	3.2	.1
Teramo	1.3	.2	.0	.1	.0	6.4	1.9	.1
CAMPANIA	24.1	4.0	3.7	4.6	1.5	143.6	20.6	1.2
Avellino	2.0	.4	.3	.1	.0	11.8	1.8	.1
Benevento	1.2	.2	.2	.0	.0	8.4	1.9	.0
Caserta	4.0	.8	.5	1.2	.0	28.8	4.7	.1
Naples	12.6	1.7	2.4	2.4	1.4	68.3	8.5	.2
Salerno	4.3	.9	.2	1	.0	26.1	3.7	.7
APULIA	8.5	1.6	1.8	.4	.0	55.1	14.8	.1
Bari	3.3	.7	1	.2	.0	22.0	7.0	.0
Foggia	2.3	.3	.1	.1	.0	13.6	3.0	.0
Lecce	2.9	.7	.6	.2	.0	19.5	4.8	.0
BASILICATA	3.7	.5	.3	.1	.0	17.0	3.7	.1
Potenza	3.7	.5	.3	.1	.0	17.0	3.7	.1
CALABRIA	7.8	.8	1.5	.3	.1	41.6	14.9	.3
Catanzaro	2.9	.3	.3	.1	.0	16.7	5.7	.1
Cosenza	2.8	.2	.4	.1	.1	12.2	5.1	.1
Reggio Calabria	2.0	.3	.8	.1	.0	12.8	4.1	.1
SICILY	17.3	3	3.8	1.1	.5	113.6	26.0	1.1
Caltanissetta	1.4	.3	.0	.0	.0	8.0	1.8	.1
Catania	3.6	.8	.4	.2	.1	20.7	5.6	.1
Girgenti	1.3	.5	.1	.0	.0	10.9	3.5	.1
Messina	2.7	.5	.3	.2	.0	15.2	3.0	.1
Palermo	5.4	.5	2.5	.6	.2	38.8	5.9	.2
Syracuse	1.5	.2	.3	.1	.2	10.9	4.0	.1
Trapani	1.5	.3	.1	.0	.0	9.0	2.2	.4
SARDINIA	3.9	.5	.3	.2	.0	16.7	16.7	.2
Cagliari	2.5	.3	.2	.1	.0	10.4	10.2	.1
Sassari	1.4	.2	.0	.1	.0	6.3	6.5	.1

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Source: see text.

Appendix Table A2
Industrial value added in 1881, by sector (million lire at 1911 prices)

Sector codes

1. Mining	2.04 Clothing
2.01 Foodstuffs	2.05 Leather
2.02 Tobacco	2.06 Wood
2.03 Textiles	2.07 Metalmaking

sector code	(1) 1	(2) 2.01	(3) 2.02	(4) 2.03	(5) 2.04	(6) 2.05	(7) 2.06	(8) 2.07
PIEDMONT	4.1	55.2	3.8	33.7	13.8	18.9	18.0	1.7
Alessandria	1.1	9.4	.0	3.7	2.9	4.0	3.4	.1
Cuneo	1.3	10.2	.0	6.5	2.0	3.3	2.3	.1
Novara	.5	13.0	.0	10.2	3.0	4.5	4.8	.3
Turin	1.2	22.6	3.8	13.4	5.8	7.1	7.5	1.2
LIGURIA	1.3	17.3	.9	5.9	2.3	5.8	5.4	3.5
Genoa	1.3	15.0	.9	5.8	2.0	5.0	4.8	3.4
Porto Maurizio	.0	2.3	.0	.1	.3	.8	.6	.0
LOMBARDY	4.6	89.8	2.4	63.3	17.8	23.6	26.0	5.2
Bergamo	2.1	8.1	.0	10.9	1.7	2.0	2.1	.4
Brescia	1.4	10.2	.0	6.6	2.5	3.1	2.5	1.2
Como	.6	9.6	.0	15.6	1.4	2.6	3.3	.6
Cremona	.1	8.4	.0	4.9	1.3	2.1	1.9	.1
Mantua	.0	7.1	.0	1.1	1.1	2.1	2.1	.2
Milan	.5	32.6	2.4	21.6	7.7	8.4	11.2	2.5
Pavia	.0	12.2	.0	2.2	1.9	2.8	2.4	.2
Sondrio	.1	1.6	.0	.3	.2	.5	.4	.0
VENETIA	2.4	44.7	2.5	18.3	11.0	14.2	16.2	.5
Belluno	1.0	2.6	.0	.6	.3	.6	1.2	.0
Padua	.0	5.6	.0	1.8	1.5	2.1	2.5	.1
Rovigo	.0	3.7	.0	1.6	.7	1.3	1.1	.0
Treviso	.1	5.5	.0	2.1	.9	1.7	1.7	.1
Udine	.3	5.3	.0	4	1.5	1.9	2.7	.0
Venice	.1	6.4	2.5	1.7	1.8	2	2.6	.2
Verona	.4	8.7	.0	1.7	1.4	2.5	2.3	.0
Vicenza	.5	7.0	.0	4.7	3.0	2.1	2.2	.0
EMILIA	3.1	31.2	2.2	7.6	12.9	14.0	11.7	.3
Bologna	.0	6.9	1.3	1.6	3.1	3.3	2.6	.2
Ferrara	.0	2.7	.0	.6	1.0	1.5	1.2	.0
Forlì	2.5	2.9	.0	.8	1.2	1.7	1.0	.0
Modena	.0	3.3	.4	1.2	2.5	1.7	1.5	.0
Parma	.0	4.5	.4	.7	1.4	1.6	1.3	.0
Piacenza	.0	3.9	.0	.7	1.2	1.3	1.4	.0
Ravenna	.5	2.8	.0	1.3	1.2	1.6	1.4	.0
Reggio Emilia	.0	4.2	.0	.7	1.3	1.4	1.3	.0
TUSCANY	13.4	34.0	3.4	8.5	19.4	13.5	12.1	2.8
Arezzo	.4	2.8	.0	.7	.9	1.3	.9	.4
Florence	.4	14.1	1.3	2.6	14.7	5.4	5.3	1.1
Grosseto	1.4	1.5	.0	.1	.2	.6	.4	.1
Leghorn	1.3	3.0	.0	.1	.9	1.1	1.0	.2
Lucca	1.8	3.9	2.1	.8	.9	1.3	1.2	.1
Massa Carrara	6.0	1.6	.0	.2	.4	.6	.3	.0
Pisa	2.1	4.4	.0	3.6	.8	1.8	1.9	.5
Siena	.1	2.8	.0	.3	.6	1.4	1.0	.3

Appendix Table A2, cont.

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sector code	(9) 2.08	(10) 2.09	(11) 2.10	(12) 2.11	(13) 2.12	(14) 2	(15) 3	(16) 4
PIEDMONT	39.9	8.8	5.5	8.5	.6	208.4	41.3	2.8
Alessandria	6.0	.9	1.0	.5	.0	31.9	7.3	.3
Cuneo	4.4	1.4	.6	.6	.0	31.4	4.7	.3
Novara	8.6	4.2	.3	2.6	.2	51.8	16.8	.4
Turin	20.9	2.4	3.6	4.8	.3	93.3	12.4	1.7
LIGURIA	23.2	2.9	1.7	3.2	1.4	73.6	16.5	1.5
Genoa	22.4	2.7	1.5	3.1	1.4	68.1	14.2	1.4
Porto Maurizio	.8	.2	.2	.2	.0	5.5	2.3	.1
LOMBARDY	49.8	10.7	5.1	13	1.5	308.2	45.9	2.5
Bergamo	3.6	1.1	.4	.9	.1	31.3	3.2	.2
Brescia	8.1	1.1	.4	1.7	.2	37.6	4.5	.2
Como	8.0	3.7	.2	1.3	.1	46.5	17.6	.2
Cremona	2.8	.6	1.1	.2	.0	23.5	3.7	.1
Mantua	2.6	.4	.2	.3	.1	17.1	3.1	.1
Milan	20.3	2.9	2.6	8.3	1.1	121.8	9.2	1.5
Pavia	3.8	.6	.1	.3	.0	26.4	4	.2
Sondrio	.6	.2	.0	.1	.0	3.9	.6	.0
VENETIA	30.5	8.1	3.3	4.8	.5	154.6	31.4	1.5
Belluno	2.2	.2	.0	.1	.0	7.8	2.2	.0
Padua	3.5	.4	.1	.4	.1	18.0	2.9	.3
Rovigo	1.9	.3	.0	.1	.0	10.9	1.8	.1
Treviso	3.5	.4	.1	.9	.0	16.8	2.6	.1
Udine	4.9	2.6	.4	.5	.0	23.8	11.7	.2
Venice	6.2	2.8	1.6	.9	.3	29.0	3.3	.5
Verona	4.3	.7	.7	.5	.0	23.0	3.8	.2
Vicenza	4.0	.7	.2	1.2	.0	25.3	3.0	.1
EMILIA	19.7	3.8	2.7	3.1	.3	109.4	29.2	1.0
Bologna	5.7	1	1.2	1.2	.1	28.2	8.0	.4
Ferrara	1.9	.2	.1	.2	.0	9.3	2.8	.0
Forlì	2.1	.5	.6	.2	.0	11.2	2.7	.1
Modena	2.3	.3	.0	.5	.0	13.9	3.3	.1
Parma	2.2	.3	.3	.3	.0	13.0	3.4	.1
Piacenza	2.0	.4	.1	.3	.1	11.4	3.1	.1
Ravenna	1.8	.6	.2	.1	.0	10.9	2.5	.1
Reggio Emilia	1.7	.4	.1	.2	.1	11.4	3.4	.0
TUSCANY	23.5	12.8	3.3	4.9	2.0	140.2	19.7	1.9
Arezzo	2.3	.9	.3	.2	.0	10.6	1.7	.1
Florence	9.3	4.6	1.5	2.2	.3	62.5	8.7	1.1
Grosseto	.9	.2	.2	.0	.0	4.2	1.0	.1
Leghorn	3.3	.6	.3	.4	1.3	12.3	1.6	.1
Lucca	2.5	1.5	.2	1.4	.1	15.9	1.7	.1
Massa Carrara	.8	2.6	.1	.1	.0	6.8	1.0	.1
Pisa	2.2	1.6	.6	.2	.2	17.8	2.3	.1
Siena	2.2	.8	.2	.4	.0	10.0	1.8	.1

Appendix Table A2, cont.

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Sector codes
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1.    Mining                                    2.04  Clothing
2.01  Foodstuffs                                2.05  Leather
2.02  Tobacco                                   2.06  Wood
2.03  Textiles                                  2.07  Metalmaking
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sector code	(1) 1	(2) 2.01	(3) 2.02	(4) 2.03	(5) 2.04	(6) 2.05	(7) 2.06	(8) 2.07
MARCHES	1.2	9.7	1.4	3.9	4.6	6.5	4.1	.1
Ancona	.0	3.1	1.4	1.3	1.2	2.0	1.4	.1
Ascoli Piceno	.0	2.1	.0	1.0	1.5	1.4	.7	.0
Macerata	.0	2.0	.0	.7	.9	1.6	1.1	.0
Pesaro	1.1	2.5	.0	.8	.8	1.4	.8	.0
UMBRIA	.6	6.4	.0	1.4	1.3	3.5	2.3	.3
Perugia	.6	6.4	.0	1.4	1.3	3.5	2.3	.3
LATIUM	3.6	18.2	1.0	1.3	2.9	6.3	5.0	.4
Rome	3.6	18.2	1.0	1.3	2.9	6.3	5.0	.4
ABRUZZI	1.6	13.9	.0	1.3	4.7	7.2	3.5	.0
Aquila	.3	3.1	.0	.6	1.7	1.9	1.0	.0
Campobasso	.5	4.3	.0	.2	.9	2.0	1.0	.0
Chieti	1.1	4.3	.0	.3	1.0	1.9	1.0	.0
Teramo	.0	2.1	.0	.2	1.1	1.4	.6	.0
CAMPANIA	6.1	59.3	1.7	13.1	12.7	22.2	17.5	1.0
Avellino	.9	5.1	.0	.7	1.3	2.8	2.1	.0
Benevento	.2	3.2	.0	.8	.7	1.6	.8	.0
Caserta	1.5	9.5	.0	3.5	2.9	4.6	3.3	.0
Naples	1.9	31.1	1.7	5.2	6.1	10	8.6	.9
Salerno	1.6	10.5	.0	3	1.6	3.2	2.7	.0
APULIA	2.5	23.8	.1	1.3	4.6	10.8	7.1	.2
Bari	1.2	9.5	.0	.7	2.3	4.5	3.1	.1
Foggia	.2	8.0	.0	.1	1.0	2.3	1.5	.1
Lecce	1.2	6.4	.1	.6	1.3	4.0	2.5	.1
BASILICATA	.6	6.1	.0	.4	1.5	3.7	1.7	.0
Potenza	.6	6.1	.0	.4	1.5	3.7	1.7	.0
CALABRIA	.9	17.5	.0	2.0	4.5	8.5	5.5	.1
Catanzaro	.3	7.0	.0	.7	2.0	3.5	1.8	.0
Cosenza	.5	4.9	.0	.7	1.3	2.7	1.1	.0
Reggio Calabria	.2	5.6	.0	.6	1.2	2.3	2.6	.0
SICILY	24.8	55.3	1.3	3.9	5.4	23.9	12.7	.3
Caltanissetta	8.8	5.1	.0	.4	.8	1.9	.6	.0
Catania	2.4	10.7	.5	.8	1.2	5.4	2.7	.0
Girgenti	8.3	6.6	.0	.3	.5	2.6	.9	.0
Messina	.3	6.5	.1	1	.6	3.0	2.3	.0
Palermo	3.3	16.3	.7	.5	1	6.0	3.3	.2
Syracuse	1.1	5.9	.0	.6	.8	2.7	1.2	.0
Trapani	.5	4.3	.0	.2	.4	2.3	1.7	.0
SARDINIA	13.1	8.5	.2	.1	.8	3.5	2.3	.1
Cagliari	12.9	5.7	.2	.0	.5	2.1	1.6	.1
Sassari	.2	2.8	.0	.0	.3	1.4	.8	.0

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Appendix Table A2, cont.

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sector code	(9) 2.08	(10) 2.09	(11) 2.10	(12) 2.11	(13) 2.12	(14) 2	(15) 3	(16) 4
MARCHES	9.4	1.1	1.1	2.2	.2	44.1	8.5	.2
Ancona	3.1	.3	.5	1.3	.1	15.8	3.0	.1
Ascoli Piceno	1.8	.2	.1	.2	.0	9.1	1.5	.0
Macerata	2.3	.3	.2	.5	.1	9.9	1.7	.0
Pesaro	2.1	.3	.2	.2	.0	9.3	2.2	.0
UMBRIA	5.1	.8	.4	.6	.0	22.2	9.1	.2
Perugia	5.1	.8	.4	.6	.0	22.2	9.1	.2
LATIUM	10.5	3.4	1.3	4.7	.2	55.3	17.5	4.0
Rome	10.5	3.4	1.3	4.7	.2	55.3	17.5	4.0
ABRUZZI	10.0	1.8	.7	.4	.0	43.6	19.3	.3
Aquila	2.5	.6	.1	.1	.0	11.8	5.1	.1
Campobasso	3.3	.4	.2	.1	.0	12.4	7.2	.1
Chieti	2.5	.4	.3	.1	.0	11.9	4.8	.1
Teramo	1.6	.4	.1	.1	.0	7.5	2.3	.1
CAMPANIA	35.8	4.9	4.6	7.3	3.8	183.9	28.7	1.7
Avellino	3.0	.5	.2	.1	.1	15.9	2.8	.1
Benevento	1.5	.3	.1	.1	.0	9.0	2.1	.1
Caserta	5.6	.9	.8	2.8	.1	34.0	6.1	.2
Naples	20.9	2.3	2.8	3.3	3.6	96.5	12.7	1.2
Salerno	4.8	.9	.7	.9	.0	28.5	5.1	.2
APULIA	11.3	2.0	2.4	.8	.0	64.4	16.5	.1
Bari	4.8	.9	1.0	.4	.0	27.2	8.2	.1
Foggia	2.7	.3	.2	.1	.0	16.3	3.2	.0
Lecce	3.8	.8	1.1	.2	.0	20.8	5.1	.1
BASILICATA	4.3	.6	.4	.1	.0	18.8	5.0	.1
Potenza	4.3	.6	.4	.1	.0	18.8	5.0	.1
CALABRIA	8.8	.8	1.7	.3	.1	49.8	11.6	.3
Catanzaro	3.3	.3	.6	.2	.0	19.5	4.7	.1
Cosenza	3.1	.2	.2	.1	.0	14.4	4.0	.1
Reggio Calabria	2.4	.3	.9	.1	.0	15.9	3.0	.1
SICILY	23.5	5.6	4.9	1.7	.3	138.7	31.0	1.7
Caltanissetta	1.4	.5	.1	.1	.0	11.0	2.8	.1
Catania	5.2	1.4	1.4	.3	.1	29.7	7.7	.7
Girgenti	1.6	.6	.3	.1	.0	13.3	2.9	.1
Messina	3.7	.9	1.1	.2	.1	19.7	3.6	.2
Palermo	7.1	1.2	1.1	.9	.1	38.4	6.3	.3
Syracuse	2.1	.4	.6	.1	.0	14.4	4.6	.1
Trapani	2.3	.7	.3	.1	.0	12.1	3.0	.1
SARDINIA	5.0	.6	.5	.3	.0	21.7	9.2	.3
Cagliari	3.2	.3	.4	.2	.0	14.2	6.0	.2
Sassari	1.8	.2	.1	.1	.0	7.5	3.2	.1

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Source: see text.

Appendix Table A3
Industrial value added in 1901, by sector (million lire at 1911 prices)

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Sector codes
1. Mining   2.04 Clothing
2.01 Foodstuffs   2.05 Leather
2.02 Tobacco   2.06 Wood
2.03 Textiles   2.07 Metalmaking

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sector code	(1) 1	(2) 2.01	(3) 2.02	(4) 2.03	(5) 2.04	(6) 2.05	(7) 2.06	(8) 2.07
PIEDMONT	4.7	76.2	2.0	74.2	23.4	27.8	26.9	5.6
Alessandria	1.0	14.0	.0	6.1	5.4	5.7	5.3	.3
Cuneo	.4	13.7	.0	9.7	3.0	4.7	3.2	.2
Novara	.7	17.9	.0	25.4	5.2	6.4	7.2	1.1
Turin	2.6	30.5	2.0	33.0	9.8	11.0	11.2	4.0
LIGURIA	3.1	23.7	1.7	8.8	3.9	9.5	9.3	11.0
Genoa	2.9	21.1	1.7	8.7	3.5	8.1	8.3	11.0
Porto Maurizio	.2	2.6	.0	.1	.5	1.4	1.0	.0
LOMBARDY	7.1	131.2	2.0	156.9	31.1	38.7	46.8	5.9
Bergamo	3.3	12.0	.0	25.2	2.1	3.0	3.2	.4
Brescia	1.1	15.1	.0	10.1	3.1	4.4	3.9	.8
Como	1.0	14.1	.0	42.3	3.0	4.6	6.8	1.0
Cremona	.1	12.1	.0	6.4	2.4	3.3	3.0	.1
Mantua	.0	9.7	.0	1.0	1.9	2.6	3.0	.0
Milan	.8	51.1	2.0	65.8	14.6	15.3	22.5	3.4
Pavia	.1	15.2	.0	5.0	3.6	4.8	3.7	.2
Sondrio	.7	1.8	.0	1.0	.4	.6	.7	.0
VENETIA	3.5	61.8	2.0	35.8	13.5	18.7	26.2	1.1
Belluno	1.5	3.4	.0	.7	.6	.8	1.9	.0
Padua	.1	9.0	.0	3.4	1.9	2.8	3.9	.1
Rovigo	.0	4.7	.0	.8	1.0	1.7	1.7	.0
Treviso	.1	8.3	.0	5.1	1.3	2.3	2.8	.1
Udine	.0	7.1	.0	9.7	1.9	2.3	4.7	.3
Venice	.3	8.1	2.0	3.4	1.9	2.3	4.4	.3
Verona	.5	11.1	.0	2.5	1.7	3.4	3.4	.2
Vicenza	1.0	10.2	.0	10.1	3.2	3.0	3.5	.1
EMILIA	2.5	48.1	2.3	3.9	19.7	20.9	17.5	.4
Bologna	.2	10.9	.9	1.0	4.6	5.1	4.4	.2
Ferrara	.1	4.4	.0	.4	1.3	2.4	1.9	.0
Forlì	1.2	4.1	.0	.4	1.9	2.6	1.5	.0
Modena	.3	5.6	1.4	.5	4.0	2.4	2.4	.1
Parma	.1	7.2	.0	.3	2.0	2.6	1.8	.0
Piacenza	.2	5.6	.0	.4	1.6	1.7	1.5	.0
Ravenna	.5	3.6	.0	.7	2.0	2.3	2.2	.0
Reggio Emilia	.1	6.7	.0	.3	2.3	1.9	1.9	.0
TUSCANY	23.1	46.8	5.2	16.8	22.9	20.9	21.0	8.5
Arezzo	1.2	3.5	.1	1.1	1.1	2.0	1.3	1.9
Florence	.7	21.8	2.5	5.5	15.8	8.7	10.0	2.2
Grosseto	4.7	1.7	.0	.1	.3	1.0	.7	.2
Leghorn	2.8	4.0	.0	.3	1.0	1.3	1.4	1.9
Lucca	1.9	4.9	2.6	1.9	1.5	2.1	2.2	.1
Massa Carrara	9.6	2.0	.0	.5	.7	1.0	.6	.0
Pisa	1.4	5.2	.0	7.1	1.8	2.7	3.1	1.8
Siena	.8	3.6	.0	.3	.7	2.1	1.6	.3

Appendix Table A3, cont.

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Sector codes
2.08 Engineering   2.12 Sundry manufacturing
2.09 Non-metallic mineral products   2.   Manufacturing
2.10 Chemicals, rubber   3.   Construction
2.11 Paper, printing   4.   Utilities

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sector code	(9) 2.08	(10) 2.09	(11) 2.10	(12) 2.11	(13) 2.12	(14) 2	(15) 3	(16) 4
PIEDMONT	54.1	16.7	10.2	19.3	1.9	338.4	36.6	10.7
Alessandria	8.3	2.3	1.0	1.0	.1	49.6	5.7	1.6
Cuneo	5.5	2.4	.7	1.1	.0	44.4	3.9	.9
Novara	12.1	7.1	.5	6.4	.8	90.2	15.2	1.3
Turin	28.2	4.9	7.9	10.8	1.0	154.2	11.7	6.9
LIGURIA	57.9	6.8	3.9	5.8	.9	143.3	19.3	4.9
Genoa	56.7	6.2	3.6	5.6	.9	135.5	17.5	4.5
Porto Maurizio	1.2	.5	.3	.2	.0	7.8	1.8	.3
LOMBARDY	82.8	18.5	15.7	32.7	3.8	566.0	54.3	13.7
Bergamo	4.2	1.9	.4	2.3	.4	55.1	4.8	1.0
Brescia	10.1	2.1	.5	1.9	.4	52.4	5.3	1.0
Como	10.1	5.2	.6	3.3	.3	91.3	18.6	.9
Cremona	4.1	1.1	.3	.6	.1	33.4	3.7	.4
Mantua	3.4	.7	.1	.5	.2	23.2	3.1	.3
Milan	44.6	6.2	13.6	23.4	2.5	265.1	14.4	9.0
Pavia	5.4	1.1	.2	.7	.1	39.9	3.6	.9
Sondrio	.8	.2	.0	.1	.0	5.6	.9	.2
VENETIA	40.5	10.6	8.8	10.0	.6	229.6	35.4	4.6
Belluno	2.0	.5	.0	.2	.0	10.1	4.5	.2
Padua	5.3	.4	1.3	1.2	.1	29.4	2.3	.6
Rovigo	2.4	.3	.3	.3	.0	13.1	1.3	.2
Treviso	4.3	.5	.1	1.4	.0	26.2	2.9	.5
Udine	6.4	5.6	1.3	1.0	.1	40.4	14.9	.7
Venice	9.7	2.2	3.8	1.4	.1	39.6	3.4	1.3
Verona	5.6	.5	.5	1.2	.1	30.1	2.8	.5
Vicenza	4.9	.7	1.6	3.3	.1	40.8	3.3	.6
EMILIA	26.6	5.9	3.9	6.7	.8	156.7	30.3	2.9
Bologna	8.7	1.5	2.6	2.8	.2	42.9	5.6	1.0
Ferrara	2.9	.2	.4	.3	.0	14.2	2.9	.2
Forlì	2.6	.7	.4	.4	.0	14.6	3.5	.5
Modena	2.9	.6	.1	.8	.1	20.8	3.1	.3
Parma	2.7	.7	.1	.7	.0	18.0	2.7	.4
Piacenza	2.3	.9	.0	.8	.4	15.2	2.1	.2
Ravenna	2.4	.7	.1	.5	.0	14.4	7.2	.2
Reggio Emilia	2.2	.7	.2	.4	.1	16.5	3.0	.2
TUSCANY	31.3	20.5	7.0	11.4	1.9	214.2	25.1	4.1
Arezzo	2.4	.9	.2	.3	.0	15.1	2.5	.3
Florence	13.0	6.5	4.1	6.1	.3	96.3	10.6	1.9
Grosseto	1.3	.3	.0	.1	.0	5.8	1.1	.2
Leghorn	4.6	1.2	1.0	.8	.9	18.4	1.1	.4
Lucca	2.8	2.7	.5	2.8	.3	24.5	2.9	.3
Massa Carrara	1.3	4.8	.2	.1	.0	11.3	1.3	.2
Pisa	3.1	2.8	.9	.5	.3	29.2	3.3	.4
Siena	2.9	1.2	.2	.8	.0	13.7	2.3	.3

Appendix Table A3, cont.

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Sector codes
1.   Mining                          2.04  Clothing
2.01  Foodstuffs                     2.05  Leather
2.02  Tobacco                        2.06  Wood
2.03  Textiles                       2.07  Metalmaking
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sector code	(1) 1	(2) 2.01	(3) 2.02	(4) 2.03	(5) 2.04	(6) 2.05	(7) 2.06	(8) 2.07
MARCHES	1.6	12.5	1.6	3.8	6.0	10.4	6.0	.2
Ancona	.2	4.3	1.6	1.3	1.8	2.9	2.1	.1
Ascoli Piceno	.0	2.3	.0	1.0	1.8	2.7	1.2	.0
Macerata	.0	2.6	.0	.5	1.1	2.7	1.5	.0
Pesaro	1.4	3.3	.0	.9	1.3	2.2	1.3	.1
UMBRIA	1.3	7.5	.0	2.1	1.7	5.8	3.9	7.1
Perugia	1.3	7.5	.0	2.1	1.7	5.8	3.9	7.1
LATIUM	3.1	26.1	1.0	.5	5.4	10.4	8.6	.3
Rome	3.1	26.1	1.0	.5	5.4	10.4	8.6	.3
ABRUZZI	2.1	14.7	.0	.9	6.4	11.6	5.6	.0
Aquila	.9	3.7	.0	.4	2.1	3.3	1.6	.0
Campobasso	.6	4.0	.0	.1	1.3	3.0	1.5	.0
Chieti	.7	4.4	.0	.2	1.4	2.7	1.5	.0
Teramo	.0	2.6	.0	.2	1.6	2.6	1.0	.0
CAMPANIA	3.4	65.7	2.2	13.6	16.6	35.7	25.7	2.9
Avellino	.7	5.5	.0	.6	1.6	4.2	2.6	.0
Benevento	.4	3.1	.1	.6	1.0	2.4	1.2	.0
Caserta	1.0	10.5	.0	3.3	3.8	7.9	5.1	.1
Naples	.6	36.0	1.8	5.7	7.9	15.8	12.3	2.5
Salerno	.7	10.5	.3	3.5	2.3	5.3	4.6	.3
APULIA	2.6	28.2	.2	1.5	6.4	17.8	11.9	.2
Bari	1.3	11.5	.0	.8	2.7	7.2	5.2	.1
Foggia	.3	7.5	.0	.1	1.3	3.7	2.1	.0
Lecce	1.0	9.1	.2	.6	2.5	6.9	4.6	.1
BASILICATA	.2	6.2	.0	.2	1.5	4.7	2.2	.0
Potenza	.2	6.2	.0	.2	1.5	4.7	2.2	.0
CALABRIA	1.3	19.6	.0	2.6	5.6	12.3	8.3	.0
Catanzaro	.6	8.5	.0	1.0	2.2	5.0	2.9	.0
Cosenza	.6	4.7	.0	.6	1.6	3.8	1.9	.0
Reggio Calabria	.1	6.4	.0	1.0	1.8	3.5	3.5	.0
SICILY	39.5	66.2	1.1	2.2	7.5	39.3	23.4	.4
Caltanissetta	17.2	6.7	.0	.1	.6	3.1	1.1	.0
Catania	3.8	14.1	.7	.4	1.6	9.4	5.2	.1
Girgenti	14.8	7.7	.0	.2	.7	4.1	1.6	.0
Messina	.2	7.3	.0	1.0	1.2	4.8	3.8	.0
Palermo	1.4	16.6	.4	.2	2.0	9.1	5.8	.3
Syracuse	1.3	7.9	.0	.3	.8	4.8	2.4	.0
Trapani	.8	6.1	.0	.1	.6	3.9	3.4	.0
SARDINIA	17.0	9.6	.8	.2	1.2	5.6	3.6	.4
Cagliari	16.6	5.6	.7	.1	.8	3.3	2.3	.3
Sassari	.4	4.0	.0	.1	.4	2.3	1.3	.0

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Appendix Table A3, cont.

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Sector codes
2.08 Engineering   2.12 Sundry manufacturing
2.09 Non-metallic mineral products   2.   Manufacturing
2.10 Chemicals, rubber   3.   Construction
2.11 Paper, printing   4.   Utilities

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sector code	(9) 2.08	(10) 2.09	(11) 2.10	(12) 2.11	(13) 2.12	(14) 2	(15) 3	(16) 4
MARCHES	11.7	2.2	1.4	4.5	.3	60.4	8.1	1.6
Ancona	4.7	.5	1.0	2.4	.2	22.8	2.5	.7
Ascoli Piceno	2.1	.3	.2	.4	.0	12.0	1.7	.3
Macerata	2.6	.6	.1	1.3	.1	13.1	1.6	.4
Pesaro	2.3	.7	.1	.4	.0	12.5	2.4	.3
UMBRIA	7.9	1.3	1.5	1.3	.0	40.1	9.5	1.1
Perugia	7.9	1.3	1.5	1.3	.0	40.1	9.5	1.1
LATIUM	15.1	3.7	2.4	10.3	.3	84.1	21.5	6.7
Rome	15.1	3.7	2.4	10.3	.3	84.1	21.5	6.7
ABRUZZI	11.5	1.9	.9	1.1	.1	54.7	13.0	1.1
Aquila	2.8	.7	.1	.3	.0	15.0	4.5	.3
Campobasso	3.4	.5	.1	.2	.0	14.1	3.6	.3
Chieti	3.0	.4	.3	.4	.0	14.4	2.8	.3
Teramo	2.3	.4	.3	.2	.0	11.3	2.1	.2
CAMPANIA	52.6	4.3	6.0	11.6	5.0	241.8	25.8	7.8
Avellino	3.0	.3	.2	.2	.0	18.4	2.0	.5
Benevento	1.8	.2	.3	.1	.0	10.7	1.6	.4
Caserta	7.0	.9	2.5	3.7	.1	44.8	4.9	1.1
Naples	35.1	2.2	2.5	6.3	4.9	132.8	12.5	5.0
Salerno	5.8	.7	.5	1.3	.0	35.2	4.7	.8
APULIA	20.3	2.2	4.2	2.1	.1	95.1	16.1	.8
Bari	7.8	.8	2.5	1.2	.0	39.9	7.9	.4
Foggia	5.0	.3	.2	.3	.0	20.5	2.7	.1
Lecce	7.5	1.1	1.5	.6	.0	34.7	5.4	.3
BASILICATA	4.0	.3	.2	.3	.0	19.7	3.4	.3
Potenza	4.0	.3	.2	.3	.0	19.7	3.4	.3
CALABRIA	9.2	.9	2.2	.9	.0	61.6	9.3	.9
Catanzaro	3.3	.4	1.0	.4	.0	24.8	2.7	.3
Cosenza	3.0	.2	.4	.2	.0	16.4	2.7	.3
Reggio Calabria	2.9	.3	.7	.3	.0	20.4	4.0	.3
SICILY	33.9	9.0	7.1	4.2	.3	194.6	24.7	5.0
Caltanissetta	2.1	.7	.2	.2	.0	14.9	1.9	.4
Catania	7.4	2.6	2.8	.9	.1	45.2	5.5	1.0
Girgenti	2.5	.9	.4	.2	.0	18.3	1.6	.4
Messina	5.1	1.4	1.4	.6	.0	26.5	6.0	.7
Palermo	10.0	1.6	1.4	1.9	.1	49.5	4.5	1.5
Syracuse	3.1	.6	.6	.2	.0	20.8	2.9	.5
Trapani	3.7	1.2	.3	.2	.0	19.5	2.3	.5
SARDINIA	6.7	.7	1.2	.6	.0	30.5	6.7	.7
Cagliari	4.5	.4	1.0	.4	.0	19.4	4.7	.4
Sassari	2.2	.3	.2	.3	.0	11.1	2.0	.3

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Source: see text.

Appendix Table A4
Industrial value added in 1911, by sector (million lire at 1911 prices)

Sector codes
1. Mining	2.04 Clothing
2.01 Foodstuffs	2.05 Leather
2.02 Tobacco	2.06 Wood
2.03 Textiles	2.07 Metalmaking

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sector code	(1) 1	(2) 2.01	(3) 2.02	(4) 2.03	(5) 2.04	(6) 2.05	(7) 2.06	(8) 2.07
PIEDMONT	8.5	96.1	2.2	99.5	33.2	26.3	40.2	11.9
Alessandria	1.7	16.4	.0	7.0	7.9	5.4	8.2	.5
Cuneo	1.3	15.8	.0	11.1	4.2	4.5	4.6	.7
Novara	2.0	28.2	.1	37.9	7.3	5.8	9.3	2.0
Turin	3.6	35.7	2.1	43.4	13.9	10.5	18.1	8.8
LIGURIA	7.0	39.3	1.8	14.0	6.7	9.2	15.6	25.5
Genoa	6.0	35.5	1.8	13.9	5.7	7.9	14.1	24.6
Porto Maurizio	1.0	3.8	.0	.0	1.0	1.3	1.5	.9
LOMBARDY	13.7	159.2	3.7	211.7	48.2	40.3	77.0	19.3
Bergamo	5.3	12.3	.0	34.6	3.0	2.8	5.0	2.2
Brescia	2.6	15.4	.0	15.3	4.2	4.2	6.4	3.4
Como	2.4	16.2	.1	51.8	5.0	5.0	13.3	2.8
Cremona	.1	15.2	.0	9.4	3.4	2.9	5.0	.1
Mantua	.1	12.4	.0	1.3	2.8	2.5	4.3	.0
Milan	2.0	64.3	3.6	91.3	24.3	15.5	35.8	8.6
Pavia	.2	20.8	.0	6.7	5.1	6.6	6.1	2.1
Sondrio	1.0	2.6	.0	1.3	.6	.6	1.0	.0
VENETIA	8.1	73.7	1.5	50.2	16.7	19.6	43.4	2.1
Belluno	2.3	3.9	.0	.7	.6	.9	2.6	.2
Padua	.4	8.6	.0	4.4	2.5	3.5	6.5	.2
Rovigo	.0	4.8	.0	1.1	1.2	1.7	2.9	.0
Treviso	.4	9.4	.0	7.4	1.8	2.4	5.7	.0
Udine	1.8	12.7	.0	12.7	2.9	2.2	7.3	.9
Venice	.3	9.4	1.4	4.6	2.5	2.2	6.9	.2
Verona	.9	13.4	.0	4.1	2.2	3.7	5.7	.2
Vicenza	2.0	11.5	.1	15.2	3.1	3.0	5.9	.4
EMILIA	7.5	78.9	2.5	5.3	29.0	22.8	29.5	.9
Bologna	.4	15.5	.8	1.1	7.7	5.4	6.6	.6
Ferrara	.6	9.6	.0	1.4	2.4	2.6	3.7	.0
Forlì	1.2	6.2	.0	.6	3.0	2.7	2.7	.0
Modena	.5	9.7	1.7	.6	4.8	3.1	4.3	.2
Parma	.6	13.0	.0	.2	3.1	2.7	3.1	.0
Piacenza	1.5	8.4	.0	.5	2.1	1.7	2.3	.0
Ravenna	2.3	5.4	.0	.7	3.1	2.5	3.4	.0
Reggio Emilia	.3	11.1	.0	.3	2.8	2.1	3.4	.0
TUSCANY	33.1	53.8	5.4	18.4	30.0	21.6	31.7	27.0
Arezzo	2.2	3.5	.3	1.7	.9	2.1	1.9	2.2
Florence	2.0	23.3	2.1	6.6	24.0	9.4	13.9	5.1
Grosseto	4.5	2.0	.0	.1	.1	1.0	1.0	.0
Leghorn	3.6	4.5	.0	.4	.8	1.1	1.6	6.8
Lucca	3.4	6.4	2.9	2.5	1.5	2.1	4.3	.8
Massa Carrara	12.3	2.6	.0	.5	.6	1.1	1.3	.1
Pisa	2.2	7.3	.1	6.3	1.5	2.7	4.7	11.6
Siena	2.8	4.2	.0	.3	.6	2.1	3.0	.2

Appendix Table A4, cont.

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Sector codes
2.08 Engineering   2.12 Sundry manufacturing
2.09 Non-metallic mineral products   2.   Manufacturing
2.10 Chemicals, rubber   3.   Construction
2.11 Paper, printing   4.   Utilities

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sector code	(9) 2.08	(10) 2.09	(11) 2.10	(12) 2.11	(13) 2.12	(14) 2	(15) 3	(16) 4
PIEDMONT	111.7	34.0	25.2	36.9	2.0	519.1	72.6	33.8
Alessandria	17.0	9.6	3.3	1.8	.1	77.1	11.6	4.7
Cuneo	7.3	4.2	1.7	3.3	.0	57.6	6.6	4.3
Novara	19.2	8.0	1.4	12.4	.7	132.2	20.6	10.9
Turin	68.3	12.2	18.8	19.4	1.2	252.2	33.8	14.0
LIGURIA	91.7	13.1	11.5	11.0	.6	239.9	50.2	12.2
Genoa	89.8	11.8	11.0	10.6	.6	227.2	44.3	11.3
Porto Maurizio	1.9	1.3	.5	.4	.0	12.7	5.9	.9
LOMBARDY	190.4	50.6	33.2	67.0	11.7	912.2	106.5	46.0
Bergamo	8.1	5.7	1.3	5.3	2.9	83.2	8.3	2.2
Brescia	20.4	4.8	2.2	3.5	2.0	81.9	10.3	4.4
Como	19.7	8.7	2.2	8.6	2.1	135.5	22.6	3.2
Cremona	6.0	4.0	.5	1.8	.1	48.5	7.2	1.0
Mantua	4.7	2.1	.3	1.2	.4	32.1	6.5	.9
Milan	122.4	19.9	26.0	44.7	4.0	460.4	42.5	32.3
Pavia	8.0	5.0	.5	1.7	.1	62.7	7.3	1.6
Sondrio	1.2	.5	.1	.2	.0	8.0	1.8	.5
VENETIA	71.8	27.1	13.1	18.6	1.7	339.5	84.2	14.0
Belluno	2.5	1.3	.1	.7	.1	13.4	6.2	.4
Padua	10.9	2.8	2.0	1.9	.2	43.6	11.0	2.3
Rovigo	3.0	2.0	.6	.4	.0	17.6	5.1	1.1
Treviso	7.2	2.7	.5	2.7	.4	40.1	8.7	.7
Udine	10.6	5.6	2.2	2.1	.1	59.1	18.1	2.6
Venice	15.6	6.8	5.1	2.3	.3	57.3	13.7	3.9
Verona	13.1	2.6	1.7	2.5	.5	49.5	11.1	1.4
Vicenza	8.9	3.3	1.1	6.1	.1	58.8	10.3	1.6
EMILIA	58.0	18.5	11.0	13.7	2.4	272.5	68.1	10.8
Bologna	19.2	4.4	5.4	5.7	.4	72.9	13.6	2.8
Ferrara	5.8	1.9	.9	.9	.0	29.0	4.6	1.5
Forlì	4.9	2.0	1.5	.6	.1	24.3	11.0	1.0
Modena	6.6	2.2	.3	2.2	.2	35.7	7.3	1.3
Parma	5.4	2.1	1.4	1.1	.0	32.2	6.8	1.7
Piacenza	5.0	1.8	.5	1.1	1.4	24.9	3.9	.7
Ravenna	4.5	1.6	.4	.9	.0	22.7	14.4	1.0
Reggio Emilia	6.7	2.3	.5	1.2	.2	30.8	6.5	.7
TUSCANY	55.9	40.7	18.2	26.2	1.4	330.2	51.0	9.0
Arezzo	4.5	1.9	1.1	.8	.0	20.9	5.4	1.0
Florence	23.9	13.4	7.3	14.1	.5	143.6	21.3	3.4
Grosseto	1.5	1.1	.5	.3	.1	7.7	2.1	.2
Leghorn	7.5	2.6	3.1	1.9	.4	30.9	2.9	1.7
Lucca	5.5	5.7	1.4	6.2	.1	39.3	6.6	.8
Massa Carrara	2.3	5.8	.6	.3	.0	15.3	2.4	.4
Pisa	6.4	7.3	3.6	1.2	.2	52.9	7.4	1.2
Siena	4.2	2.9	.5	1.6	.1	19.7	3.0	.5

Appendix Table A4, cont.

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Sector codes
1.   Mining                              2.04  Clothing
2.01  Foodstuffs                         2.05  Leather
2.02  Tobacco                            2.06  Wood
2.03  Textiles                           2.07  Metalmaking
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sector code	(1) 1	(2) 2.01	(3) 2.02	(4) 2.03	(5) 2.04	(6) 2.05	(7) 2.06	(8) 2.07
MARCHES	3.2	15.1	1.6	4.0	7.4	10.3	8.8	.2
Ancona	1.6	5.6	1.6	1.7	2.4	2.8	3.0	.0
Ascoli Piceno	.2	2.9	.0	.8	2.0	2.8	1.8	.0
Macerata	.1	3.2	.0	.4	1.3	2.8	2.1	.0
Pesaro	1.4	3.4	.0	1.1	1.6	1.9	1.9	.2
UMBRIA	2.0	9.5	.1	4.7	2.3	5.8	4.7	9.4
Perugia	2.0	9.5	.1	4.7	2.3	5.8	4.7	9.4
LATIUM	6.7	25.8	1.0	.6	8.3	10.7	11.0	.6
Rome	6.7	25.8	1.0	.6	8.3	10.7	11.0	.6
ABRUZZI	3.4	16.8	.0	1.4	7.3	11.2	8.7	.4
Aquila	1.1	4.3	.0	.5	2.1	3.2	2.6	.3
Campobasso	.5	4.5	.0	.2	1.5	2.7	2.1	.0
Chieti	1.7	4.6	.0	.4	1.8	2.7	2.4	.0
Teramo	.1	3.3	.0	.3	1.9	2.7	1.7	.0
CAMPANIA	6.5	82.1	3.1	12.5	21.0	37.9	37.7	19.2
Avellino	1.2	5.7	.0	.6	2.0	4.1	3.7	.1
Benevento	.3	3.8	.2	.4	1.0	2.3	1.4	.0
Caserta	1.4	12.5	.0	2.0	4.1	8.3	7.4	.1
Naples	2.8	44.4	2.7	7.0	11.5	17.7	18.7	18.4
Salerno	.8	15.6	.2	2.6	2.5	5.5	6.4	.5
APULIA	6.6	46.6	2.2	2.1	9.9	18.8	20.6	.4
Bari	2.5	15.0	.5	.8	3.7	7.6	9.2	.3
Foggia	.6	8.8	.0	.1	2.3	3.9	3.7	.0
Lecce	3.5	22.9	1.8	1.3	4.0	7.3	7.8	.1
BASILICATA	.6	6.8	.0	.2	1.9	4.7	3.5	.0
Potenza	.6	6.8	.0	.2	1.9	4.7	3.5	.0
CALABRIA	2.6	24.2	.0	2.2	7.3	13.8	12.7	.0
Catanzaro	1.1	10.2	.0	.9	2.8	5.4	4.1	.0
Cosenza	1.3	7.6	.0	.4	2.1	4.2	3.3	.0
Reggio Calabria	.2	6.4	.0	.9	2.3	4.2	5.3	.0
SICILY	37.4	82.0	1.9	1.5	11.9	41.2	33.1	1.1
Caltanissetta	15.9	8.1	.0	.0	.9	3.2	1.7	.0
Catania	4.1	16.8	.8	.2	3.3	10.7	8.8	.2
Girgenti	12.0	7.8	.0	.2	1.2	4.2	2.4	.0
Messina	.9	8.8	.0	.6	1.5	5.0	5.0	.1
Palermo	1.5	18.5	1.1	.2	2.8	9.3	7.1	.7
Syracuse	2.0	10.3	.0	.1	1.3	5.1	4.1	.0
Trapani	1.0	11.7	.0	.1	.9	3.8	4.0	.0
SARDINIA	17.9	17.1	.9	.2	2.0	5.7	7.8	.4
Cagliari	17.0	10.9	.9	.1	1.3	3.4	4.5	.4
Sassari	.9	6.3	.0	.1	.7	2.3	3.3	.0

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Appendix Table A4, cont.

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Sector codes
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2.08  Engineering                      2.12  Sundry manufacturing
2.09  Non-metallic mineral products    2.    Manufacturing
2.10  Chemicals, rubber                3.    Construction
2.11  Paper, printing                  4.    Utilities
```
_____
_____

sector code	(9) 2.08	(10) 2.09	(11) 2.10	(12) 2.11	(13) 2.12	(14) 2	(15) 3	(16) 4
MARCHES	15.6	7.6	3.6	7.5	.5	82.0	13.3	5.7
Ancona	6.5	2.8	1.6	4.3	.3	32.7	4.3	2.0
Ascoli Piceno	3.2	1.6	.9	.7	.0	16.7	3.4	1.6
Macerata	3.0	1.4	.2	1.9	.1	16.5	2.3	1.3
Pesaro	2.8	1.7	.9	.6	.0	16.2	3.3	.8
UMBRIA	8.8	3.0	7.1	3.0	.0	58.3	14.1	6.7
Perugia	8.8	3.0	7.1	3.0	.0	58.3	14.1	6.7
LATIUM	27.8	9.2	3.9	21.0	1.2	121.1	45.6	16.5
Rome	27.8	9.2	3.9	21.0	1.2	121.1	45.6	16.5
ABRUZZI	13.8	5.3	3.3	2.2	.2	70.7	16.7	2.5
Aquila	3.4	1.3	1.5	.5	.0	19.6	4.8	.9
Campobasso	3.8	.6	.3	.3	.0	16.1	4.7	.8
Chieti	3.6	1.8	1.3	.8	.0	19.5	4.4	.7
Teramo	3.0	1.5	.3	.6	.2	15.4	2.8	.2
CAMPANIA	79.6	12.8	11.1	21.0	3.9	341.9	44.6	15.2
Avellino	3.3	1.2	.7	.3	.0	21.6	3.1	.5
Benevento	2.0	.6	.4	.2	.0	12.4	2.2	.3
Caserta	6.9	3.1	4.4	8.2	.1	57.2	8.0	2.2
Naples	60.2	5.7	4.5	10.2	3.6	204.7	23.9	10.7
Salerno	7.3	2.3	1.0	2.0	.2	46.1	7.4	1.5
APULIA	27.3	9.4	6.7	4.8	.5	149.3	32.9	2.4
Bari	10.6	5.8	4.4	2.7	.2	60.6	17.1	1.3
Foggia	5.9	1.1	.3	.8	.0	26.8	5.3	.5
Lecce	10.8	2.5	2.1	1.3	.3	62.0	10.5	.7
BASILICATA	5.0	1.0	.3	.3	.0	23.8	11.0	2.4
Potenza	5.0	1.0	.3	.3	.0	23.8	11.0	2.4
CALABRIA	12.4	4.1	3.3	1.4	.2	81.7	20.5	1.7
Catanzaro	3.9	1.4	.5	.8	.1	30.1	5.8	.4
Cosenza	3.6	.9	.6	.3	.0	23.1	6.5	.6
Reggio Calabria	4.8	1.9	2.2	.3	.1	28.4	8.3	.7
SICILY	46.9	16.3	11.7	6.5	.5	254.5	53.0	8.8
Caltanissetta	3.4	1.5	.2	.3	.0	19.3	3.3	.5
Catania	10.6	4.7	4.1	2.0	.2	62.5	13.8	2.4
Girgenti	3.0	1.9	2.2	.2	.0	23.2	4.4	.2
Messina	7.0	2.2	2.0	.5	.0	32.9	11.5	.9
Palermo	14.4	3.0	1.6	2.6	.2	61.4	9.0	3.7
Syracuse	3.8	1.5	1.2	.4	.0	27.9	7.4	.5
Trapani	4.6	1.5	.3	.4	.0	27.4	3.6	.5
SARDINIA	11.2	2.3	1.3	1.1	.2	50.3	12.5	1.0
Cagliari	7.2	1.6	1.0	.8	.2	32.3	8.4	.5
Sassari	4.0	.8	.3	.2	.0	18.0	4.0	.5

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Source: see text.

Appendix Table A5
Industrial value added in Italy's provinces, census years (million lire at 1911 prices)

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(1) name	(2) 1871	(3) 1881	(4) 1901	(5) 1911
PIEDMONT	202	256	390	634
Alessandria	33	41	58	95
Cuneo	34	38	50	70
Novara	53	69	107	166
Turin	81	109	175	304
LIGURIA	90	93	171	309
Genoa	83	85	160	289
Porto Maurizio	7	8	10	20
LOMBARDY	285	361	641	1,078
Bergamo	29	37	64	99
Brescia	36	44	60	99
Como	47	65	112	164
Cremona	25	27	38	57
Mantua	19	20	27	40
Milan	99	133	289	537
Pavia	27	31	44	72
Sondrio	3	5	7	11
VENETIA	159	190	273	446
Belluno	9	11	16	22
Padua	19	21	32	57
Rovigo	11	13	15	24
Treviso	19	20	30	50
Udine	27	36	56	82
Venice	28	33	45	75
Verona	24	27	34	63
Vicenza	23	29	46	73
EMILIA	118	143	192	359
Bologna	28	37	50	90
Ferrara	11	12	17	36
Forlì	13	17	20	38
Modena	16	17	24	45
Parma	15	17	21	41
Piacenza	12	15	18	31
Ravenna	12	14	22	40
Reggio Emilia	12	15	20	38
TUSCANY	149	175	266	423
Arezzo	11	13	19	29
Florence	62	73	109	170
Grosseto	5	7	12	14
Leghorn	12	15	23	39
Lucca	19	19	30	50
Massa Carrara	11	14	22	30
Pisa	18	22	34	64
Siena	11	12	17	26

Appendix Table A5, cont.

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(1) name	(2) 1871	(3) 1881	(4) 1901	(5) 1911

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MARCHES	46	54	72	104
Ancona	15	19	26	41
Ascoli Piceno	9	11	14	22
Macerata	11	12	15	20
Pesaro	11	13	16	22
UMBRIA	27	32	52	81
Perugia	27	32	52	81
LATIUM	57	80	115	190
Rome	57	80	115	190
ABRUZZI	50	65	71	93
Aquila	13	17	21	26
Campobasso	15	20	19	22
Chieti	14	18	18	26
Teramo	8	10	14	19
CAMPANIA	170	220	279	408
Avellino	14	20	22	26
Benevento	11	11	13	15
Caserta	34	42	52	69
Naples	79	112	151	242
Salerno	31	36	41	56
APULIA	72	84	115	191
Bari	30	37	49	81
Foggia	17	20	24	33
Lecce	25	27	41	77
BASILICATA	21	24	24	38
Potenza	21	24	24	38
CALABRIA	57	63	73	107
Catanzaro	23	25	28	37
Cosenza	18	19	20	32
Reggio Calabria	17	19	25	38
SICILY	157	196	264	354
Caltanissetta	16	23	34	39
Catania	28	41	55	83
Girgenti	21	25	35	40
Messina	18	24	33	46
Palermo	46	48	57	76
Syracuse	15	20	25	38
Trapani	12	16	23	33
SARDINIA	45	44	55	82
Cagliari	31	33	41	58
Sassari	13	11	14	24
ITALY	1,705	2,081	3,070	4,897

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Source: Appendix Tables A1 - A4.

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