MIGRATION FROM THE ARGENTINE NORTHWEST

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Studies of Argentine agriculture usually concentrate on the Pampas and neglect what is frequently called “the rest of the country." Of course---they do so for two very good reasons. The first is that in many ways, the Argentine and the Pampas can be treated as synonymous; and second, the difficulties awaiting the student of the “rest of the country” are discouraging. Not the least of them is the necessity of analyzing separately numberless tiny areas, each one specialized in the production of one or a few products. But, however convenient the neglect of the rest of the country may be, it has the disadvantage of hiding some of the most interesting questions related to the development of Argentine agriculture. Of these questions, regional differences in economic growth are the most likely ones to be ignored when emphasis is placed on the Pampas to the exclusion of other areas. What follows is our first attempt to take a closer look at what lies outside the Pampas and to scratch the surface of some of the reasons for regional differences in the economic growth of the outlying areas.

I

Our interest in this topic was aroused by the following, rather startling fact: according to the 1869 Census of Population, the province of Catamarca had one of the highest ratios of urban population in the country, as illustrated by the following table:

	Total Population	Urban	% of Total
Argentina	1,737,076	496,680	28.6
City of Buenos Aires	187,346	187,126	99.9
14 Provinces	1,549,577	309,374	19.9
Catamarca	79,962	25,324	31.8
4 Pampas Provinces	741,657	179,893	24.2

One is tempted to say that Catamarca must have had a highly developed agriculture, capable of producing a surplus large enough to sustain the (relatively) most numerous urban population in the country. This is a remarkable achievement considering that if nowadays there are any underdeveloped areas in Argentina, Catamarca is certainly one of them. Catamarca's decline since 1869 is superficially illustrated comparing the above figures with the following 1947 Census results.

	Total Population	Urban	% of Total
Argentina	15,893,827	9,932,133	62.6
Federal District	2,982,580	2,981,043	99.9
14 Provinces	11,589,459	6,585,228	56.8
Catamarca	147,213	47,302	32.1
4 Pampas Provinces and one Territory	8,430,141	5,294,489	62.8

It is at once apparent that the case of Catamarca is a very unhappy one. Furthermore, its

population growth is misleading. The constancy of the urban population ratio was achieved mainly by the growth of the provincial capital and decline in other areas.

Population of towns classified as urban in 1869

	Census Years				
	1869	1895	1914	1947	1960
Andalgalá	3,073	442	*	5,016	3,260
Alto	2,022	365	*	227	530
Belén	3,822	2,201	2,969	4,342	5,469
Catamarca (City)	5,718	7,397	13,262	31,067	45,929
San Antonio (Piedra Blanca)	3,434	1,028	*	271	1,312
San Isidro (Valle Viejo)	2,687	773	*	521	2,271
Tinogasta	4,568	283	*	2,169	3,557
	25,324	13,489	*	38,573	62,328

*The 1914 Census did not give the population of towns of less than 2,000 inhabitants.

The 1895 Census authorities were not unaware of the changes occurred between the first two censuses, but they brushed all problems aside remarking that the 1869 urban population figures include not only the inhabitants of each town but also those of surrounding, near-by villages, while in 1895 a more strict definition of "urban center" was applied. In fact, this may explain the drastic depopulation of Andalgalá and San Isidro (Valle Viejo), but it does not explain the decline between the same two censuses of total urban and rural population of Andalgalá and Valle Viejo counties. (See Table 2) Apart from a change in definitions, there were other stranger and more serious things going on. Some of these are hinted at by the census of the flour milling industry in Catamarca. Again, this is one of the statistical gems which aroused our interest in this area. Bread consumption in Catamarca is very likely to have increased, but the following figures show that flour milling in that province was wiped out completely.

FLOUR MILLING IN CATAMARCA

Year	Number of mills		Wheat milled (tons)	Flour produced (tons)
	registered	working		
1895	40	n.a.	2,340	1,821
1908	16	13	755	512
1914	18	14	704	470
1937	2	2	25	17

Unfortunately nothing is known about flour-milling in Catamarca before 1895, but w e can guess that before 1886 more flour had been produced than at any time after that year. 1886 marks

the turning point because that was the year in which the first railway to Catamarca was inaugurated. With this we are pointing to one of the hypotheses argued for below.

So far we have singled out Catamarca only as an example of areas hit hardest by the forces making for regional differences in economic growth. But Catamarca is part of a broader area, encompassing also La Rioja, Salta, and Jujuy, which for brevity we shall call the "North-west" or the "mountain provinces." Agriculture in this area is carried out in narrow valleys at high altitudes (up to 3,000 meters above sea level) and almost exclusively on irrigated land. Each valley has its own micro-climate, but the rainy season is invariably in summer. Yearly rainfall varies from less than 100 to more than 1, 000 mm in the months from October to March.2

		Yearly Rainfall (mm.)			
		1935	1936	1937	1938
Salta	Rosario de Lerma	1129	993	966	1044
	San Carlos	115	113	94	172
	Chicoana	n.a.	728	645	689
	Salta	n.a.	n.a.	706	813
La Rioja	Chilecito	n.a.	89	85	191
	Arauco	n.a.	124	104	11
	Famatina	104	98	14	42
Catamarca	Valle Viejo	445	300	150	326
	Andalgalá	n.a.	261	190	135
	Tinogasta	n.a.	87	120	53
Jujuy	Perico	n.a.	507	744	773
Source: Annual Reports of the Ministry of Public Works (Irrigation)					

The settlement of the area began at the turn of the XVIth and early XVIIth century, settlers coming from Spain via Peru and Bolivia. Though now a part of Argentina, the area's economic ties were closer with Peru than with Buenos Aires. The treeless Pampas, which in the absence of wire-fencing and railways were regarded as a desert, were a larger obstacle to trade than the winding mountain passes on the road to Peru. The main objects of trade were mules and cattle exported to Bolivia and Peru. Some of them were raised locally, others were imported from Córdoba and re-exported after fattening. With the exception of a small trickle of wine, sugar and olives exported to Buenos Aires, trade with the Pampas was nil. The Pampas had nothing to offer at a time when they exported to Spain only hides and had to import all the flour they consumed.

Of course, another reason for the lack of trade with Buenos Aires is afforded by the commercial policy of Spain. At Córdoba, customs duties were charged on traffic to and from Buenos Aires at several times, and the Crown did its utmost to discourage production of wine and olives, to the point of destroying the olive groves in La Rioja in 1787. Thus these provinces sided with Buenos

Aires in the struggle for free trade and independence from the monopolistic oppressor. But once that independence was achieved, it soon became apparent that what the NW provinces meant by free trade was free domestic trade protected from foreign competition while the Pampas provinces meant free trade, period. In fact, trade policy was to become the main bone of contention through almost 50 years of civil war, although it is better known as a struggle for federal vs. unitarian forms of government, the NW being Federalist and Buenos Aires the sole Unitarian. In this respect it is interesting to quote Juan Manuel de Rosas, Argentina's XlXth century dictator and self-erected----albeit paradoxical---champion of the "federalist cause:"

> "We will impoverish them. The system of not establishing any prohibitions or restrictions on the importation of foreign goods produced also by the provinces must be upheld, otherwise they (the provinces) will prosper; they will not need us anymore and our plan will be frustrated."
>
> ("Les haremos sentir la pobreza. El sistema de no establecer prohibiciones o restricciones a la importación de efectos extranjeros que producen las Provincias es preciso sostenerlo, porque de lo contrario ellas (las Provincias) prosperan, no les seremos necesarios y nuestro plan se frustra").[1]

A remarkable case of unsound political action based on sound economic prediction!

III

The following is a tentative list of factors of which we believe that they affected the development of the NW relative to other areas of the country. They are,

1. Special historical events, e.g. the building of railways.
2. Smallness of markets.
3. Compound interest.
4. A distinction between absolute and relative returns to the introduction of new factors (technologies).
5. Land tenure systems.
6. Government policies:
   a. Regulation
   b. Protection
7. Irrigation.

We hasten to emphasize that this list may be far from being complete and that we do not yet claim to have satisfactory tests of each hypothesis. Furthermore, we will consider in this paper only the first, third, and fourth as preludes to the following analysis of migration.

The results are modest. There is quite a bit of evidence of the negative effect of railway construction in the area. The ensuing migration does not seem to have selected people of only a given level of education. Instead, it seems as though any possible selectivity depends on the nature of the migration's particular circumstances. The migration's income effects are undoubtedly positive. The few significant relations which we found show that the annual wage of farm labor increased substantially. But income differentials with respect to other areas and occupations may have persisted.

THE EXTENSION OF THE RAILWAY INTO THE NW

[1] From the memoirs of General Pedro Ferré, quoted by Alejandro Bunge, *La Economía Argentina*, vol. III (Buenos Aires: 1928), page 123.

It is well known that the Pampas owe their development to the happy coincidence of the introduction of wire-fencing, the building of railways, and the availability of refrigeration in overseas transport. These factors were of course also available to the NW, but they seem to have had the opposite effects.

As almost everywhere, railway construction was most active up to 1914 (see Table 1). For the provinces outside the Pampas the introduction of the railway had two double-edged effects: (1) it made the Pampas a better market where to sell, but also a cheaper source of supply, and (2) it cheapened both in- and out-migration. Apparently, the edges which did most of the cutting were the rise in the supply to the NW of goods produced in the Pampas and the lowering of the moving cost out of the NW and into the Pampas.

Calling the ratio of the number of a province's natives living in other provinces the "average rate of emigration," and defining the ratio between the increase in natives living in other provinces and the increase in the total number of a province's natives the "marginal rate of emigration," we obtain the following figures:

Out-Migration rates (in %)

	Average		Marginal
	1895	1914	1895-1914
Argentina	15.3	14.4	13.4
Catamarca	22.4	29.9	66.8
Jujuy	6.0	10.5	18.6
La Rioja	15.7	24.9	58.4
Salta	10.1	19.1	81.3
5 Pampas provinces	15.2	11.9	8.2
Federal District	2.7	15.9	19.3

The net effect of internal migrations on total population is illustrated by the ratio of the change in total Argentine-born population living in a province over the change in the number of people born in the province, or the number by which Argentine-born population grows per 100 people born in the province:

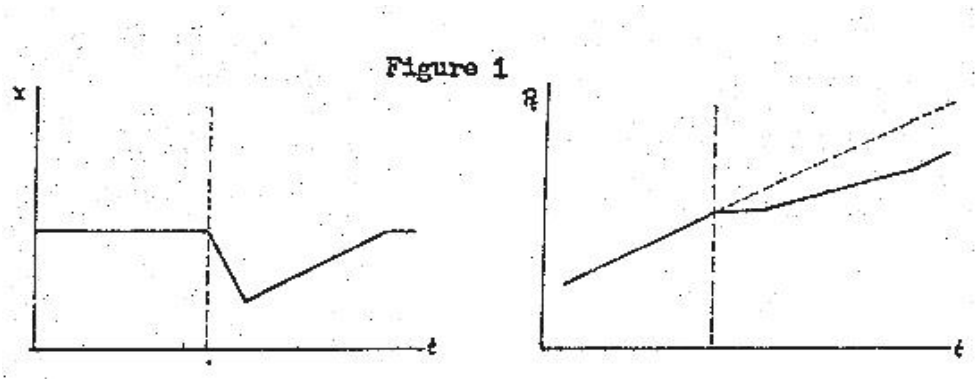
	1895-1914
Argentina	100.0
Catamarca	41.4
Jujuy	83.8
La Rioja	45.2
Salta	125.1
5 Pampas provinces	110.7
Federal District	79.2

These are surprising numbers. In the first place, the Pampas are attracting people, as expected, but so does Salta, although its marginal emigration rate is the highest among those recorded. Also, were it not for the influx of European immigrants, the city of Buenos Aires would have lost population (presumably to the Pampas). We have no explanation for the paradoxical behavior of Salta's population. The markets for human capital are known to be imperfect but that of Salta appears to be the most unsatisfactory one. For every 81.3 newly-produced *salteños* which are exported, the province imports 125.1 replacements. It is unlikely that Salta demanded people of newer vintages and exported old ones, but some change in the average quality of the population must have occurred. Comparison of population pyramids for Salta in 1895 and 1914 shows that the increase in population occurred mostly in age brackets of under 30 years of age while those in the 30-39 age group underwent almost no change at all. This suggests that people of all ages may have been moving in and out, but more young people moved in than out. This is consistent with a larger increase in the 10-29 bracket than in the 0-9 age group. Also, the ratio of men to women increased between 1895 and 1914. The number of males in Salta per 100 females were:

	1895	1914
Total	99.3	109.2
Age 20-29	84.6	106.4
Age 30-39	102.0	109.0
Age 40-49	110.8	115.4

Generally, one would not expect this after being told that the marginal rate of emigration is no less than 81.3 per cent. The fact that between 1895 and 1914 emigration from the NW was more serious than anywhere else in the country is of course no proof of the railways' complicity with other factors accounting for migration. To test the hypothesis that the railways had a decisive influence on migration rates, and lacking other relevant information, we computed continuous rates of population growth by counties for every period between two censuses and between the first and last census.[2] If now we imagine the effect of railway construction as one of pulling down the rate of population growth, we do find that in general a county's population growth slows down or turns negative around the date on which the railway first reached it. Graphically:

Figure 1



[2] $P_t = P_o e^{xt}$, where P_t is population at time *t*. Then *x*, the rate of growth, equals $(\ln P_t - \ln P_o)/ t$.

Table 6 shows the long and short-run rates of population growth for each county in the NW. The short-run rates are for the inter-census period during which the railway reached the corresponding county, if it ever did. In case it did not, we took the 1947-60 growth rate, assuming that motor transport has the same--- though belated --- effect that the missing railway would have had. This latter procedure, however; was not applied to Castro Barros and Valle Viejo, since they are very near to railway stations in Arauco and Capital (Catamarca), respectively. The result is summarized in the following table.

	Number of counties considered	Number of counties to which the rule applies
La Rioja	13	9
Catamarca	13	11
Jujuy	12	6
Salta	21	15
	59	41

Since they are such a large proportion of the total, we have to find excuses for some of the eighteen failures. But let us put this matter off for a later occasion. It will suffice here to hint at what may have happened in two of the notable "failures," Ledesma and Anta. Both enjoy some of the heaviest rainfall in the country. Ledesma was successful in switching immediately to such products as sugar and oranges, while in Anta agriculture actually declined and the population increase may be attributed to forestry. Other cases can be disposed of more easily. For example, the railway came to San Blas de los Sauces in 1911. Of course, people did not scramble to take the first train to Buenos Aires so soon and fast as to wipe out in the three years from l911 to 1914 all population growth achieved since 1895. The out migration would have been felt mostly after1914 and indeed, between 1914 and 1947, population grew by only 0.015 per cent. The same can be said of Castro Barros, Caldera, La Viña, El Carmen, and Capital (Jujuy).

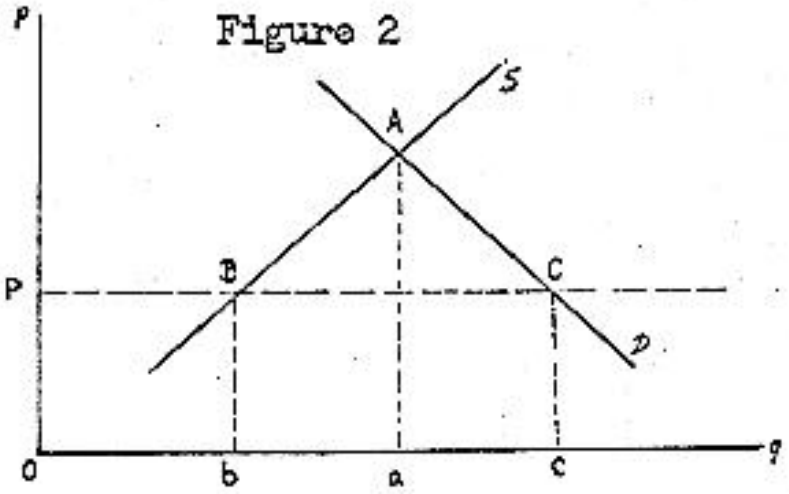
Allowing for such lags, population growth rates are found to be below trend during periods coincident with or immediately following transport improvements in 80 per cent of all cases. In slightly more than 60 per cent of these counties, growth rates actually reached their lowest level ever recorded.

The effect of transport improvements on agricultural production is not so clear. In the first place, we do not have data by counties for 1888 and 1872, when the first agricultural censuses were taken, and hence have to do with a smaller sample size. In the second place, production, particularly areas sown to grains, declines almost everywhere between 1909-1914 and 1947-1960.

The effect of transport may be visualized by analogy to the gold standard and the gold export and import points.[3] With the introduction of the railways, the NW is put under a “Pampa standard.” The price of wheat in the NW cannot fall below the "wheat export point," ---the price of wheat in the Pampas minus the cost of transport---, nor can it rise above the import point, the price of wheat in the Pampas plus the cost of transport, but what actually happened may be much simpler. The export

[3] Of course, the “wheat points” are further apart from each other than the gold points.

point is never reached, since costs in the NW may be assumed to be higher than in the Pampas. In figure 2, *P* is the price in the Pampas plus the freight rate. Initially, the NW is at A. As soon as *P* becomes effective (the railway starts operating), NW farmers can sell only 0*b* at price *P*. Output falls by *ba* and farmers emigrate in proportion. The problem then is to find out why supply didn't shift to *C*.



One of the implications of this simple model is that the provinces hit hardest of all should be those nearest to the fringes of the Pampa, since wheat sowing must be sensitive to the absolute level of freight rates. Between 1872 and 1888, the area sown to wheat in Catamarca fell by 50 per cent while it actually increased further North (Table 11). Between 1895 and 1906, the railway serving Catamarca lowered its rates relative to those charged in the other provinces. *Ceteris paribus*, one would expect production in Catamarca to have fallen relative to the other provinces, and so it did. Between 1906 and 1908, wheat acreage in Catamarca and La Rioja moved opposite to that in Jujuy and Salta.[4] Between 1908 and 1912, the railway reached Andalgalá and Tinogasta and rates charged in Catamarca and La Rioja fell while they rose in Salta and Jujuy. The price of wheat in the Pampas remaining equal, output in the first two provinces fell but rose in the other two. Between 1912 and 1914, prices and rates did not change, but output fell everywhere.

The Great Depression was the only time during which the railways were kind to the NW. Prices in the Pampas were halved, but the railway rates didn't even flinch. The high cost of transport may have worked as a barrier partially sealing the NW off from the depression. Between 1937 and

[4] Between 1906 and 1908, no new railways were built in Catamarca, where output rose most of all. The line to San Juan is carried 110 km. through the deserted south of La Rioja, the province where output increased least of all. In Jujuy the line to La Quiaca is completed with the construction of 203 km. North of Tilcara and through Humahuaca, one of Jujuy's oldest (pre-Colombian) agricultural areas. In Salta the railway reaches Talapampa (55 km.) on the way to Cafayate and Molinos, and also Rosario de Lerma (13 km.), opening up Salta's most precious valleys. Wheat acreage declined in both of the latter provinces.

For more details of agricultural products traded in Catamarca and La Rioja between 1905 and 1909, see Table 12. It shows that there was a tendency to adjust by shifting to wine and fresh fruit. Among the non-agricultural alternatives, forestry was a rather important one. People may have moved down from the valleys to the lowlands to exploit what little woodlands there were. Note also that imports of cattle on the hoof increased.

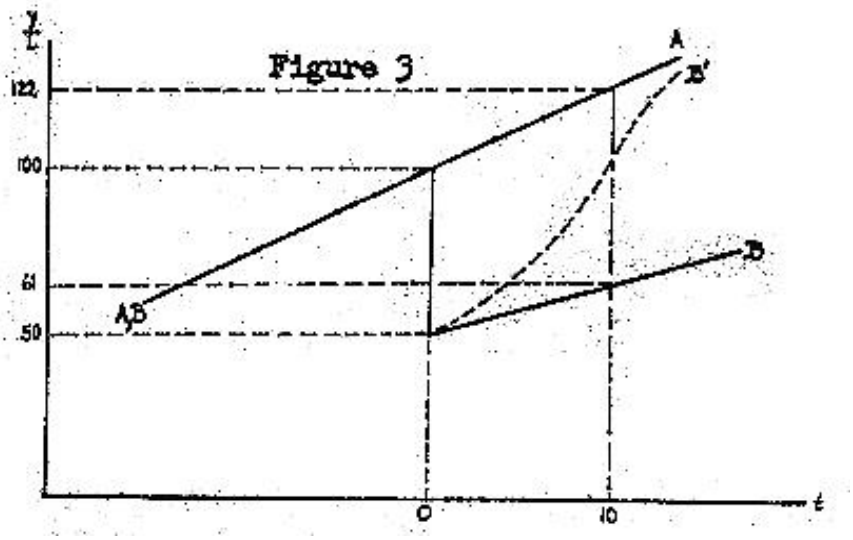
1950 the price of wheat was halved again[5] and from 1944 on, inflation was allowed to erode the railway rates.[6] Accordingly, areas sown to wheat fell everywhere.

The above comments may leave the impression that the Pampas standard works; its simplicity makes the model very attractive indeed, but more precise analyses are called for, which may also teach us more about the agriculture in the NW. In this respect, the biggest stumbling block of all is going to be the measurement of the delivered price of agricultural products in the NW. The freight rates we have so far considered are for given lengths of haul over a single railway company. The computation of actual, total transport costs involves combined freight rates and requires the knowledge of countless freight agreements among several railways.

COMPOUND INTEREST AND ABSOLUTE Vs. RELATIVE RETURNS TO INNOVATION

We offer the above title more or less in jest, but there may be something to it.

We have not exactly shown but at least illustrated how a largely exogenous event--- namely the construction of railways--- pulled the NW down from its trend. Suppose, as drawn in Figure 3, that all regions grow at the same rate until, at some point in time, one of them temporarily plunges down. Furthermore, suppose that from then on they continue to grow at the same rate. Regions A and B grow at 2 per cent per year compounded continuously. At time 0, they reach a level of 100, but B is suddenly kicked down to only 50.



The income differential at $t = 0$ equals 50. The catastrophe which occurred at $t = 0$ has no after effects and both B and A continue to grow at 2 per cent. Ten years later the income differential rose to 61 and the potential incentive for emigration from B is larger---it grows at a rate of 2 per cent.

Why doesn't region B make a special effort and follow the path *B*'? To catch up with A in one generation (30 years), B would have to grow at no less than 4.31 per cent. Can it do so? It will have to try very hard, since during all those years there will be a large incentive to migrate from B to A. In fact, one may think that B will catch up with A not only because it will try to grow faster but

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[5] The price of wheat---deflated by the wholesale price index---fell from 13.63 to 6.18.

[6] Railway rates deflated by the cost of living fell from an index of 1.158 at the end of 1944 to 0.456 at the end of 1949. (See *The Review of the River Plate*, April 21, 1967, page 87.)

also because by sending a large number of *capitas* to A it will tend to depress the rate of growth of *per capita* income in A. But whether it will be successful in thus undermining A's development will depend on the relative sizes (in resources, population, etc.) of A and B. In the real world, B's success is quite unlikely, compared to the Pampas (A), the NW (B) is of a dwindling size.

Is there any incentive to invest in the improvement of B's resources so as to enable them to achieve the path *B'*? It is very likely that there will be none. Suppose that progress proceeds as in the case of hybrid corn: it raises yields by a given percentage. And suppose that one has a dollar with which one can achieve a 10 per cent increase in yields in either A or B. We can then predict that one will invest in A. Yields being higher in A to begin with, a 10 per cent increase means a larger absolute increase, and a larger return on the dollar in A than in B.

The imperfection of capital markets imposes additional problems and may explain the severity of the railways' impact on the NW. Returning to the "Pampas standard" model, a once-and-for-all fall in the price of wheat in the NW reduces the returns to the resources producing wheat. If the markets for all assets were perfect, the owners of those resources would suffer a once-and-for-all capital loss. The prices of all assets fall as much as is necessary to restore all rates of return to their equilibrium level. But--- unfortunately or not--- nobody is allowed to buy up the NW's human capital at its new and lower price and to then continue to use it in the same region at a normal rate of return. Instead, the owners of human capital will not attempt to sell this asset as they would sell their land and machinery, but will attempt to salvage as much of its value as possible by moving it to where it can demand a higher price. We can then expect that those who have more human capital to save will be the most anxious to move. Hence, we should observe more young people moving out than older ones. And among the young migrants we will observe more men than women because, even if their capital values were equal, the returns to the labor of women are paid out more in love and children than in money. This *a priori* selectivity of migration is a second factor depressing per capita income in the NW and it is less likely to have once-and for-all effects than to give rise to permanent income differentials.

SELECTIVITY AND OUTPUT EFFECTS OF MIGRATION

We wish to know at what age people migrate, and to what sex and level of education the migrants belong. Cohorts are a convenient device for analyzing this question, but for Argentina, cohort analysis will not yield great results because the censuses were taken at uneven and widely separated dates. Most of the cohorts living in 1914, for example, were dead in 1947.

Suppose that we have estimates of life expectancy for males and females of 0 years of age, 10 years of age, 20 years of age, etc. We could then estimate for each census year the numbers of males and females in each age group which were living in any given province if there had been no migration since the previous census. The differences between the estimated and actual distributions of population by age and sex will show us at once the net number, age, and sex of the migrants.

Regardless of how interesting the above method may be, its application would have placed too heavy a burden on us and we have to leave it as a suggestion for further research. For our present purposes it suffices to accept *a priori* that more men than women migrate. Next, we may notice that the life expectancies of men and women are almost the same:

Life expectancy at birth, in years

	Men	Women
1875	28.33	31.84
1895	33.99	36.93
1915	47.23	49.02
1945	57.99	60.7

Source: CONADE, "Consecuencias demográficas de los movimientos migratorios internacionales en la República Argentina, 1870-1960." (mimeo. no date), page 8.

One can then interpret changes in the male/female ratio as indices of migration. Specifically, if one observed that the number of men per 100 women falls, one will infer a significant net emigration.

Table 8 shows the male/female ratios for several cohorts. For example, 101.3 of every 200 children under ten years of age living in La Rioja in 1895 were boys, but 19 years later, in 1914, only 66 couples could be arranged for every 100 young ladies. Another 33 years later, in 1947, the ratio of men to women is higher (89.5) but not as high as during the childhood of this cohort of people born around 1890. This rise in the ratio may be due to either (1), some migrants tend to return, or (2), the women follow the men with some lag, or (3), both things happen.

It does seem as though most migrants were around 20-29 years old. Returning now to the paradoxical case of Salta mentioned earlier, we see that the cohort born around 1865 has in large part emigrated while those born around 1890, 1880, and 1870 show a lower ratio of men to women in 1895 and a higher one in 1914. The ratios are:

	1895	1914
cohorts born around 1890	105.6	103.3
cohorts born around 1880	91	122.4
cohorts born around 1870	84.6	114.8

This shows that around 1895 young men were moving out while around 1914 they were moving in. Putting this together with the data on natives living in other provinces mentioned earlier, we see also that the migrants who left in the 1890's did not return.

What attracted the migrants to Salta and Jujuy shortly before 1914? In the case of Jujuy it could have been the development of sugar plantations; but not in Salta. The following table shows the development of sugar plantations in the two provinces:

Year	Area Planted to Sugar (hectares)							
	Salta				Jujuy			
	Total	Campo Santo	Orán	Rosario de la Frontera	Total	El Carmen	Ledesma	San Pedro
1895	991	746	121	26	905	337	427	126
1908	631	479	86	15	3,179	-	87	3,053
1914	795	672	24	56	11,371	946	5,368	5,043
1937	9,363	1,744	7,616	3	14,926	255	8,088	6,582
1947	10,400	n.a.	n.a.	n.a.	19,100	n.a.	n.a.	n.a.
1960	12,700	n.a.	n.a.	n.a.	21,000	n.a.	n.a.	n.a.

The relation between employment and area planted to sugar can be found in the 1895 Census of Industries.

The Sugar Industry in 1894

	Factory working since	Employment				Sugar cane ground	Area planted to sugar
		Permanent		Temporary			
		Skilled	Unskilled	Planting	Harvesting	(tons)	(Has.)
Campo Santo	1882	37	97	120	600	6,890	460
Ledesma	1876	86	120	600	200	15,600	750
San Pedro	1883	85	700	20	2,000	47,200	1,300
		208	917	740	2,800	69,690	2,510

*On factory's own land

Roughly 147 men were needed to harvest 100 hectares in Campo Santo and San Pedro.[7] Hence, in the absence of technical change, Jujuy would have needed, between 1895 and 1914, 15,385 additional men to harvest sugar. In fact, Jujuy's male population ages 10-59 grew by 14,136 between 1895 and 1914. Incidentally, El Carmen, Ledesma, and San Pedro are three of the exceptions to the relation between population growth rates and railway construction discussed earlier.

There are no equally clear explanations for Salta. Of the total absolute increase in population between 1895 and 1914, more than one-half is accounted for by Capital (Salta). The other half seems to have moved mostly into Orán and Anta in the East and Metán, Rosario de la Frontera and Candelaria in the South.

To analyze the effect of migration on output and the welfare of those remaining we borrowed

[7] In arriving at this figure, we ignored the data for Ledesma since it seems as though the Ledesma factory did not harvest all the sugar it planted.

a technique from D. Gale Johnson.[8] We used farm output and labor input at the county level to correlate the percentage change in labor input between 1908 and 1937 with the percentage change in output over the same period.[9] A positive correlation will indicate that the withdrawal of labor reduced output compared to what it would have been in the absence of migration. Indeed, for the 68 counties in La Rioja, Catamarca, Salta, and Jujuy, this correlation coefficient equals 0.479332. Furthermore, if the rate at which labor is withdrawn increases by one percent, then output falls faster by another 0.69060 per cent. That is the elasticity of the change in output with respect to the change in labor input.

It can also be shown that the static elasticity of output with respect to labor is equal to the share of labor.[10] Using the same output and labor input indices to correlate the levels of output with the levels of employment, the shares of labor were found to be approximately 0.228 in 1908, and 0.488 in 1937. Since average output per worker increased over the same period from 634 to 760 pesos at 1937 prices,[11] competitive wages would have increased from 144.6 to 370.9 pesos per man per year. These results should be compared to agricultural wages according to the 1937 Census.

Farm Wages - 1937

	Averages for Common Labor (pesos)	
	monthly	per day
Buenos Aires	50.40	2.48
Catamarca	41.30	1.82
La Rioja	37.60	1.73
Jujuy	64.70	2.25
Salta	46.50	1.98

[8] "Output and Income Effects of Reducing the Farm Labor Force," *Journal of Farm Economics*, XLII, No. 4 (November, 1960), pp. 779-96.

[9] Farm output was computed on the basis of areas sown in 1908 and 1937 and 1937 yields and prices of 21 crops. With respect to livestock we assumed that each animal yields a constant stream of final products and estimated the value of the stream of products per year by, say, market value of sheep traded in 1937 divided by the stock of sheep in 1937. We admit that this is a quite unsatisfactory way of estimating output, but in the absence of production statistics for 1908 and of prices for that and many other years we couldn't have done it better.

Family labor and hired workers---permanent and seasonal---all broken down among children, women, and men, were obtained directly from the censuses. To add them up we borrowed M. Ballesteros' formula: one man-year = 4/3 woman-year = 2 child-years, and his assumption that a seasonal worker works four months, or one-third of a year. See his "Argentine Agriculture, 1908 -1954, a Stud y in Growth and Decline," unpublished dissertation, University of Chicago, 1958. See also Table 17 for a listing of the products included in the output estimates.

[10] D. Gale Johnson, *op. cit.*

[11] When the dollar exchanged for 3.33 pesos in the black market. See Marcelo G. Cañellas, "El peso (m$n) en los mercados de cambio," *Revista de Ciencias Económicas* (Universidad de Buenos Aires), Serie IV, No. 4.

The comparison suggests that the wage-income per capita we computed implies seven to ten months of full employment per year.[12]

To analyze the level of education of the migrants we can distinguish only among literates and illiterates. Even so, the information we have is very sparse. Only the 1937 agricultural census provides data on the literacy of farm workers and operators. Of the population censuses, only that of 1960 gives age distributions of rural and urban population broken down by sex and literacy.

The little we could do, then, is this: for literacy to be at all related to migration, there must be a demand for it. Whether migration will select the more educated people of an area or not depends in part on whether the labor markets in other areas demand education or not. Hence, we have tried out two very simple tests: first, we correlated wages with literacy, and second, we correlated a migration proxy with literacy. The correlations between average (monthly or daily---as the case may be) farm wages (for a given occupation) and literacy (per cent of literate workers in the corresponding occupation) for 2 provinces in 1937 were found to be the following:

Foremen		0.83623
Common labor	monthly	0.7262
	per day	0.80194

The migration proxy used was the agricultural labor force in 1937 over the agricultural labor force in 1908. The literacy variable was the percentage of literate farm operators. One may question the relevance of tho latter variable, since the migrants may be mostly the operators' employees or sons. We realize the importance of this objection. However, some operators must have been migrating too.

	Number of Farms	
	1914	1937
Catamarca	9,615	7,963
Jujuy	6,764	6,688
La Rioja	7,860	4,499
Salta	10,207	10,371
	34,347	29,521

On the other hand, the operator's literacy can serve as a proxy at least for the literacy of his sons if not even for the literacy of the area.

The results were---at least to us---unexpected. The correlation between literacy and change in the labor force for the 68 NW counties is 0.070839. As a relatively interesting by-product we obtained a somewhat significant and positive correlation R = 0.254766 between literacy in 1937 and the change in output between 1908 and 1937. We then tried another proxy for migration, namely the number of years that the farm operators interviewed in 1937 had been living (a) in the same area, and

[12] These wages are well below what could be obtained in other sectors, e.g., the State Railways' workshops---a relevant alternative--- paid 2.43 and 4.30 pesos per day for unskilled labor in 1913 and 1935, respectively.

(*b*) on the same farm.[13] The first of them is barely significant and negative.

Finally, we asked the population pyramids whether the migrants tended to be predominantly literate or illiterate. If the pyramid for rural literates showed larger indentations than that for rural population as a whole, we could infer that the migrants were predominantly literate. Again, there was no clear indication of selectivity. In other words, even if throughout tho country literate workers were preferred to illiterates, there would be no reason why only one or the other class of people should be migrating.

We had a little more luck with the country as a whole. For the 24 provinces, the correlations between length of residence in the same area (province) or on the same farm and literacy are -0.42883 and -0.51248, respectively.

There are good reasons why migration is not very selective with respect to literacy, even if literates are paid differently from literates. Both are paid according to their respective and presumably different marginal physical products but also according to the market price of the commodity in whose production they are engaged. Now this price is the same whether one employs literates or illiterates. And if the reason for emigration from the NW is---as under our Pampas standard---a fall in the price of the final product, this affects all classes of labor equally.

However, if, as suggested above, the migration's selectivity depends on the particular circumstances which triggered it, it may be worthwhile to look at each province separately: The following are the few significant results we obtained:

Literacy of farm operators in:	Sample Size (N)	Percentage change in labor force	Years in area	Years on same farm
		Correlation coefficients		
La Rioja	18	0.48407	---	0.60709
Catamarca	15	---	---	---
Salta	1	-0.61556	---	---
Jujuy	14	---	---	-0.64694
NW	68	---	-0.20772	---

On the whole, the longer people stay in the same area, the less literate they are. Hence, on the whole, the literates move out. In La Rioja, the more people move out (labor force falls), the less literate are those remaining---it seems as though literates moved out. Correspondingly, the longer they stay on the same farm, the more literates are remaining. In Jujuy and Salta, however, we observe the opposite. Illiterates move out and literates move in. Why? Probably because between 1908 and 1937 new crops were introduced into Salta and Jujuy (e.g, sugar) and literates are better equipped for such an innovation job. The particular reasons why only Jujuy and Salta, but not the other two provinces were successful in switching to new crops are, however, another story.

[13] These are in fact different proxies. The correlations between change in labor employed on farms and the operators' length of residence in the same area or on the same farm are negative but not significant.

Finally, one may want to ask where all the migrants went. Table 16 shows the destinations of those who migrated before 1960. It shows also that more men than women migrate and that most of them do not go very far. But still we don't know where the migrants went which actually moved around 1960 or at any other specific date. In this respect, it is convenient to distinguish three periods: 1869-1940, 1940-1947, and 1947-1960.

Most of the migration in the first period will have been towards the Pampas and only in the later years to such places as the Chaco, Misiones, and Río Negro. The pull of the Pampas is illustrated in a negative way by our inability to estimate shares of labor for the country as a whole comparable to those obtained for the NW. We did obtain quite satisfactory correlations of agricultural output with labor-input for both 1908 and 1937 (the respective correlation coefficients are 0.85882 and 0.95721); but the shares of labor turned out to be significantly larger than unity. For 1908 this is the result one might expect, in part from the problems which may be raised by our output and labor-input estimates, labor-shares in excess of unity imply serious disequilibria and manpower scarcity. In fact, this scarcity was such that prior to 1914 there were substantial seasonal migrations of farm workers from Spain and Southern Italy to Argentina and back. That the share of labor should have been larger than one even in 1937 is more disquieting. But around that date the area sown to crops in the Pampas increased absolutely and relative to pastures, crops being more labor-intensive than cattle-raising.[14]

The war and immediate post-war years (1940-1947) witnessed what is perhaps the beginning of Argentina's industrialization but also a strong substitution for imported agricultural products, e.g. cotton, vegetable oils and some fresh fruit. It is true that this substitution was initiated during the Great Depression, but it was completed at a faster rate during the war. 1947-60 contains the Perón era, with its sequel of deliberate industrialization, unionization, and increasing welfare of the urban population (1946-50). The differences between the two latter periods are hinted at by the differences between tables 9 and 10. If errors in the estimates of population (that is, in the estimates following reports of births and deaths) are randomly distributed---which they are not---then the differences between actual and estimated populations indicate the direction of net migratory movement. Thus, the last columns of these tables show that, while in 1943- 47[15] migrants moved in several directions (e.g. to Buenos Aires, but also into the Chaco), during 1947-60, they all swarmed into the suburbs of the Federal Capital, the city itself being already filled to capacity. Notice also that during 1947-60 the province of Córdoba suffered a large net emigration, which suggests that probably most of the more recent migrations took place in the earlier years of the Perón era.

[14] We are in debt with Lucio Reca for a discussion of this point.

[15] The 1943 figures are based on a census of school children, their parents and guardians, not a regular population census.

TABLES

TABLE 1
TOTAL POPULATION, PEOPLE LIVING ON FARMS, AREA SOWN, AND RAILWAY MILEAGE
1888 to 1960 CENSUS YEARS

	1888	1895	1908	1914	1937	1947	1960
POPULATION[1] ('000)							
Five Pampas Provinces	-	1988.0	-	4229.0	-	8430.0	11312.0
Catamarca	-	90.2	-	100.8	-	147.2	172.4
Jujuy	-	49.7	-	77.5	-	166.7	239.8
La Rioja	-	69.5	-	79.8	-	110.7	128.3
Salta	-	118.0	-	142.2	-	290.8	412.6
		327.4	-	400.3	-	715.4	953.1
Chaco	-	10.4	-	46.3	-	430.6	535.4
Formosa	-	4.8	-	19.3	-	113.8	178.5
		15.2	-	65.6	-	544.4	713.9
FARM POPULATION[2] ('000)							
Five Pampas Provinces	-	-	-	1150.6	1554.0	-	1250.3
Catamarca	-	-	-	51.3	40.3	-	33.7
Jujuy	-	-	-	32.3	32.5	-	50.6
La Rioja	-	-	-	43.9	20.2	-	25.4
Salta	-	-	-	54.5	52.5	-	71.7
				182.0	145.5		181.4
Chaco	-	-	-	10.2	99.9	-	185.0
Formosa	-	-	-	6.6	29.8	-	61.3
				16.8	129.7	-	246.3
AREA SOWN ('000 Hectares)							
Five Pampas Provinces	1929	4181.0	14672	22159.0	25971.0	20809.0	24555
Catamarca	44.6	30.6	84.9	76.4	30.9	53.0	28.4
Jujuy	19	13.9	52.6	75.5	39.8	89.8	90.6
La Rioja	22.2	29.0	83.0	96.3	21.8	16.0	26.4
Salta	41.3	81.9	109.6	147.5	119.5	398.3	207.7
	127.1	155.4	330.1	395.7	212.0	557.1	353.1
Chaco	3.8	8.6	17.8	21.0	423.8	649.2	578.4
Formosa	0.7	3.3	18.5	22.6	30.9	166.7	84.2
	4.5	11.9	36.3	43.6	454.7	815.9	662.6
RAILWAY MILEAGE[3] (Km.)							
Five Pampas Provinces	5598	10421	17283	24650	27712	27955	27967
Catamarca	296	362	364	633	561	583	583
Jujuy	-	50	424	530	530	506	506
La Rioja	-	152	514	655	864	851	851
Salta	135	258	367	375	1255	1798	1798
	431	822	1669	2193	3210	3738	3738
Chaco	-	-	157	539	943	1221	1221
Formosa	-	-	-	183	512	509	509
	0	0	157	722	1455	1730	1730

[1]. Comprising Buenos Aires, Córdoba, Entre Ríos, La Pampa and Santa Fe.

[2]. Operators and relatives living on farms, excluding hired laborers and their families. However, it is not clear whether the 1960 fiures do or do not exclude the latter.

[3]. Declines are due only to changes in provincial boundaries

TABLE 2

PROVINCE OF CATAMARCA

TOTAL POPULATION BY COUNTIES: 1869, 1895, 1914, 1947 and 1960

Area of the counties; year in which the railway first arrived, and index to map

COUNTY	Index to map	Area (Km^2)	Arrival of Ry. (year)	TOTAL POPULATION 1869	1895	1914	1947	1960
Ancasti	15	2,412	1886	5508d	5,239	4,154	3,904	3,415
La Paz	16	5,474	1875	a	7,032	10,536	12,796	13,949
		7,886	*3761*	*5,508*	*12,271*	*14,690*	*16,700*	*17,364*
Andalgalá	5	4,497	1910	7,035	6,273	6,604	10,578	10,172
Antofagasta de la Sierra[1]	1	28,097	--	--	--	378	677	840
Belén	3	12,945	--	7,845	8,836	8,946	14,159	15,387
Capayán[3]	14	3,837	1889	10,224	5,660	5,990	7,923	8,264
Capital	10	684	1889	5,718	9,727	14,973	32,536	49,066
El Alto	13	2,327	--	9,449	5,747	5,237	4,727	4,067
Santa Rosa	9	1,424	--	b	5,242	4,432	6,028	5,688
				9,449	*10,989*	*9,669*	*10,755*	*9,755*
Fray M. Esquiú[2]	11	280	1915	8916f	3,172	3,617	4,360	6,859
Ambato	7	1,797	--	c	3,114	2,676	3,665	3,538
Paclín	8	985	1925	c	3,306	2,922	4,526	3,913
				8,916	*9,592*	*9,215*	*12,551*	*14,310*
Pomán	6	5,197	1910	3,695	3,552	3,934	5,821	6,387
Santa María	4	5,740	--	5,390	6,532	7,568	12,334	11,047
Tinogasta	2	23,582	1911	10,324	12,233	13,735	16,779	17,457
Valle Viejo	12	540	--	5,858	4,496	5,067	6,400	8,182
TOTAL		99,818		79,962	90,161	100,769	147,213	168,231

1. In 1914 and 1937 Antofagasta de la Sierra belonged to the Territory of Los Andes.

2. Also known as Piedra Blanca

3. The 1869 population is the sum of San Pedro (5,250) and Villa Prima or Huillapima (4,974 inhabitants).

a. Included in Ancasti. b. Included in El Alto. c. Included in Esquiú. d. Included in La Paz.

e. Including Santa Rosa. f. Including Ambato and Paclín.

TABLE 3

PROVINCE OF JUJUY

TOTAL POPULATION BY COUNTIES: 1869, 1895, 1914, 1947 and 1960

Area of the counties; year in which the railway first arrived, and index to map

COUNTY	Index to map	Area (Km^2)	Arrival of Ry. (year)	TOTAL POPULATION				
				1869	1895	1914	1947	1960
Capital	10	2384	1891	7629	10,165	14,117	41,955	72,062
Cochinoca	4	7837	1907	3845	3,741	4,257	6,913	6,412
El Carmen[1]	13	912	1886	3170	5,406	7,582	12,632	20,005
Humahuaca	6	3792	1906	3,590	4,298	4,262	11,471	12,014
Ledesma	11	3249	1906-9	5,248	4,786	12,372	25,724	47,614
Rinconada	3	6407		2,395	1,681	1,616	4,916	2,832
San Antonio[2]	12	690	1891	976	1,049	1,505	2,245	2,364
San Pedro	14	2150	1891	2,228[a]	5,639[b]	15,218	23,579	41,129
Santa Bárbara[3]	15	4448	1909	[c]	812[d]	1,570	6,736	9,541
				2228	*6,451*	*16,788*	*30,315*	*50,670*
Santa Catalina	1	2960		2640	2,454	2,510	3,298	2,976
Susques[4]	5	9199	1943			880	1,450	1,738
Tilcara	8	1845	1905	2157	2,742	2,886	6,053	5,834
Tumbaya	7	3442	1905	1643	2,030	2,799	4,479	3,442
Valle Grande[5]	9	962		1403	1,631	1,721	2,130	1,600
Yaví	2	2942	1908	3455	3,279	4,216	13,119	10,810
TOTAL		53219		40379	49,713	77,511	166,700	241,462

[1]. Also known as Perico del Carmen

[2]. Also known as Perico de San Antonio

[3]. Also known as Gobernador Ovejero

[4]. In 1914 and 1937 Susques belonged to the Territory of Los Andes.

[5]. Also known as Gobernador Tello

[a]. Including Santa Bárbara. [b]. Excluding the districts of Santa Bárbara and Santa Clara. [c]. Included in San Pedro.

[d]. Corresponds to the districts of Santa Bárbara and Santa Clara in San Pedro county.

TABLE 4

PROVINCE OF LA RIOJA

TOTAL POPULATION BY COUNTIES: 1869, 1895, 1914, 1947 and 1960

Area of the counties; year in which the railway first arrived, and index to map

COUNTY	Index to map	Area (Km2)	Arrival of Ry. (year)	TOTAL POPULATION 1869	1895	1914	1947	1960
Arauco	6	1654	1911	4,184[a]	3,012	3,437	4,939	6,514
Castro Barros	5	1420		[b]	4,067	4,080	3,504	3,084
				4,184	*7,079*	*7,517*	*8,443*	*9,598*
Capital	10	14,245	1891	5,632[c]	8,325	12,536	27,659	39,597
Sanagasta	9	1,711		[d]	1,043	1,410	1,537	1,500
				5,632	*9,368*	*13,946*	*29,196*	*41,097*
Chilecito[1]	8	4,846	1898	5,787	7,967	9,315	14,008	18,143
Famatina	3	4587		4,881	5,093	5,444	6,071	5,665
Belgrano	15	2,556	1891	7,283[e]	4,568	3,685	5,784	5,137
Ocampo	16	2,135	1906	[f]	4,000	4,377	6,547	6,393
				7,283	*8,568*	*8,062*	*12,331*	*11,530*
Gobernador Gordillo	13	6,474	1891	881[g]	3,299[h]	4,107[i]	6,438	6,852
Lamadrid[2]	2	7,636		3,308[k]	1,470	1,697	1,217	1,336
Sarmiento	1	10,334			3,071	3,519	2,724	2,358
				3,308	*4,541*	*5,216*	*3,941*	*3,694*
Lavalle[3]	7	9184		2,669[m]	4,669	5,251	6,751	7,533
Independencia	11	7120	1891	[n]	1,238	1,463	1,619	1,909
				2,669	*5,907*	*6,714*	*8,370*	*9,442*
Rivadiavia4	14	2585		6,196[p]	4,305	4,218	3,724	3,517
Roca	17	6114	1910	[q]	5,049	5,588	7,982	8,147
Vélez Sarsfield	12	3106	1891	[q]	2,458	2,075	2,415	2,423
				6,196	*11,812*	*11,881*	*14,121*	*14,087*
San Martín	18	5034	1935	3,919	2,624	3,697	3,950	4,715
San Blas de los Sauces[5]	4	1590	1911	4,006	3,244	3,855	3,877	3,407
TOTAL		92331		48,746	69,502	79,754	110,746	128,220

[1]. In 1869 it is part of Famatina under the name of Villa Argentina

[2]. Also known as Vinchina

[3]. Also known as Guandacol

[4]. Also known as Costa Alta

[5]. Also known as Pelagio B. Luna

[a]. Includes Castro Barros. [b]. Included in Arauco. [c]. Includes Sanagasta. [d]. Included in Capital.

[e]. Includes Ocampo. [f]. Included in Belgrano. [g]. Or Independencia. [h]. Or Chamical. [i]. Or Juárez Celman.

[k]. Includes Sarmiento. [k]. Includes Sarmiento. [l]. Included in Lamadrid. [m]. Includes Independencia.

[n]. Included in Lavalle. [p]. Includes Roca and Vélez Sarsfield. [q]. Included in Rivadavia.

TABLE 5

PROVINCE OF SALTA

TOTAL POPULATION BY COUNTIES: 1869, 1895, 1914, 1947 and 1960

Area of the counties; year in which the railway first arrived, and index to map

COUNTY	Index to map	Area (Km2)	Arrival of Ry. (year)	TOTAL POPULATION				
				1869	1895	1914	1947	1960
Anta	11	21,742	1924-27	4,228	6,738	6,946	20,526	22,789
Cachí	12	2,925		2,694	5,079	4,852	5,608	4,746
Cafayate	21	1,570		3,711	5,474	4,790	4,678	4,892
Caldera	9	867	1891	1,627	2,086	2,180	2,831	3,096
Campo Santo[1]	10	2,365	1886	3,233	5,075	7,066	13,404	19,922
Candelaria	22	1,525	1885	1,809	1,738	2,625	2,611	3,326
Capital	15	1,722	1891	16,877	20,361	33,636	76,552	123,172
Cerrillos	14	640	1898	4,270	4,744	4,919	6,060	9,291
Chicoana	13	910	1898	3,304	5,353	5,953	9,242	10,131
Guachipas	19	2,785	1919	2,961	3,243	3,416	2,954	2,990
Iruya	2	3,515		2,668	3,240	3,231	4,541	3,489
La Poma[2]	7	4,447		3,325	2,937	1,265	1,844	1,557
La Viña	18	2,152	1907	2,627	3,442	4,901	4,127	4,676
Metán[3]	20	4,865	1886	4,146	6,401	8,133	18,472	24,134
Molinos	16	3,600		5,409	4,523	5,348	4,696	4,499
Orán	3	11,892	1911	4,592[a]	6,022[a]	10,403[a]	60,381[a]	60,163
San Martín	4	16,257	1924	[b]	[b]	[b]	[b]	50,929
				4,592	*6,022*	*10,403*	*60,381*	*111,092*
Rivadavia	5	25,951	1931	1,622	9,184	5,755	9,347	11,754
Rosario de la Frontera	23	5,262	1885	5,014	6,254	8,035	14,160	16,026
Rosario de Lerma	8	5,110	1907	5,973	7,238	7,666	12,066	14,752
San Antonio de los Cobres[4]	6	25,636	1931			1,229	4,315	4,267
San Carlos	17	5,125		5,565	5,130	5,585	5,721	5,953
Santa Victoria	1	3,912		3,278	3,753	4,222	6,690	6,300
TOTAL		154,775		88,933	118,015	142,156	290,826	412,854

[1]. Also called General Güemes

[2]. Also known as Payogasta

[3]. Also known as San José de Metán

[4]. In 1914 and 1937 San Antonio de los Cobres was divided into San Antonio de los Cobres and Pastos Grandes and belonged to the Territory of Los Andes. San Antonio de los Cobres was also known as Los Andes.

[a]. Includes San Martín. [b]. Included in Orán

TABLE 6
CONTINUOUS RATES OF POPULATION GROWTH
(per cent per year)

	LONG-RUN between first[1] and last census	SHORT-RUN around date when railway first arrived
CATAMARCA		
Ancasti	-0.650	--
La Paz	1.050	--
Andalgalá	0.408	0.270
Belén	0.741	0.623
Capayán	-0.231	-2.265
Capital	2.362	2.043
El Alto	-0.531	-1.156
Santa Rosa	0.121	-0.473
Piedra Blanca	1.187	0.563
Ambato	0.199	-0.256
* Paclín	0.254	1.330
Pomán	0.600	0.530
Santa María	0.783	-0.859
* Tinogasta	0.576	0.610
Valle Viejo[2]	0.366	-1.015
LA RIOJA		
Arauco	1.186	0.703
* Castro Barros	-0.428	0.013
Capital	2.400	--
Sanagasta	0.563	-0.202
Chilecito	1.252	0.823
Famatina	0.162	-0.538
Belgrano	0.180	
Ocampo	0.720	0.477
* Gdor. Gordillo	1.123	--
* Lamadrid	-0.142	0.721
Sarmiento	0.404	-1.091
* Lavalle	0.734	0.841
Independencia	0.664	--
Rivadavia	-0.307	-0.382
Roca	0.736	0.534
* Vélez Sarsfield	-0.025	--
San Martín	0.905	0.198
*San Blas d.l. Sauces	0.078	0.921

	LONG-RUN between first[1] and last census	SHORT-RUN around date when railway first arrived
JUJUY		
* Capital	2.468	3.808
* Cochinoca	0.563	0.685
* El Carmen	2.024	2.055
Humahuaca	1.325	-0.048
* Ledesma	2.422	5.005
Rinconada	0.181	-4.253
San Antonio	0.970	0.281
* San Pedro	--	5.217
* Santa Bárbara	--	3.470
Santa Catalina	0.133	0.784
Tilcara	1.091	0.279
* Tumbaya	0.814	1.692
Valle Grande	0.146	-2.200
* Yaví	1.250	1.326
SALTA		
* Anta	1.851	3.277
Cachí	0.624	-1.280
* Cafayate	0.303	0.337
* Caldera	0.673	0.956
Campo Santo	1.997	1.983
Candelaria	0.670	-0.151
Cerrillos	0.854	0.196
Capital	2.181	0.723
* Chicoana	1.229	5.822
Iruya	0.294	-2.023
Guachipas	-0.098	-0.447
La Poma	-0.830	-2.039
* La Viña	0.633	1.861
Metán	1.932	1.666
Molinos	-0.204	-0.334
Orán	3.500	2.876
Rivadavia	2.181	1.468
Rosario de la Frontera	1.275	0.850
Rosario de Lerma	0.997	0.303
* San Carlos	0.074	0.303
Santa Victoria	0.717	-0.462

[1]. Either 1869 or 1895, whichever was available.

[2]. Although lacking a railway, Valle Viejo is within walking distance of the Capital and the city of Catamarca.

*. Starred counties are exceptions to the assumption of coincidence between decline of population growth and the introduction of the railway (or motor transport).

TABLE 7

INTERNAL MIGRATION OF THE NATIVE POPULATION, 1895 AND 1914 CENSUS RESULTS

	Census Year	Natives of the Province residing in			Residents of the province who are natives of		
		Their home province	Other provinces	Total	The same province	Other provinces	Total
ARGENTINA	1895	2,496,381	454,003	2,950,384	2,496,381	454,003	2,950,384
	1914	4,727,954	799,331	5,527,285	4,727,954	799,331	5,527,285
Catamarca	1895	84,341	24,350	108,691	84,341	4,755	89,096
	1914	91,536	38893	130,429	91,536	6,574	98,110
Jujuy	1895	29,776	1,923	31,699	29,776	15,313	45089
	1914	43,821	5,141	48,962	43,821	15,733	59,554
La Rioja	1895	64,553	12,125	76,678	64,553	4,113	68,666
	1914	73,268	24,383	97,651	73,268	4,881	78,149
Salta	1895	100,658	11,369	112,027	100,658	12,819	113,477
	1914	114,972	21,468	136,440	114,972	14,125	129,097
Five Pampas Provinces[1]	1895	1,281,394	231,198	1,512,592	1,281,394	151,368	1,432,762
	1914	2,538,180	344,265	2,882,445	2,538,180	410,073	2,948,253
Federal Capital	1895	150,376	3,875	154,251	150,376	167,985	318,361
	1914	638,550	121,036	759,586	638,550	159,419	797,969

1. Comprising Buenos Aires, Córdoba, Entre Ríos, La Pampa and Santa Fe.

TABLE 8

MALES PER 100 FEMALES IN POPULATION COHORTS

		CATAMARCA					LA RIOJA				
Cohort	Year	1869	1895	1914	1947	1960	1869	1895	1914	1947	1960
0 to 9	1869	102.0	71.9	82.5	-	-	105.5	74.5	86.9	-	-
	1895	-	104.0	71.7	94.4	80.6	-	101.3	66.0	89.5	83.2
	1914	-	-	101.0	91.2	93.7	-	-	99.9	95.0	102.8
	1947	-	-	-	100	97.8	-	-	-	100.3	102.2
10 to 19	1869	102.2	77.8	86.9	-	-	91.0	82.9	63.3	-	-
	1895	-	93.2	73.6	80.5	-	-	94.8	64.4	78.5	-
	1914	-	-	94.4	88.0	93.5	-	-	91.3	92.1	93.2
	1947	-	-	-	93.5	85.0	-	-	-	105.0	96.4
20 to 29	1869	80.9	82.9	94.4	-	-	69.3	88.3	87.5	-	-
	1895	-	67.9	77.6	-	-	-	70.3	80.0	-	-
	1914	-	-	68.4	91.6	78.8	-	-	62.3	88.7	79.1
	1947	-	-	-	88.4	87.7	-	-	-	96.5	97.5
30 to 39	1869	86.0	78.8	-	-	-	74.7	88.3	-	-	-
	1895	-	75.3	91.1	-	-	-	78.3	89.4	-	-
	1914	-	-	74.5	79.0	-	-	-	64.7	98.6	-
	1947	-	-	-	92.8	94.6	-	-	-	96.1	102.2

		SALTA					JUJUY				
Cohort	Year	1869	1895	1914	1947	1960	1869	1895	1914	1947	1960
0 to 9	1869	109.2	94.5	74.3	-	-	97.0	84.3	126.8	-	
	1895	-	103.3	105.6	127.0	98.4	-	104.8	132.4	137.4	102.6
	1914	-	-	110.9	118.9	154.1	-	-	103.4	127.7	116.8
	1947	-	-	-	102.9	102.1	-	-		102.2	105.3
10 to 19	1869	99.5	106.2	109.7	-	-	97.8	105.0	117.5	-	-
	1895	-	91.0	122.4	101.0	-	-	108.2	136.5	111.3	-
	1914	-	-	107.2	129.6	103.1	-	-	124.1	135.8	114.8
	1947	-	-	-	114.0	105.4	-	-	-	106.4	112.3
20 to 29	1869	94.1	107.3	104.0	-	-	95.3	121.3	94.6	-	-
	1895	-	84.6	114.8	-	-	-	109.4	128.4	-	-
	1914	-	-	106.4	125.4	109.7	-	-	133.8	132.4	100.3
	1947	-	-	-	109.7	110.7	-	-	-	123.9	115.0
30 to 39	1869	110.1	117.8	-	-	-	107.3	104.0	-	-	-
	1895	-	102.0	114.8	-	-	-	128.8	132.4	-	-
	1914	-	-	109.1	101.9	-	-	-	134.9	108.8	-
	1947	-	-	-	115.6	118.1	-	-	-	129.7	116.3

TABLE 9
CHANGES IN POPULATION, 1947-1960.

	1947	1956[a]			1960		
	Census	Estimated[1]	Census	Error	Estimated[2]	Census	Error[3]
Federal Capital	2,982,580				3,875.7	2,966,816	(908.9)
Buenos Aires suburbs	1,739,625				n.a.	3,795,813	n.a.
Greater Buenos Aires	4,722,205				n.a.	6,762,629	n.a.
Buenos Aires Province	4,272,337				5,457.7	6,734,548	1,276.8
do. excluding suburbs	2,532,712				n.a.	2,938,735	n.a.
Córdoba	1,497,987	1,846,035	1,596,134	(249,901)	1,975.7	1,759,997	215.7
Entre Ríos	787,362				990.9	803,505	86.4
Santa Fe	1,702,975				2,106.2	1,865,537	240.7
La Pampa	169,480				194.2	1,584,889	35.7
5 Pampas provinces[4]	8,430,141				10,724.7	11,312,076	597.4
do. excluding suburbs	6,690,516				n.a.	7,516,263	n.a.
Chaco	430,555				705.6	535,443	(170.2)
Formosa	113,790				212.3	178,458	(33.8)
Catamarca	147,213				184.6	172,407	(12.2)
Jujuy	166,700				263.3	239,783	(23.5)
La Rioja	110,746				130.4	128,270	(2.1)
Salta	290,826				433.5	412,652	(20.8)
ARGENTINA	15,893,827				20,959.1	20,008,945	(950.2)

[a]. Provincial Census, June 30, 1956
[1]. Estimates based on birth and death rates, for June, 1956
[2]. Estimates based on birth and death rates, for July 18, 1960, in thousands of persons
[3]. Thousands of persons
[4]. Buenos Aires, Córdoba, Entre Ríos, La Pampa and Santa Fe.

TABLE 10

CHANGES IN POPULATION, 1914-1947.

	Census figures				Estimated[1]	Census	Error
	1904[a]	1914	1936	1943		1947	
Federal Capital	945,094	1,576,597	2,415,142	2,433,397	2,550,208	2,982,580	432,372
Buenos Aires suburbs		2,064,813		n.a.	n.a.	1,739,625	n.a.
Greater Buenos Aires		488,216		n.a.	n.a.	4,722,205	n.a.
Buenos Aires Province		2,066,165		3,598,732	3,774,136	4,272,337	498,201
do. excluding suburbs		1,577,949		n.a.	n.a.	2,532,712	n.a.
Córdoba		735,472		1,337,132	1,440,503	1,497,987	57,484
Entre Ríos		425,373		780,595	852,879	787,362	(65,517)
Santa Fe		899,640		1,593,761	1,683,941	1,702,975	19,034
La Pampa		101,338		n.a.	n.a.	169,480	n.a.
5 Pampas excl. suburbs[2]		3,739,772		n.a.	n.a.	6,690,516	n.a.
4 Pampas[3]				7310240	7,751,459	8,260,661	509,202
Chaco		46,274		n.a.	n.a.	430,555	n.a.
Formosa		19,281		n.a.	n.a.	113,790	n.a.
Catamarca		100,769		158,408	173,922	147,213	(26,709)
Jujuy		77,511		121,782	134,684	166,700	32,016
La Rioja		79,754		114,855	124,275	110,746	(13,529)
Salta		142,156		227,949	253,977	290,826	36,849
ARGENTINA		7,885,237		14,141,041	14,689,408	15,893,827	1,204,419

[a]. Municipal Census

[1]. Estimates based on birth and death rates, for May, 1947, the month in which the census was taken.

[2]. Buenos Aires excluding suburbs, Córdoba, Entre Ríos, La Pampa and Santa Fe.

[3]. Buenos Aires including suburbs of the Federal Capital, Córdoba, Entre Ríos and Santa Fe.

TABLE 11

AREAS SOWN TO WHEAT, WHEAT PRICES, AND RAILWAY RATES FOR WHEAT

Year	AREA SOWN				PRICE OF WHEAT[1]	RAILWAY RATES[2]		
	La Rioja	Catamarca	Salta	Jujuy		La Rioja	Catamarca	Salta and Jujuy
1872	n.a.	2,766	2,252	1,594				
1888	6,030	1,334	6,848	4,094				
1892	n.a.	n.a.	n.a.	n.a.	9.65	5.02	12.61	5.62
1895	4,058	5,552	13,760	2,191	7.68	5.00	12.50	5.62
1906	4,000	4,200	14,700	3,100	6.65	8.48	8.48	5.72[c]
1908	5,838	10,754	2,455	2,865	8.43	8.48	8.48	5.72[c]
1912	4,000	4,000	2,700	3,000	8.46	6.25	6.25	8.44[a]
1914	2,137	3,014	1,555	876	8.50	6.25	6.25	8.44[a]
1930	1,100	8,500	2,800	2,000	10.70	9.68	9.68	10.54
1937	2,850	6,230	4,600	1,020	7.20	9.68	9.68	10.54
1947	1,069	2,284	1,849	334	17.00	n.a.	n.a.	n.a.
1950	700	1,300	800	n.a.	23.50	18.18	18.18	18.18
1960	831	1,631	3,137	456	300.00	362.00	362.00	362.00

1. Pesos per 100 kilograms.

2. Pesos per ton for a distance of 250 Km. Since 1948 rates are uniform throughout the country. For 1892 and 1895 they are rates charged by the Deán Funes a Chilecito Ry. in La Rioja, by the Chumbicha to Catamarca in Catamarca Ry., and by the Central Norte Argentino Ry. in Salta and Jujuy. 1906-14, rates charged by the Argentino del Norte Ry. in La Rioja and Catamarca, and by the Central Norte Argentino, Sección Norte, in Salta and Jujuy. 1930 and 1937: rates charged by the Central Norte Argentino, Sección Norte and Sección Sud.

a. But 15.00 pesos on the branch to Talapampa (to Cerrillos, La Viña, Chicoana, Guachipas and beyond).

b. Prices paid by the Government.

c. Pesos 12.50 on the Talapampa branch.

* Areas sown in starred years were estimated by the Department of Agriculture; for other years we use census figures.

TABLE 12

RAILWAY GOODS TRAFFIC IN THE PROVINCES OF CATAMARCA AND LA RIOJA

Year	Horses (heads)	Cattle (heads)	Hides, skins and bones (tons)	Wheat (tons)	Maize (tons)	Flour (tons)	Wine (tons)	Fresh Fruit (tons)	Firewood (tons)	Charcoal (tons)
Traded among stations in Catamarca and La Rioja										
1902	1,155	2,014	133	53	895	306	505	a	3,098	593
1903	29	2,636	a	20	a	334	623	23	2,148	390
1904	885	2,782	743	32	807	394	854	a	4,200	197
1905	138	3,590	40	33	612	438	1,045	a	4,805	277
1906	39	3,515	69	81	397	145	1,330	a	4,976	
1907	715	5,547	808	84	447	526	1,127	a	5,974	67
1908	420	7,428	47	146	590	678	808	a	8,944	
1909	1,817	6,719	227	82	391	598	1,048	a	1,178	316
Exported through Chumbicha and Deán Funes										
1902	950	185	653		710		208	3,097	6,909	50
1903	540	430	a	64	a		363	2,996	7,637	811
1904	320	620	751	159	1,352		462	4,108	14,375	1,796
1905	290	330	841	69	671	10	695	3,641	17,358	2,826
1906	750	1,100	813	90	259	564	657	4,235	29,751	4,182
1907	1,160	180	29	112	444		594	3,165	29,231	6,215
1908	690	850	939	112	297		1,636	4,860	22,630	7,151
1909	90	720	1,267	68	146		2,938	6,624	40,975	7,472
Imported through Chumbicha and Deán Funes										
1902		540	29		740	2,117	81	172		
1903	18	235		27	1,645	2,133	91	9		
1904	6	291		29	217	2,486	111			
1905	1	246		6	391	3,310	26	95	1,024	65
1906	110	1,262	10	1	1,863	5,559	88	8	866	29
1907	506	1,723		52	1,498	5,167	205	1	781	
1908	233	4,568	1	71	2,221	5,066	371	24	1,847	3
1909	2,033	3,827	29	1	1,787	4,673	352	41	8,875	1

a. Could not be obtained because of conflicting commodity classifications.

Source: Ministerio de Obtas Públicas, Dirección General de Ferrocarriles, *Estadística de los Ferrocarriles en Explotación*, 1902 to 1909.

TABLE 13
FLOUR MILLING

	Year	Number of mills		Wheat milled	Flour produced
		Registered	Working	(tons)	(tons)
ARGENTINA	1895	603	n.a.	600,935	383,147
	1908	341	276	1,005,893	695,627
	1911	322	223	1,217,030	840,118
	1937	260	186	1,954,007	1,419,568
LA RIOJA	1895	27	n.a.	1,497	757
	1908	11	9	4,377	2,518
	1911	8	5	453	287
	1937	3	1	3	2
CATAMARCA	1895	40	n.a.	2,340	1,821
	1908	16	13	755	512
	1911	18	14	705	470
	1937	2	2	25	17
SALTA	1895	65	n.a.	5,093	2,884
	1908	29	23	1,371	1,232
	1911	26	13	263	233
	1937	8	5	166	143
JUJUY	1895	34	n.a.	415	1,650
	1908	14	7	254	222
	1911	13	5	207	165
	1937	9	6	164	141

Sources: Agricultural Yearbooks and 1937 Census of Agriculture.

TABLE 14
RESIDENCY, LITERACY, OUTPUT, AND LABOR, 1908 AND 1937

	Average number of years residing		Farm operator literacy rate (%)	Percentage change in output, 1908-1937, at 1937 prices	Percentage change in farm employment
	in the same area	on the same farm			
LA RIOJA					
Arauco	27.8	15.8	45.4	-56.4	-63.1
Belgrano	29.6	21.5	70.1	-33.6	-42.0
Capital	22.7	17.6	59.5	-39.1	-41.3
Castro Barros	33.9	22.7	58.0	-56.1	-75.5
Chilecito	32.0	19.7	61.6	-44.9	61.9
Chamical (Gordillo)	32.0	23.4	69.4	-15.3	-17.6
Famatina	30.6	18.7	65.9	10.3	-43.8
Independencia	24.2	9.7	10.4	-69.1	-85.9
Lavalle	31.2	17.9	60.5	-23.6	-60.6
Lamadrid	32.1	15.2	68.2	226.1	-24.4
Ocampo	28.7	20.5	62.9	-48.5	-30.2
San Blas de los Sauces	34.4	26.8	53.4	-52.1	-82.9
Rivadavia	42.5	17.5	39.0	-67.6	-89.4
Roca	30.3	21.2	64.7	75.9	60.6
Sanagasta	28.9	19.8	68.6	-70.2	-46.7
Sarmiento	31.6	21.8	58.1	-24.9	-52.8
San Martín	30.4	21.7	58.0	-85.9	-63.1
Vélez Sarsfield	35.3	24.6	63.1	-45.7	-22.0
CATAMARCA					
Ambato	27.0	15.5	70.2	96.0	-73.1
Ancasti	31.7	21.5	74.3	-54.5	55.4
Andalgalá	24.8	17.7	18.0	-92.0	-69.0
Belén	32.4	19.9	48.7	-17.7	70.7
Capayán	30.6	18.6	61.5	-78.2	79.7
Capital	24.0	20.9	77.1	-22.3	-2.2
El Alto	29.9	20.0	70.0	-14.4	6.3
La Paz	29.0	17.6	48.8	57.3	125.1
Paclín	26.7	13.4	71.7	33.7	122.0
Piedra Blanca (Esquiú)	27.9	12.4	83.0	43.0	22.9
Pomán	32.1	19.2	67.3	-4.5	-4.2
Santa María	32.2	22.7	66.2	-70.2	-28.7
Santa Rosa	26.8	18.0	56.4	41.9	68.2
Tinogasta	31.9	18.5	40.8	-28.3	-31.3
Valle Viejo	27.4	16.7	77.2	-45.5	-5.1
SALTA					
Anta	23.6	12.9	66.0	126.8	20.0
Cachí	32.1	17.4	54.6	-8.6	-8.0
Cafayate	34.8	17.6	55.0	15.2	-61.3
Caldera	23.3	14.9	61.7	12.6	-59.4
Campo Santo	18.6	9.3	62.1	62.5	44.5
Candelaria	25.2	15.0	66.2	140.3	58.9
Capital	22.2	12.7	64.6	86.9	53.5
Cerrillos	21.3	12.6	72.2	122.9	-16.9
Chicoana	28.8	18.0	72.8	39.4	-12.8

TABLE 14
RESIDENCY, LITERACY, OUTPUT, AND LABOR, 1908 AND 1937

	Average number of years residing		Farm operator literacy rate (%)	Percentage change in output, 1908-1937, at 1937 prices	Percentage change in farm employment
	in the same area	on the same farm			
Guachipas	25.3	17.9	76.4	-10.5	-37.4
Iruya	34.9	22.3	67.8	-24.7	-33.7
La Poma	27.3	17.9	65.4	3.5	-13.1
La Viña	27.8	17.1	72.1	50.8	-6.9
Metán	20.7	16.8	70.3	133.4	72.5
Molinos	31.5	15.2	49.3	77.4	14.4
Orán	26.6	19.4	41.4	190.3	248.4
Rivadavia	21.6	12.5	56.5	88.0	129.0
Rosario de la Frontera	23.6	20.7	68.8	59.0	71.5
Rosario de Lerma	30.2	16.7	70.8	14.6	-44.5
San Carlos	28.8	17.3	58.1	41.6	40.8
Santa Victoria	34.7	19.2	45.8	-13.4	210.2
JUJUY					
Capital	25.8	15.6	75.8	-16.8	-64.0
Cochinoca	34.9	21.6	65.6	-22.5	370.6
El Carmen	19.0	9.9	67.8	249.6	425.6
Humahuaca	34.6	22.3	56.8	-23.2	23.4
Ledesma	18.9	11.5	69.2	77.4	179.4
Rinconada	36.7	18.2	68.4	44.4	-29.5
San Antonio	21.3	15.3	69.0	33.8	52.1
San Pedro de Jujuy	15.1	10.9	81.5	84.6	-66.5
Santa Bárbara (Ovejero)	16.2	11.5	78.2	50.7	83.1
Santa Catalina	6.7	20.6	59.1	15.8	-67.0
Tilcara	30.3	15.5	65.6	-24.1	-26.9
Tumbaya	33.8	18.5	70.0	-22.1	-6.9
Valle Grande (Tello)	31.6	18.9	64.0	-36.5	-33.6
Yaví	36.3	18.6	48.2	-20.8	-32.1

TABLE 15

TOTAL POPULATION BY AGE GROUPS AND SEX, 1869, 1895, 1914, 1947 AND 1960

	1869		1895		1914		1947		1960	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
CHACO			5,829	4,593	26,440	19,834	229,221	201,334	279,221	265,181
0 to 9			1,658	1,508	7,252	6,744	68,001	65,768	86,952	84,105
10 to 19			1,019	949	5,205	4,199	51,476	48,031	63,664	62,937
20 to 29			1,104	772	6,297	4,053	35,567	33,397	38,909	41,092
30 to 39			1,021	640	3,736	2,367	29,495	23,693	32,132	30,918
40 to 49			549	387	2,126	1,263	22,991	15,809	23,874	21,173
50 to 59			295	191	1,085	646	13,180	8,198	18,743	13,671
60 to 69			110	97	456	326	5,998	3,983	9,172	6,787
70 plus			43	40	233	202	2,128	1,968	4,315	3,966
CATAMARCA	38,650	41,312	42,019	48,142	46,890[a]	53,879[a]	72,045	75,168	81,769	86,462
0 to 9	12,884	12,623	14,229	13,678	16,043	15,882	22,471	22,263	25,525	25,131
10 to 19	9,614	9,401	9,570	10,262	11,745	12,434	18,234	17,217	19,843	19,669
20 to 29	6,033	7,452	5,716	8,417	6,357	9,293	9,855	11,137	10,032	11,686
30 to 39	4,342	5,048	4,722	6,244	4,394	5,896	7,665	8,253	8,568	10,037
40 to 49	2,875	3,316	3,492	4,217	3,452	4,419	5,839	6,752	6,822	7,154
50 to 59	1,579	1,844	2,116	2,484	2,528	2,825	4,251	4,544	5,452	5,895
60 to 69	795	1,030	1,104	1,530	1,436	1,738	2,285	2,744	3,494	3,984
70 plus	626	598	723	1,017	905	1,318	1,321	2,018	1,978	2,802
JUJUY	20,105	20,274	26,257	23,456	42,449[b]	35,062[b]	88,540	78,160	125,152	116,310
0 to 9	6,212	6,402	6,944	6,621	9,548	9,231	22,830	22,525	35,380	34,588
10 to 19	4,118	4,211	4,643	4,288	8,908	7,175	17,646	1,611	26,591	25,750
20 to 29	3,469	3,635	4,819	4,403	10,130	7,592	16,465	13,284	22,252	19,952
30 to 39	2,748	2,564	4,329	3,360	6,183	4,509	12,455	9,902	16,968	14,783
40 to 49	1,619	1,511	2,774	2,149	3,715	2,927	8,480	6,292	11,178	9,633
50 to 59	839	825	1,303	1,166	2,068	1,632	4,949	3,525	7,481	6,360
60 to 69	501	497	644	678	1,068	1,020	2,123	1,844	3,659	3,303
70 plus	599	628	641	715	793	949	960	1,113	1,553	1,777
LA RIOJA	22,775	25,971	32,706	36,796	36,592	43,162	54,628	56,118	63,778	64,442
0 to 9	8,572	8,122	11,154	11,006	12,520	12,530	16,760	16,715	18,961	18,720
10 to 19	5,535	6,067	7,595	8,006	9,166	10,029	13,447	12,797	15,051	14,445
20 to 29	3,215	4,623	4,454	6,336	4,708	7,558	7,686	7,964	8,536	8,993
30 to 39	2,174	2,910	3,641	4,650	3,240	5,002	6,001	6,253	7,303	7,590
40 to 49	1,339	1,914	2,708	3,088	2,750	3,322	4,578	4,948	5,520	5,423
50 to 59	866	1,163	1,528	1,732	2,018	2,217	3,221	3,537	4,414	4,258
60 to 69	614	672	905	1,023	1,293	1,431	1,754	2,195	2,529	2,991

TABLE 15

TOTAL POPULATION BY AGE GROUPS AND SEX, 1869, 1895, 1914, 1947 AND 1960

	1869		1895		1914		1947		1960	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
70 plus	459	500	591	831	891	1,066	1,016	1,441	1,442	1,973
SALTA	44,745	44,188	58,799	59,216	74,171[c]	67,985[c]	151,286	139,540	211,168	201,686
0 to 9	13,656	13,265	18,031	17,442	21,303	19,209	41,320	40,472	60,155	59,291
10 to 19	10,110	10,160	11,470	11,611	16,314	15,209	32,074	31,095	45,587	44,931
20 to 29	7,696	8,176	9,094	10,749	13,429	12,611	25,259	22,997	34,168	32,763
30 to 39	5,911	5,369	8,535	8,366	8,906	8,160	20,133	17,407	27,645	25,056
40 to 49	3,436	3,277	5,600	5,050	6,572	5,681	14,819	11,437	19,090	17,029
50 to 59	1,789	1,893	2,769	2,689	3,841	3,270	8,773	6,752	13,640	11,514
60 to 69	1,040	1,031	1,396	1,459	2,132	1,988	3,713	3,530	7,034	6,461
70 plus	1,107	1,017	988	1,104	1,626	1,823	1,638	2,199	3,157	3,869

Any difference between total populations and the sum of individuals in age groups is because there always are some of unknown age.

[1]. The National Territory of the Chaco was created in 1884. The boundaries of 1895 do not coincide with those of 1914 and later years.

[a]. Including 439 males and 441 females living in Susques county, which then belonged to the extinct Territory of Los Andes.

[b]. Including 173 males and 205 females living in Antofagasta de la Sierra, which then belonged to the extinct Territory of Los Andes.

[c]. Including 1,229 inhabitants of San Antonio de los Cobres and Pastos Grandes counties, which then belonged to the extinct Territory of Los Andes.

TABLE 16

DESTINATIONS OF MIGRANTS WHICH LEFT THE NORTHWEST PRIOR TO 1960.

From:	CATAMARCA			LA RIOJA			JUJUY			SALTA		
To:	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females
Catamarca				2,735	1,355	1,380	512	243	269	865	435	430
La Rioja	2,947	1,458	1,489				99	54	45	172	107	65
Jujuy	2,967	1,745	1,222	235	146	89				22,118	11,995	10,123
Salta	4,064	2,276	1,788	511	318	193	20,322	10,524	9,798			
Tucumán	12,750	6,873	5,877	1,124	623	501	2,750	1,369	1,381	10,384	4,870	5,514
Mendoza	1,297	765	532	3,965	2,069	1,896	1,653	948	705	2,069	1,218	851
San Juan	344	184	160	7,193	3,706	3,487	253	146	107	264	154	110
San Luis	72	39	33	440	237	203	103	71	32	73	44	29
Santiago	3,522	1,631	1,891	257	136	121	312	140	172	1,723	877	846
Chaco	404	237	167	111	60	51	292	174	118	2,351	1,317	1,034
Formosa	91	51	40	28	19	9	321	182	139	2,776	1,527	1,249
Corrientes	105	51	54	40	24	16	111	62	49	141	82	59
Misiones	61	37	24	36	22	14	128	68	60	148	89	59
Chubut	2,750	1,730	1,020	693	439	254	129	87	42	305	208	97
Neuquén	48	32	16	64	34	30	34	22	12	333	173	160
Río Negro	83	48	35	119	60	59	80	47	33	80	55	25
Santa Cruz	1,040	827	213	374	285	89	67	51	16	246	182	64
Tierra del Fuego	3	2	1	1	1		4	3	1	5	5	
ALL NON-PAMPAS	32,508	17,986	14,522	17,926	9,534	8,392	27,170	14,191	12,979	44,053	23,338	20,715
Neighboring Provinces	23,273	12,238	11,035	10,368	5,298	5,070	20,322	10,524	9,798	40,217	21,021	19,196
More distant non-Pampas	9,265	5,748	3,517	7,558	4,236	3,322	6,848	3,667	3,181	3,836	2,317	1,519
Entre Ríos	130	60	70	86	48	38	106	54	52	173	100	73
Santa Fe	1,656	801	855	1,416	711	705	998	511	487	1,850	937	913
Córdoba	8,235	3,903	4,332	11,331	5,490	5,841	2,050	1,098	952	3,943	2,104	1,839
La Pampa	40	27	13	85	54	31	26	17	9	41	26	15
Buenos Aires	10,715	5,319	5,396	7,318	3,599	3,719	6,198	3,149	3,049	8,362	4,203	4,159
B.A. ex Suburbs	1,847	953	894	1,253	655	598	1,321	769	552	2,109	1,179	930
B.A. Suburbs	8,868	4,366	4,502	6,065	2,944	3,121	4,877	2,380	2,497	6,253	3,024	3,229
Federal Capital	9,753	3,456	6,297	7,571	2,763	4,808	4,036	1,782	2,254	9,604	3,890	5,714
TOTAL	63,077	31,552	31,525	45,733	22,199	23,534	40,584	20,802	9,782	68,026	34,598	33,428

Source: 1960 Census of Population

TABLE 17

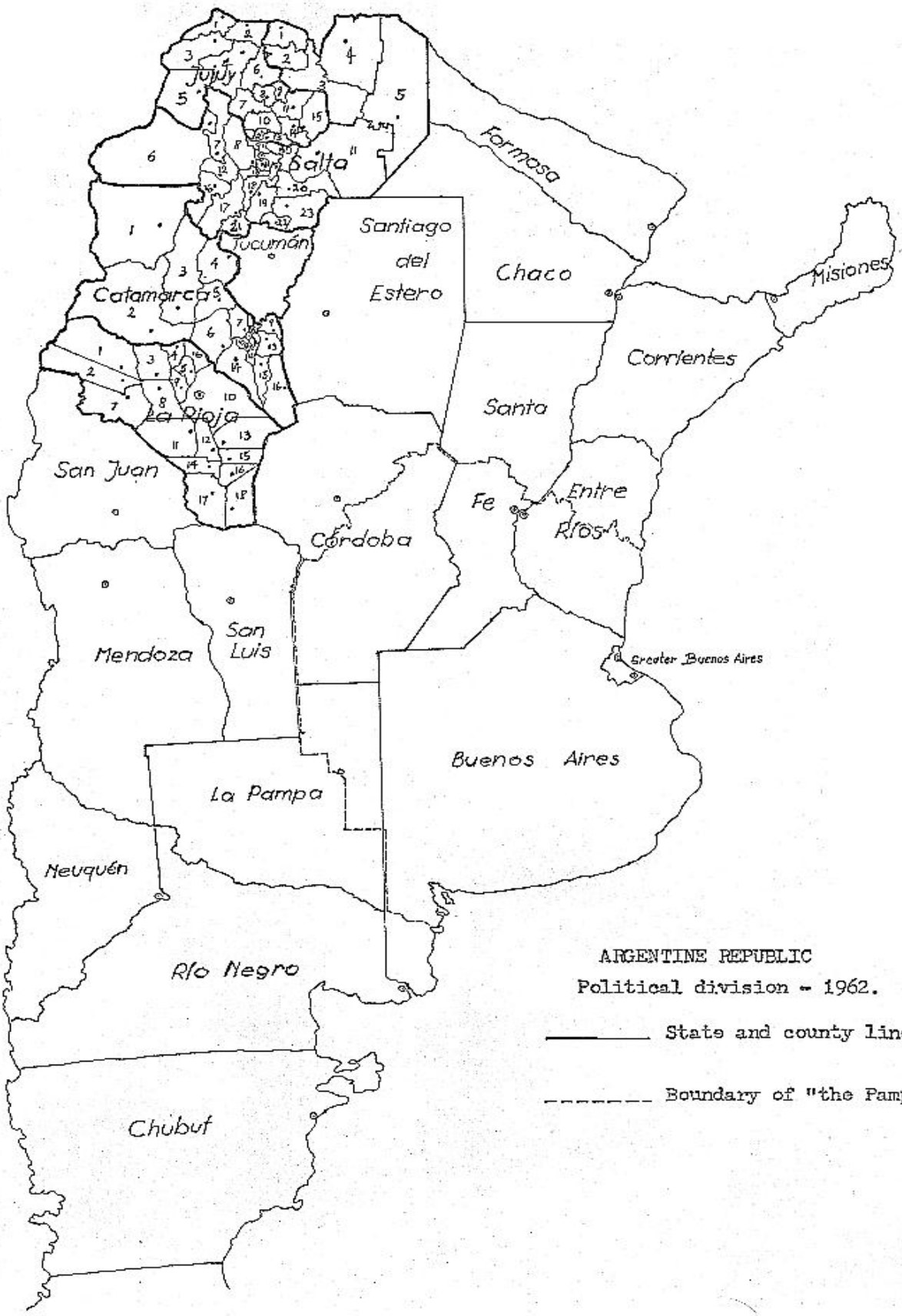
PRODUCTS INCLUDED IN THE OUTPUT INDEX

For 68 counties and 19 Provinces

PRODUCT	1937 Yield (kg./Ha.)	1937 Price (pesos per ton)
Wheat	956	133.00
Linseed	565	155.90
Maize	1,981	68.60
Oats	496	63.70
Barley	652	77.70
Rye	170	106.50
Birdseed	554	213.10
Alfalfa	583	54.11 (Hay)
Tobacco	988	480.88
Sugar cane	26,708	13.20
Grapes	10,256	54.32
Peanuts	746	306.10
Rice	2,292	236.5
Cotton	407	322 (raw)
Potatoes	3,345	191.03
Beans	785	202
Sweet potatoes	4,783	100
Other vegetables	1,437	267.44
Sunflower	659	168.1
Yerba mate	1,683	180.6
Fruits	2,328	254.41

	1937 Value of Animals consumed or exported/Stock
Cattle	17.93
Horses	0.127
Sheep (incl. wool production)	8.360
Goats	2.24
Hogs	22.94

Source: 1937 Agricultural Census.

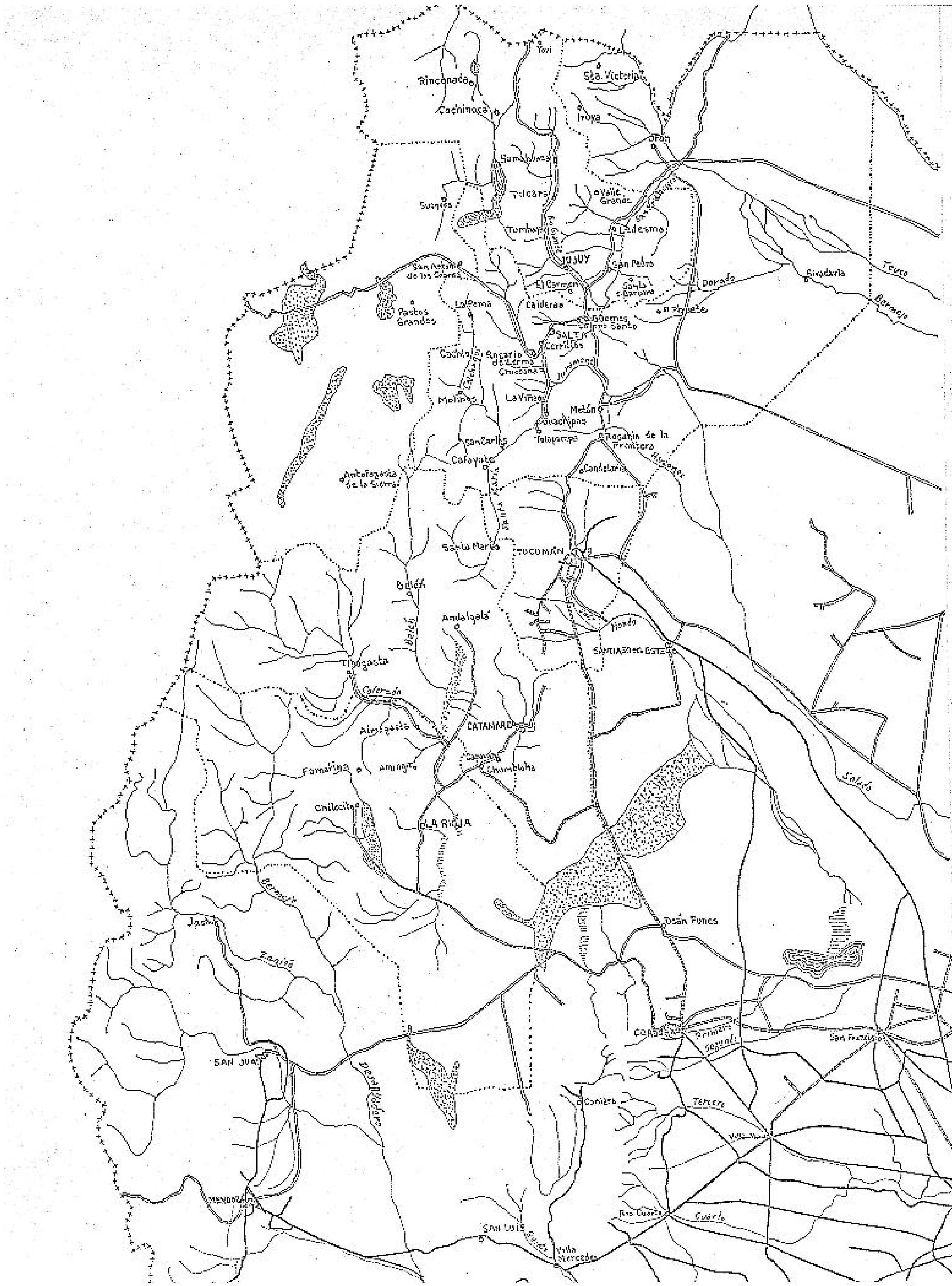


ARGENTINE REPUBLIC

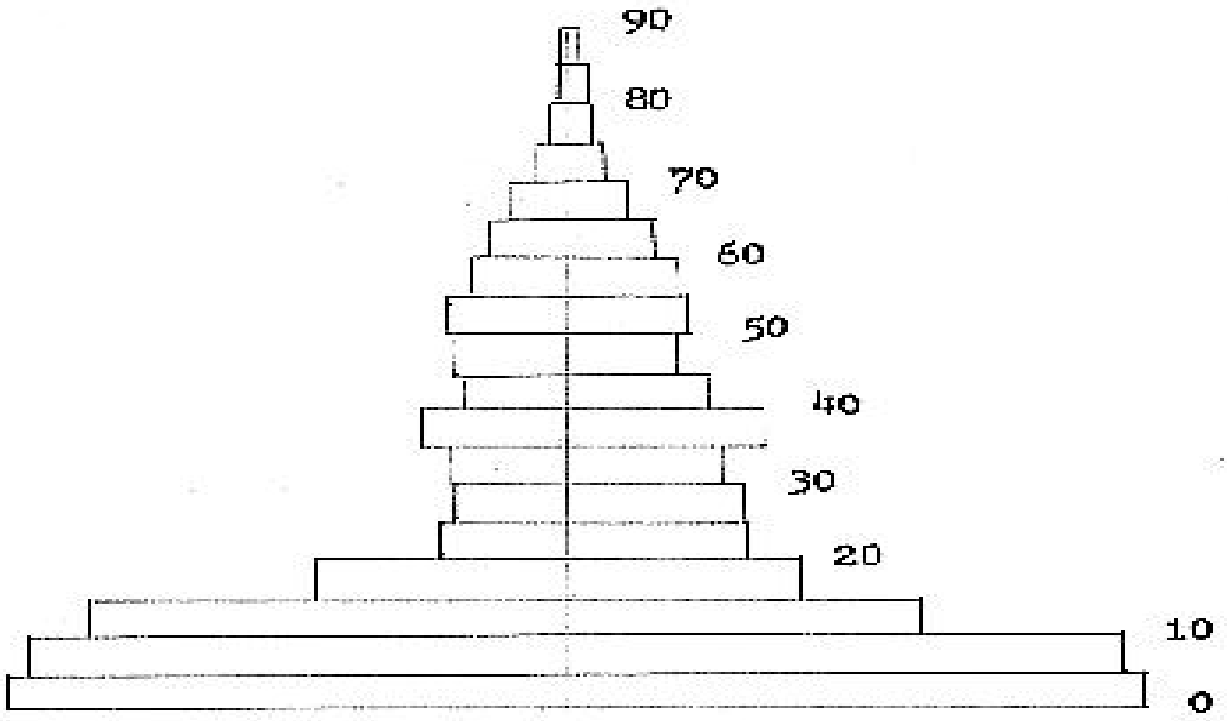
Political division - 1962.

_____ State and county lines

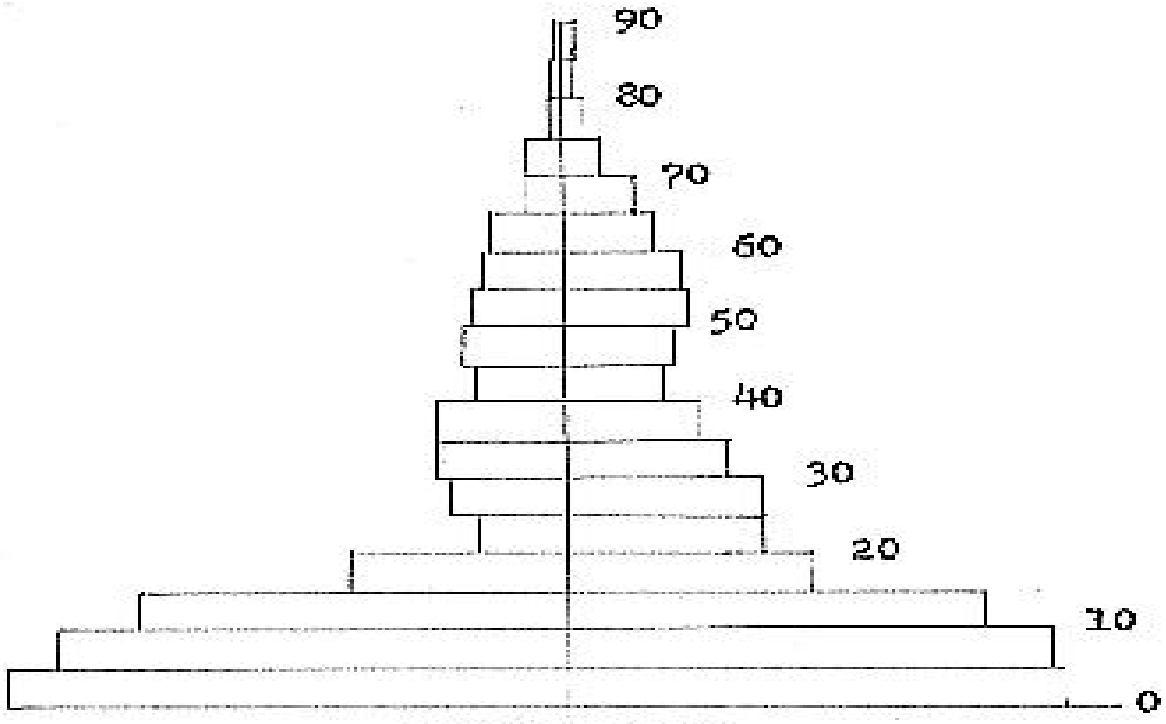
_ _ _ _ _ _ _ Boundary of "the Pampas"


Yavi
Sta. Victoria
Rinconada
Cochinoca
Iruya
Oran
Humahuaca
Susques
Tilcara
Valle Grande
Tumbaya
Ledesma
JUJUY
San Pedro
San Antonio de los Cobres
El Carmen
Dorado
Rivadavia
Teuco
Bermejo
Pastos Grandes
La Poma
Calderas
Güemes
SALTA
Cerrillos
Cachi
Rosario de Lerma
Chicoana
Juramento
La Viña
Molinos
Metán
Guachipas
Rosario de la Frontera
San Carlos
Cafayate
Antofagasta de la Sierra
Candelaria
TUCUMÁN
Santa María
Belén
Andalgalá
Hondo
SANTIAGO DEL ESTERO
Tinogasta
CATAMARCA
Famatina
Chilecito
LA RIOJA
Salado
Deán Funes
Jachal
Zanjón
CORDOBA
San Francisco
SAN JUAN
Tercero
Cuarto
Rio Cuarto
MENDOZA
SAN LUIS
Villa Mercedes

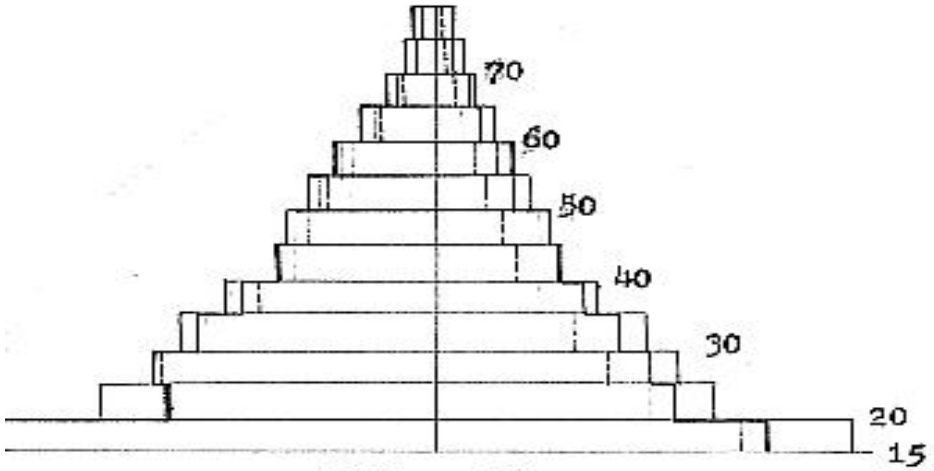
The following population pyramids were not drawn to scale. To facilitate comparisons over time, the number of boys in the youngest age group was set equal to 100 and all other groups were drawn in proportion.



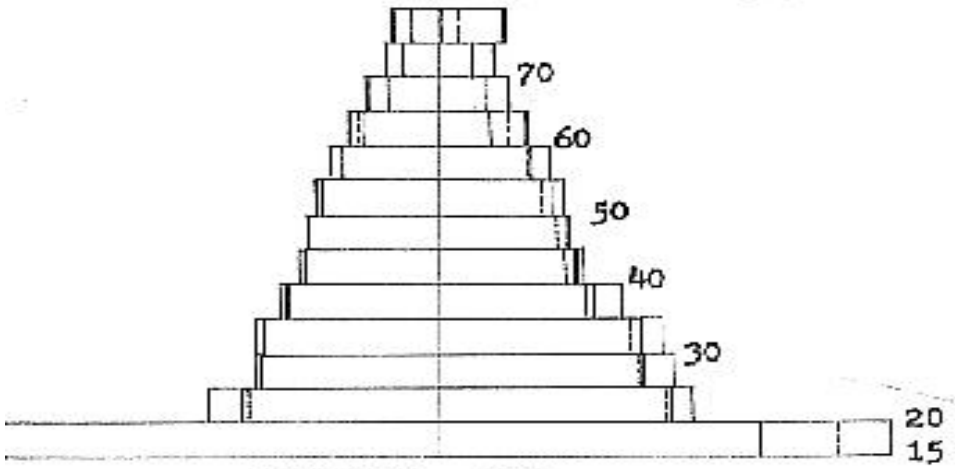
CACHI – 1960



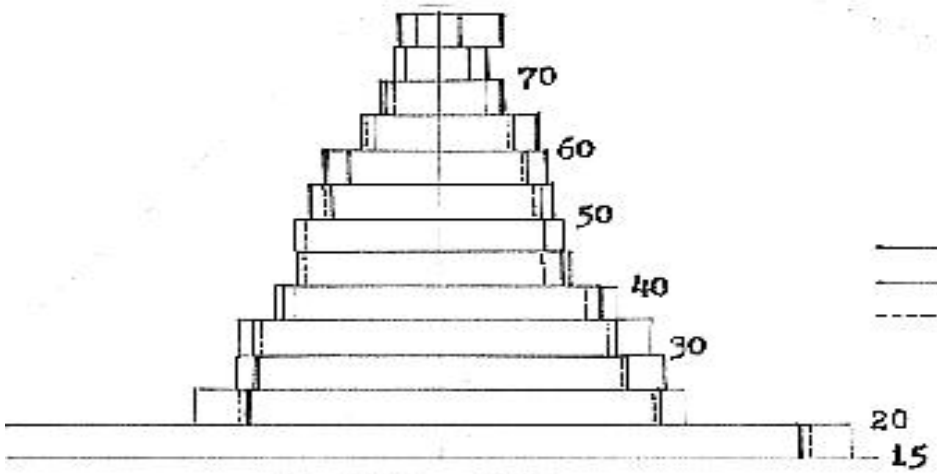
MOLINOS – 1960



SALTA - 1960

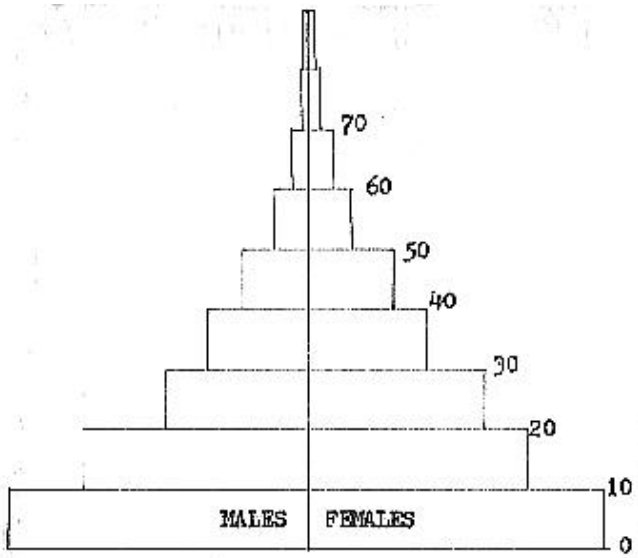


CATAMARCA - 1960

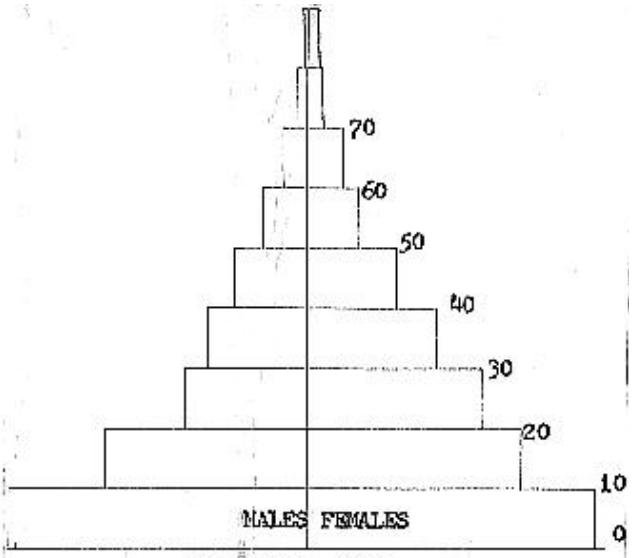


LA RIOJA - 1960

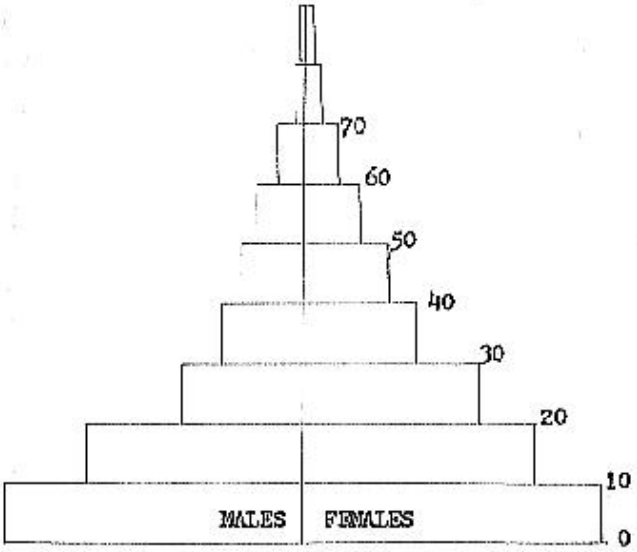
RURAL POPULATION
LITERATE POPULATION
RURAL AND LITERATE



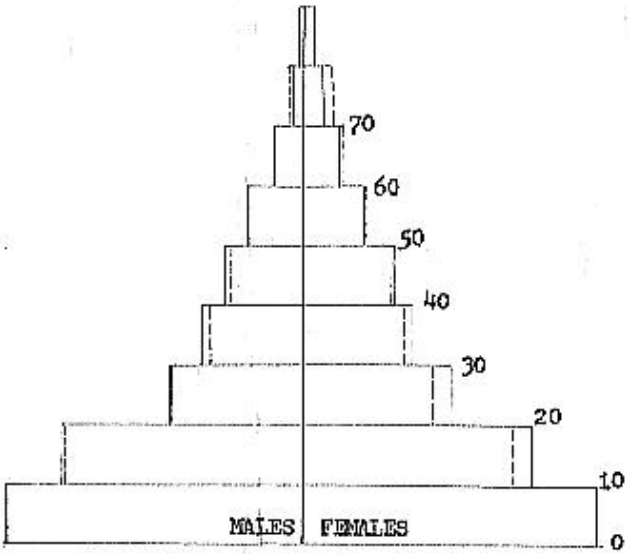
CATAMARCA - 1869



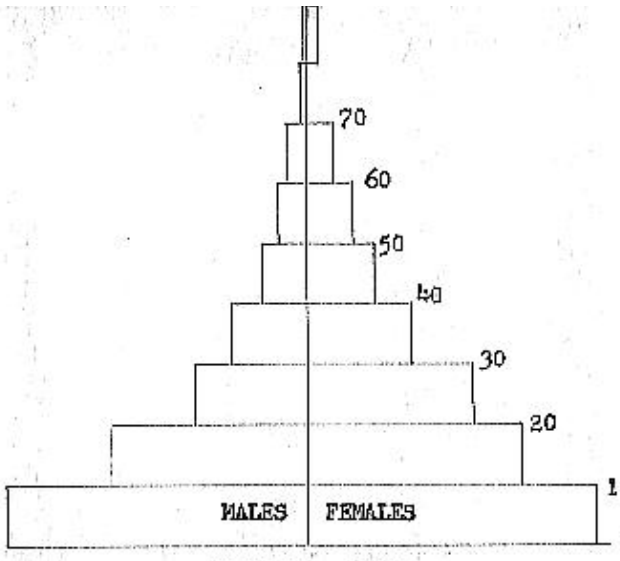
CATAMARCA - 1895



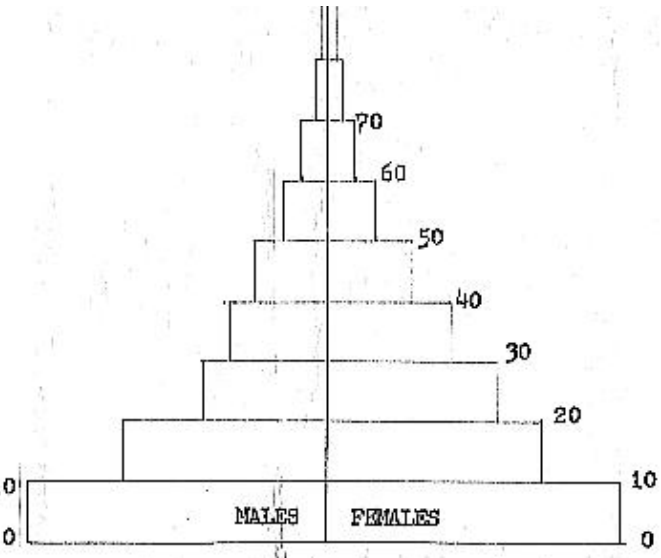
CATAMARCA - 1914



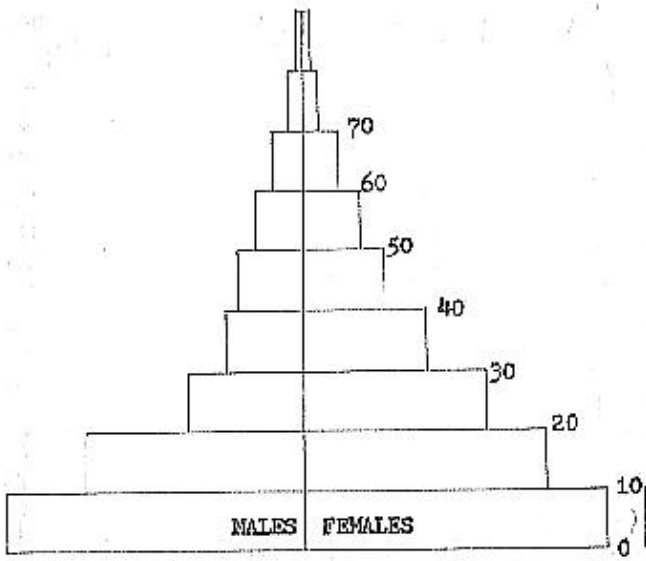
CATAMARCA - 1947
TOTAL (OUTSIDE) AND RURAL (INSIDE)



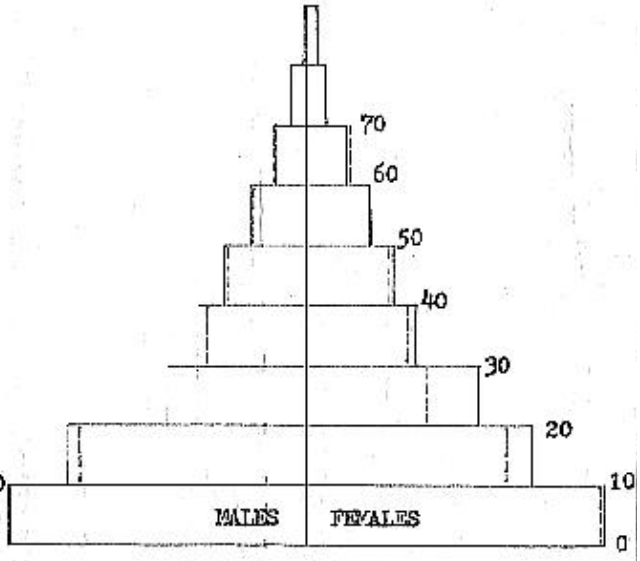
LA RIOJA - 1869



LA RIOJA - 1895

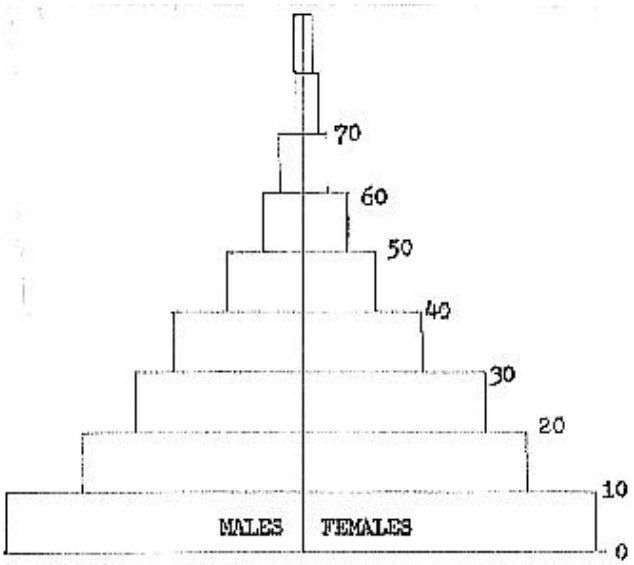


LA RIOJA - 1914

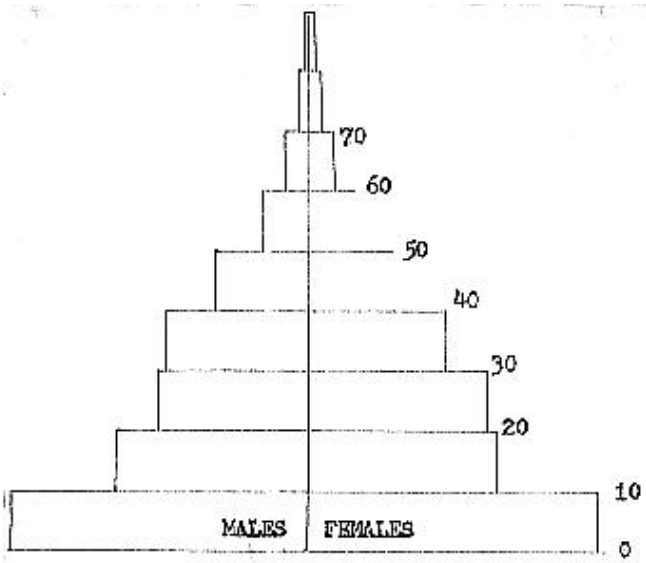


LA RIOJA - 1947

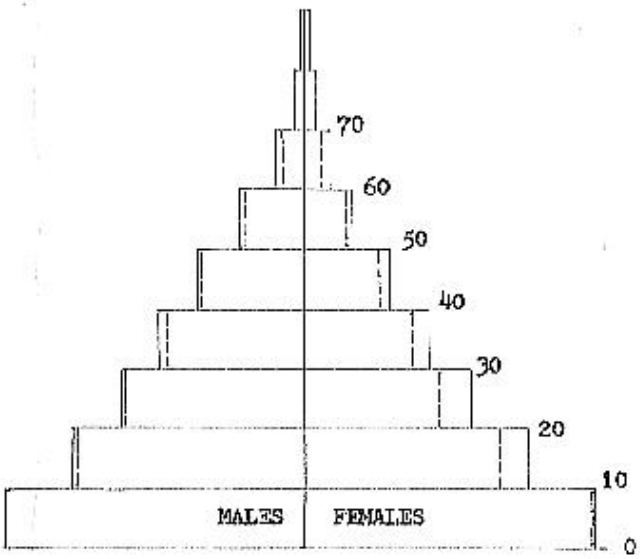
TOTAL (OUTSIDE) AND RURAL (INSIDE)



SALTA - 1869

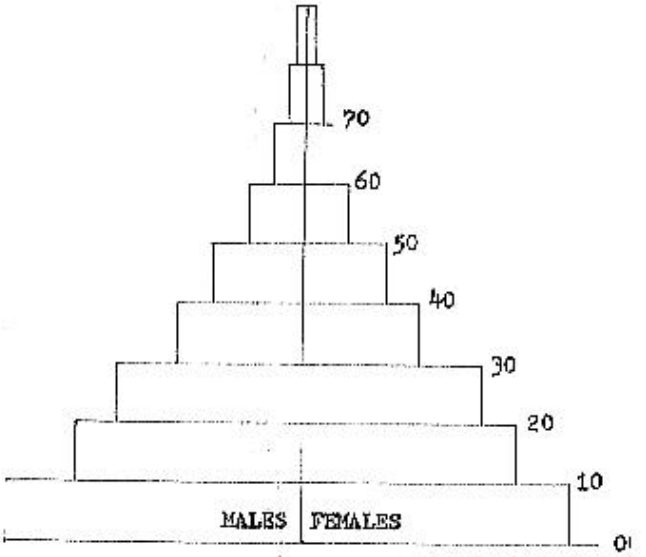


SALTA - 1895

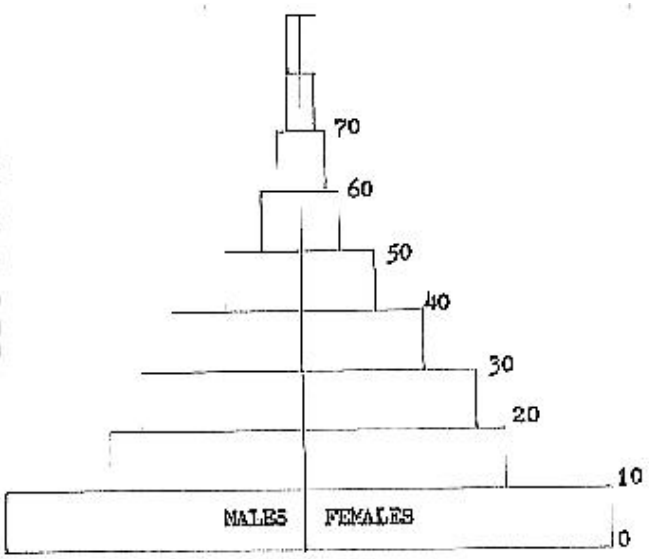


SALTA - 1947

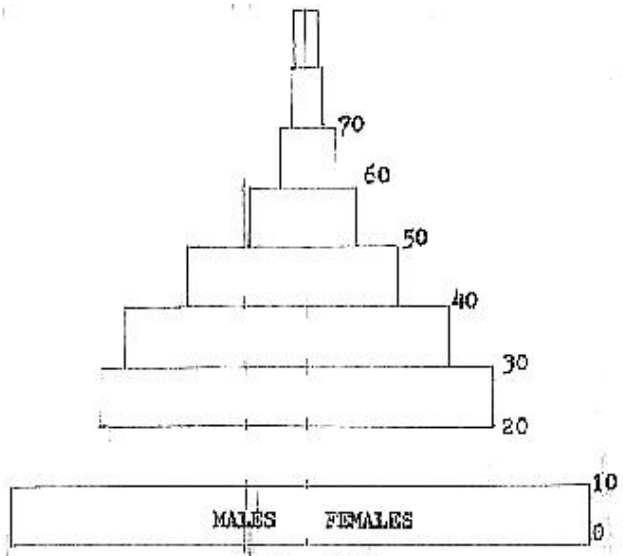
TOTAL (OUTSIDE) AND RURAL (INSIDE)



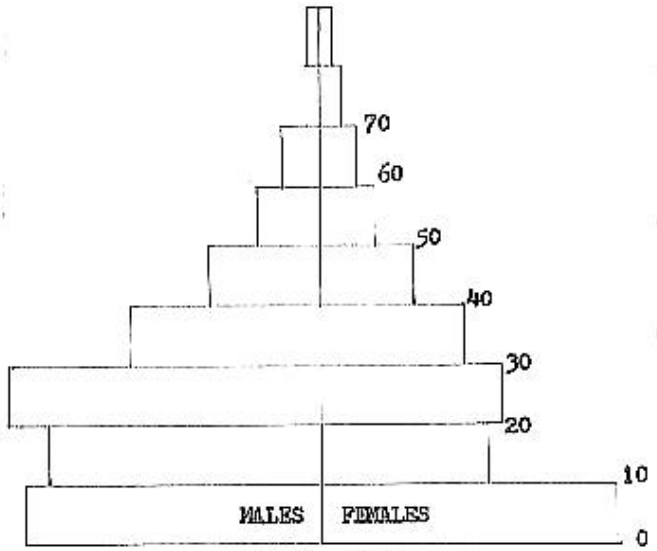
SALTA - 1914



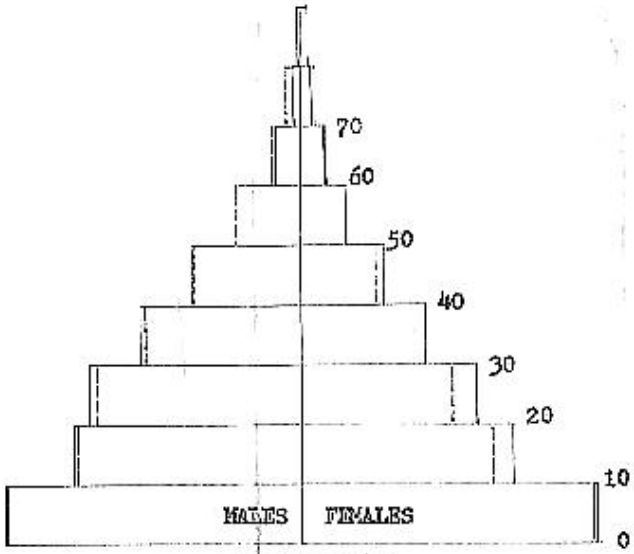
JUJUY - 1869



JUJUY - 1895



JUJUY - 1914



JUJUY - 1947

TOTAL (OUTSIDE) AND RURAL (INSIDE)