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FAMILIES, WELFARE INSTITUTIONS AND ECONOMIC DEVELOPMENT: CHILE AND SWEDEN IN COMPARATIVE PERSPECTIVE

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ABSTRACT

Since the 1960s, the sociology of development has drawn its explanations for the inadequate development of Latin American countries from culturalist paradigms, such as modernization theory, or macro-structural ones, like the dependency perspective. Setting such perspectives aside, this paper seeks to reinvigorate a sociological focus on development by arguing that it requires "social fundamentals"—and not only the economic and political ones that have taken center stage in recent discussions of this topic. Such social fundamentals have to do primarily with the synergies that are generated between properly designed welfare institutions and the characteristics of a nation's families.

The paper illustrates the importance of family structure (in particular their numbers of children) by showing that it is endogenous population growth, not low economic expansion, that has generated less than adequate growth of per capita income in leading Latin American countries during the twentieth century. This demographic difference with leading European economies produces a different kind of development despite its success in generating economic expansion and high returns to investors. It is the sort of development that concentrates on the production of primary goods and simple manufacturing, with low productivity and very little effort in research and development, because the labor market contains a great abundance of very lowly qualified workers. Such workers stem from the large new generational cohorts that are reproduced decade after decade by the equally large proportion of all national households that are formed by very poor and ill-educated families.

By comparing Chile and Sweden, the paper seeks to understand the origins of this different, and ultimately less successful, developmental trajectory. Both of these countries were similar socially, politically, and economically at the beginning of the twentieth century. The key difference between their subsequent development trajectories is that properly designed welfare institutions, in particular a universal old-age pension system, were set in place in Sweden early on. Such institutions had a transformative impact on poor families, reducing their fertility levels, and allowing them to invest in the education of their children. This did not occur in Chile. In sum, old-age pensions and other welfare institutions are not a "luxury" that only rich countries can afford to adopt, but are key contributing elements to creating the most successful form of development in our time.

RESUMEN

Desde los años sesenta, la sociología del desarrollo ha recurrido ya sea a paradigmas culturalistas o macro estructurales para explicar los niveles deficientes del desarrollo latinoamericano. Dejando estas perspectivas —las de la "modernización" o de la "dependencia"— de lado, este ensayo busca darle un nuevo impulso al enfoque sociológico sobre el desarrollo. Argumenta que este requiere de ciertos "fundamentos sociales", y no sólo de los económicos y políticos que han concentrado la atención en las discusiones recientes sobre el tema. Los fundamentos sociales se relacionan

principalmente a las sinergias que se generan entre instituciones de bienestar que han sido diseñadas adecuadamente y las características de las familias en una sociedad nacional.

El texto ilustra la importancia de la estructura familiar (en especial su número de hijos) al mostrar de que es el crecimiento vegetativo de la población, y no la expansión económica, la que ha generado un crecimiento per cápita inadecuado durante el siglo XX en los países más adelantados de América Latina. Esta diferencia demográfica con sus congéneres Europeos produce un tipo distinto de desarrollo a pesar de su éxito en generar una expansión económica y retornos altos para los inversionistas. Es el tipo de desarrollo que se concentra en producir bienes primarios y manufacturas simples, con baja productividad y muy poco esfuerzo en investigación y diseño, ya que el mercado de trabajo está dominado por una gran abundancia de trabajadores de muy poca calificación. Tales personas surgen de las nuevas y abundantes cohortes generacionales que generan década tras década las familias pobres y escasamente educadas que constituyen una amplia proporción del total de los hogares.

Haciendo una comparación entre Suecia y Chile, el paper trata de dilucidar los orígenes de este tipo de desarrollo menos exitoso. Ambos países eran social, política, y económicamente muy similares a comienzos del siglo XX. La diferencia principal entre sus desarrollos posteriores surgió del hecho que Suecia creó tempranamente instituciones de bienestar bien diseñadas, en especial un sistema de pensiones universales de vejez. Dichas instituciones tuvieron un efecto transformador sobre su sociedad nacional, en particular sobre sus familias pobres, ya que redujo sus niveles de fertilidad y les permitió invertir en la educación de sus hijos. Ello no ocurrió en Chile. En suma, el ensayo concluye que los sistemas de pensión y otras instituciones de bienestar no son un “lujo” que solamente los países ricos pueden solventar, sino que son elementos claves para forjar la modalidad más exitosa de desarrollo nacional en nuestra época. Esa modalidad pudo adoptarse también a comienzos del siglo veinte en los países latinoamericanos, pero hubo fallas de diseño en las instituciones que se crearon y falta de voluntad política para hacerlas de mejor manera.

One of the founding questions in the social sciences—why some countries or civilizations have reached higher levels of modernization than others—took on a new form in the mid-twentieth century. The problem of the moment was to understand why there was such a difference in the extent of development between leading "industrialized democracies" and those that were then labeled as belonging to the "Third World." Scholars began to part ways as they adopted two different general approaches to this new variant of the basic question. The modernization paradigm—with its primary focus on the cultural and even religious determinants of economic and social progress—emphasized that it was not enough to have adequate levels of investment and other growth factors in the Third World in order to produce development. There also had to be a profound transformation in the attitudes, ways of thinking, and practices of the leading national elites in poor countries. Such elites had to absorb key cultural and institutional patterns of the "West," adapting and incorporating them to their local national societies and customs.[1] The dependency perspective emerged primarily among Latin American scholars as a reaction to modernization's tenets. They were baffled by the notion that "Westernization" should be considered a precondition for development because they had always considered their area of the world to be culturally and religiously a part of the West. As a result, instead of focusing on cultural variables, they emphasized the way in which their region was incorporated into the world economy in order to explain its relative underdevelopment and the obstacles it confronted in seeking to develop.[2]

Much has been written during the last three decades regarding the merits or deficiencies in both of these approaches. The resulting disputes have been inconclusive, and in the process, the sociology of development has lost much of its former vigor. Creative work was done nonetheless on comparing regions of the world (Gereffi and Wyman 1990), on the role of the state in development (Evans 1995), and more largely on the way in which the world economic system developed out of its core areas (Wallerstein 1976, 1980). Meanwhile, development economics has moved much beyond the classical growth functions centered on savings and investment, productivity, and human resources, examining as well the effects of variables such as the extent of poverty and inequality (Ros 2001). And a new "institutionalism," much inspired by the work of North (1990),

has focused the attention of economists on variables formerly considered the providence of sociologists and political scientists, such as the rule of law, property rights, trust, corruption, and the transaction costs of doing business.[3]

Leaving the modernization versus dependency debates to intellectual history, this paper seeks to reinvigorate the sociology of development by offering a new perspective on the effects and importance of previously under-conceptualized social determinants of national development. The discussion here in no way negates (and will say little about) the obviously important economic and political "fundamentals" for growth presented in the literature. The focus here is on some *social* fundamentals. The most basic of these is demographic growth, even if, as will be appreciated below, it is but an entry point for a larger discussion of how family composition affects human capital formation, labor markets, productivity, social equality, or—in a word—the social factors long associated with the kind of development that generates what are seen as the most successful experiences of development in the "advanced countries" of the world.

Taking the broadest of views, the nature of development changed with the new technologies and energy resources put into place towards the end of the nineteenth century. Until then, developmental success relied significantly on population growth as ever more labor was needed to till yet another hectare, to cut into a new mineral-rich vein in a mine, or to forge more horseshoes, plows, and cannons. With the new conditions it became possible to increase greatly—even revolutionize—productivity, and to expand, like never before, the number of products in daily use. The highest levels of development in the twentieth century were reached by countries that were able to enhance their productivity most effectively, to design new products and reconfigure old ones to make them more efficient and attractive, and to forge more extensive marketing venues. As a result, developmental success began to rely more than ever before on an educated and well-trained—rather than expanding—labor force.

The key question is, then, why did some countries, but not others, take full advantage of the new conditions for development that became possible as the twentieth century unfolded. The search for answers to this question has often viewed it simply as pertaining to the lack of economic dynamism in some countries when compared to others; and indeed, for many countries it is possible to explain developmental failures by

looking at their economic fundamentals. However, the key dependent variable for these analyses has normally been the rate of yearly increase in the gross national product per capita (GDPp/c) of the countries under examination. What is often overlooked is that some countries may have high rates of economic growth while at the same time very mediocre yearly increases in their GDPp/c levels simply because their populations also increase at a very rapid pace. Clearly, for such cases it is necessary to look at other than merely economic variables to explain the causes of their developmental failure, for the problem does not seem to lie in their lack of economic dynamism.

The purpose of this paper is to provide new insights into the developmental process by zeroing in on precisely this kind of situation. It is hardly unusual. As shown in a first section below, leading Latin American countries had in the past higher levels of economic growth than major European ones, and yet they form part of what are now viewed as "developing economies" and not "first world" ones because they also had, together with their higher rates of economic growth, much higher rates of demographic expansion. Nonetheless, instead of exploring the specificities of this type of development process by comparing many cases, the analysis here focuses on a historical contrast between just two countries, Chile and Sweden. While this choice of cases may seem at first glance surprising, it is not. It offers what can be seen as an approximation of a controlled experiment in the form of a historical and comparative analysis. No two countries are ever completely alike, and yet Chile and Sweden shared many common elements at the beginning of the twentieth century: they were nations of miners, peasants, lumberjacks, fishermen, and some industrial and transport workers, and had roughly equivalent GDPp/c. They also had relatively small populations of slightly over three million in Chile and over five million in Sweden. But the countries became subsequently more and more different as Chile lagged behind Sweden in its national development.

The combination of a case study focusing mainly on the developmental laggard—Chile—with a suitable comparative referent—Sweden—provides a venue for a broad exploration of new ideas that can later be tested with additional cases and even cross-national statistical analysis. A key difference between the two countries was their levels of fertility, which declined very rapidly in Sweden to just over two children per woman in the early 1930s—a level only reached in Chile in the late 1980s. Anticipating briefly the

main argument here, the difference in fertility was generated by the synergies created between welfare institutions and family structures. Such synergies led to the creation in Sweden of much greater levels of social equality, which permitted even the poorest parents to educate their children. This rapidly produced a well-trained Swedish labor force, allowing the sort of development that we associate with "advanced economies." Therefore, the creation and design of welfare institutions matters for economic success rather than being, as is often asserted, a cost or a burden that can only be sustained by "rich" countries. The effects of such welfare institutions are transmitted to growth through their impact on family composition, particularly of poor families and especially of poor families headed by single mothers.

The comparison between Chile and Sweden suggests that given the technological conditions initiated with the twentieth century, universal access to old-age pensions was the key welfare measure affecting long-term development. Although such pensions are given to individuals who are inactive, they do facilitate development through their impact on families. The moral economy of the family is such that any resources given to the elderly have a direct impact on children, a consideration that is especially important for poor families that then can devote more resources to investing in schooling. And if an effective program of old-age pensions is in place, it also has an important impact on fertility as children cease to be seen by poor families as their only possible source of sustenance and care during the fragility of old age. The argument here is, then, that in the last analysis properly constituted welfare institutions were an essential ingredient in generating a chain of social effects that impelled the most advanced form of twentieth-century national development forward. All "advanced nations" have long had an "advanced welfare systems" in the form of old-age pensions, and this feature was neither a coincidence nor a burden for growth, but one of its key facilitators. Current efforts and thinking regarding growth promotion in poor countries should take stock of this conclusion.

Prior to developing this argument, the first part of this paper discusses the as yet not fully appreciated impact of demographic expansion on growth. It will help characterize the type of developmental experience that forms the focus of this paper,

namely, a national economy with a high rate of growth that nonetheless remains a developmental laggard given its patterns of demographic expansion.

PART I: DEMOGRAPHY AND DEVELOPMENT

Barro (1991, p. 437) expresses a widespread consensus among economists and other social scientists when he refers in an influential paper to the "typically weak growth performance in Latin America."[4] Whatever else may characterize the leading Latin American economies from different viewpoints, some captured by moderately favorable scores in their Human Development Indexes, it is their paltry levels of GDPp/c growth during the twentieth century that have left them among the lesser developed nations of the world.

Numerous studies, including Barro's, have tried to explain the reasons for what appears to be Latin America's inadequate economic growth. To do so, they normally resort to regression models that use rates of change in annual GDPp/c as the dependent variable, often omitting to mention the fact that the GDP measure is in fact a per capita one. The independent variables in these studies have variously included rates of savings and investment (foreign and/or domestic), productivity levels, the quality of human resources (seen through educational attainment, health measures, or even life expectancy), the size of the external debt, terms of trade, currency stability, inflation, fiscal soundness, government expenditures exclusive of public investment, proportion of the population in poverty, income inequality, public transparency or corruption, the security of property rights, the depth of the rule of law, the relative strength of business associations and labor unions, and the overall quality of public institutions and governance. The results of these exercises have been mixed, but they do end up finding at least in part what they seek. They can all point to the fact that, relative to the "developed" countries, Latin America has or has had a less than optimal combination of at least a subset of these factors.

All these studies assume that the central dependent variable, GDPp/c growth (mostly rendered simply as GDP growth), reflects straightforwardly a nation's economic performance in ways that are comparable across countries. Although this measure obviously contains two components, there is very little reflection devoted to the impact of

the levels of demographic growth. The growth equation models do sometimes add fertility or population growth rates to the set of control variables, as Barro (1991) does with his. And yet doing so only distorts the regression models, given the fact that the dependent variable, GDPp/c, already contains a control of sorts for this factor, creating a serious problem of endogeneity that may well affect all the metrics the models produce. In principle, one would expect fertility to show a negative effect on GDPp/c growth. This is what Barro reports (1991, pp. 428–29), and what Przeworski et al. (2000, p. 259) show as well.[5] But given the endogeneity problem, which Barro acknowledges (1991, p. 428) even this result should be viewed as uncertain.

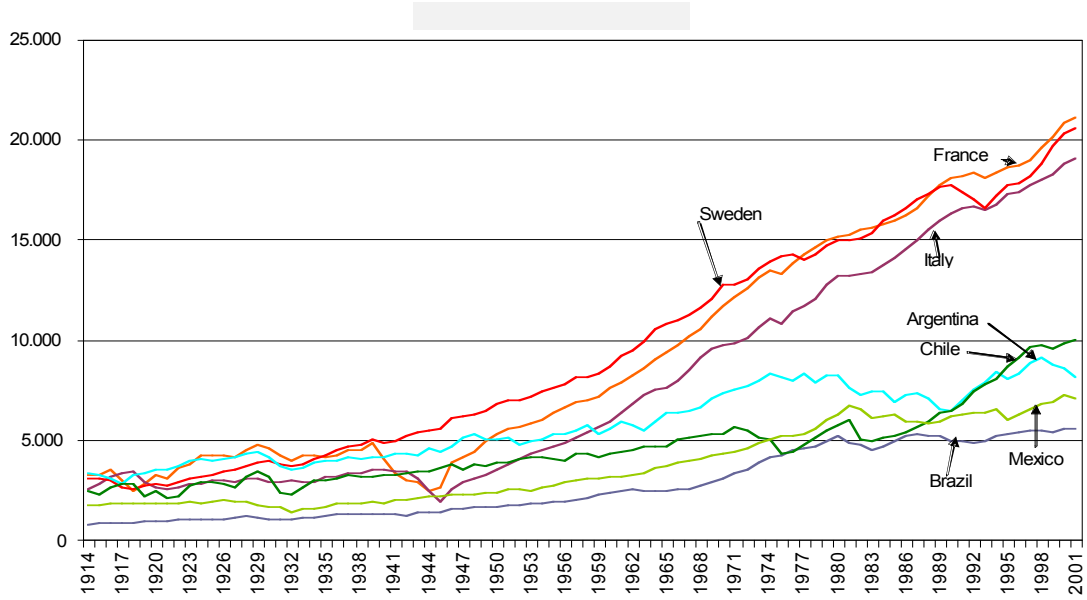
What follows illustrates the importance of paying closer attention to the effects of population growth in examining national economic performances as measured with the GDPp/c indicator. It does so by comparing the growth trajectory over the course of the twentieth century of Argentina, Brazil, Chile, and Mexico, and three nations—France, Italy and Sweden—that are considered part of the "developed" world. By contrasting the actual GDPp/c rates of growth of these seven countries with a fictitious GDPp/c growth rate (or GDPp/c') for the Latin American ones, it is possible to see the extent to which the economic performance of the Latin American countries has been misunderstood and, more importantly, how the very nature of the developmental process itself has not been adequately grasped. The GDPp/c' rate has been calculated with the Latin American countries' own rates of economic growth, but with the European nations'—not their own—demographic growth rates. This illustrative exercise shows that far from being "typically weak growth performers," to reiterate Barro's assessment (1991. p. 437), it is the Latin American, not the European, countries that have had the highest levels of annual economic growth on average throughout the twentieth century. The lower GDPp/c performance of the selected Latin American countries is simply generated by their own much higher pattern of population growth.

Figure 1 shows the actual GDPp/c growth of Argentina, Brazil, Chile, France, Italy, Mexico and Sweden during the twentieth century. The right side of the figure presents a familiar picture: the European countries are much richer than the Latin American ones.[6] The gap between the two sets of countries shows clearly why we consider the first to be part of the "developed world" and the second part of the

"underdeveloped" one. However, Figure 1 also shows that this difference between the two sets of countries basically emerged in the mid-twentieth century. During the first half of the century the per capita GDP levels of the two sets of nations were not all that different—in particular when comparing the European ones with Argentina and Chile. During the 1940s the latter even had higher GDPp/c levels than either France or Italy, no doubt due to the effects of the Second World War.

Figure 1

Per Capita GDP Growth Rates of Selected European and Latin American Countries, 1914–2001



Figures 2, 3, and 4 contain the hypothetical growth curves with the GPDp/c' calculation using the demographic growth rates of the European country presented in each figure. The results all indicate that if such rates had been the actual rates, the Latin American countries would have had, by the end of the twentieth century, a much higher level of development (as measured by this fictive "per capita" GDP) than either Sweden (Figure 2), France (Figure 3), or Italy (Figure 4).

Figure 2

Per Capita GDP Growth Rates of Selected European and Latin American Countries with Swedish Population Growth Rates

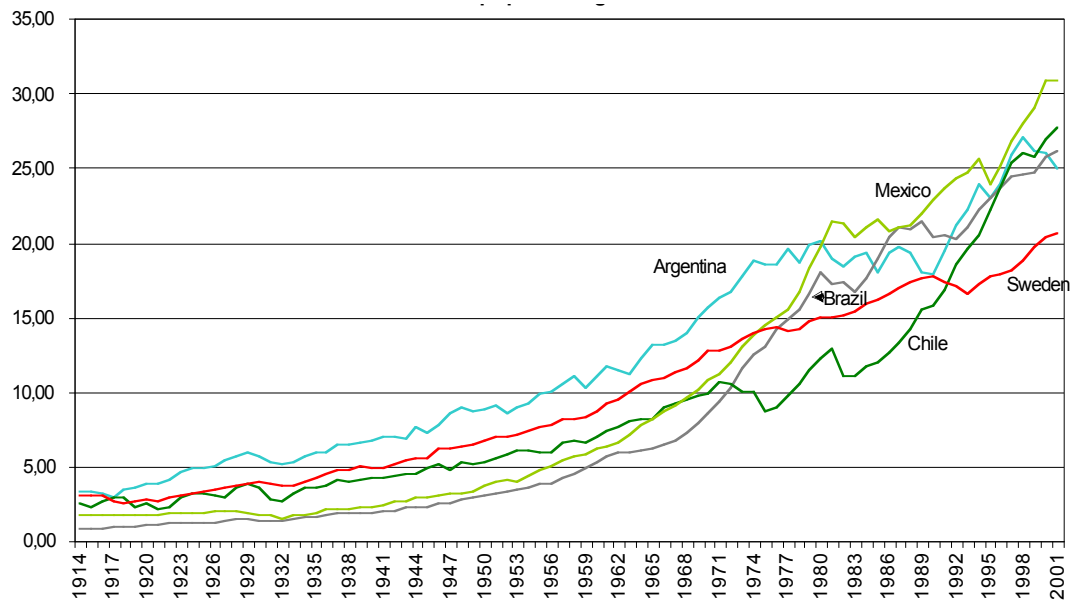


Figure 3

Per Capita GPA of Selected Latin American Countries with French Population Growth Rates

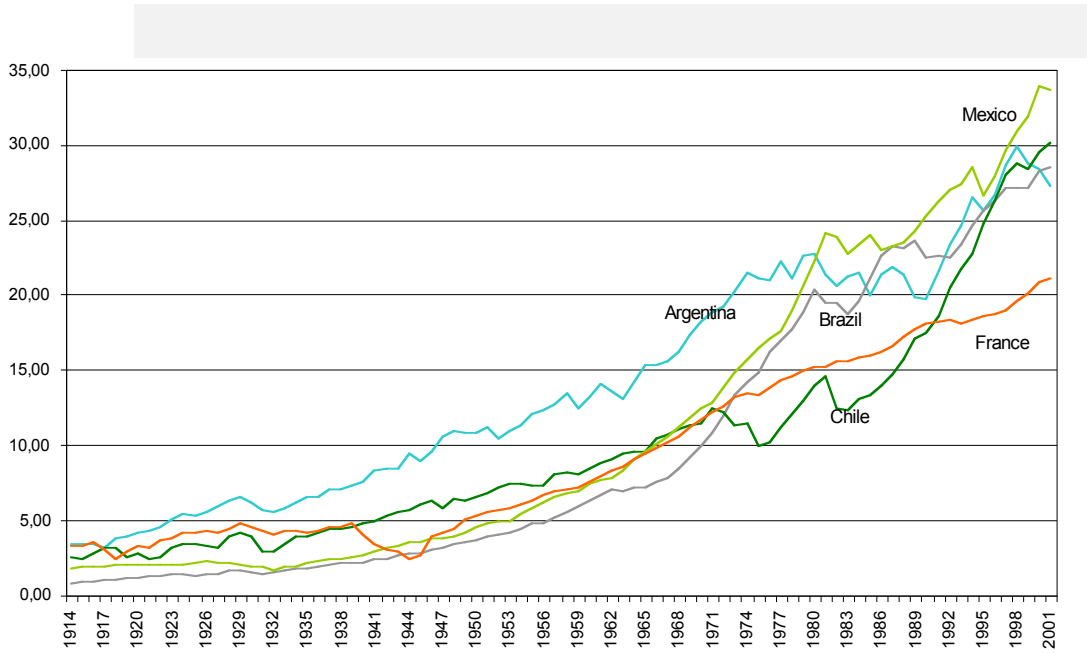
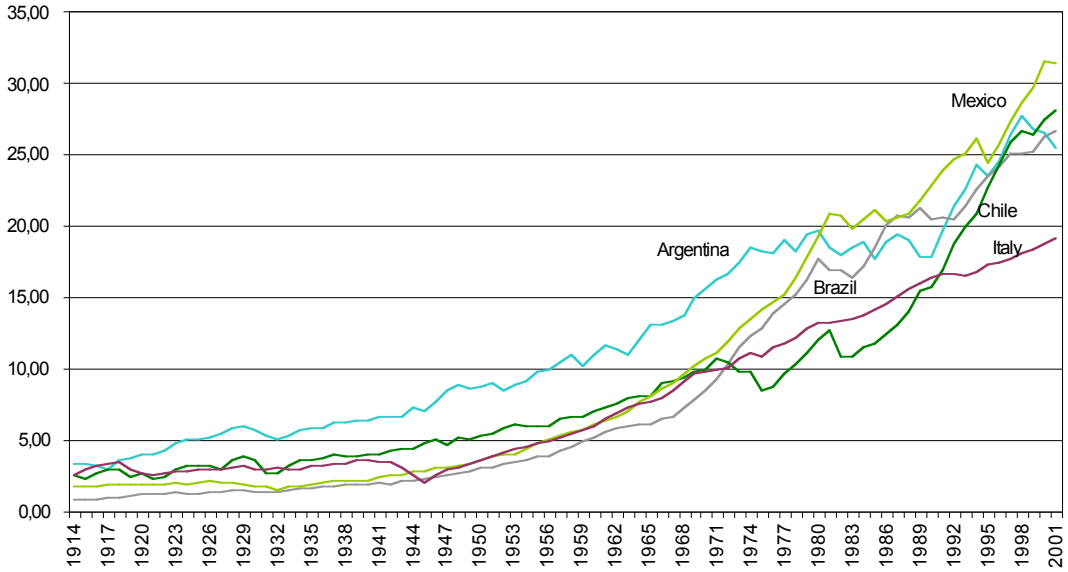


Figure 4

Per Capita GPA of Selected Latin American Countries with Italian Population Growth Rates



The major lesson of all these graphs is that, at least in terms of GDPp/c growth rates, the principal difference between the growth curves of the selected European and Latin American countries in Figure 1 is produced by the demographic, not the economic, growth rates. The hypothetical growth curves for the Latin American countries in Figures 2, 3, and 4 far outstrip those of the respective European countries because the Latin American economic growth rates were much higher. From 1900 to 2001 Argentina's GDP grew by a factor of 23.8, Brazil's by 81.1, Chile's by 26.4, and Mexico's by 36.1; by contrast, France's and Italy's GDP only grew by a factor of 10.7 and Sweden's by 8.1.[7] The shape of the presumptive Latin American country growth curves in Figures 2, 3, and 4 is also notably similar in each case. This reflects not only their own peculiar pattern of yearly economic growth, but also the fact that the demographic growth rates in the three European countries have all followed roughly similar trends, given a combination of emigration, the impact of two world wars, and a drop in fertility levels to between 2 and 3 children per woman by the 1930s. The population of France grew

between 1900 and 2001 by only a factor of 1.5 and that of Sweden and Italy by a factor of 1.7. By contrast, these factor growth figures are 7.9 for Argentina, 10.4 for Brazil, 5.3 for Chile, and 7.5 for Mexico.[8]

These graphs call into question much of the literature in development studies over the past two decades on Latin America, because it has consistently sought to explain the "lower growth" of Latin American countries by appealing mainly to a variety of economic, human resource, or state institutional variables.[9] In fact, the widespread perception that Latin America's economic growth has been weak is in need of deep revision, at least in so far as Argentina, Brazil, Chile and Mexico are concerned—countries that account for about two thirds of the subcontinent's GDP. Instead, these Latin American economies can be said to have "typically high" growth rates when compared to their European counterparts.

To explain the failure of the leading Latin American countries' development as measured by GDPp/c it is necessary to focus our attention on the reasons their rates of *demographic* growth were so much higher than in the rest of the Western world during much of the twentieth century. This observation can be generalized: analysts would seemingly need to pay more attention to whether "underdevelopment" is due primarily to low economic growth, to high demographic increases, or to both at the same time, and the problems of overall development may indeed be different in each of these mixes. There is no single GDPp/c growth trajectory. If both economic and demographic growth trends can be categorized as either slow, medium, or high, the problem with the GDPp/c variable is that it obliterates what may in fact be nine different types of variation in the combinations of these two basic trend variables. This results in the diminution of our analytical capacity to make sense of different development experiences. The contrast between the growth trajectories of Chile (with its high overall economic growth and demographic transition from high to medium expansion beginning in the late 1970s) and of Sweden (with its overall medium economic but low demographic increases) provides evidence that this is indeed the case. Paradoxically, the highest levels of developmental success under twentieth-century conditions belong to the country—namely Sweden—with the lower average economic growth.

The Hidden Impact of High Fertility on Growth

As is expressed in the GDPp/c measure, the most visible consequence of population growth is that it creates a larger number of people who share a national economy's finite set of goods and services. This can be particularly problematic when there is a high-paced population increase generated by high fertility and a low or lowering mortality rate, as this will augment the dependency ratio. Population increases based on immigration do not normally have the same effect in so far as immigrants tend to be of working age. The most negative impact of population growth on economic expansion as measured by the GDPp/c measure occurs when the former's natural increase is high while having as well a concurrent process of emigration of young adults.

However, countries that had the highest rates of natural population increase at the beginning of the twentieth century would have had their development affected by much more than what is implied by this standard sort of analysis. Let us assume that we compare a set of such countries that have adequate levels of investment, similarly proper governance, no significant in or out migration flows, and a high percentage of the population living in poverty at the close of the nineteenth century. Those with the higher rate of natural population increase were likely to have had their subsequent development affected by the fact that the higher fertility levels fueling that increase were normally concentrated disproportionately among poor and illiterate or barely educated households. Given the difficulties poor children had in escaping poverty as they grew into adulthood —particularly because their families could not afford to educate them—this meant that having a relatively high rate of endogenous demographic growth also implied reproducing a large proportion of the same kind of family households, namely poor ones, from one generation to the next. As a result, this also meant reproducing over time a labor force that was not only abundant (given the higher birthrate), but also minimally qualified. Investors in such national economies would consequently put their capital mainly into areas of production that also required minimal qualifications from the labor force. They may themselves have derived considerable profits, but this pattern of investments would tend to generate a formal employment sector characterized by very low wages. Nonetheless, given the abundance of people with low qualifications, many were bound to have difficulty in finding formal-sector employment, and therefore the

levels of informality would also be high. The end result would be an overblown service sector with many individuals seeking to scratch a living as penny capitalists. In the aggregate, these patterns would generate national economies with high levels of inequality, large numbers of people who continue to live in poverty, and far from optimal levels of overall productivity despite some islands of efficiency in the more capitalized and modern sectors of the economy.

The irony is that such national societies with high endogenous demographic growth, despite their large pools of unskilled labor from poor households, may have had high rates economic growth from investments in extracting, growing, or processing primary products, and from developing relatively simple manufacturing processes. This was, of course, the case with the Latin American examples included in the figures above. Despite its capacity for economic expansion, such growth generated as well a productive structure that did not correspond to that found in those areas of the world that reached the highest levels of development under the new twentieth-century conditions. With money to be made more easily by employing the large unqualified labor forces, it made little sense for investors to focus on research and development for the purpose of creating new products. The end result—again, despite high profits and high growth—was much lower levels of labor and total factor productivity, and exports with little value added. Moreover, this high growth did little to transform the characteristics of the labor force, reproduced as it was by a high rate of demographic expansion concentrated among underemployed or unemployed poor households. This in turn replicated high levels of social inequality from one generation to the next.

Nations that led the way in developing new technologies from the beginning of the twentieth century obviously also employed low-skilled workers. However, their numbers were not continually expanding at a rapid pace because of decreases in the birth rate and the access that their children had to education—for reasons to be explored further below. Moreover, such countries often tended to generate within their borders the product, industrial and other designs that employed low-skilled workers, thereby expanding opportunities for scientists, engineers, technicians, and more highly skilled workers. This strengthened the middle class in ways that did not occur in countries that retained large unqualified work forces and which tended to import the designs they

needed for their leading economic sectors. Even if national governments in economies with poorly skilled workforces made an effort to fund higher technology research and areas of economic activity, such initiatives remained reliant on public resources and functioned more as enclaves than as motors of development. As a result, they continued to depend on the constant renewal of technological transfers from countries that invested more heavily across the board in producing new products and technologies.

Where a transition to a lower fertility regime occurred, the subsequent pattern of economic growth could be different. All enterprises certainly do some (at times significant) training of their employees, but investment in different types of activity depends on, rather than creates, the labor force it employs. With a lower birth rate, poorer households would have a higher income per person, permitting them to invest in the education of their children. With the slow but steady transformation of the labor force, existing businesses that relied on large pools of unqualified laborers would begin to have difficulty in hiring new workers. The more highly qualified workforce of the new generations would not simply accept any type of employment, as did their parents. And with fewer new entrants into the labor force, fewer people would also have to seek to make a living in the informal economy, while those that did engage in self-employment, given their higher qualifications, would have a better chance of developing successful micro- or even medium-sized enterprises that would become part of the formal economy. With more highly trained human resources, investors could (and would have to) profit from creating new and more complex products and services using new technologies. They would also have to make greater efforts to enhance productivity in order to meet rising wage scales as they sought to hire and retain workers with higher skills. The conjunction of these processes led to national societies with lower inequalities, higher wages, more similar consumption patterns across households, higher levels of innovation and productivity, and obviously higher gains in GDPp/c growth because it was predicated on a social transformation that sprang in part from reduced fertility. This second type of development is the one that generally characterizes the countries that are currently considered part of the “first world” group of nations.

Generating this second type of growth—again, in the absence of large-scale immigration which would complicate the demographic parameters of this discussion—

depended, therefore, to a still unrecognized extent on the characteristics of a nation's families. For a well-trained labor force to emerge, several generations of poor children since the early 1900s had to be able to increase their formal education, as this transformation seldom occurs in only one generation. But this change was not easy: comprising up to half or even more of the total number of households, those that were poor could easily impede the eventual transformation of the labor force with their higher fertility rates and their inability to educate their young. Consequently, contrary to conventional wisdom, the continued existence of a large proportion of households in poverty was not simply a result of inadequate development in the twentieth century but rather one of its causes.

A key question is, then, why did poor households have higher fertility? As has been noted repeatedly for decades by analysts of this question, children represent a form of old-age (and even sickness and disability) insurance for poor parents. Such parents hope that their children will be in a position to take care of them if anything happens to their own capacity to make a living, and to do so in old age when they are no longer able to work. And as Przeworski et al. (2000: 246–47) have indicated in drawing from the economic literature, it is best to have multiple children in order to make sure that at least one of them will have the means and the disposition to provide such care. In some cultures this helps create a preference for sons rather than daughters—a preference that has the effect of enhancing the overall fertility of couples that have only first-born daughters as they seek to have sons. Poverty also increases the levels of infant mortality even beyond the national average, and as this enhances the uncertainty of relying on children as insurance for the future, there is an incentive to have more of them in order to reduce that uncertainty. Hence, high incidences of infant mortality are associated with even higher fertility levels. Peak levels of natural population growth are usually reached as infant mortality begins to decline. This is what happened in particular in the leading countries of Latin America by the mid-twentieth century, thereby creating at that point the sharpest contrast with the demographic growth pattern of the "first world" economies, which were by then firmly set into low-fertility regimes.

Unlike children in middle- or upper-class households, the children of the poor may be an important economic asset for their parents, and this may also stimulate fertility

among them. It has long been observed that children are part of the workforce of peasant families, but they can also work in a variety of ways in cities, as well as beg and steal. When compared to other socioeconomic groups, poor parents often have much lower expectations regarding what their children can and should achieve in life. These differences affect the propensity of poor parents to invest in their children's education. Sending a child to school for such parents not only means extra expenses, but also a likely loss of household income and support in daily chores, and all for educational goals that are viewed as either unnecessary or in the longer run unattainable anyway. The highly visible demand for workers with very low skills in the existing occupational structure reinforces these perceptions. The need to make all kinds of sacrifices for the sake of educating children is much more likely to begin to occur with higher levels of household income, at which point the value of education becomes much clearer and within reach.

For all these reasons, countries are likely to have higher levels of fertility when they have higher percentages of the population in poverty. There are, in addition, a series of other reasons that may help explain cross-national differences in fertility levels, some of which can also be related to poverty. Fertility will, for instance, be higher in countries where women are expected to—or forced to—marry at a young age. Similarly, if cultural norms prevent women from working outside the home, or if labor markets are such that women have fewer opportunities to find gainful employment, then the fertility rate is also likely to be higher, in part because women will need to rely more on their own children for long-term care. There may as well be much greater acceptance of births out of wedlock in some countries than in others. The former are likely to have greater numbers of households led by solo mothers.

This list of factors does not include two that may appear at first glance to be important. The first is religion. There are in fact many variations in fertility levels among countries that nonetheless have the same religious traditions. Moreover, within the same country over time, fertility levels may vary, even very rapidly, in the absence of any discernable decline in religiosity. The second factor is modern contraception. It was of course not a factor in the sharp declines in fertility in Europe, beginning with France in the eighteenth century and essentially culminating in the interwar years (see Anderson

and Zinsser 1990). And at present, despite the availability of contraception, fertility rates remain very different across nations and classes within nations. Przeworski et al. (2000, p. 244) conclude rightly that what drives fertility is "the demand for children." Contraception will only be used when people, especially women, decide to use it.

In general, there have been no major cultural differences between the European and Latin American countries depicted in Figures 1 through 4 above what would affect fertility levels. The differences in the patterns of demographic growth during the twentieth century are therefore related much more strongly than any other factors to the greater proportions of households in poverty in Latin America. The comparison between Chile and Sweden that follows below suggests that the key factor in generating more successful economic development in Sweden, despite its lower levels of economic expansion, has to do in large part with the much earlier development of state-run welfare institutions in that country. They transformed the nation's families, reducing fertility and drastically reducing the proportion of poor households. This stimulated the creation of a much more highly qualified labor force, one that could enhance productivity, innovation, and the design and production of new products.

Naturally, any succesful growth requires adequate levels of investment (public, private, domestic, and/or foreign), macroeconomic stability, proper governmental regulation, political-institutional stability, and the rule of law, as has been noted repeatedly. But enabling a double transformation among poorer households towards having fewer children and investing more in their education was also a key social link in the chain leading to the more successful form of twentieth-century development.

PART II: EXPLAINING DIVERGENT DEVELOPMENTS: CHILE AND SWEDEN, 1912–2002

Although it may appear surprising today, Chile and Sweden had much more than just similar GDPp/c in common at the beginning of the twentieth century. With small populations, the economies of both countries concentrated above all on the exploitation of natural resources in which they had clear competitive advantages. With rich mineral deposits—especially iron ore and copper, in addition to saltpeter in Chile—large forests, lands suitable for a seasonal agriculture, and long coasts, both countries were nations of

miners, lumberjacks, peasants, and fishermen. An incipient industrial sector supplied their respective internal markets with basic consumer products, and a growing metallurgical industry furnished equipment to mines and farms. The exports of both countries were considerable given their size, and expanding employment in loading and unloading the many boats that visited the ports presaged better times. A certain deficiency in energy was easily covered with the revenues from international trade. Public debates in both countries at the turn of the century centered on the social question. Commentaries from all points of view (including in Chile but not Sweden from the perspective of Catholic social doctrine) appeared abundantly in the press, in parliamentary debates, and university theses. Chile was a republic and Sweden a monarchy, but both countries had constitutional frameworks that followed the basic outlines of democracies, with regular elections and ample participation by male working-class electorates.

In the prewar years of 1912–14, the average GDPp/c of Chile and of Sweden was $2,583 and $3,063, respectively, in 1990 dollars.[10] As such, Sweden's product was only 15.8% larger than Chile's. As illustrated above in Figure 1, the divergence in GDPp/c growth between Chile and Sweden developed from the 1930s onwards. The growing gap was not the result of Swedish economic development changing its course drastically at any point. Sweden continued with an export orientation based on producing goods related to its natural resource endowment, although it greatly deepened their value added. Thus, its rich iron ore deposits, which formerly were used mainly to export metal bars, were the base for its armament and motor-vehicle industries, and its forests became the source for exporting paper instead of wood. Sweden did not have great leaps in its rate of economic growth, either. Its GDP—not its GDPp/c—increased, without great variations, at an average rate that was close to a very solid but not extraordinary 3% per annum between 1890 and 1960, accelerating to 4.6% in the decade of the 1960s, thanks in good measure to an expansion of public services.[11]

The Chilean economy, by contrast, suffered fluctuations in its growth after the First World War. It expanded until the end of the 1920s, only to loose, at the beginning of the 1930s, all it had gained given the drastic fall in the demand for nitrate. Towards 1936 the economy had recovered most of what it had lost, but the decade of the 1940s only

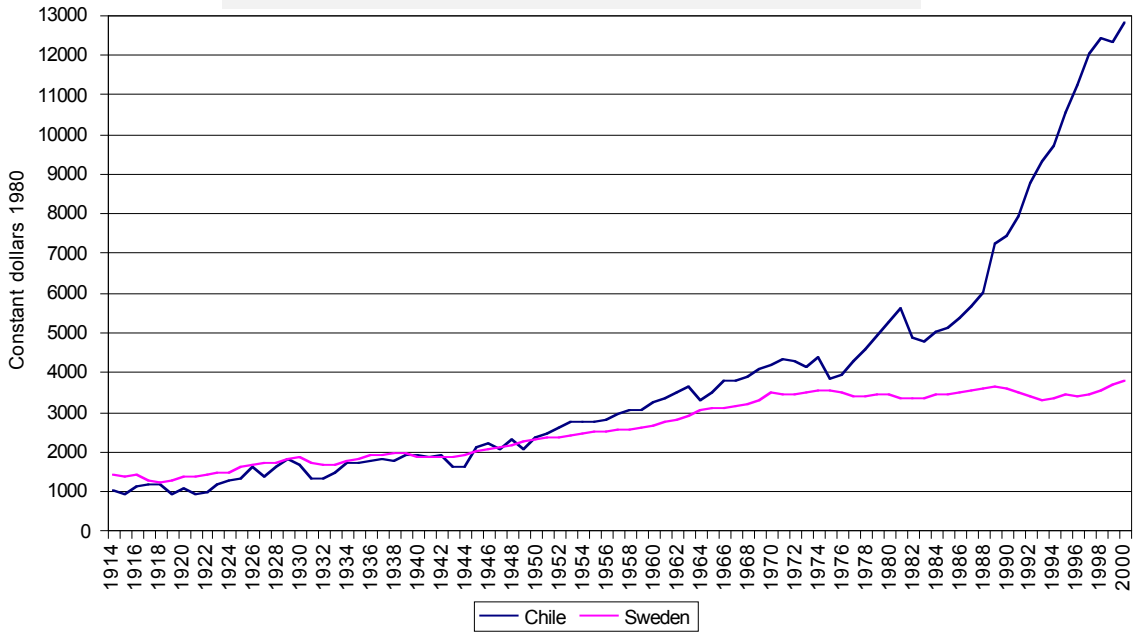
produced an average GDPp/c growth of 1.2%. The decades of the fifties and sixties generated average increases that were somewhat better at 1.5% and 2.3% respectively. Chile has only experienced rapid GDPp/c growth since 1985.

As illustrated in Figure 2 above, the central difference in terms of GDPp/c performance between Chile and Sweden during the twentieth century was the two countries' respective demographic growth rates. Such growth in both countries was due mainly to endogenous causes (Swedish emigration, principally to the United States, ceased after the First World War), and mortality after the first year of life descended in a more or less parallel way (although from initial levels that were different) in the two countries. The doubling in size of Chile's GDPp/c between 1985 and 2000, so often attributed misleadingly to the effects of neoliberal policies, was due mostly to the sharp decline in fertility that began in 1970.[12] Figure 5 sharpens the graphic impact of population growth by calculating a fictitious GDPp/c' for Chile with Sweden's demographic growth rates as well as a fictitious GDPp/c' for Sweden with Chile's demographic growth rates. With this equally contrived "per capita" measure for Sweden, the Chilean economy would be 2.7 times larger than the Swedish one by the beginning of the twenty-first century. With Chile's population increase, Sweden would have had a lower per capita GDP by the twenty-first century than that which Chile experienced with its own economic and demographic growth rates.

Parenthetically, the Swedish growth line in Figure 5 is indeed a fair representation of the shape of the inverted "per capita" measure because Chile's economic expansion was in no way a function of its demographic growth. A regression model with Chile's yearly economic growth rate between 1925 and 2001 as the dependent variable and the yearly population growth rate between 1915 and 1991 as the independent one, with a ten-year lag between the two, generates an R square that is basically zero (.0016). The Pearson correlation coefficient between these two variables is -.04. Hence, the key question in assessing the different performances in terms of GDPp/c of the two countries is, indeed, why Chile's birthrate was so much higher than Sweden's until the 1970s.

Figure 5

Per Capita GDP with Interchanged Rates of Population Growth
Chile and Sweden 1914–2000



From the 1920 census to that of 2002, the Chilean population increased 4.65 times to 15,116,400. Its biggest increase from one census year to the next occurred between 1952 and 1960, when the yearly rate of growth reached 3.04%, while the smallest such increase took place between 1992 and 2002, when the yearly rate was only 1.32%. The size of the Swedish population was greater than that of Chile until the end of the 1950s, but at present, with somewhat less than nine million, it is about 60% as large as the Chilean one. The Swedish population ceased increasing significantly in the 1970s (Valenzuela 2006a, pp. 105–107).

Why More Births in Chile than in Sweden

Returning to the similarities between Chile and Sweden at the beginning of the twentieth century, these included several common features in the light of the above mentioned factors that affect fertility regimes. The populations in both countries included a

relatively high proportion (about 30–40%) of people living in poverty. Both countries had high levels of infant mortality, although the Chilean rate, at 292 per thousand compared to Sweden's 100 per thousand, far surpassed that of Sweden (Ohlander 1992, p. 216; INE 1993, p. 12). A mid-1930s Chilean government report on forty countries concluded that Chile's infant mortality was the highest of all, and Sweden's the sixth highest (DGE 1937, p. 836). The Chilean rate was so high that its level was probably affected by a much stricter legal definition of what constituted a live birth than that which was used in other countries.[13]

Nuptiality was also similar in the two countries, given that about half the population over 15 years old in each country was either single or married. Thus, in both countries there were sizeable numbers of single adult women, which indicates that the expectation that they should marry rather than remaining either single, widowed, or divorced (or "annulled," to refer to the equivalent Chilean procedure) was generally low, although it may have varied by class, by social groups as defined by religious observance, or by region. And in both countries the proportion of births out of wedlock, at a third of the total, was virtually the same (Ohlander 1992, pp. 216–17; Ponce de León et al. 2006, p. 68). In fact, the proportions of Swedish and Chilean births out of wedlock have been remarkably coincidental over time. They both reached their lowest points in 1960 and 1961 (11.3% for Sweden and 15.8% for Chile), and have increased to just over 50% by the early twenty-first century (Valenzuela 2006a, pp. 114–117; Larrañaga 2006, p. 158). This would indicate that both countries had, despite different religious traditions, similar degrees of acceptance for single motherhood. Chile has been, in this sense, quite different from Southern European countries like Italy or Greece, where births out of wedlock in 1998 were only 9% and 4%, respectively, of the total number of births (Larrañaga 2006, p. 142). The rates of urbanization in both Sweden and Chile during the twentieth century have also followed roughly similar paths. About half the population lived in urban areas by the late 1920s, and about 90% do so today.

These similarities suggest that at the beginning of the twentieth century the fertility levels of Chile and Sweden had every reason to also be rather similar, except that the lower level of infant mortality in Sweden, while still very high, would tend to generate a lower level of fertility than that in Chile. This was indeed the case. Before the

First World War the Swedish birthrate was about 30 per thousand, and the Chilean one about 38 per thousand (Ohlander 1992, p. 216; Ponce de León et al. 2006, p. 64.) And yet by the mid-1930s, the Swedish birthrate had fallen to 14.3 per thousand (or the equivalent of just over two children per woman of childbearing age) (DGE, Chile 1937, p. 829). By contrast, the Chilean birthrate did not begin to fall until the 1960s. If cultural or religious factors, or the proportions of the population in rural areas cannot explain this difference, what does? What changed in Sweden that generated such a low fertility regime already in the 1930s?

Could it be, as Chilean government demographers have argued, that Chilean women did not know how to limit their fertility, and therefore only did so when modern contraception became available in the mid-1960s? (INE 1993, p. 17). This argument would contradict the above noted observation that people limit their births when they want to rather than as a result of contraceptive technology. But there is evidence pointing to the fact that Chilean women did indeed, when they so wished, limit their births before the 1960s. This occurred in response to the world economic depression of the early 1930s, which hit Chile with particular severity.

During the years 1927 to 1929 Chilean economic development reached its best level before the Second World War, while during the years 1931 to 1933 the country experienced a severe crisis. Such back-to-back periods of expansion and decline provide an excellent framework to examine the fertility behavior of the population in response to economic circumstances. Newly wed couples usually have a first child within a year or two, and a traditional method of limiting births is to delay marriages. And indeed, between 1927 and 1929 the average number of marriages per year in Chile was 40,650, while between 1931 and 1933 this average was only 29,150—a 28.3% drop (DGE 1937, p. 826; I have rounded the figures). The prevalence of births out of wedlock in the country would presumably limit the lower fertility effects of delaying marriages. This seems to be confirmed by the fact that the decline in births between the two periods was lower, at 15.9%, than the decline in marriages. However, the decline in the number of births during the second two-year period was slightly higher among single than among married women. Consequently, the smaller decline in the number of births was due to a proportionately higher fertility among already married women than among single ones.

Both the marriage and the birthrates subsequently recovered rapidly from these declines, except that the slump in the birthrate among single women lasted a decade and therefore only recovered its prior levels when the economy finally surpassed its 1927–29 GDPp/c level. Consequently, if the birthrate in Chile did not decline until the 1960s, it was due to the fact that people had little or no intention of limiting their fertility. Given that Chilean women responded to the economic crisis by reducing their births, it is very hard to sustain the notion that they did not know how to limit their fertility before receiving medically assisted modern contraceptives in the mid-1960s.

The difference in the evolution of fertility patterns in Sweden and Chile has to do, therefore, with some of the other factors mentioned above. They pertain to the value of children as insurance for old age, sickness, and disability; to levels of infant mortality; and to the value of children as economic assets for the survival of the household. While at the turn of the century Chile and Sweden had roughly similar parameters along these lines, changes were quickly in store for Swedish families, particularly poor ones, given the design of Swedish welfare institutions. Although Chile and Sweden first created welfare institutions in the 1910s and 1920s, the generally faulty design of those in Chile meant that its poor families had to wait until the 1950s for the same changes to begin. Given the fact that at that earlier point Chile and Sweden had quite similar per capita income levels, there was really no economic reason why Chile could not have adopted the Swedish designs at the very beginning. Although the great depression, which affected Chile more than Sweden, would have put Chilean institutions under a severe test had they been like those of Sweden, the Chilean economy did recover from the depression by the early 1940s, and it perhaps would have done so sooner with the countercyclical effects of the Swedish designs.

Even if the Chilean and Swedish institutions differed greatly in their design, in terms of social spending they were not that different. For example, in Chile primary school attendance was made obligatory in 1920 for the first four years of schooling, and total public spending on education in both countries represented about 16.5% of total public expenditures during the 1920s and 1930s. Hence, it is important to cast a finer net in examining the operations of welfare institutions in order to discover their effects on changing the fertility parameters of a country, which in turn, as I will note below, change

the characteristics of economic development. In Sweden the welfare institutions were a success, and in Chile they were not. Therefore, fertility in Chile did not change until the 1950s and 60s—after the design flaws in the welfare institutions were corrected.

Contrasts in the Design of Chilean and Swedish Welfare Institutions

The first and most important difference between the welfare institutions of the two countries pertained to the way in which their old-age pension systems were set up. As Stein Kuhnle explains, Sweden did not follow Otto von Bismarck's social insurance model to provide old-age pensions to the employed population; instead, in 1913 it created a system that gave all men and women above the age of 67 a pension supported by general state revenues (Kuhnle 1981, pp. 125–50). By 1914 there were already 73,216 pensioners in the country (Kuhnle 1981, p. 140).[14] Instead of following the Swedish example when it set up its old-age pension regime in 1924, Chile was inspired by the Bismarckian social insurance system. All the nation's employees and their employers had to contribute to either a "general" or "individual" retirement fund, while the self-employed were supposed to pay in the full amount, or ten percent of their earnings. The "general" fund was supposed to pay pensions to workers based on pooled savings, but did not allow the heirs of people who died prematurely to withdraw the funds that had been paid into it. Hence, less than 2% of all contributors opted to pay into the "general" fund. The "individual" retirement accounts did allow heirs to withdraw the full amount of the deposits from them, and were supposed to pay a monthly pension at retirement unless the amounts on deposit were to generate an income that was less than half the minimum wage. If this was the case, the full amount on deposit could be withdrawn in one lump sum. However, these individual retirement accounts did not have any provisions to readjust the amounts on deposit according to the rate of inflation.

The design of the Chilean pension system generated a fourfold failure when contrasted with that of Sweden. First, the system did not begin to pay any pensions at its inception, because the funds would only be available as they matured. Second, the people who withdrew their money from the system within a few years of its inception because they were close to retirement age could only do so in a lump sum because the amounts on deposit were not sufficient to fund a pension equal to more than half the minimum wage.

Third, those who tried to withdraw their money after twenty years of accumulation discovered that inflation had eaten away its real value. A person withdrawing retirement account money in 1948, after 23 years of contributions, would discover that the amount was barely sufficient to pay for one day of bus rides on the public transport systems of the nation's cities. Hence, as shown in Table 1, only 327 people received old-age pensions before the system was changed, following the US model, to a pay-as-you-go modality in 1953.[15] And fourth, the system was hardly universal. Only those who had formal employment had a high probability of becoming affiliates. There were separate pension systems for different employment categories, the main differences being between private white-collar employees, public servants, and blue-collar workers. Those who were self-employed and had incomes roughly similar to those of blue-collar workers were supposed to affiliate with the Obligatory Worker's Insurance Program by paying both worker and the employer contributions, but less than 10% of them did so. The evolution of the affiliated population to the blue-collar social insurance system and the numbers of pensions the system paid before and after it was revamped in the early 1950s are shown in Table 1.

Table 1

Affiliates and Pensioners in the Chilean Obligatory Worker's Insurance Program and the Social Security Service, 1930–1970

Year	No. of affiliates in thousands	% of affiliates over the labor force	No. of old-age pensions	No. of widows' pensions	No. of orphans' pensions	No. of disability pensions	% of total No. of pensions over affiliates
1930	614		11			217	0.04
1940	910		95			4,136	0.5
1945	962	49.4	128			6,629	0.7
1950	985	47.1	93			9,327	1.0
1955	1,128	51.2	48,205	3,026	10,319	13,347	6.6
1960	1,240	51.9	60,572	7,881	29,068	21,688	9.6
1965	1,375	50.5	136,720	32,388	52,047	38,068	18.9
1970	1,476	50.3	183,525	60,703	68,310	54,480	24.9

Notes: The number of pensions refers to those that exist at the end of each year. The widows' pensions in 1955 and 1960 include permanent and temporary ones. This distinction was eliminated in December 1963.
Sources: SSS circa 1971, pp. 57, 68, 72, and 78; and Arellano 1985.

Table 1 also shows that widows' and orphans' pensions did not begin until the 1950s. The only pension program that functioned with some success before that year was the one providing an income to the disabled. Such pensions were given to workers despite their not having the funds necessary to cover them in their individual retirement accounts, were set in relation to the value of minimum wages—and were therefore readjusted according to inflation. The numbers of disability pensions in Table 1 are only those that were given due to illnesses or physical ailments unrelated to occupational diseases or workplace accidents. The latter were covered by the occupational and labor accident insurance system, which also proved to be successful. It included compensation at 100% of the employee's salary while medical treatments lasted, and temporary or permanent disability pensions when the injured or sick persons could not return to the job. This program was spurred by the fact, as in Sweden, that Chilean legislation adopted in 1917 made employers fully responsible for treating the victims of occupational hazards and accidents. In 1924 the new social legislation exempted employers of this responsibility if they paid into a government-regulated insurance system for their employees. It became the basis for an elaborate network of health facilities for occupational diseases and labor accidents as well as a source for financing disability pensions that still exists to this day.

Given that virtually no one received an old-age pension in Chile before the 1950s, both men and women probably continued to expect their children to be their main asset for protection in old age. Life expectancy at birth in Chile was low until the mid-twentieth century, mostly because of the high rates of mortality of infants and children. This meant that those who reached adolescence had a much higher life expectancy than they did when they were born. In 1940, for example, life expectancy at birth was only 41 years for men and 43 for women. However, a 15-year-old male in 1940 had a life expectancy of 68 years, while a woman of that age could expect to reach 70.5 years (INE 1993, p. 21). In other words, having survived childhood, Chileans, especially women, could reasonably assume that they would live past retirement age. Consequently, a young adult in those years did have to think about how to sustain him or herself in old age, and it must have been common for at least one of his or her parents to still be alive. In sum, the lack of an adequate pension system meant that Chilean couples, and especially

women, had little reason to limit their births, unlike their Swedish counterparts who, fully forty years before them, could count on the fact that they would have old-age pensions. It is only after the pension system did begin to function in Chile in the 1960s (although still with many exclusions) that women began the very rapid transition to a much lower fertility rate.[16]

The elderly or the disabled form part of the "dependent" population that must be sustained by those in the labor force, and therefore they have been viewed as an overall burden on the national economy even if their expenditures may help on occasion to maintain consumption during recessions. However, one of the most important effects of pension systems has been largely overlooked. Families whose elderly and disabled members receive pensions can for that very reason devote more resources to caring for their children. This has a particularly important effect among poor families and can make significant difference in terms of enabling them to invest in their education. This means that the next generation of children from poor families can potentially enter the labor force with higher overall skills. In this sense, pensions are not only or merely about providing the elderly and disabled with a means of livelihood. They are about giving children the potential for a better start in life. They are an essential poverty reduction tool that has an immediate impact on a nation's *youngest,* not only its oldest and disabled populations.

In addition, the fertility rate probably remained higher in Chile than in Sweden because infant mortality only declined significantly much later. With the continued importance of children as old-age insurance, Chile's incredibly high infant mortality rate helped stimulate the high birthrate. In Sweden the infant mortality rate was cut in half by 1930, reaching 50‰ (DGE 1937, p. 836). This result was most probably due to the new measures to protect infants adopted by the Swedish state in 1917, to the beginning of a decline in the birthrate, and to the development of health care institutions with universal access. The measures to protect infants in Sweden included obliging absent fathers to pay child support. When this was impossible, the state was supposed to give child support subsidies to mothers (Ohlander 1992, pp. 216–17). Infant mortality in Chile was still 251‰ in 1935, after which it began to fall gradually, reaching 119.8‰ in 1955, 57.6‰ in 1975 (Sweden's level fifty years earlier!), 19.5‰ in 1985, and 8.8‰ in 2005 (Valenzuela

2006a, p. 107). When infant mortality finally began to decline in the 1940s, the Chilean population grew even faster given the lag between perceptions of the fragility of newborns and their greater odds of survival. Hence the rate of births per thousand was 39.8 in 1930 and still 37.5 in 1960, even though the infant mortality rate had declined by two thirds in this same period. However, it is possible that the absence of a proper old-age pension system is a much more powerful factor driving decisions regarding proper family size. From 1930 to the early 1960s, Chilean women bore an average of between five and six children during their fertile years, an average that was even higher in rural areas (INE 1993, p. 17).

The slow decline of infant mortality in Chile was in part a consequence of the inadequate access of Chile's poor to health care. The Obligatory Worker's Insurance Program created in 1924 was actually intended mainly as a health care system for its affiliates. Given the fact that contributors were mainly drawn from the nation's salaried labor force (only 3.4% of the total affiliates were self-employed), about two thirds of the affiliates were men. Preventive health was given to the system's affiliates and to their female spouses for pregnancy and infant care until age two. Affiliates wishing to insure their spouses and children in preventive programs covering all ailments and providing a full program of health care had to pay additional contributions into the system. The cost was such that only .2% of all registered affiliates were contribution-paying family members of primary contributors (Valenzuela 2006b, p. 384). Hence, even the family members of the contributors to the system went to it only on an emergency basis, and paid means-tested fees for services.

The health system designed for employed workers was also supposed to serve the indigent, free of charge. For example, in 1948 a third of all women who sought medical attention in the system and 13% of all men were classified in its records as "indigent" (Valenzuela 2006b, p. 385). While the health system did not offer preventive care to these people, over the years it became the main vehicle to reach the whole population with public health measures such as vaccinations and attempts to eradicate illnesses like tuberculosis. But the system did not really function well as a general public health system. Thus, as late as 1949 the Obligatory Workers' Insurance Program's health services tended to only 36% of all births in the country, which meant that most children

were simply born at home, mostly with no prenatal or postnatal care (Valenzuela 2006b, p. 384). And despite the promise to provide health care to all children of affiliates and, presumably, to all those born to poor families, in 1949 the system provided health care services to only 31.5% of all children born either in 1948 or 1949 (Valenzuela 2006b, p. 384). If separate health systems for white-collar employees and civil servants and private medicine covered another 20% of the population—a generous estimate—this meant that the Chilean health care system in the mid-twentieth century failed to reach somewhat over 40% of the total population (Valenzuela 2006b, p. 385). All of this was in sharp contrast to the Swedish approach of providing health care services for the whole population at a time, up to the 1940s, when the GDPp/c of the two countries were not dramatically different.

The same reasons that led to a high birthrate in Chile produced, at the beginning of the 1960s, the opposite result. The infant mortality rate had been cut in half, and as of the 1950s old-age and widows' pensions for the salaried labor force and the self-employed who had contributed to the pension system became a reality. Obviously a certain time lag is necessary to change perceptions regarding ideal family size, but by the mid-1960s this must have already occurred. As the maternal-infant clinics began to distribute modern contraceptives at that point, it is not surprising that they found great acceptance. The reach of these clinics had expanded considerably given new public investments in the health service in the 1950s, and as a result the coverage of the new methods was extensive. The effect was to create the most important and rapid transformation in the rates of Chilean demographic growth since independence from Spain. The birthrate fell 8.8‰ in just five years from 1965 to 1970, an amount equal to a reduction of 71,000 births per year. This abrupt decline was followed by a slower but steady pace of decrease in the following years.

Other Chilean welfare institutions not only failed to deliver on their stated objectives, but also had negative consequences. This resulted from the fact that they established variable costs for enterprises, and ended up creating labor market distortions that were and have continued to be detrimental to workers. The most significant example was the provision for infant and child care. Instead of creating a childcare network in neighborhoods with state funding and a variable scale of copayments, the childcare

legislation of 1917 demanded that employers create childcare centers in their enterprises, assuming fully their cost, if they hired more than fifty women between the ages of 18 and 45. A subsequent decree in 1925 lowered the number of women workers that obliged employers to create childcare centers to nineteen. The consequence of these measures was that employers began to avoid hiring more than nineteen women of childbearing age, thereby decreasing formal employment opportunities for women, which in turn prevented them from becoming health and pension system affiliates. Thus, while 22% of all women (including girls) were in the labor force in 1907, this proportion declined to 19% in 1920, and to 13% by 1930 (Valenzuela 2006b, p. 394). This obviously affected most those women who were single mothers and heads of households, limiting their employment opportunities and enhancing the proportions of such families that were living in poverty. Moreover, employers tried to pass on the costs of the childcare provisions in those enterprises where they did establish day care centers to women workers themselves by lowering their wages.

Other such institutions with negative consequences have been severance payments for workers who are fired instead of having a proper unemployment compensation system, like the one created in 1926 in Sweden, which operates independently from enterprises and therefore does not affect the microeconomic environment of the firm. The consequence of the Chilean severance payment system has been an increase in job rotation as employers seek to prevent their salaried labor force from gaining seniority, given that each extra year adds a month's wages to the cost of firing workers. Moreover, a family allowance system created in the 1950s that was supposed to give workers extra payments for each dependent they declared merely resulted in a subsidy to employers for their labor costs. Employers were put in charge of administering the system by paying the family allowance and by later collecting its costs from the state. What they did, aided by an inflation rate that hid the real value of the payments to workers, was to re-label a portion of the salary they paid as the new family allowance, and then they collected this amount from the state (Valenzuela 2006b, pp. 410–14). By contrast, the Swedish program of family allowances was paid directly by state institutions.

In sum, while Swedish welfare institutions quickly had a significant and positive impact on the nation's families, no such effect occurred in Chile, particularly for the majority of poor families and single-mother-headed households. The consequence well into the twentieth century was the continued reproduction of poverty in a large proportion of the Chilean population, fluctuating from a third to a half.

Poverty, Educational Attainment, and Development

As noted previously, a high rate of endogenous demographic growth when a significant proportion of a nation's households live in poverty will generate a different form of economic growth from the kind associated with the highest levels of development under the new conditions created in the twentieth century. This difference has to do largely with the low qualifications of the labor force, which is itself a result of the inability of poor families to educate their children.[17] With the support of properly designed welfare institutions, as developed in Sweden but not in Chile in the early part of the twentieth century, poor families will rapidly realize that they can have higher educational aspirations for their children. What such welfare institutions do is no less than to alter the family structures of poor households. They reduce their fertility as parents realize that they need not rely so heavily on their children for care in old age, and they foster a change in the conceptions of parental and filial roles. The main responsibility of children is to study, and that of parents is to make sure that children remain in school until they graduate from the highest educational levels they can achieve. As this second change takes hold, poor families begin to alter their perception of the cost of having children, which generates in turn further incentives to limit births.

Despite their similarities, there was already a difference between Chile and Sweden in terms of educational attainment. Chileans did not have universal literacy, and the schools had not reached full coverage of the school-age population. By contrast, in Sweden these problems had been resolved, and by the 1920s the central question was how to improve the quality of the nation's public schools.[18] Primary education in Sweden had been made compulsory by law in 1842 (Olson 1986, p. 4), long before a similar measure for the first four years of primary education was adopted in Chile in 1920. The Chilean government did make efforts to expand public primary education, but by the end

of the nineteenth century only 50% of the population over age 15 could read and write. By 1930 literacy had expanded to 75%, but progress was subsequently slow because 4.9% of adults were still listed as illiterate in 1996 (Mamalakis 1980, p. 142; SERNAM 1998, p. 75). The progression of literacy may be seen in Table 2, which shows the rates of increase in the number of literates and in the population as a whole.

Table 2

Rates of Increase in Chile of the Literate Population and of the Total Population between Census Years, 1854–1970

Years	Percentage Increase of the Number of Literates	Percentage Increase of the Population	Increase of the Percentage of Literates Beyond the Percentage of Population Growth
1854–1865	59.5	26.4	33.1
1865–1875	54.3	14.1	40.2
1875–1885	53.2	21.7	31.5
1885–1920	44.4	14.8	29.6
1920–1930	32.7	12.5	20.2
1930–1940	15.6	18.5	-2.9
1940–1952	31.4	19.4	12.0
1952–1960	25.9	20.8	5.1
1960–1970	29.3	21.4	7.9

Sources: Calculated on the bases of Mamalakis (1980, p. 142). The figures for the 1885 to 1895 changes are omitted due to the inaccuracy of the 1895 census (DGE 1933, p. 39). The large increases in the population up to 1885 resulted from the incorporation of indigenous territories and some immigration.

Table 2 reveals that the proportion of Chileans who could read and write increased at a faster pace in the nineteenth than in the twentieth century. To defeat illiteracy in a population that has a literacy rate of only 10% (the approximate level in 1854 in Chile), it is necessary to have about a century of increases of 3% per year in literacy above the percentage increase of the population. Between 1854 and 1885 this yearly increase was 3.38%, but from 1885 to 1970 it was only .845%. With this

slowdown, universal literacy was not reached in Chile until the beginning of the twenty-first century.

The fact that literacy grew faster before the 1930s than after those years seems puzzling. The increase in the number of people who could read and write did not have in itself a multiplier effect. This would indicate that the population without instruction was relatively isolated from the rest. Moreover, the variations in the increase of the literate population seemed to bear no relationship with the evolution of fiscal spending on education. From 1845 until the end of the nineteenth century, when the progression of literacy was rapid, the percentage of fiscal spending on education was on average—and without much variation—6.7% of the total (Mellafe et al., 1992, Anex 5). Beginning in 1910 fiscal expenditures on education rose to a higher level, averaging 16.5% from that year until 1963. This percentage represented a slightly higher proportion of the fiscal budget devoted to education than in Sweden between 1950 and 1980 (Olson 1986, p. 42, vol. 4), although in those years it had a smaller school-age population and the real levels of Swedish state spending were higher. And yet literacy in Chile expanded more slowly after the state earmarked a higher proportion of its budget for education. Part of the problem was that half of the state's spending on education went to secondary and higher educational institutions, thereby providing a subsidy for the nation's wealthier families.[19] Still, the portion devoted to primary schools increased to a little over half the total budgeted amount from the mid-1920s onwards (Mellafe et al. 1992, p. 146). Considering the large increase in the education budget in 1910, this represented an important infusion of resources for basic education. The compulsory education law of 1920 also seems to have had no discernable effects.

Private education does not explain the Chilean variations in the increase of literacy either. In the decades after independence private primary education comprised a high percentage of enrollments, but by 1861 it included only 26.8% of all primary students, mostly in Catholic schools (Galdames 1934, p. 63). Since then, private education enrollments have oscillated between a fifth and a third of all primary-school enrollments until the closing decade of the twentieth century.

An examination of the expansion of school infrastructure does not help to clarify why the increase in literacy stagnated as it did after the 1920s. In 1875 there were 818

state-run primary schools with a total enrollment of about 60,000 children, which represented only 16% of the population between 6 and 14 years of age. These children were taught by 1,130 teachers, an unfavorable student teacher ratio of 58 to 1. Beginning in 1875, the expansion of the system was very rapid. Enrollments doubled by 1902, quintupled by 1920, and were 7.5 times larger in 1928. Enrollments suffered a retrenchment beginning in 1930 and did not recover their 1928 levels until 1939. The availability of public schools followed a similar rhythm. Their number reached a maximum of 3,389 in 1926, after which there was a decrease followed by a resumption of their expansion in 1936, at which point there were 3,446 schools with a better teacher student ratio of about 41 pupils per teacher (Torres Silva 1941, pp. 34–35). The increase in the capacity of the educational system continued in the 1940s and beyond.[20] And yet, despite this expansion, the percentage of school-age children who were enrolled in school stagnated until the mid-1940s. Table 3 contains these figures between 1935 and 1980, showing their distribution by gender.

Table 3

Coverage of Chilean Primary Education by Gender, 1935–1975

Year	% of boys enrolled in schools over the total population of boys aged 6 to 14	% of girls enrolled in schools over the total population of girls aged 6 to 14	% of public school enrollments over the total number of enrollments
1935	59.7	53.7	82.1
1940	60.5	60.7	79.8
1945	61.0	58.4	77.8
1950	67.5	64.5	72.2
1955	72.3	69.8	66.4
1960	80.2	79.5	68.2
1965	93.9	92.4	71.4
1970	96.3 *	96.7	77.2
1971	102.5	102.6	81.7
1975	105.6	104.9	83.4
1980	104.2	102.7	79.8

* The original source has a mathematical error that has been corrected here.

Source: Echeverría 1982, pp. 72–75.

Table 3 shows that after the economic crisis of the 1930s, the proportion of school children enrolled did not begin to increase until the end of the 1940s. The key change was the introduction of school lunches and scholarships for poor children beginning in 1953, a measure that also coincided with the effective beginning of the provision of old-age pensions. From that moment on the expansion of the coverage of the primary school system was more or less sustained. Table 3 also shows that the percentage of school enrollments in the state-run system remained more or less the same throughout this period.

These considerations show that in order to obtain universal primary school coverage—thereby eventually permitting full literacy in the population 15 years and older—it was not enough to increase the education budget, to establish legally compulsory primary school attendance, and to create the infrastructure of teachers and classrooms. If that had been the case, progression in literacy would have been more sustained over time. The basic problem was that Chile's poor people did not have the means to send their children to school. Schooling and literacy advanced at a relatively high rhythm while those families that had the means to invest at least partially in the education of their children took advantage of the opportunity to do so as the educational infrastructure developed, beginning in the nineteenth century. The cost of sending children to school obviously increased with the distance they had to travel to get there, and was greater for rural than for urban families. In any event, it is clear that poor families would have sent their children to school much earlier if the state had given them the means to accomplish this goal through cash subsidies, nutritional supplements, and even clothes, something that did not effectively begin until the creation of the Office of School Assistance and Scholarships (Junta de Auxilio Escolar y Becas) in 1953. The welfare institutions that were set up in the mid-1920s had but a minimal impact on poor households, and therefore did not generate any changes in the structure of poor families. A universal old-age pension system, like the Swedish one, would have probably been sufficient to generate this change.[21] The state, in a word, had to supply the cost of educational investments for poor families. Because it did not do so, the progression of literacy declined once the families that could send their children to school in response only to the offer of school placements had already done so. The most difficult phase in

overcoming illiteracy obviously involved the children of the poorest families, and the lack of support for them simply prolonged from one generation to the next large numbers of illiterates in a population that had, overall, minimal educational attainments anyway. In Sweden nutritional assistance for school-age children had existed since the beginning of the twentieth century. In Chile, observers of the educational system in the early 1900s knew that this was necessary. Dr. Eloísa Díaz, the medical advisor of the public education system, proposed that the state provide food and clothing for poor children in a memorandum she wrote to the government in December 1905 (Monsalve Bórquez 1998, p. 23–24). Prior to 1953 there were efforts to distribute milk in schools, especially in the larger cities, through the private charitable health networks). However, these efforts were insufficient, and a half-century would go by before Díaz's recommendation was taken up, at least in its nutritional aspect.

The impact of the incapacity of poor households to invest in the education of their children is also demonstrated by the patterns of school desertion. The gravity of this problem can be appreciated by the fact that in 1931 47.3%—almost half—of all students in public primary schools were enrolled in the first year of studies. Given that a further 23.2% of all students were enrolled in second grade, the result was that 70.5% of the whole primary school population was enrolled in the first two grades.[22] These percentages were repeated, basically unchanged, in subsequent years. A large part of the deficit in school coverage was due, therefore, to the fact that children did not continue in school after a minimal exposure to it. It seems that many families did send their children to school for a short period, but found it difficult to keep them there for any substantial number of years, and much less until graduation. Hence, while conventional wisdom would indicate that insufficient school enrollments are indicative of a lack of state efforts to provide schooling, the conclusion here is that the problem lies, rather, in the incapacity of poor households to take advantage of the educational opportunities that are on offer.

These enrollment figures explain, nonetheless, what is an apparent paradox, namely that literacy actually increased more rapidly in the decades around the turn of the century than the paltry school attendance figure would suggest. In 1907, for example, only about a third of the school-age population was enrolled in either state-run or private primary education. For that third to be repeated in subsequent years with a great

concentration of students in the first and second grades, there had to be a large turnover of children in the schools. As a result, there were many more people with some exposure to the alphabet than would appear to have been the case. But this also meant that the new generations of the literate population had barely any instruction at all beyond minimal literacy.

At the end of the nineteenth and beginning of the twentieth centuries, worker-run mutual aid societies used to organize adult education courses for their affiliates and their families. (Such societies in Sweden also did this at the time (Lindensjö 1992, p. 309)). It is likely that such institutions had some impact on increasing literacy, although they probably served more to reinforce what had been learned in the weak childhood exposure to education. Primary schools run by the state for adults, both during the day and at night, always had very low enrollments.[23]

CONCLUSIONS

Since the 1960s, the sociology of development has drawn its explanations of the inadequate development of Latin American countries from culturalist paradigms, such as modernization theory, or macro-structural ones, like the dependency perspective. According to these views, either something was amiss in the Latin American "mentality" that led people to replicate "traditional" behaviors incompatible with modernization, or the subcontinent's positioning in the international economic order had perverse effects. This paper argues that the problem of development has to be rethought by examining its social foundations, in particular the characteristics of a nation's families, welfare institutions, and demographic growth.

Families are not only a depository of a whole range of economic and cultural determinants but have, in turn, their own effects on the macro-social context. They are an important factor in reproducing the class structure and social inequality over time, and help forge the characteristics of national societies and their development, in particular through the numbers of children they have and through the educational opportunities they are able, if at all, to give them. Figures 2, 3, 4, and 5 show the extent to which a very simple exchange of the demographic growth rates between "developed" European countries and "developing" Latin American ones totally invert their levels of economic

development as measured by GNPp/c. However, if Chile (and by extension other major Latin American countries) had had since the 1930s fertility rates like those of Sweden, France, or Italy, it would not only eventually have had a much smaller population with more resources per inhabitant. The country could quite possibly also have had the development trajectory that is typical of a "first world" economy.

For Chile's birthrate to have descended to somewhat over two children per woman by the late 1920s it would have been necessary for Chileans to have had more trust in their future—trust that they would not be left unprotected in old age, and that their children would not easily fall victims to infant and child mortality. That security could have been given to them by adequately designed welfare institutions providing universal access to old-age pensions and to health care. When Sweden adopted these measures in the early decades of the twentieth century, its GNPp/c was not very different from that of Chile, and hence the Chilean failure was not a matter of a lack of resources but of proper public policy designs and political will.

While policies to provide health care for children, nutritional supplements in schools, and cash transfers to poor mothers as long as their children remain in school are broadly understood at present to be important tools in the arsenal to combat poverty, the crucial importance of old-age pension systems for this end—as well as for development in the medium to long term—has been greatly underappreciated. Yet as a poverty reduction tool old-age pensions are very effective, and not only to decrease destitution among the elderly. The moral economy of the family is such that it transfers resources between its generations very efficiently, and therefore old-age pensions do not only support the elderly but can also allow the poor to invest scarce resources in children rather than grandparents. Moreover, when old-age pension systems function properly to guarantee an income to all at retirement age, this impacts the fertility choices of the poorest families as parents no longer need to think of their children as potential old-age insurance. For this effect to occur, such pension payments do indeed need to be sufficient to cover basic necessities, and not just token amounts. The long-term fertility consequences of old-age provision for poor families are unique among poverty alleviation measures, especially when accompanied by effective policies to reduce infant mortality. For this reason old-age pensions are a key measure to reduce (in the absence of

forcible coercion such as China's one-child policy) the size of new generational cohorts, and to diminish over the medium to long term both poverty and social inequality. School nutritional programs and cash payments to poor families in and of themselves may have, by contrast, the opposite effects on fertility, such that an effective program of old-age pensions is a key complement to these measures. Nutritional supplements and cash payments do of course have a much more immediate and readily measurable impact on poor families, and it is in part these qualities that make them so attractive to politicians, policy makers, and aid donors. However, the socially transformative effects of old-age pensions are in the longer term much more profound.

If Chile had adopted an effective old-age pension program and better healthcare for children in the opening decades of the twentieth century, as did Sweden, its new generational cohorts would have been smaller. The same levels of national expenditures for education would have been concentrated on serving fewer pupils. Universal coverage of primary education would have been reached long before the 1970s, especially if school nutritional programs had been set in place as well long before 1953, and additional subsidies had been given to destitute families in order to clothe their children. Such programs were well within the capacity of the national economy to fund, as noted above. With these elements, the new generations entering the labor force would have had better educational levels, and had immigration remained as low as it was, their numbers would have been smaller. Such cohorts of new workers would have been able to demand better salaries, forcing employers to make efforts to improve labor productivity, and investors to create new products or designs for existing ones that would have deepened the value added of national production. To accomplish these goals they would have had to incorporate new technologies—inventing some of them—more quickly and extensively. They would also have had to pay more attention to worker training, and workers, in turn, would have been able to absorb such training with greater ease given their higher educational achievement. There would also have been a closer association between levels of education and earnings, and as a result a greater degree of overall income equality as well. The purchasing power of the population would have been higher despite its smaller size, creating as a result better opportunities for the development of manufacturing and agro-industrial activities catering to consumer demand—as well as for the businesses that

supplied them with machinery and raw materials. In any event, with its relatively small population, Chile's economy, like that of Sweden, would have required an important export orientation. The diversification of its export products beyond its natural resource endowments would have had greater probabilities of success given the overall scenario of a more highly trained labor force and a broader base from which to cultivate the emergence of new entrepreneurial talent.

This hypothetical Chile could only have emerged if the proper welfare institutions had been developed in the early decades of the twentieth century. They were not. Instead of generating support for the poorest families, their design in fact excluded them while providing facilities to those who were better off. And in particular they tended to exclude women, many of whom were single mothers, even affecting their capacity to find employment. Their response was to continue to rely on having children as a means of social insurance. This result was in part the consequence of a conception of welfare institutions, as seen through the health care and old-age pension systems of the Obligatory Worker's Insurance Program, that took the stability of two-parent households for granted. The benefits of welfare institutions are best conceived to facilitate the life of individuals, not families; and such an approach, paradoxically, helps all existing family units in a much better way. The most adequate social bases for development in the twentieth century were created, therefore, through the synergy between the creative activities of families and the supports and facilities that welfare and educational institutions gave to individuals.

The price structure of a national economy shapes the levels and nature of investment and entrepreneurship, and a key factor in the price structure are wage and salary levels in the labor market. In underdeveloped countries with a high birthrate, the labor markets look like those described classically by Arthur Lewis (1954, pp. 139–191). They are markets with an unlimited offer of labor, where salary levels gravitate towards those that prevail in the most backward and traditional sector of the economy.[24] If the prices in the labor market are minimal, growth rests on a very low capital-labor ratio, because there are many opportunities for investing in activities that require no or very few qualifications of the labor force—as well as an abundant supply of it. The result is to

reproduce the economy along patterns that do not lead to the highest type of development possible with the century's new technologies.

As long as the benefits of welfare institutions have an important impact on raising the living conditions of families in the whole population, such institutions have in the medium term the consequence of ratcheting up salary levels within the price structure. As a result the labor market ceases to be like the one described by Lewis, which will have repercussions on the level of consumption, the structure of prices, the educational attainment of the labor force, and therefore the nature of investments.[25] Consequently, rather than being a drag on national development that only "rich nations" can afford, properly designed welfare institutions have been in fact an essential element in creating the social fundamentals for growth since the dawn of the twentieth century. If the constraints of national economies are such that universal programs are initially impossible to fund, it is always necessary for properly designed welfare institutions to begin by providing support to the very poorest. Through incremental changes universality can be achieved in time. However, beginning such programs (as occurred in Chile) by providing benefits to those who are better off, makes the achievement of universal coverage in the future much more difficult both for financial as well as political reasons.

At the end of an economically successful nineteenth century from the perspective of its overall growth, Chile nonetheless had all the social elements to ensure the failure of its development in the twentieth. It had high levels of poverty, an incomplete extension of literacy, high inequality, and low salaries in a labor market (with the exception of the mining industry and railways) that fit Lewis's description. It also had a birthrate that greatly exceeded the capacity of families to invest in the education and training of their children. In that context, if welfare institutions had had the effect of ratcheting up the labor market and inducing a change in attitudes regarding optimal family sizes, the repercussions on the price structure would have led to a form of development based on a more productive capital-labor ratio. And families would have produced new generations better prepared for the challenges of development in the twentieth century. Jaime Ros (2001, p. 5 and Chapter 10), summarizing and expanding on a significant body of economic literature, shows the importance of human capital for development, the advantages of a greater level of social equality, and the value of endogenous

technological innovations that not only make possible, but are necessary, for a process of development that ends up increasing productivity and expanding the offer of new products. This paper shows the importance of well-conceived welfare institutions as a means to set the synergy of these factors into motion. It is the road that Sweden adopted beginning early in the twentieth century.[26] And even though we will never know exactly what the economic growth of Chile would have been, or what Chilean society would have looked like if from the first decades of the twentieth century it had adopted welfare institutions similar to those of Sweden, what is certain is that its economic development as measured by GNPp/c would have been much greater. "Underdevelopment" is basically a phenomenon that emerged in the twentieth century, and Chile would have been from the mid-century on more in the league of the rich rather than the poor countries of the world.

Given the inadequacies of the welfare institutions created in Chile in the 1920s and 1930s, children continued to be the only viable old-age insurance system for the poor, and a potential resource for the daily survival of many households. The barefoot child dressed in tatters who begged in the streets or stole from outdoor markets to support a family led by a mother afflicted by tuberculosis was a common sight in Chilean cities through the mid-twentieth century. His or her cousin in the countryside already knew at age seven how to plant potatoes and lead a pair of oxen. They swelled the ranks of the population in which poverty was reproduced. Educational and welfare institutions barely began to involve them as the century passed the midpoint. Meanwhile, as they grew up they enlarged a labor market bulging with people who had few or no qualifications.

In sum, government spending on welfare institutions—again, if properly designed—enhances growth of per capita income by changing family structures with the consequence of increasing human capital. The connections between welfare institutions, poverty, and poor families constitute key missing links in the study of development.

ENDNOTES

[1] For comprehensive expositions of this view see Black (1966) and the selections in Finkle and Gable (1971).

[2] Valenzuela and Valenzuela (1978) describe and compare the two development paradigms. For founding statements in the dependency perspective see Cardoso and Faletto (1969) and Sunkel and Paz (1970).

[3] For a sweeping view of development across the ages from this perspective see North, Wallis, and Weingast (2009).

[4] Barro (1991, p. 437) adds Sub-Saharan Africa to this observation about Latin America.

[5] However, Przeworski et al. (2000, p. 259) emphatically note that Barro reports the opposite result.

[6] Figure 1 and subsequent Figures 2, 3, and 4 all rely on data compiled by Angus Maddison (1995). The figures use constant 1990 Geary-Khamis US dollars that measure national economies with corrections for purchasing power parities and international prices for basic commodities.

[7] These factor growth figures are calculated from Maddison (1995).

[8] If population increases in the Latin American countries were driving their economic growth, the graphs with the GDPp/c' calculation could be suspect without introducing some corrections to their slopes. However, an examination of the scatterplots of the rates of growth of the population and of the GDP in each case (not shown here) dispels this possibility. The fluctuations of both variables are clearly independent of each other over the course of the full century. Since 1960 the trend has been for population growth to decline gradually in all four Latin American countries, while economic growth has been positive overall despite some sharp fluctuations. Argentina's growth before 1940 may have been somewhat positively related to its population growth increases or decreases given its immigration flows in the first part of the century, but after that decade (and therefore over the course of the century) this relationship disappears entirely and even tends to be negative since 1950. Latin America's most important economic sectors employ modern technologies, and the decoupling of its population from its economic growth is only natural.

[9] For an example of a paper emphasizing state institutional factors see De Gregorio (2005).

[10] Angus Maddison (1995), expressed in 1990 International Geary Khamis US dollars.

[11] Södersten (1990: 33). After the petroleum crisis of 1973, the rhythm of Swedish growth diminished notably, even suffering a retrogradation that it didn't begin to recover from until the mid-1990s.

[12] While the creation of an export led model of development has benefitted Chilean growth, the sharp reduction in the fertility rate was a far more important factor in determining the country's GDPp/c increase. Thus, the average annual GDP growth rate between 1955 and 1970 was about 4%, and from 1985 to 2000 it was about 6%. But in per capita terms these annual increases were about 1% and 4.6 % respectively.

[13] The infant mortality statistics were affected by the legal definition of birth and by the concomitant obligation to register life births: see McGuire and Frankel (2005), especially, p. 88.

[14] Kuhnle offers a general analysis of the origins of welfare states in Scandinavia. For a detailed description of the evolution and characteristics of the Swedish welfare state, see Olson (1986, p. 1–116), where references to the old-age pension system appear on p. 7. See also Olson (1987, p. 10).

[15] The literature on the subject in Chile is silent on this enormous failure of the nation's pension system. Quite the contrary, it celebrates the fact that Chile was a "pioneer" nation in establishing a social security system in the Western Hemisphere (Mesa Lago 1989, and Arellano 1985).

[16] Cross-national statistical research confirms that there is a strong statistical association between the adoption of old-age pension systems and a rapid decline of the fertility rate. See Boldrin, De Nardi and Jones (2005).

[17] For a discussion of the relationship between education, capital accumulation, and development, see Ros (2001, chapter 6). In part this relationship depends on the degree of income inequality in a country. A lower level of schooling is related to greater inequality, and the latter is associated therefore with a lower level of development.

[18] For a historical account of those debates in Sweden, which culminated only in the 1960s with the creation of comprehensive basic schools as an expression of the Social Democrats' commitment to equality, see Lindensjö (1992, p. 307–38).

[19] After 1881 the state began to expand secondary education for girls, which was previously mainly in private hands. Public secondary schooling enrollments for boys and girls reached parity in the 1920s. Women were first admitted to the University of Chile in 1877.

[20] In 1954 there were 4,261 public primary schools and 2,727 private ones, for a total of 6,988 schools (UNESCO 1961, p. 74).

[21] The Chilean state finally established a universal pension system for all who reach age 65 in 2007.

[22] Dirección General de Estadísticas (1933, p. 92). Completing these figures, 15.7% of children were in third grade, 8% in fourth grade, 3.3% in fifth grade, and only 2% in sixth grade.

[23] For instance, in May 1931 there were 452,857 students in attendance at regular state-run primary schools. At the same time, there were 15,366 students in the special primary schools, run both during the daytime and at night and open to people who were not of normal primary-school age (DGE 1933: 89).

[24] In the Chilean countryside this salary level was at rock bottom in the 1950s as migrant workers asked to be paid amounts equivalent to what they were due in "family allowances" (a then-new government program), in addition to in-kind benefits.

[25] The effect of ratcheting up the price of labor in the price structure of an economy, thereby unleashing an incentive for businesses to invest in measures to enhance productivity and the value added of the products they produce, can also be generated by the early organization of strong labor movements that put constant but moderate upward pressures on wages. In this sense, strong labor movements can also be viewed as a contributing factor in creating the kind of twentieth-century development associated with first world economies. For this argument, see Valenzuela (1994). The comparison between Chile and Sweden also conforms to this prediction: Chile's labor movement had a very weak effect, if at all, on the labor market, while Sweden's was quite strong.

[26] Sweden did have the advantage, unlike Chile, of being connected over several centuries to the trade networks of Northern Europe, especially to the so-called Hanseatic League.

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