CLASS DISCRIMINATION AND MERITOCRACY IN THE LABOR MARKET: EVIDENCE FROM CHILE*

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Abstract

This paper studies class discrimination and meritocracy in the Chilean labor market. Employing a dataset rich in productivity and class measures, we find that upper-class professionals earn approximately 50 per cent more than those raised in lower socioeconomic backgrounds. This gap is unrelated to differences in academic performance at university, second language proficiency, postgraduate studies, schools' academic quality, geographic origin and other standard controls, which suggests some employer discrimination. This gap is larger than gaps reported elsewhere for gender, race and physical appearance. Meritocracy is modest, as the effect of socioeconomic background on earnings outweighs that of academic performance at university.

Resumen

Este artículo estudia la discriminación por clases y la meritocracia en el mercado laboral chileno. Empleando una data rica en mediciones de productividad y clases sociales, se encuentra que los profesionales de clase alta ganan aproximadamente 50 por ciento más que aquellos que han crecido en menores estratos socioeconómicos. Esta brecha no está relacionada con diferencias en el desempeño académico en la universidad, habilidades en el manejo de un segundo idioma, estudios de postgrado, calidad académica escolar, origen geográfico ni otras variables de control estándar, lo cual sugiere algún tipo de discriminación por parte del empleador. Esta brecha es mayor que aquellas reportadas en otros estudios por género, raza o apariencia física. El efecto meritocracia es modesto, de manera que el efecto del origen socioeconómico sobre los ingresos sobrepasa a aquel obtenido del desempeño académico en la universidad.

Keywords: *Chile, Latin America, Discrimination, Meritocracy, Class, Earnings Differentials.*

JEL Codes: J31, J70.

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I. Introduction

Discrimination in the labor market has received a great deal of attention from economists. The vast theoretical and empirical research done in this area has investigated different forms of discrimination based on various worker characteristics such as race, gender, ethnicity and physical appearance. Yet, discrimination may emerge also from characteristics other than those commonly addressed in the literature. The purpose of this work is to study the effect on earnings of another common but neglected phenomenon: "classism" or class-consciousness.

Studying the effect of class on earnings is important both for reasons of efficiency and for normative considerations. Labor market efficiency requires that labor be rewarded according to marginal productivity, that the division of labor exploits individual talents, and efficient investment in human capital be driven by expected increases in productivity. These conditions are violated if class discrimination exists, as earnings would not be driven only by expected productivity. From a normative perspective, class discrimination contradicts the widely shared principles of equal opportunity and meritocracy, inhibits social mobility and perpetuates economic inequality. It also reduces the incentives of the poor to invest in human capital, making it even harder for them to improve their economic condition.

There are various reasons to expect a relationship between class and earnings. First, class can be associated with some productivity-enhancing skills or characteristics. Some examples include the quality of education and networking skills. Second, employers can be "classists" or class-conscious in the sense of having preferences for hiring employees from a certain class, regardless of their expected productivity. Third, even if employers do not class-discriminate, class-discrimination from other sources can still exist (for example from peers, clients, consumers or suppliers). These forms of non-employer discrimination may affect an employee's productivity and earnings. Finally, employer statistical class-discrimination would exist if employers hire an employee just because they expect his or her class to be associated with certain skills or productivity-enhancing characteristics.

Most studies on earnings differentials have failed to fully disentangle discrimination and productivity effects in the determination of earnings because they often employ few measures of productivity, and therefore many aspects of productivity remain unobserved by the researcher.[1] This paper employs a richer and more detailed dataset than most related studies on earnings differentials, which are typically based on population surveys. Our dataset contains various measures of ability and productivity uncommon in the literature, such as various measures of academic performance at university, school academic quality, second-language proficiency and postgraduate studies, among others. This uncommon availability of productivity measures turns particularly plausible that a statistical association between class and earnings is likely to be caused at least in part by employer class-discrimination, once proper controls are employed.

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[1] However, see Kahn (1992), Hamermesh and Biddle (1994) and Biddle and Hamermesh (1998).

On the other hand, the availability of measures of academic performance allows us to examine the degree of "meritocracy" in the labor market, under the assumption that academic performance at university can be regarded an appropriate measure of merit.

We investigate these issues empirically employing a dataset of different cohorts of Economics and Business graduates from a large public university in Chile, regarded as one of the best of the country and of Latin America.[2] As a public and meritocratic university, it has a significant degree of socioeconomic diversity among its students. This, plus the fact that all graduates were exposed to a common academic environment and have fairly similar jobs produces an exceptionally rich dataset by which to assess and isolate the effect of class on earnings.

Chile also constitutes an interesting place to empirically assess the relationship between class and earnings. Since the Spanish conquest, Spanish and Amerindian descendants have mixed continuously, and the size of Afro-American population has historically been negligible. As a result, and except for the small Amerindian populations existing today, "race" and "ethnicity" as such are not meaningful categories by which identify and describe the vast majority of the mixed-blood Chilean population, unlike other nations in the Americas.[3] Instead, we postulate that "class" is a more appropriate characteristic for examining labor market discrimination in Chile, as we discuss next. It is well known that Chile has historically exhibited a particularly unequal income distribution even in comparison to other developing nations, and also being a relatively class-segregated country.[4] Moreover, it is also well known that this large inequality is of a peculiar kind; it is fundamentally the consequence of an unusually large gap between the wealthiest 5 to 10 per cent of the population and the rest.[5] These particular conditions can be expected to be a breeding ground for a class-conscious society. In fact, as Chileans would agree, Chilean culture, language and everyday life is plagued with eloquent manifestations of class-consciousness. As we shall discuss in some detail, historians have claimed that this class-segregation can be traced back to various idiosyncratic developments in Chilean history, whose consequences may be still echoing today. In this context, it is interesting to study whether contemporary Chilean society, having undergone profound market reforms since the 70s, shows signs of being a more open and meritocratic society.

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2 University X is the only Chilean university included in a recent academic ranking of the top 500 universities of the world elaborated in January, 2004. Only seven Latin American universities appear in this ranking. See http://europa.eu.int/comm/research/headlines/news/article_03_12_31_en.html.

3 In the 2002 Chilean census less than 5 per cent of the population declared to belong to one of the existing Amerindian ethnic groups. See http://www.ine.cl/cd2002/sintesiscensal.pdf.

4 See for example Larrañaga (2002) and Ruiz-Tagle (1999).

5 In fact, when inequality statistics are computed after excluding the richest 10 per cent of each country in Latin America, Chile becomes one of the most egalitarian countries in the region, while all other countries tend to keep the relative positions derived from the standard measures of inequality. See Contreras (1998).

This work is structured as follows. Section two defines and discusses the notion of class employed in this paper. This section also describes the dataset and explains in detail the four measures of class used in the empirical analysis. Section three presents the returns of class on earnings by means of earnings equations. Earnings predictions are obtained for various hypothetical combinations of class and academic performance, which sheds light on the relative importance of socioeconomic background and academic merit on the determination of earnings. Next, this section reports and discusses Oaxaca-Ramson (1994) earnings decomposition estimates and class earnings gaps. These are contrasted with earnings gaps reported in the literature for other worker characteristics, namely gender, race and physical appearance. Section three ends by discussing some plausible interpretations of the class earnings gaps. Finally, Section four presents the main conclusions and recommendations.

II. Data

This article employs data from a follow-up survey conducted on a representative sample of students graduated from Business and Economics from University X in 12 consecutive years up to 1999.[6] University X is one of the largest universities in Chile, and it enrolls students from diverse socioeconomic backgrounds. As mentioned earlier, the similar academic treatment received by the students combined with the wide disparity of their socioeconomic background produce a rich database for studying the effects of class on earnings. The survey contains detailed information of each individual's performance in the labor market, as well as job and employer characteristics. It also contains information about postgraduate studies. This database has been merged with data containing detailed information about each individual's socioeconomic background of origin. In addition, University X has provided detailed data about each individual's academic performance throughout their undergraduate studies. A description of the variables in the merged dataset is presented in Appendix two.

Class is certainly a complex concept. However, as Weber first noted, there is agreement that class involves the notion of economic status as well as other characteristics that provide social status within a society.[7] In this paper we define "class" as an individual's socioeconomic *background*, understood as a set of characteristics imprinted by the family and social environment of *origin* in the early phases of his or her life cycle. Therefore, our definition implies that class is a set of characteristics acquired early in life, which remain constant throughout time, and therefore cannot be modified during an individual's life. However, this notion does not contradict the possibility that individuals may modify their socioeconomic status, for example by investing in education. There-

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6 Business and Economics is a single 5-year undergraduate program, which consists of 3 years of a core curriculum including courses in both disciplines, followed by 2 years in which students must choose either an Economics or Business specialization. However, both specializations are fairly good substitutes for a wide variety of occupations in the labor market in Chile.

7 This is well illustrated by the concepts of "new rich", "old money vs. new money" and so on. See for example Marshall (1994) for various operational definitions of "class".

fore, our notion of class has the important property of being exogenous from an econometric perspective. This implies that the causal relationship between class and earnings examined in this article is unambiguous; since the imprinting of class precedes participation in the labor market, a statistical association between class and earnings must be interpreted as a causal effect of class (socioeconomic background of origin) on earnings.

In order to embrace different aspects of class, we employ four different measures of it. These are; i) family and environmental socioeconomic background, measured as the average income of the individual's Municipality of origin; ii) the socioeconomic status of the individual's school; iii) the individual's ancestry, measured as the number of Basque or (non-Spanish) European surnames; and iv) an experimentally-generated subjective measure of the individuals' socioeconomic status judged from their two surnames.[8] Each of these measures of class requires detailed explanation and justification, which are provided next in sequential order.

i) As mentioned earlier, Chile has historically had one of the most unequal income distributions in the world, also exhibiting a high degree of spatial (physical) class-segregation.[9] As a consequence, the average income of an individual's Municipality contains a great deal of information about an individual's likely family background, as well as the socioeconomic background of his or her neighborhood and social environment of origin.[10]
ii) Chile's school system is also highly segregated; while the majority of state schools enroll mostly lower-income students, private schools are attended mostly by well-off students. Therefore, school characteristics reveal information about each individual's family background, as well as the socioeconomic background of the individual's classmates and social environment. We employ the earliest available measure of each school's socioeconomic background, which is a five-point variable provided by the Ministry of Education for 1998. Since a great deal of time persistence can be expected for a school's socioeconomic background, this measure is employed for all cohorts in the sample.[11] The five-point measure was transformed into a dummy variable equal to one for schools having upper socioeconomic status. In order to distinguish the possible effect on earnings of a school's socioeconomic background from the school's academic quality, we also employ comparable data of the schools' academic performance in the empirical estimation.[12]

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8 Unlike Anglo-Saxon countries, in Spanish-speaking countries both the father's and mother's surnames are employed.

9 See Larrañaga (2002).

10 For example, the richest Municipality of the sample has an average income 11 times higher than the poorest Municipality.

11 In any case, this measure is highly correlated with schools' Public/Private dependency. However, we employ the socioeconomic measure because it is more closely related to each individual's socioeconomic background.

12 This data correspond to the average scores in the SIMCE test administered by the Ministry of Education for 1998. Previous data is not available for all schools. However, since a lot of time persistence exists in a school's academic performance as the evidence suggests, we employ this measure for all the cohorts in the sample. See Ministerio de Educación (2002).

iii) Apart from economic characteristics, there are reasons to hypothesize that class is also affected by ancestry, particularly in Chile. Chilean historians have long emphasized how Chile's socioeconomic elite has been formed largely from the descendants of Basque and non-Spanish European immigrants. In fact, the term "Castillian-Basque aristocracy" was coined by historians to refer to the elite that arose from the merging of upper-class *criollos* (Spanish descendants living in Chilean territory) and the Basque immigrants who arrived in Chile mainly in the late colonial times.[13] Later, other flows of European immigration occurred during the XIXth and part of the XXth centuries. It has been well documented how these immigrants and their descendants merged with the existing Castillian-Basque aristocracy and gained control over a significant fraction of Chile's most productive land, developed different trades and industries, and engaged in the most prestigious professions. As a result, towards the turn of the XXth century a significant fraction of national wealth and political and economic power were concentrated on a relatively small group of families and dynasties, a notion that is well captured by the well-known term "*la Fronda Aristocrática*". These families were often connected by kinship relations, and did not intermarry with the large *mestizo* (half-breed) population.[14] This situation is still recognizable today in Chilean society; it is estimated that only 25 per cent of the Chilean population are descended mainly from Europeans, while 70 per cent are *mestizos* and 5 percent are predominantly of Amerindian ethnic background.[15] To capture the notion of ancestry we make use of the individuals' father's and mother's surnames. These were then classified as being of Basque or non-Spanish European origin, or otherwise (i.e. non-Basque Spanish) employing Chilean and international literature on the genealogical origins of the surnames existing in Chile.[16] Accordingly, each individual obtained a score of either none, one or two surnames of Basque or non-Spanish European origin.

iv) Finally, the fourth measure of class was constructed by means of a novel experimental procedure; 30 university undergraduate students of various socioeconomic backgrounds were asked to provide anonymously and individually their perception of the graduates' socioeconomic background judging only from their two surnames using a five-point scale.[17] The results

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13 Mainly in the second half of the XVIII and the beginning of the XIX centuries. Hence Miguel de Unamuno's famous remark that "the two greatest creations of the Basques were the Society of Jesus and the Republic of Chile". Collier and Sater (1996), p. 18.

14 See for example Villalobos (1987) and Collier and Sater (1996).

15 See Collier, Skidmore and Blakemore (1992).

16 Only non-Spanish European surnames were considered because it is impossible to disentangle Spanish surnames from recent Spanish immigrants from those of the large *mestizo* population. Moreover, Amerindian surnames were not identified separately because they were very few. The details and sources employed can be found in Núñez and Pérez (2004).

17 The five categories of socioeconomic status were High, Upper-Middle, Middle, Lower-Middle and Lower Socioeconomic Status. Subjects were paid for turning-up and also according to their relative performance in the experiment: money prices were given to the top three evaluators whose guesses coincided the highest number of times with the most voted rank for each individual across the 30 evaluators. The details of the experiment can be found in Núñez, and Pérez (2004).

from this experiment are remarkable and interesting in its own right; all 435 partial correlations of the ranking of the 30 evaluators were positive and statistically significant at 1 per cent confidence, ranging from 0.27 to 0.76 with an average of 0.53. Moreover, the variance of the 30 evaluations obtained by each of the 300 pairs of surnames evaluated was statistically lower than the variance that would be obtained if evaluators had assigned their ranks randomly. This lower-than-random variance achieved for all evaluated individuals suggests that *all* individuals obtained a significant degree of consensus regarding their socioeconomic background as perceived from their surnames.

TABLE 1
CORRELATION MATRIX OF CLASS MEASURES

	School SES	Ancestry	Subjective SES
Municipality SES	0.39	0.28	0.34
School SES		0.24	0.37
Ancestry			0.58

All correlation coefficients are significant at 1 per cent confidence.

Table 1 presents the partial correlations among the four measures of class explained above. Both the Ancestry variable, defined as the number of Basque and Non-Spanish European surnames, and the Subjective Socioeconomic Status (Subjective SES) equal to each individual's average ranking in the experiment were significantly correlated with each other. This suggests strongly that the evaluators indeed assessed the individuals' likely socioeconomic background based on the ethnic origin suggested by their surnames. Moreover, these measures were also significantly correlated with the other two measures of class, namely the average income of the Municipality of origin (Municipality SES) and with School's Socioeconomic Status (School SES). These results suggest that socioeconomic background is in fact associated with ethnic background. In addition, these results suggest that in Chile surnames contain and reveal information about an individual's *perceived* socioeconomic background of origin, and that this perception is amply shared and consensual. Finally, this agreed perception is actually correct, in the sense that the common perception is indeed associated with the individuals' real socioeconomic background.[18]

The high and statistically significant correlations among the four measures of class shown in Table 1 pose a potential collinearity problem, which may undermine the statistical significance of each class measure in the empirical estimation. If, however, these measures of class turn out to be jointly significant in causing earnings despite their positive correlation, then their coefficient should be taken as fairly robust.

[18] See Núñez and Pérez (2004).

III. The Returns to Class

The graduates' earnings were collected as ordered data by the follow-up survey. Respondents were asked to report their earnings using a scale of nine money intervals. In order to obtain money measures of earnings for each individual, we employed two alternative procedures. The first was to compute the median value of each interval, and the second was to compute the mean value of each earnings interval derived from a kernel density function applied on the ordered data.[19]

Table 2 shows the results of mean-difference tests for the kernel-based earnings of upper vs. lower SES groups, according to each of the four class variables described above. In all cases upper-class individuals have, on average, statistically higher earnings. Table 3 shows the results of various specifications of earnings equations. Each model in Table 3 includes three different measures of earnings as dependent variables. The first column of each model is an ordered probit regression employing the ordered earnings data. The dependent variable of the second and third columns of each model are the log of the median value of each earnings interval and the log of the mean value of each earnings interval derived from the kernel-based procedure. As in the rest of the article, all regressions have robust standard errors. Table 3 indicates that the results are very similar regardless of the dependent (earnings) variable and the econometric specification employed. All specifications yield the standard results of an earnings equation, namely concave experience, and relative earnings premium for males. The coefficients of various measures of academic performance at university are positive, significant and robust across the different specifications, namely the academic performance percentile, performance in final exams and whether the student had interrupted or failed in a previous university

TABLE 2
LABOR MARKET EARNINGS OF HIGHER VS. LOWER SES PROFESSIONALS
(Chilean Pesos of 2000)

Measures of SES	High SES	Low SES	Difference	t-test
School	1,625,091	1,355,342	269,749	2.69[a]
Municipality	1,725,734	1,281,667	444,067	4.72[a]
Ancestry	1,667,980	1,449,967	218,013	2.23[b]
Subjective SES	1,787,577	1,434,531	353,046	3.29[a]

* a, b indicate statistical significance at 1 and 5 per cent, respectively.

[19] From the optimal kernel density function f(x), we computed the term f(x)/x for all earnings intervals, and then imputed this value for all the observations of the corresponding interval.

TABLE 3
EARNINGS EQUATIONS

	Model 1			Model 2			Model 3			Model 4		
	Ordered-data income	Ln of median income	Ln of kernel-based income	Ordered-data income	Ln of median income	Ln of kernel-based income	Ordered-data income	Ln of median income	Ln of kernel-based income	Ordered-data income	Ln of median income	Ln of kernel-based income
Experience	0.53[a]	0.17[a]	0.16[a]	0.53[a]	0.17[a]	0.17[a]	0.53[a]	0.17[a]	0.17[a]	0.53[a]	0.17[a]	0.17[a]
	(0.057)	(0.018)	(0.016)	(0.051)	(0.014)	(0.014)	(0.051)	(0.015)	(0.014)	(0.050)	(0.014)	(0.014)
Experience^2	–0.02[a]	–0.01[a]	–0.01[a]	–0.02[a]	–0.01[a]	–0.01[a]	–0.02[a]	–0.01[a]	–0.01[a]	–0.02[a]	–0.01[a]	–0.01[a]
	(0.0026)	(0.0008)	(0.0008)	(0.0021)	(0.0006)	(0.0006)	(0.0022)	(0.0007)	(0.0006)	(0.0021)	(0.0006)	(0.0006)
Gender (Male=1)	0.76[a]	0.26[a]	0.25[a]	0.77[a]	0.27[a]	0.27[a]	0.77[a]	0.27[a]	0.27[a]	0.76[a]	0.27[a]	0.26[a]
	(0.16)	(0.06)	(0.05)	(0.14)	(0.05)	(0.05)	(0.14)	(0.05)	(0.05)	(0.14)	(0.05)	(0.05)
Capital District=1	–0.22	–0.10	–0.08									
	(0.30)	(0.13)	(0.12)									
Received Funding =1	–0.05	–0.03	–0.03									
	(0.18)	(0.064)	(0.062)									
Interrupted Previous studies =1	–0.49[b]	–0.15[b]	–0.15[b]	–0.49[a]	–0.16[b]	–0.16[a]	–0.48[a]	–0.16[b]	–0.16[a]	–0.51[a]	–0.17[a]	–0.17[a]
	(0.22)	(0.076)	(0.075)	(0.19)	(0.063)	(0.062)	(0.19)	(0.063)	(0.062)	(0.18)	(0.062)	(0.062)
Academic Percentile	–0.50[b]	–0.17b	–0.16[c]	–0.38[c]	–0.14[c]	–0.13[c]	–0.41[b]	–0.15[b]	–0.15[b]	–0.37[b]	–0.14[c]	–0.13[c]
	(0.24)	(0.085)	(0.082)	(0.21)	(0.075)	(0.073)	(0.21)	(0.074)	(0.073)	(0.21)	(0.076)	(0.074)
Passed finals 1st Attempt=1	0.36[c]	0.13[c]	0.12[c]	0.44[b]	0.16[b]	0.15[b]	0.44[b]	0.16[b]	0.16[b]	0.43[b]	0.15[b]	0.15[b]
	(0.21)	(0.073)	(0.070)	(0.19)	(0.067)	(0.064)	(0.19)	(0.068)	(0.065)	(0.19)	(0.067)	(0.064)
Leadership=1	0.05	0.05	0.06									
	(0.31)	(0.11)	(0.10)									
Business in business job with MBA degree=1	0.44	0.15	0.16									
	(0.39)	(0.13)	(0.13)									
Top mark in finals=1	–0.21	–0.07	–0.07									
	(0.27)	(0.085)	(0.083)									
English Proficiency =1	–0.19	–0.06	–0.06									
	(0.24)	(0.081)	(0.080)									
Postgraduate studies=1	0.04	0.0004	–0.01									
	(0.20)	(0.069)	(0.067)									
High SES School=1	0.18	0.06	0.06	0.35[b]	0.12[b]	0.12[b]	0.40[a]	0.13[a]	0.13[a]	0.36[b]	0.12[b]	0.12[b]
	(0.30)	(0.104)	(0.101)	(0.15)	(0.052)	(0.050)	(0.15)	(0.051)	(0.049)	(0.15)	(0.052)	(0.051)

Table 3 (Cont.)

	Model 1			Model 2			Model 3			Model 4		
	Ordered-data income	Ln of median income	Ln of kernel-based income	Ordered-data income	Ln of median income	Ln of kernel-based income	Ordered-data income	Ln of median income	Ln of kernel-based income	Ordered-data income	Ln of median income	Ln of kernel-based income
School Size*High SES School	0.002	0.001	0.001									
	(0.0023)	(0.0008)	(0.0008)									
School's Academic quality	0.005	0.002	0.002									
	(0.0035)	(0.0011)	(0.0011)									
Municipality Average Income	0.0016[b]	0.0006[b]	0.0005[b]	0.0017[b]	0.0006[b]	0.0006[b]	0.0018[a]	0.0007[a]	0.0006[a]	0.0018[b]	0.0006[b]	0.0006[b]
	(0.0008)	(0.0003)	(0.0003)	(0.0007)	(0.0003)	(0.0002)	(0.0007)	(0.0003)	(0.0002)	(0.0007)	(0.0003)	(0.0002)
Basque/Non-Spanish European Ancestry	0.10	0.04	0.04	0.13	0.06	0.05	0.21[b]	0.08[b]	0.08[b]			
	(0.13)	(0.044)	(0.043)	(0.11)	(0.039)	(0.038)	(0.090)	(0.032)	(0.031)			
Subjective SES	0.26[c]	0.07	0.07	0.18	0.05	0.05				0.25[b]	0.08[b]	0.08[b]
	(0.15)	(0.053)	(0.052)	(0.12)	(0.044)	(0.043)				(0.10)	(0.036)	(0.036)
Private firm=1	0.57[b]	0.15[c]	0.15[b]	0.45[a]	0.14[a]	0.14[a]	0.46[a]	0.14[a]	0.14[a]	0.45[a]	0.14[a]	0.14[a]
	(0.24)	(0.080)	(0.077)	(0.15)	(0.052)	(0.050)	(0.15)	(0.052)	(0.050)	(0.15)	(0.052)	(0.050)
Public firm=1	0.39	0.12	0.11									
	(0.26)	(0.089)	(0.085)									
Self-employed=1	–0.27	–0.11	–0.11									
	(0.48)	(0.16)	(0.16)									
Self-employed *Received Funding	–1.13	–0.33	–0.31									
	(1.07)	(0.37)	(0.35)									
Firm size	–0.12	–0.03	–0.03									
	(0.10)	(0.036)	(0.035)									
Economist in economics job=1	0.016	–0.003	0.001									
	(0.32)	(0.11)	(0.11)									
Economist in business job=1	–0.21	–0.06	–0.05									
	(0.30)	(0.10)	(0.11)									
Business in business job=1	0.078	0.017	0.023									
	(0.29)	(0.10)	(0.10)									
Constant		12.10[a]	12.15[a]		12.45[a]	12.51[a]		12.61[a]	12.65[a]		12.38[a]	12.43[a]
		(0.40)	(0.38)		(0.17)	(0.17)		(0.13)	(0.12)		(0.17)	(0.16)
R^2		0.55	0.55		0.51	0.51		0.51	0.51		0.51	0.51
Pseudo R^2	0.21			0.19			0.19			0.19		
Observations	246	246	246	283	283	283	283	283	283	283	283	283

* a, b, c significant to 1%, 5%, 10% respectively. Standard deviation in parenthesis.

degree.[20] Schooling in years is not included as a regressor because all observations in the sample are university graduates, yielding very little variance in this variable. However, dummy variables for post-graduate studies yielded positive coefficients, although not statistically significant. This may be possibly due to the inclusion of the various measures of ability described above, which is consistent with the possibility that post-graduate studies may have an important signaling component. Employees in private firms earn more than their counterparts (mainly in universities and in the public sector), and Economics and Business majors have similar earnings. The reduced regressions in Models 3 and 4 include only the variables significant at 10 per cent confidence. These variables explain nearly half of the variance in earnings, more than most of the standard earnings equations in the literature. This may be due to the inclusion of regressors not commonly employed in other earnings studies, namely measures of academic performance and class.

All four measures of class are highly and jointly significant and robust across all specifications despite the existence of collinearity among them, with the exception of Ancestry and Subjective SES, which have the highest correlation (0.58). However, they become significant when included separately from each other but keeping the other class variables, as in Models 3 and 4 of Table 3. Taken at face value, the evidence of Table 3 indicates that there exists an important and statistically significant return to employees' socioeconomic background. It is important to note that the measures of class are significant and robust even when other possibly class-related measures of productivity are included, such as school's academic performance, school size (as measures of networking opportunities), English proficiency, postgraduate studies, "leadership" (measured as participation in student unions and/or competitive sports as undergraduates), and geographical origin.[21] This suggests that the return to class may be the result of some form of discrimination and/or some class-related source of productivity unrelated to those included in the models in Table 3.

Note that all models included in Table 3 assume that the effect of academic performance on earnings is the same regardless of the individuals' socio-economic background. However, there is a reason to expect academic performance to be relatively more important in determining earnings for graduates from poorer backgrounds: while better-off students may compensate a poor academic performance with social skills and connections, students from poorer backgrounds are less likely to do so. Accordingly, academic achievement seems a relatively more important means to succeed in the labor market for poorer students. We investigate this hypothesis in the models presented in Table 4, where academic performance at university has been interacted with the various measures of class.

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[20] The score in the PAA, a multiple-choice test required to apply to a University degree in Chile was not included for two reasons. First, this score is not designed to be strictly comparable across cohorts. Second, PAA scores measure an individual's relative performance in a given year. This raises yet another comparability problem as the coverage of the PAA has increased significantly in the last decades.

[21] A large proportion of jobs in Business and Economics are located in Santiago. Employees born and raised in Santiago may have more connections and networking opportunities than outsiders.

This procedure poses an econometric problem, however: the variables that employ the class measures either in isolation or interacted with academic performance are collinear, which reduce their statistical significance. To avoid this problem, we have estimated only those models where a specific class measure is employed either in isolation or interacted with academic performance, as shown in Table 4.

The models in Table 4 share interesting features. First, all the variables have very similar coefficients and statistical significance across the models. Second, all the models indicate joint existence of intercept class effects and interactions between class and academic performance. In particular, all models suggest an increased return to academic performance for students from lower socio-economic status, which confirms the hypothesis mentioned above.

The results of Table 4 allow studying the relative importance of class vs. academic performance in determining earnings. In order to do so, we computed earnings predictions from various hypothetical combinations of class and academic performance, which are reported in Table 5. The model used to obtain these predictions was selected from those in Table 4 by employing Davidson and MacKinnon´s J-test, designed to choose among non-nested models. Each model in Table 4 was tested against all the remaining models.[22] This procedure indicated that the Models 1 and 5 could not be defeated by any of the remaining models, while they could not defeat each other. Model 5 was finally selected due to its slighter better goodness-of-fit.

Table 5 presents the predicted income in Chilean pesos of 2000 for various combinations of class and academic performance derived from Model 5 in Table 4, keeping the remaining variables of the model fixed at their sample means.[23] Table 5 provides several interesting results. First, the earnings estimates show that a bottom-of-the-class student raised in a rich Municipality and a rich school, and endowed with upper-class ancestry is expected to earn statistically more than a top-of-class student raised in a poor Municipality, without upper-class ancestry and coming from an average State school. Various cells of Table 5 even suggest that the bottom-of-the-class hypothetical employee raised in a privileged environment is likely to earn statistically more than an ample variety of top-of-class students raised in *average* socioeconomic backgrounds. This exercise provides clear suggestions that socioeconomic origins seem relatively more important than academic performance in determining earnings in the labor market. Accordingly, this evidence portrays the Chilean professional labor market as having some although modest degree of meritocracy.

However, Table 5 does indicate that academic performance is indeed rewarded in the labor market, although in varying degrees depending on the students' socioeconomic background. As hypothesized and demonstrated earlier, a marginal increase in academic performance raises a poor student's expected income more than that of an upper-class student. In fact, Table 5 shows that academic merit is fairly irrelevant in determining an upper class student's ex-

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22 See Greene (2000) for a detailed explanation of Davidson and MacKinnon's J test.

23 Table 5 reports income predictions only for the model that includes school and municipality background and the subjective measure of SES. However, very similar results are obtained in the subjective measure is replaced by the ancestry measure.

TABLE 4

EARNINGS EQUATIONS WITH CLASS-ACADEMIC PERFORMANCE INTERACTIONS. DEPENDENT VARIABLE: LN OF KERNEL-BASED INCOME

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Experience	0.167[a]	0.170[a]	0.169[a]	0.168[a]	0.168[a]	0.169[a]	0.169[a]	0.169[a]
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
Experience^2	–0.0056[a]	–0.0057[a]	–0.0056[a]	–0.0056[a]	–0.0056[a]	–0.0056[a]	–0.0056[a]	–0.0056[a]
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender (Male=1)	0.261[a]	0.270[a]	0.267[a]	0.263[a]	0.266[a]	0.267[a]	0.266[a]	0.269[a]
	(0.047)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Interrupted Previous studies=1	–0.169[b]	–0.180[a]	–0.173[a]	–0.171[b]	–0.171[b]	–0.180[a]	–0.179[a]	–0.178[a]
	(0.067)	(0.067)	(0.066)	(0.067)	(0.067)	(0.066)	(0.067)	(0.067)
Passed Finals 1st attempt=1	0.149[a]	0.162[a]	0.160[a]	0.156[a]	0.156[a]	0.160[a]	0.155[a]	0.158[a]
	(0.058)	(0.057)	(0.057)	(0.057)	(0.058)	(0.057)	(0.057)	(0.057)
Academic Percentile	–0.130[c]	–1.020[a]	–0.914[a]	–0.770[a]	–0.357[a]	–0.872[a]	–0.297[a]	–0.471[a]
	(0.078)	(0.208)	(0.216)	(0.223)	(0.106)	(0.218)	(0.096)	(0.108)
Private Firm =1	0.137[a]	0.128[a]	0.129[a]	0.130[a]	0.133[a]	0.126[a]	0.128[a]	0.129[a]
	(0.049)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)
High SES School = 1	0.121[b]		0.123[b]	0.122[b]	0.116[b]			
	(0.052)		(0.051)	(0.051)	(0.052)			
Municipality Average Income	0.0006[a]			0.0006[b]		0.0006[b]	0.0006[b]	
	(0.0002)			(0.0002)		(0.0002)	(0.0002)	
Subjective SES	0.082[b]				0.080[b]		0.084[b]	0.086[b]
	(0.037)				(0.037)		(0.036)	(0.036)
High SES School *Ac. Percentile		0.232[a]				0.247[a]	0.268[a]	0.242[a]
		(0.090)				(0.087)	(0.086)	(0.089)
Municip. Avg. Income*Ac. Percentile		0.0009[b]	0.0011[b]		0.0012[a]			0.0010[b]
		(0.0004)	(0.0004)		(0.0004)			(0.0004)
Subjective SES* Ac. Percentile		0.167[b]	0.172[a]	0.188[a]		0.173[a]		
		(0.065)	(0.065)	(0.064)		(0.064)		
Constant	12.427[a]	12.888[a]	12.816[a]	12.717[a]	12.546[a]	12.788[a]	12.498[a]	12.593[a]
	(0.159)	(0.106)	(0.112)	(0.119)	(0.160)	(0.116)	(0.161)	(0.161)
R^2	0.507	0.517	0.515	0.514	0.511	0.512	0.515	0.515
Adjusted R^2	0.489	0.499	0.497	0.496	0.493	0.500	0.497	0.498
Observations	283	283	283	283	283	283	283	283

* a, b, c significant to 1%, 5%, 10% respectively. Standard deviation in parenthesis.

TABLE 5
PREDICTED INCOME CONDITIONAL UPON CLASS MEASURES
AND ACADEMIC PERFORMANCE
(Chilean Pesos of 2000)

		Highest Income Municipality in Sample			
		High SES School		Low SES School	
		High Subjective SES	Low Subjective SES	High Subjective SES	Low Subjective SES
Academic Performance Percentile	10% (top)	1,838,060 (82,433)	1,572,587 (96,243)	1,643,241 (109,684)	1,377,767 (95,891)
	50%	1,828,724 (70,579)	1,563,251 (87,191)	1,633,905 (112,059)	1,368,432 (99,373)
	90%	1,818,681 (112,742)	1,553,207 (124,484)	1,623,862 (151,012)	1,358,388 (142,433)

		Average Income Municipality of Sample			
		High SES School		Low SES School	
		High Subjective SES	Low Subjective SES	High Subjective SES	Low Subjective SES
Academic Performance Percentile	10% (top)	1,823,867 (84,235)	1,558,393 (96,100)	1,629,048 (109,348)	1,363,574 (93,775)
	50%	1,764,855 (66,909)	1,499,382 (74,982)	1,570,036 (101,834)	1,304,562 (78,820)
	90%	1,701,370 (90,092)	1,435,897 (90,511)	1,506,551 (122,963)	1,241,077 (99,461)

		Lowest Income Municipality in Sample			
		High SES School		Low SES School	
		High Subjective SES	Low Subjective SES	High Subjective SES	Low Subjective SES
Academic Performance Percentile	10% (top)	1,801,424 (88,355)	1,535,951 (97,098)	1,606,605 (109,894)	1,341,132 (91,625)
	50%	1,663,864 (91,986)	1,398,391 (85,289)	1,469,045 (108,139)	1,203,572 (72,137)
	90%	1,515,876 (130,330)	1,250,403 (113,036)	1,321,057 (138,211)	1,055,584 (97,930)

* Standard errors in parenthesis.

pected income, judging from the first column of the upper panel. The enhanced responsiveness of a poor students' expected income to his or her academic performance suggests that academic merit or effort is indeed a means that socially-handicapped students can employ to improve their prospects in the labor market. However, our earlier conclusion indicates that academic merit is unlikely to fully close the earnings gap relative to an upper-class student, regardless even of the latter's academic performance.

The earnings predictions of Table 5 also provide an order of magnitude of the earnings gap between employees of upper vs. lower socioeconomic background, keeping academic merit fixed. In particular, an average student (in the 50th academic percentile) from an upper-class background is likely to earn nearly 50 per cent more than an average student from the poorest socioeconomic background in the sample, or, alternatively, the latter graduate is likely to earn 35 per cent less than the former.[24] This gap does stand out as a large gap even in comparison with the earnings gap reported for other workers characteristics, as we shall discuss later. In order to examine earnings in more depth, we estimated class earnings gaps following one of the standard methodologies employed in the literature for these purposes, namely the Oaxaca-Ramson (1994) decomposition. Appendix 1 shows the decomposition of class-earnings effects for the four measures of class, with Ancestry and Subjective SES included separately as in models 3 and 4 of Table 2.[25] Each row of Tables a) and b) of Appendix 1 decomposes the earnings gap associated with the corresponding class measure into a premium and a penalty for upper (higher than average) and lower than average SES employees, respectively, in addition to the part of the earnings gap explained by differences in skills between the two class groups. Tables a) and b) of Appendix 1 indicate that School SES, Municipality SES, Ancestry and Subjective SES all have statistically significant earnings premium for upper SES employees, as well as earnings penalties for lower SES employees, controlling for differences in observable skills. In all three cases, the order of magnitude of the earnings premium and penalties is in the range of 4 to 7 per cent. Accordingly, each of the class measures yields earnings gaps unrelated to skills differences of around 10 to 12 per cent, which correspond roughly to the sum of the premium and the penalty for each class measure.

Note that Tables a) and b) of Appendix 1 report the earnings gap decompositions for each class measures separately, that is, keeping the remaining class measures fixed at the sample mean values. Therefore, the sum of the premia and penalties of all three measures of class provides an approximate measure of the total earnings gap associated with socio-economic background, once skills differences between the upper and lower class groups have been controlled. The combined effects of the three measures of class in Tables a) and b) yield class earnings gaps of approximately 30 per cent between upper SES and lower

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[24] This figure is obtained using the expected earnings figures of 1828724 and 1203572 Chilean pesos reported in Table 5.

[25] The derivation and interpretation of the Oaxaca-Ramson decomposition is fairly standard and it is not presented here. For a presentation and discussion, see the original paper in Oaxaca and Ramson (1994).

SES employees, all other observable characteristics kept constant. Note however that these gaps are obtained from the comparison of the earnings of higher-than-average SES and lower-than-average SES individuals, such that the earnings gap between the extreme upper and extreme lower SES individuals would be considerably higher, as suggested indeed by Table 5.

Since class discrimination has been largely a neglected topic, it is difficult to asses how the class-earnings gap reported above would compare with the situation in other regions of the world and other niches of the labor market. In the only comparable work known to the authors done recently for British graduates, the direct effect of social class background (measured as parental socioeconomic background) on earnings was very close to zero and often not significant.[26] However, the class earnings gaps reported above seem remarkably large in comparison to the earnings gaps reported in the literature for other workers' characteristics such as gender, race and physical appearance. For example, the earnings gaps between African Americans and Whites in the US reported in the literature are typically situated in the 5 to 15 per cent range, after controlling for skills differences.[27] On the other hand, gender earnings gaps unexplained by differences in observed skills are in the range of 15 to 25 per cent.[28] Comparable gender earnings gaps in Chile are close to 20 per cent.[29] Finally, estimates of the beauty earnings gap amount to 12–13 percent.[30]

The large class earnings gaps reported above can be interpreted as evidence of class discrimination exercised by employers under the assumption that all relevant skills and sources of productivity have indeed been included in the model. It is certainly impossible to actually observe all possible sources of productivity. However, our database does include various measures of productivity, many of which are uncommon in earnings differential studies, namely measures of academic performance at university, school's academic quality, second language (English) proficiency, and postgraduate studies, among others.[31] This suggests that interpreting the large class earnings gap reported here as resulting at least partly from employer discrimination seems plausible and even likely.

IV. Conclusions

This paper has shown that class, understood as an individual's socioeconomic background of *origin*, can be an important factor in the determination of earnings in the labor market. In fact, we find that upper-class graduates earn approximately 50 per cent more than those raised in lower socioeconomic backgrounds, all other observed factors kept constant. We have shown that this large class earnings gap is not explained by differences in various measures of pro-

26 See Elias and Purcell (2004).
27 See, for example, the evidence reviewed in Borjas (2000).
28 See for example, evidence cited in Borjas (2000).
29 Contreras and Puentes (2001).
30 Hammermesh and Biddle (1994).
31 However, note that only the former turned out to be statistically significant.

ductivity, such as academic performance at university, second language proficiency, postgraduate studies, schools' academic quality, geographic origin and other standard controls. This fact suggests that this large class earnings gap is likely to be the result of employer discrimination, at least in part. This gap is large in comparison to earnings gaps reported elsewhere for gender, race and physical appearance. This article also finds evidence of some degree of meritocracy in the labor market, as earnings are also associated with measures of academic performance at university, especially those of graduates raised in lower socioeconomic backgrounds. However, this degree of meritocracy seems rather modest, as socioeconomic background is in the end more important than academic performance at university in the determination of earnings.

This article proposes several avenues for future research. First, future investigations must attempt to establish the extent to which the reported class earnings gap is the result of employer discrimination, and to which extent is associated with unobserved sources of productivity that may be correlated with socioeconomic background. Measuring and disentangling discrimination and productivity effects associated with socioeconomic background seems a first necessary step towards understanding the ultimate causes of class earnings gaps and discussing policy options. Second, it would be interesting to examine class earnings differentials for other professions and niches of the labor market, as well as their evolution in time. The latter, however, may prove very demanding in terms of data requirements. Third, it would be interesting to study class earnings gaps for other countries and regions of the world. While most research on labor discrimination and earnings differentials has focused on gender, race, ethnicity and physical appearance, class distinctions may be a major, and perhaps more important source of discrimination in some regions of the world, and even part of what is often imputed to race and ethnicity may be driven by class, as we have argued for the Chilean case.

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APPENDIX 1

TABLE a
OAXACA-RAMSOM EARNINGS DECOMPOSITION:
CLASS PREMIUM, CLASS PENALTIES AND SKILLS DIFFERENCES

Variable	Component	Estimated Value	Estimated Value by Bootstrap	Standard Deviation by Bootstrap	95% Confidence Interval	
					Min	Max
School SES	Premium: $X_H(B_H-B_P)$	0.041	0.05	0.023	0.003	0.096
	Penalty: $X_L(B_P-B_L)$	0.075	0.044	0.02	0.005	0.083
	Skills Differences: $(X_H-X_L)B_P$	0.068	0.092	0.043	0.006	0.177
Municipality SES	Premium: $X_H(B_H-B_P)$	0.057	0.055	0.018	0.02	0.09
	Penalty: $X_L(B_P-B_L)$	0.071	0.068	0.023	0.023	0.113
	Skills Differences: $(X_H-X_L)B_P$	0.199	0.203	0.049	0.106	0.3
Basque/ Non-Spanish European Ancestry	Premium: $X_H(B_H-B_P)$	0.053	0.05	0.023	0.003	0.096
	Penalty: $X_L(B_P-B_L)$	0.046	0.044	0.02	0.005	0.083
	Skills Differences: $(X_H-X_L)B_P$	0.089	0.092	0.043	0.006	0.177

Sub-indexes H, L, P indicate Higher, Lower and Population's socio-economic status (SES) according to each Socioeconomic Status (SES) measure, respectively.

TABLE b
OAXACA-RAMSOM EARNINGS DECOMPOSITION:
CLASS PREMIUM, CLASS PENALTIES AND SKILLS DIFFERENCES

Variable	Component	Estimated Value	Estimated Value by Bootstrap	Standard Deviation by Bootstrap	95% Confidence Interval	
					Min	Max
School SES	Premium: $X_H(B_H-B_P)$	0.036	0.036	0.014	0.008	0.064
	Penalty: $X_L(B_P-B_L)$	0.066	0.065	0.025	0.015	0.115
	Skills Differences: $(X_H-X_L)B_P$	0.084	0.089	0.048	–0.007	0.185
Municipality SES	Premium: $X_H(B_H-B_P)$	0.050	0.049	0.018	0.012	0.085
	Penalty: $X_L(B_P-B_L)$	0.062	0.059	0.023	0.013	0.106
	Skills Differences: $(X_H-X_L)B_P$	0.214	0.215	0.047	0.121	0.309
Subjective SES	Premium: $X_H(B_H-B_P)$	0.066	0.065	0.032	0.000	0.129
	Penalty: $X_L(B_P-B_L)$	0.024	0.024	0.012	0.000	0.048
	Skills Differences: $(X_H-X_L)B_P$	0.130	0.132	0.048	0.036	0.228

Sub-indexes H, L, P indicate Higher, Lower and Population's socio-economic status (SES) according to each Socioeconomic Status (SES) measure, respectively.

APPENDIX 2

DESCRIPTION OF SELECTED VARIABLES IN DATASET

Variable	Observations	Average	S.D.	Min	Max
Income by category	293	4.392491	2.127658	1	10
Experience	315	7.766667	3.661688	0.5	25.5
Experience^2	315	73.68651	66.72715	0.25	650.25
Schooling	322	17.49689	0.9145703	17	21
Gender (Male=1)	322	0.6614907	0.4739392	0	1
Capital District=1	317	0.9337539	0.2491049	0	1
Municipality Average Income	315	198.4052	104.397	43.622	410.505
Private School = 1	322	0.6925466	0.462157	0	1
High SES School=1	316	0.6550633	0.4761016	0	1
School Size	283	182.7456	177.2286	16	643
School's Score	283	307.0336	24.99776	219.5	344
Received Funding =1	316	0.3924051	0.4890606	0	1
Interrupted previous studies	316	0.1329114	0.3400174	0	1
English Proficiency =1	316	0.1455696	0.3532336	0	1
Leadership	316	0.0664557	0.249472	0	1
Academic Percentile	319	0.5222026	0.2942802	0.0153846	1
Economics degree =1	322	0.4099379	0.4925874	0	1
Passed finals 1st Attempt	322	0.7919255	0.4065622	0	1
Graduated=1	316	0.9810127	0.1366966	0	1
Top mark in finals=1	322	0.0621118	0.2417342	0	1
Postgraduate studies	319	0.2915361	0.4551838	0	1
Economist in economics job	304	0.2138158	0.4106743	0	1
Economist in business job	304	0.2006579	0.4011529	0	1
Business in business job	304	0.5427632	0.4989893	0	1
Business in economics job	304	0.0394737	0.1950401	0	1
Local MBA degree=1	322	0.0652174	0.2472934	0	1
International MBA degree=1	322	0.0124224	0.1109336	0	1
PhD degree = 1	322	0.0186335	0.1354374	0	1
Mining=1	295	0.0101695	0.1005003	0	1
Manufacture =1	295	0.0983051	0.2982326	0	1
Construction=1	295	0.0338983	0.1812749	0	1
Commerce=1	295	0.1288136	0.3355627	0	1
Government Services=1	295	0.1355932	0.3429378	0	1
Financial services=1	295	0.3118644	0.464042	0	1
Personal services	295	0.0372881	0.1897889	0	1
Natural resources=1	322	0.0248447	0.155894	0	1
Private firm=1	322	0.6055901	0.4894842	0	1
Public firm=1	321	0.0778816	0.2684036	0	1
Civil servant	321	0.0996885	0.3000519	0	1
Education sector=1	321	0.0373832	0.1899951	0	1
Consultant=1	321	0.0311526	0.1740014	0	1
NGO=1	321	0.0186916	0.1356449	0	1
Self-employed=1	321	0.05919	0.2363485	0	1
Unemployed=1	321	0.0685358	0.2530576	0	1
Firm size	297	3.306397	0.9499606	1	4
Nº of Basque surnames	322	0.1583851	0.3903922	0	2
Nº of Non-Spanish European surnames	322	0.4037267	0.6203093	0	2
Subjective SES	289	3.45917	0.6556861	2.2	4.9