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CONSTITUTIONAL RIGHTS AND EDUCATION: AN INTERNATIONAL COMPARATIVE STUDY

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ABSTRACT

We investigate whether the inclusion of social rights in political constitutions affects social performance. More specifically, we analyze whether including the right to education in the constitution has been related to better "educational outcomes." We rely on data for 61 countries that participated in the 2012 PISA tests. Our results are strong and robust to the estimation technique: we find that there is no evidence that including the right to education in the constitution has been associated with higher test scores. The quality of education depends on socioeconomic, structural, and policy variables, such as expenditure per student, the teacher-pupil ratio, and families' background. When these covariates are excluded, the relation between the strength of constitutional educational rights and the quality of education is negative and statistically significant. These results are important for emerging countries that are discussing the adoption of new constitutions, such as Thailand and Chile.

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1. Introduction

Constitutions – or constitutional arrangements– are the most important determinants of political institutions.[1] They establish the form of government, define the electoral system, specify the rights and obligations of the population, and stipulate the extent to which property (and other) rights are protected. A number of economists have studied the relationship between constitutions and economic performance. In their classical study, North and Weingast (1989) argued that the constitutional arrangements adopted by England after the Glorious Revolution (and, in particular, after the Bill of Rights) allowed the government to make a credible precommitment that it would not confiscate property in an arbitrary fashion and without compensation. This commitment provided the bases for England's economic success during the 18th and 19th centuries. In their 2005 book *The Economics Effect of Constitutions*, Persson and Tabellini analyze, both theoretically and empirically, the effects of constitutions on economic policies and economic outcomes. Their analysis is centered on two key distinctions of the political and constitutional organization of a country: presidential vs. parliamentary systems, and majoritarian vs. proportional electoral rules. Other authors that have addressed the relationship between constitutional arrangements and economics include North (2006) and Qian and Weingast (1997).

The idea that institutions (including constitutional arrangements) matter for economic performance was already present, in an embryonic form, in Adam Smith's *The Wealth of Nations*. In Chapter VII he argued that the main reason why the English settlements of North America had done significantly better than the Spanish dominions of South America was that "the political *institutions* of the English colonies have been more favorable to the improvement and cultivation of this land than those of the [Spanish colonies]."[2]

In this paper we deal with an aspect of the relation between constitutions and economic performance that, to our knowledge, has not been addressed before: we investigate whether the inclusion of *social constitutional rights* – what constitutional lawyers call "positive constitutional rights" – affects social performance. More specifically, we analyze whether including the right to education in the constitution is related to better "educational outcomes." Another way of phrasing the question is this: Do countries that enshrine and protect the right to education at the

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[1] "We refer to "constitutional arrangements" to the constitutional ordering in countries, such as England, that don't have a written and precisely codified constitution.

[2] Smith (1776), Cannan Edition, published by the University of Chicago Press, 1976. Emphasis added.

constitutional level have better educational results (as measured by standardized tests) than jurisdictions that don't grant such level of protection? In order to address this issue we use data from 61 countries that participated in the OECD's 2012 PISA test on education achievement. The information on social rights protection is taken from the data assembled by *Project Constitute* that covers 191 countries and distinguishes three levels of constitutional protection to education.[3]

This question has an important practical dimension, as constitutions are amended, or completely changed, quite often – on average, every 20 years or so.[4] For example, between the years 2000 and 2013, 45 countries – most of them developing nations -- adopted brand new political charters. Many of these nations are new democracies and/or countries that have gone through major social conflicts and civil wars. Examples include Afghanistan, Burundi, Egypt, and Zimbabwe. Developing countries that are currently discussing new constitutions include Chile and Thailand.[5]

Those drafting new constitutions – members of Constitutional Assemblies or other bodies – have to decide which rights to incorporate in the new constitution. Should education, shelter, and the right to a pension, among other social rights, be protected at the constitutional level? Or, should countries restrict constitutional rights to the traditional ones, such as the right to free speech, property rights, and right to privacy? Examples of countries that include social rights in their constitutions are France and Germany; the United States, Australia, and Norway, on the other hand, are countries that don't include social (positive) rights in their constitutions.

Supporters of social rights have argued that when these are enacted in the constitution, political bodies – the legislatures and the executive – are forced to enact laws, rules, and regulations geared at providing strong and high quality social services. That is, the inclusion of social rights in constitutions is seen as a way of motivating and compelling legislatures to move

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[3] https://www.constituteproject.org/

[4] See the detailed data on 191 constitutions assembled in Project Constitute. See https://www.constituteproject.org/

[5] On July 22, 2014, the Thai military issued a new draft or interim constitution, and announced the formation of a Reform Committee comprised of 36 members to draft a new permanent constitution. Once approved, this would become Thailand's 12th constitution since 1932. In 2013 Michelle Bachelet was elected president of Chile by a large majority. An important component of her political platform was reforming Chile's constitution, eliminating any vestige of the military dictatorship that ruled the nation for 17 years. She has repeatedly argued that the new constitution will strengthen social rights, and in particular the right to education. On Chile's economic history, including the performance of the education sector, see, for example, Edwards (2010).

in a certain direction.[6] Whether this works or not is, to a large extent, an empirical question. In spite of the importance of this issue, there has been no systematic academic work on the subject.

There is consensus among development experts that improving the provision of education – its coverage and, in particular, its quality – is an important component of any comprehensive development strategy. Improved education will result in higher productivity, better jobs, and faster income growth. Moreover, a quality educational system is likely to result in better social conditions and reduced inequality. What is less clear, however, is how to improve the quality of education. A number of developing countries have put emphasis on teachers' training and salaries, while others are beginning to focus on the provision of preschool education. Chile is a good example of a developing nation that is trying to make a qualitative change in its educational system. In spite of having made significant economic progress since the return of democracy in 1990, Chile continues to have a highly skewed income distribution – its Gini coefficient is 0.52, one of the highest in all of Latin America. In 2014, the second administration of President Michelle Bachelet embarked on an ambitious program of educational reform. At the center of this effort is the idea that education is a social right, and that the market should not a central play a role – as it has until now -- in its provision. At the same time, the country is moving towards adopting a new constitution that would, indeed, strengthen social rights, including the right to education. For countries like Chile, then, it is vitally important to understand the international comparative evidence on the relation between constitutional protection and educational outcomes.

The rest of the paper is organized as follows: In Section 2 we provide some background on constitutional rights and education. A preliminary and unconditional analysis of the data suggests that countries that provide a stronger degree of constitutional protection to education have had *lower* PISA scores than countries that don't protect these rights. In Section 3 we expand the analysis, and estimate a series of regressions that explain differences in PISA scores across countries. The results obtained suggest that, once other factors are taken into account, constitutional protection has no significant effects on educational outcomes. These results are robust to the equation specification and estimation technique – either OLS or instrumental variables. In Section 4 we present a robustness analysis and some extensions. Among other

[6] Zackin (2013).

things we analyze whether here has been a connection between constitutional provisions on education and the dispersion of test scores. Finally, in Section 5 we provide some conclusions, including some reflections on enforceability. We also discuss possible directions for future research. The paper also has a data appendix.

2. A preliminary cross country analysis

Constitutional lawyers distinguish between "negative" constitutional rights, and "positive" constitutional rights. The former are aimed at protecting individuals from the overreach of the State, and include property rights, the right of contract, equal protection, the right to privacy, and freedom of speech, among other. Positive constitutional rights, in contrast, detail the obligations of the State toward individuals, and include the rights to education, health, and shelter. Their aim is to protect the people from poverty and devastation. Although every constitution – or constitutional arrangement – contains negative rights, not every national constitution enshrines positive rights. In that regard, the United States is an interesting case. The U.S. Constitution includes a long and detailed list of negative rights – the Bill of Rights – but doesn't recognize any positive or social right. This is the case in spite of efforts made by many politicians, and in particular by President Franklin D. Roosevelt, to amend the constitution to include social rights.[7]

Positive or social constitutional rights have been codified in articles 22 through 27 of the United Nation's *Universal Declaration of Human Rights of 1948,* and include the right to receive social security payments in old age (Article 22), the right to work (Article 23), the right to equal pay for equal work (Article 23), the right to an income that allows a family to live with dignity (Article 23), the right to join trade unions (Article 23), the right to leisure and rest (Article 24), the right to food, clothing, housing, medical care and social services (Article 25), the right to child care (Article 25), the right to education (Article 26), the right to participate in cultural activities (Article 27), and the right to benefit from artistic creation (Article 27).

Project Constitute has compiled detailed information on 191 written constitutions. This data set includes a complete English version of each charter, the date of enactment, the requirements for amending each constitution, and the content and date of the most recent constitutional reforms. Project Constitute distinguishes three types of constitutional protection to

[7] Sunstein (2004).

education: the provision of free education, compulsory education, and equal access to higher education. According to these data, 132 constitutions establish that the state should provide free education up to a certain level (usually up to the end of secondary education); 120 out of the 191 constitutions include constitutional provisions that make education (at least to some level) compulsory; and 62 constitutions ensure equal access to higher education. In addition to these direct educational rights, in 79 of the 191 constitutions there are explicit limitations to the employment of children.[8]

In 2012 the OECD administered its PISA (*Program for International Student Assessment*) test to thousands of 15 year old students in 65 countries.[9] This exam measures skills and knowledge in math, science and reading through common standardized tests. The sample includes all OECD countries, plus a number of invited nations (and territories). Countries that participate in this test have a significantly higher income per capita than all nations (the median GDP per capita is $16 thousand for participating countries, and $8 thousand for the world as a whole).

There are detailed data on the constitutions of 61 out of the 65 countries that participated in the 2012 PISA test.[10] Out of these 61 countries, 7 had no constitutional provisions on education; 11 had one constitutional provision; 27 included two provisions; and 16 had all three provisions identified by *Project Constitute* (free education, compulsory education, and equal access to tertiary education).

Out of the 61 countries in the sample, 49 establish, at the constitutional level, the right to free education, 45 countries established that education (to a certain level) is mandatory, and 19 included the right to equal access to higher education.

In Table 1we present the average scores in the PISA 2012 tests. Panel A contains data for the science test, Panel B for the math test, and Panel C for the reading test. In each Panel we

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[8] Constitutions are so dynamic and change so fast around the world that in the process of revising this paper the number of constitutions that enshrined and protected the right to education kept changing. The data provided here are for early August 2014.

[9] The PISA test is administered periodically. Before 2012, it was given in 2009. We also performed a number of tests using the 2009 scores. The results obtained were very similar to those reported in this paper, and are available on request.

[10] Project Constitute has no data on constitutional rights for New Zealand, the Slovak Republic, Tunisia, the United Kingdom, and Vietnam. The 2012 PISA test included results for Shanghai, Hong Kong, and Macao. We assigned to all three the constitutional rights of China's constitution. Taiwan also participated in the test; we used the island's constitution to define the strength to which educational rights are protected.

present the mean score for the 61 countries in the sample. We also present the scores for four subgroups, corresponding to the number of constitutional provisions on education (scale from 0 to 3). As may be seen, in every one of the Panels there are strict descending test scores: countries with stronger constitutional provisions on education have *lower* scores than nations with fewer provisions. These differences in scores tend to be large. For instance, in the science test there is more than a 50 points differential between the mean score for countries without any provisions (510 points) and countries with the maximum number of three provisions (460 points). In fact, this gap is larger than one standard deviation for the test results for the 60 countries in the sample.

In Table 2 we present formal tests for the equality of means for the four subgroups of constitutional protection in each test. We rely on both an Anova F-test and a Welch F-test. As may be seen, in all cases the null hypothesis of equality of means scores across the number of constitutional provisions on education is rejected at conventional levels, confirming that differences in performance across groups are statistically significant.

The preliminary results in Tables 1 and 2 provide some background information on the relationship between constitutional rights and educational performance. They also set the stage for a more formal regression analysis that control for other variables -- including countries' stage of development and policies towards education --, explore some causality issues, and analyze possible channels through which constitutional provisions may affect educational outcomes.

3. Regression results

It is possible to think of two channels through which constitutional rights may affect the quality of education: the first one – which we call the "direct production function channel" – is the simplest one: Once the right to education is enshrined in the constitution, the legislature is required to pass laws aimed at providing more (and better) "inputs" for the education "production function." For example, there would be more funds for training teachers, higher investment in school infrastructure, and funds to have smaller classes (lower pupil-teacher ratio). All of this would result in better test scores. The second channel is what we call the "cultural channel." It is possible that countries that protect education in the constitution develop a national atmosphere, or national ethos, that celebrates and encourages education: teaching would become a well paid, sought-after, and highly respected profession (as in Sweden); attending college could become a prestigious achievement (as in Korea); and doing well in international tests would be a

source of national pride (as in China). This "cultural channel" would improve the efficiency or productivity of the educational process; that is, it would work in a similar way to TFP in standard growth models.

This simple mechanics may be captured by an education production function,

$$(1) \qquad E = AI^{\alpha}O^{\beta}$$

where E is a (quality adjusted) measure of "educational services," I refers to material inputs, O is other inputs, including family background. The amount of I, in turn, depends on the fraction of the government budget (G) devoted to education. This fraction is denoted by θ, which is assumed to depend on the strength of constitutional protection to education. That is, $I = \theta(c)\, G$, and $\theta' > 0$, $\theta'' < 0$. Finally, the productivity parameter A is assumed to depend on institutional variables and culture, including, as noted, on the country's cultural and social commitment towards education. The latter, in turn, is assumed to depend (at least partially) on the extent to which the constitution protects the right to education. That is, $A = A(c)$, and $A' > 0$.[11]

If any of the two channels described above is indeed at work, we would expect that a simple bivariate regression of test scores (a proxy for the educational services variable E) on a constitutional rights index would result in significantly positive coefficient: stronger constitutional protection to education would be associated with better outcomes (higher test scores). Once education policy variables or inputs (class size, percentage of trained teachers, quality of infrastructure, and so on) are introduced into the regression, we would expect that the size of the "constitutional rights" coefficient would we smaller, but still significantly positive, as it would be capturing the "cultural" channel (A) in equation (1).

3.1 Basic results

In this Section we investigate the relation between constitutional rights and educational outcomes by estimating a series of equations of the following type:

$$(2) \quad \log(score_j) = \alpha_0 + \alpha_1\, constrights + \sum \beta_i\, x_{ij} + u_j$$

[11] As we argue in Section 5, a more complete framework would also incorporate the degree of enforceability of rights.

Where log $(score_j)$ is the natural logarithm of the average number of points obtained in the PISA test by country *j*, and $constrights$ is an index of the strength of educational rights in that country's constitution. This index ranges from 0 to 3, and is the simple count of the number of education-related provisions included in that nation's constitution; higher values represent a stronger constitutional mandate towards education (see Section 4 for results with alternative indexes). The basic information for constructing this index was taken from *Project Constitute*. The x_{ij} variables capture other covariates, including variables related to the education "production function," and to the socioeconomic characteristics of the families. Finally, $u_j$is an error term; in the estimation we allow for u_j to be heteroskedactic.

In the regressions reported below we follow the traditional literature on school performance and included the following covariates. [12] See the Appendix for detailed data sources:

- *Logarithm of per capita GDP*. This variable captures the level of development of the country in question and its sign is expected to be positive. We also introduced this variable squared, as a way to allow for a nonlinear impact of income per capita on test scores.
- *Pupil to Full Time Teachers Ratio*: This is a traditional "production function" variable in the school performance literature. We expect its coefficient to be negative. More crowded classes will tend to generate weaker results.
- *Percentage of private schools*: Defined as the percentage of students that study in private schools in country *j*. This variable measures the organizational structure of the school system, and the extent to which it relies on the private provision of education. Its sign in the regression analysis is not determined a priori.

[12] For a review see, for example, Hanushek. and Woessmann (2010). Much of the recent of the literature on education performance has relied on micro data, and has considered individual students' test scores as the basic unit of observation. In this research most of the the x_{ij} covariates refer to the students' attributes, characteristics of the students' family, and characteristics of the the educational establishment where he/she is studying. Our analysis, however, focuses on country averages, and not on individual data. One consequence of this is, the number of covariates with available data is smaller than in traditional studies. See Section 4 for some comments on this issue.

- *Percentage of schools with a library*: This is another "production function" covariate, and provides a measure of the quality of the school system teaching infrastructure. We expect its sign to be positive in the regressions.
- *Percentage of fathers that work full time*: This is a family related variable, and captures the degree of financial stability in the students' families. Its coefficient is expected to be positive.
- *Percentage of immigrant families*: This variable is defined as the percentage of students in the school system that are immigrants; for many of these children the country's official language is not their own. This variable measures the diversity of the country. Under most circumstances we would expect its sign to be negative.

A number of additional variables were also considered in some specifications – the percentage of full time teachers certified, and whether the parents had a high school or higher education, to name just a few. They were not included in the Tables reported here due to space considerations. Their inclusion, however, confirmed the results in Tables 3 and 4 – see the discussion in Section 4.

In Table 3 we present the results obtained from OLS; White-corrected standard errors are included. The first three columns are for the reading test, the next three are for science, and the last three include the results for the math tests. For each test we first report the results from simple bivariate regressions, where $constrights$ is the only regressor. In regressions (2) we add the log of GDP per capita in 2009 and the log of GDP per capita squared, and the three "production function input variables" listed above. Regressions (3) add family related variables, including the percentage of students that are immigrants and the job status of the father.[13]

The results are quite satisfactory and are summarized below. Notice that in presenting this summary we make an effort to avoid implications of causality. Indeed, we interpret the results in this Subsection as measuring correlation; we address possible reverse causality and endogeneity in Section 3.2, where we present results from instrumental instruments estimates:

- In all bivariate regressions the sign of the constitutional rights index is significantly *negative*. That is, that when no additional variables are included, the

[13] For comparability, we restrict the sample to the set of countries with information available for all the covariates. This reduces our sample from 61 to 55 countries in Table 3, and 54 countries in Table 4.

relation between the protection of educational rights in the constitution and educational outcomes is negative. Countries with stronger social constitutional rights that protect education have had, on average, weaker performance in the PISA tests. This confirms the results from our nonparametric tests in Section 2.

- Once other covariates are added, the coefficient of constitutional rights protection cease to be significant at conventional levels (they are still negative, however).
- Regressions (2) and (3) indicate that country, school system, and family characteristics are related, in statistically significant ways, with test scores. More specifically:
    - Richer countries tend to have significantly higher test scores. This positive relation moves at decreasing rates (the coefficient of the squared GDP is significantly negative).
    - There is a negative relationship between the pupil to teachers ratio and test scores – in every equations this coefficient is significant at conventional levels. This confirms findings from micro data based research on educational performance. Fewer students per teacher enhance the learning experience. An important implication is that, as the simple "production function approach suggests," higher expenditure on instruction – more teachers in the classroom --, is related to better test results.
    - When square terms of the pupil's ratio were included, the coefficient was not significant (estimates not reported due to space considerations).
    - The school system infrastructure – in this case, the percentage of schools with libraries – is also important. Its coefficient is significantly positive.
    - Interestingly, these results indicate that countries with a higher fraction of private sector provision of education have better scores. This result may be dependent on the sample, and merits further research.
    - These results also confirm that family attributes are fundamentally related to school performance and test scores. The coefficients of fathers' employment situation and on the percentage of immigrant families are significant and have the expected signs. (We explore this issue further in Section 4).

The finding that social constitutional rights are negatively correlated (although the relation is not always statistically significant) with the test scores suggests that neither of the two (potential) channels discussed above is at work. This is somewhat puzzling. Most people – although, maybe not most economists – would have expected a positive correlation: countries that have a stronger constitutional mandate to protect and promote education will tend to have – through the two channels discussed above – a higher quality educational system and, thus, higher test scores. On the other hand, skeptical observers may have expected no relation between the two variables. After all, in many countries – and in particular in many poorer ones – constitutional provisions are not always enforced; they are stated on paper, but politicians and judges tend to ignore them (more on this in Section 5 below).[14] In an effort to understand better what is behind these results, in the subsections that follows we present instrumental variables estimates, we explore alternative specifications, we consider the possible existence of nonlinearities, and we investigate the relation between the constitutional rights index and a number of "production function" covariates.

3.2 Instrumental variables

A potential limitation of the results in Table 3 is that they may be capturing a situation of reverse causality: it is possible that countries with weak educational systems – and low test scores – have attempted to improve outcomes by strengthening constitutional provisions that protect education. A natural way of addressing this issue is to estimate instrumental variable versions of equation (1). We present such estimates in Table 4. The following instruments were used: The "legal origin" variables developed by Lopez de Silanes, La Porta, and Shleifer (2008) in their path breaking work on corporate governance and economic performance. These authors analyzed the historical origins of legislation protecting minority investors in a score of countries. They distinguished between five such origins: United Kingdom, French, German, Scandinavian and Socialist. The attractiveness of this variable as an instrument is that it has deep historical roots that, in many cases, go back centuries, and predate most constitutions in our analysis. Moreover, the historical origin of investment protection legislation was determined a very long time before the development of standardized tests to measure education performance, such as the

[14] A possible explanation has to do with reverse causation. We deal with this issue below.

PISA tests. In that regard, "legal origin" is a truly exogenous variable that is correlated with the type of constitution a country adopts, but that is not affected by the quality of education.[15] We also used the year of independence as an instrument. For countries that were never colonized (and for countries with very early independence) we used the date 1700. The final set of instruments is the region where the country is located. We distinguish between North America, South America, Asia, Europe, and North Africa and Middle East.

The IV results in Table 4 strengthen the conclusions presented in Table 3. In particular, there is evidence that production function variables, including family and "productive inputs" variables, are important in explaining cross country variations in test scores (our measure for the quality of education). But, more important for the subject matter of this paper, in every one of the nine regressions reported in Table 4 the coefficient of the constitutional rights index is negative. As before, these coefficients are statistically significant in the three bivariate regressions. However, the point estimates are larger, in absolute terms, in the IV regressions. Interestingly, for the reading PISA scores, the estimated coefficient for the constitutional index is still significant (and negative) in the expanded regressions (2) and (3. As may be seen, the *constrights* coefficients are negative but not significant in the expanded multivariate regressions for the science and math tests.

4. Extensions and robustness

We performed a number of robustness tests, and considered a series of extensions. In this Subsection we discuss the most important of them (in most cases we summarize the results without providing detailed Tables; these, however, are available on request):

Constitutional rights index: We considered two additional indexes that measure the extent of constitutional protection to education. First, we used a simple dummy that took the value of one if the country in question had *any* constitutional provision that supported the right to education, and zero otherwise. This indicator, then, treats all countries with any provision equally. As alternative third alternative, we constructed an exponential constitutional index, where adding another pro-education provision in the constitution has a more than additive effect on the index. In this case the constitutional indicator can take the values 1, 2.7, 7.4, and 20.1. The results using these two alternative indicators didn't change the gist of our main findings: the

[15] A "first-stage" regression of constitutional rights on the legal origin variables show that these are indeed significant as a group; the R-square is 0.45.

constitutional rights indicators had negative coefficients (in some cases significant), and the other covariates were significant and had the expected signs.

PISA Test for 2009: As a way of testing for the robustness of these results we re-estimated our equations using the 2009 PISA test scores. The main conclusions were maintained: there is no evidence that countries with stronger protection, at the constitutional level, for education have had higher test scores than countries with weaker or no constitutional protection. This is the case for both the OLS and IV estimates.

Nonlinearities and interactions: We also explored whether constitutional rights play an interactive role in explaining cross-country differences in test scores. We interacted the constitutional rights index(es) with the "productive inputs" covariates, and with the family attributes. We found that there was no interactive effect. We also explored whether some of the explanatory variables entered into the test scores regressions in a nonlinear way. The only one that appeared to be important was GDP per capita (see Tables 3 and 4).

Additional covariates; In a number of specifications we included other covariates that capture educational inputs, as well as families' characteristics. Due to collinearity, and not surprisingly, the coefficients for these additional variables tended to be insignificant. However, when we substituted these variables for some of those in Tables 3 and 4, the coefficients had the expected sign and were significant. For example, when we replaced the pupil teacher ratio with the percentage of teachers with a teaching certificate, the coefficient of the latter variable was positive and significant: 0.0019 with a t-statistic of 2.44. More important, when these alternative specifications were used, the main findings regarding constitutional rights did not change: we obtained negative and mostly insignificant coefficients.

The ESCS Index: As noted, collinearity is a recurrent problem in this type of study. In particular, variables that capture families' socioeconomic conditions tend to be highly correlated among themselves. One way of addressing this issue is by using a composite index that summarizes in a single indicator households' background. A useful measure is the OECD's *Index of Economic, Social, and Cultural Status* (ESCS). This index is calculated as the first principal component of a number of specific measures (home ownership, number of books at home, computer and internet connection at home, the existence of a quite place to study at home, higher parental education, and higher parental job status). The index has a mean of zero, corresponding to the average student that took the PISA test that year, and a standard deviation

of 1. In Table 5 we present instrumental variables results using the ESCS index as a way of capturing families' characteristics. As may be seen, the results confirm those reported above: productive inputs, level of development, and household socioeconomic characteristics go a long way in explaining cross country variations in test scores. The coefficient of the constitutional rights variable continues to be negative, and in many of the regressions is not significant.

Test scores dispersion: Social constitutional rights – including the right to education – have an egalitarian bend to them. Their aim is to protect *all citizens* from misfortune and adversity, and to ensure a minimum delivery of social services to the population. The role of educational rights may, indeed, be to ensure that there are no significant differences in educational outcomes across citizens. In that regard, we may be missing the point by analyzing the relation between the strength of constitutional protection to education and the *level* of test scores. As a way of addressing this issue we estimated a series of regressions with the (log of the) interquartile range – or difference in scores between the third and first quartile – as the dependent variable. Countries with lower dispersion in test scores (or more egalitarian educational outcomes) will exhibit lower interquartile ranges. The question is whether the size of this range is smaller in countries that provide stronger constitutional protection to education. The results obtained for the instrumental variables estimates are reported in Table 6. As may be seen, with one exception, for every test and specification the coefficients of constitutional rights are non significant at conventional levels; in the one regression where the coefficient is significant (science test, specification 1) the coefficient is negative. Complete results, including OLS estimates, are available on request.[16]

Constitutional rights and educational inputs: As noted, some authors have argued that in countries that grant a constitutional status to the right to education, legislatures will be required to provide higher funding to that sector; it is expected that through that channel the quality of education would improve (Zackin, 2013). In order to investigate the relationship between the strength of social constitutional rights and productive educational inputs in Table 7 we present partial correlation coefficients between four such inputs – pupil-teacher ratio, percentage of teachers with teaching certificate, percentage of schools with libraries, and percentage of students in private schools --, and the constitutional rights index; t-statistics are provided in

[16] As a way of investigating the dispersion issue further we also estimated a series of regressions with test scores for different percentiles of each country's distributions. The results confirmed those summarized above.

parentheses. (We also include in the correlation matrix income per capita). As may be seen, all pair-wise correlations between input variables and constitutional rights are weak; the reported t-statistics indicate that none of them is statistically different from zero. This suggests that the the "productive inputs" channel discuss above may e very weak. As we argue in Section 5, a more definitive result on this issue would require additional research.

5. Concluding Remarks

In this paper we find no evidence supporting the view that countries that enshrine the right to education in the constitution have higher quality educational systems than countries that don't. Moreover, our results suggest that there is no relation between the strength of constitutional protection and the dispersion of test scores. These results hold independently of whether we perform simple bivariate regressions or if we control for covariates that capture countries' stage of development, educational inputs, and families' characteristics. The results are also robust to the estimation method (OLS or IV), to the definition of the constitutional rights index, the covariates added to the regressions, or the year in which the test was taken. These are important findings for poor and middle income countries that are trying to improve the quality of their educational systems. It is not enough to have the right to education enshrined in the constitution. There is a need to introduce specific measures that strengthen socioeconomic conditions in the country – and in particular among vulnerable families -- and that would improve specific "productive inputs."

In a companion paper (Edwards and Garcia, 2014) we use a rather unusual data set to investigate this issue further. We take advantage of the fact that, although the U.S. Constitution does not include positive (social) rights, all of the states in the Union include educational rights in their own constitutions. The strength, purview, and specificity of these rights vary significantly across states, giving us the possibility of analyzing whether stronger constitutional protection is related to better educational outcomes. The results obtained in this U.S. states study confirm those reported in this paper. We find no evidence supporting the view that states with more detailed and stronger constitutional provisions on education have better educational outcomes. We do find, however, that school inputs (class size and the like) and families' socioeconomic conditions (parent's education, among other) go a long way towards explaining differences in performance across states in the U.S.

The most plausible explanation for the cross country results presented in this paper is related to the difficulty in enforcing constitutional provisions on social rights. Indeed, it is possible to think that the strength of the "cultural channel" discussed in Section 3 will depend on the degree of constitutional protection *and* on the institutional and practical mechanisms available to enforce these rights.

Enforceability of social rights has recently been discussed by a number of legal scholars. For example, in her recent book Zackin (2013, p. 92) states that "constitutional provisions must be judicially enforceable in order to be considered rights at all." And, referring to educational rights in U.S. states' constitutions she asks: "Can we really call these constitutional educational provisions rights even though most were not written with the idea that citizens could enforce their individual claims through court? Can mandates on governments have any meaning unless courts are willing to enforce them?"[17]

Of course, this point does not apply excusably to the United States. In fact, citizens' ability to enforce constitutional provisions – and, in particular, provisions on social rights – are very difficult in poorer and middle income countries, where there is no tradition of judicial review (as in the United States), constitutional tribunals are slow and rigid, and courts are not truly independent.[18]

The discussion presented above suggests some direction for future research: an effort could be made to develop cross country measures or indexes of the degree of enforceability of constitutional rights (both negative and positive). An additional line of research would focus on countries that have gone through constitutional reforms that have added (or expanded) constitutional educational provisions. This would allow performing diffs-in-diffs analyses on the extent to which these provisions have indeed helped countries achieve better educational outcomes. Another line of research suggested by our results has to do with the relationship between constitutional provisions and productive educational inputs. Table 7 suggests, at a preliminary level, that there is a very weak and non significant relation between these variables. This issue, however, merits further analysis. Two relevant questions are: How have legislatures reacted to constitutional provisions? Have these constitutional provisions been translated into higher and better inputs? A related research topic is whether the teaching profession is different

[17] Zackin (2013), p. 92. See also Sunstein (2004, 2006) and the literature cited there.

[18] See, for example, Brinks and Gauri (2010), Landau (2012), and Wiles (2006).

in countries with strong social constitutional provisions than in countries with weaker provisions. In this respect, two variables of particular interest are the strength and role of teachers' unions, and teachers work conditions (including salaries). Yet another topic for future research has to do with the potential tradeoff between quantity and quality: most constitutional rights on education – and certainly the three highlighted by *Project Constitute* – refer to the provision of, and access to, education. They mandate that education should be obligatory and free, and that access to higher education has to be equal to everyone. These provisions don't say anything about quality or efficiency. A finer combing of different constitutions that identifies those countries that make an explicit reference to quality would be useful. Indeed, in the companion paper on U.S. states' constitutions Edwards and Garcia (2014) find that those states with explicit reference to "efficiency" or "quality" in the constitutions have better performance than those that don't include this language.

The list of topics for future research is long and ambitious. Addressing it would throw additional light into the important topic of the relation of constitutional rights and economic and social performance. In the meantime, the results presented in this paper suggest that, from the practical, comparative, and historical perspectives, including constitutional provisions into constitutions are neither a necessary or sufficient conditions for improving the quality of education.

Data Appendix

- Constitutional Index: Correspond to the sum of three categories, each of them equal to one if the country establish the respective social right in its constitutions and zero otherwise: 1. Equal access to higher education guaranteed, 2. Compulsory education, and 3. Free education. Source: www.*constituteproject.org*.

- Per capita GDP: In constant 2005 dollars. Source: World Bank Development Indicators.

- PISA variables. Mean country scores on math, reading and sciences for the 2009 and 2012 tests.

- School, student and family variables. Mean country values, constructed from information provided by the participants in the PISA test.
    - Percentage of fathers that work full time: Mean value of the "Working Full Time" category. Question ID ST16Q01.
    - Percentage of immigrant families: Percentage of students born in a country different that the country of the test. Question ID ST17Q01.
    - Percentage of private schools: Percentage computed from the total of schools participating in the PISA test. Question ID SC02Q01.
    - Percentage of Schools with Library: Percentage computed from the total of schools participating in the PISA test. Question ID ST40Q01.
    - Pupil to full time teacher ratio: Ratio of total number of boys (question ID SC06Q01) and girls (question ID SC06Q02) to total full time teachers (question ID SC09Q11
    - Percentage of homes with more than 100 books. Question ID ST22Q01.

- Legal origin: identifies the legal origin of the Company Law of Commercial Code of each country. There are five possible origins: (1) English Common Law; (2) French Commercial Code; (3) German Commercial Code; (4) Scandinavian Commercial Code; (5) Socialist/Communist Laws. Source: La Porta et al, 1998.

- Independence year: Equal to 1700 for countries that were never colonized.

TABLE 1: PISA 2102 Test Summary Results by number of Constitutional Provisions

A. Descriptive Statistics for SCI_12

CONST_RIGHTS	Mean	Obs.
0	509.5714	7
1	495.8182	11
2	472.9259	27
3	460.0625	16
All	477.8852	61

B. Descriptive Statistics for MATH_12

CONST_RIGHTS	Mean	Obs.
0	504.2857	7
1	498.5455	11
2	467.3333	27
3	452.625	16
All	473.3443	61

C. Descriptive Statistics for READ_12

CONST_RIGHTS	Mean	Obs.
0	508.2857	7
1	486.0909	11
2	469.5556	27
3	456.4375	16
All	473.541	61

TABLE 2: Tests for Equality of Means for PISA test Scores

A. Test for Equality of Means of SCI_12

Method	df	Value	Probability
Anova F-test	(3, 57)	2.270873	0.09
Welch F-test*	(3, 23.6725)	3.820243	0.023

B. Test for Equality of Means of MATH_12

Method	df	Value	Probability
Anova F-test	(3, 57)	2.468596	0.0712
Welch F-test*	(3, 21.9051)	2.977062	0.0537

C. Test for Equality of Means of READ_12

Method	df	Value	Probability
Anova F-test	(3, 57)	2.45144	0.0726
Welch F-test*	(3, 24.7702)	6.010349	0.0032

*Test allows for unequal cell variances

Table 3: Log of PISA Scores: OLS, White-corrected standard errors

	----------Reading----------			----------Science----------			----------Math----------		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Constitution Index	-.038***	-.0192	-.0110	-.038***	-.0180	-.008	-.042***	-.0193	-.007
	(.0115)	(.0135)	(.00974)	(.0123)	(.0139)	(.00945)	(.0143)	(.0174)	(.0119)
log Per capita GDP		1.643***	.738*		1.894***	.902**		1.977***	.800*
		(.464)	(.387)		(.447)	(.373)		(.508)	(.437)
log Per capita GDP Squared		-.0803***	-.0362*		-.0929***	-.0448**		-.0968***	-.0401*
		(.0240)	(.0189)		(.0231)	(.0183)		(.0262)	(.0212)
Pupil - Teacher Ratio		-.322***	-.305***		-.348***	-.324***		-.378***	-.339***
		(.0908)	(.0679)		(.100)	(.0712)		(.119)	(.0872)
% Schools with Library		.125	.181**		.171	.231**		.214*	.281***
		(.0869)	(.0831)		(.106)	(.0950)		(.109)	(.101)
% Private Schools		.0682*	.108***		.0692*	.112***		.0823*	.132***
		(.0367)	(.0361)		(.0377)	(.0366)		(.0459)	(.0446)
% Fathers Work Full Time			.528**			.605***			.760***
			(.223)			(.207)			(.261)
% Immigrant Family			-.363*			-.356*			-.353
			(.191)			(.207)			(.249)
Constant	6.230***	-2.161	2.033	6.238***	-3.435	1.165	6.234***	-3.910	1.552
	(.0206)	(2.229)	(1.836)	(.0225)	(2.149)	(1.775)	(.0275)	(2.438)	(2.080)
Observations	55	55	55	55	55	55	55	55	55
R-Squared	.134	.612	.721	.114	.621	.739	.114	.598	.741

Note: White-corrected standard errors in parentheses. Key: ** significant at 1%; ** 5%; * 10%.

Table 4: Logarithm of PISA Score, 2012: Instrumental Variables

	----------Reading----------			----------Science----------			----------Math----------		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Constitution Index	-.061***	-.032**	-.026**	-.055***	-.026	-.017	-.056***	-.023	-.009
	(.0171)	(.0158)	(.0114)	(.0187)	(.0181)	(.0132)	(.0208)	(.0211)	(.0141)
log Per capita GDP		1.675***	.873**		1.921***	1.027***		1.995***	.867**
		(.401)	(.359)		(.400)	(.356)		(.479)	(.419)
log Per capita GDP Squared		-.0825***	-.0435**		-.0947***	-.0517***		-.0979***	-.0439**
		(.0207)	(.0175)		(.0206)	(.0174)		(.0247)	(.0203)
Pupil - Teacher Ratio		-.337***	-.318***		-.362***	-.329***		-.387***	-.338***
		(.0903)	(.0696)		(.0994)	(.0733)		(.117)	(.0868)
% Schools with Library		.130	.175*		.184	.232**		.227*	.286***
		(.0946)	(.0942)		(.110)	(.103)		(.113)	(.104)
% Private Schools		.0664*	.102***		.0652*	.103***		.0784*	.124***
		(.0366)	(.0356)		(.0373)	(.0341)		(.0452)	(.0434)
% Fathers Work Full Time			.485**			.588***			.766***
			(.213)			(.201)			(.253)
% Immigrant Family			-.295			-.247			-.264
			(.205)			(.193)			(.249)
Constant	6.273***	-2.311	1.382	6.272***	-3.588*	.527	6.263***	-4.055*	1.124
	(.0310)	(1.949)	(1.713)	(.0340)	(1.935)	(1.687)	(.0382)	(2.326)	(2.003)
Observations	54	54	54	54	54	54	54	54	54
R-Squared	.087	.604	.705	.090	.627	.742	.100	.602	.743

Note: In this Table we use the following variables as instruments of constitutions: the legal origin of the constitutions (de Silanes, La Porta and Schleifer, 1999), the year of independence (we assign 1700 to countries that were never colonized) and regional dummies. White-corrected standard errors in parentheses. Key: ** significant at 1%; ** 5%; * 10%.

Table 5: Logarithm of PISA Score, 2012 using ESCS Index: Instrumental Variables

	Reading			Science			Math		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Constitution Index	-.0429**	-.0362**	-.0341**	-.0344*	-.0282	-.0288	-.0352	-.0284	-.0262
	(.0175)	(.0154)	(.0165)	(.0198)	(.0176)	(.0189)	(.0232)	(.0218)	(.0225)
ESCS Index	.0768***	.0668**	-.00247	.0918***	.0831**	.0140	.0975***	.0887**	.00500
	(.0248)	(.0317)	(.0206)	(.0290)	(.0363)	(.0250)	(.0315)	(.0391)	(.0294)
log Per capita GDP			1.684***			1.891***			1.987***
			(.406)			(.409)			(.489)
log Per capita GDP Squared			-.0829***			-.0937***			-.0978***
			(.0208)			(.0210)			(.0250)
Pupil - Teacher Ratio		-.313***	-.342***		-.310**	-.344***		-.348**	-.383***
		(.110)	(.0904)		(.117)	(.0940)		(.134)	(.114)
% Schools with Library		.116	.128		.175	.186		.212*	.226*
		(.109)	(.0973)		(.121)	(.111)		(.126)	(.115)
% Private Schools		.0799*	.0649		.0816*	.0748*		.102*	.0821
		(.0438)	(.0399)		(.0477)	(.0409)		(.0574)	(.0530)
Constant	6.258***	6.175***	-2.353	6.256***	6.120***	-3.393*	6.248***	6.079***	-3.992
	(.0324)	(.106)	(1.991)	(.0374)	(.121)	(1.991)	(.0440)	(.122)	(2.400)
Observations	54	54	54	54	54	54	54	54	54
R-Squared	.291	.379	.600	.315	.394	.626	.295	.380	.601

Note: In this Table we use the following variables as instruments of constitutions: the legal origin of the constitutions (de Silanes, La Porta and Schleifer, 1999), the year of independence (we assign 1700 to countries that were never colonized) and regional dummies. White-corrected standard errors in parentheses. Key: ** significant at 1%; ** 5%; * 10%.

Table 6: Impact of Constitutional Arrangements on PISA 2012 Interquartile Range: Instrumental Variables Estimation

	Reading IQR	Science IQR	Math IQR
Specification 1	-.0118	-.0536**	-.0332
	(.0220)	(.0229)	(.0210)
Specification 2	.0114	-.0124	.0120
	(.0257)	(.0227)	(.0237)
Specification 3	-.00235	-.0239	.00864
	(.0262)	(.0230)	(.0247)

Note: The Table replicates Table 4 using the logarithm of interquartile range for each PISA 2012 score as dependent variables. The specifications include the same set of controls and instruments as in Table 4. Key: ** significant at 1%; ** 5%; * 10%.

Table 7:

Correlation matrix: Constitutional rights, GDP per capita, and education inputs

(t-statistics under each correlation coefficient)

	CONSTITUTION	GDP PER CAPITA	TEACHER CERT	LIBRARY	PRIVATE	PUPIL/ TEACHER
CONSTITUTION	1.000000					

GDP PER CAPITA	-0.371212	1.000000				
	-3.018247	-----				
TEACHER CERT	-0.084605	0.163164	1.000000			
	-0.641049	1.248590	-----			
LIBRARY	0.017629	-0.141188	-0.012635	1.000000		
	0.133114	-1.076730	-0.095402	-----		
PRIVATE	-0.115133	0.318191	-0.039897	-0.134477	1.000000	
	-0.875054	2.533987	-0.301455	-1.024582	-----	
PUPIL/TEACHER	0.060208	-0.200599	-0.509331	0.097918	0.149311	1.000000
	0.455385	-1.545915	-4.468389	0.742837	1.140054	-----

t-STATISTIC under each coefficient.

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