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Does Higher Education Matter?

In the 16th century, in the immediate aftermath of the Printing Revolution and the Reformation, Western Europe experienced an educational revolution, with Spain leading the pack. In parallel to the rise and fall of the Spanish empire, the number of universities and students in Spain exploded in the late 16th century and collapsed in the course of the 17th century.

Historians have debated the reasons for “the decline of Spain,” which lasted a couple of hundred years and reversed only recently (most dramatically after Spain joined the European Union in 1986).¹ This essay argues that an excess of higher education – or rather, an excess of the wrong kind of higher education and a dearth of the right kind – in early modern Spain contributed to the decline of Spain.² The Spanish case holds lessons for university reform in modern Europe.

Human Capital, Signaling and Culture Shift

With the 1999 Bologna Declaration, the ministers of education representing 29 European countries promised to establish a European Higher Education Area by 2010. The plan is to standardize higher education degrees and create quality assurance mechanisms. The idea is to promote competitiveness, growth, and jobs by boosting higher education.³

Implicit in this effort is the *human capital theory* of education.⁴ Individu-

als who invest in education become more productive and thus increase their personal incomes, which in turn raises national income.

Human capital theory comes with two propositions. First, higher education is a good of the “more is better” kind, which tends to be undersupplied. To the extent that higher education generates positive externalities (for example, because individuals who are highly educated and hence highly productive increase the productivity of their co-workers), individual investments in higher education will be suboptimally low in the aggregate.

Second, higher education in “useful” subjects such as business and engineering trumps higher education in “useless” subjects such as history and the humanities. Useful higher education is a production factor: it increases individual productivity and thus contributes to the national product. Useless higher education is a consumption good: it cultivates individual students without doing much of anything for economic development.

Two further theories of higher education – signaling and culture shift – challenge these two propositions of human capital theory.

According to *signaling theory*, higher education is a signaling device by which more productive individuals distinguish themselves from less productive individuals to get paid higher salaries.⁵ Employers cannot observe

¹ Hamilton (1938), Kamen (1978).

² Kagan (1974), Lohmann (2007).

³ Corbett (2005).

⁴ Becker (1964).

⁵ Spence (1973).

people's productivity directly, which prevents them from offering employment contracts that pay higher salaries to more productive types. The more productive types can attain a given level of higher education at a lower cost, compared to the less productive types; equivalently, for a given investment, the more productive types can achieve a higher level of education. Thus, a given type chooses to become more highly educated up to the point where the next-lower type falls short. Employers, who can observe people's educational credentials, can infer that a better educated person must be a more productive type. As a result, employers are willing to pay higher salaries to the better-educated.

People benefit from higher education because it translates into higher salaries for them. But higher education does not actually make them more productive, and so there is no positive effect at the aggregate level. Higher education is wasteful and oversupplied.

According to *culture shift theory*, a liberal arts education is critical for modernization and economic development.⁶ Societies thrive not in the first place because their citizens hold useful skills that translate straightforwardly into personal and national income. They thrive because of favorable norms and institutions, which specify how people relate to each

other and to government, church, and business. Norms and institutions that enable modernization do not drop out of the sky. They emerge as a result of social movements. Higher education can contribute to the emergence of favorable norms and institution by training public intellectuals, teachers, priests, lawyers, and other "symbolic workers."⁷

Higher education of the liberal arts kind tends to be undersupplied. To fix ideas, consider a liberal arts education that encourages people to tolerate religious diversity. An individual hardly has the incentives to invest money, time, and energy into becoming more tolerant. But society as a whole is likely to benefit if people stop excluding, or even killing, each other because they are suspicious of each others' religious practices.

To see these three theories of higher education in action, let us take a look at higher education and the decline of Spain.

Students and Society in Early Modern Spain⁸

Table 1 compares, for Western Europe and Spain, gross domestic product (GDP) per capita, expressed in 1990 international dollars, from 1000 to 1998 and the number of newly founded universities from 1200 to 1945.

Buried in these GDP numbers is the story of the rise and fall of Spain.

⁶ *The theory of culture shift is due to Inglehart and Norris (2003), Norris and Inglehart (2004), and Inglehart and Welzel (2005). Lohmann (2007) applies this theory to higher education. In the Anglo-Saxon world, John Henry Newman stands for a university-based liberal arts education (Newman 1982 [1873]). In the deutscher Sprachraum (German language zone), the corresponding concept of humanistische Bildung (humanistic education) is represented by the German idealists, especially Wilhelm von Humboldt (1956[1810/1896]).*

⁷ *The concept of symbolic workers is due to Reich (1991).*

⁸ *Kagan (1974).*

Table 1

GDP per Capita, 1000–1998, and Number of Universities Founded, 1200–1945, in Western Europe and Spain

Year	GDP per capita (in 1990 USD)		Period	Number of universities founded	
	Western Europe	Spain (in % of Western Europe)		Western Europe	Spain
1000	400	x	1200–1500	55	7
1500	774	90	1500–1600	28	10
1600	894	101	1600–1700	18	0
1700	1024	88	1700–1820	58	0
1820	1232	86	1820–1870	62	7
1870	1974	70	1870–1913	80	1
1913	3473	65	1913–1945	85	1
1950	4594	52	x	x	x
1973	11534	76	x	x	x
1998	17921	79			

Sources: Compiled by the author based on Maddison (2006), p. 206; Rüegg (2004).

Around 1580, Spain was the leading power in Europe; one hundred years later, it was not. Spain's stagnancy relative to the rest of Western Europe ended up lasting a couple of centuries.

Historians have debated the "whether and why" of the decline of Spain. What went wrong? In the 16th century, Spain excelled in global exploration, colonial expansion, and trade across the oceans. But Spain was overextended with its empire: it lacked the tax revenue and people to fight the wars needed to keep the empire up and running.

Meanwhile, the plague brought about a demographic decline. The resulting labor shortage in the agricultural sector led to famine, which exacerbated the demographic decline. The shortage of people also made necessary the costly hiring of foreign

soldiers, which further distressed the government budget.

Cultural values, too, explain the Spanish conundrum. Spain was riven by religious conflict. Militant anti-semitism encouraged the mass conversion of Jews to Christianity and (in 1492) the mass expulsion of Jews who refused to convert. Religious violence also forced conversions of Muslims to Christianity and (in 1609) the mass expulsion of Moriscos; Spain thus lost several hundred thousand Spanish Moors at a time when it could ill-afford the population loss in the agricultural sector. In the aftermath of the *reformation*, religious wars pitted Catholics and Protestants against each other all over Europe; in Spain, which was controlled by the Catholics, the Spanish Inquisition spread fear and loathing as it prosecuted real and imagined heresy.

Table 2

Student Matriculations in Salamanca, 1555–1810

Period	Student matriculations (quinquennial averages)				Year
	Total	Canon and civil law	Grammar, arts and theology	Medicine	
1555–1560	4,512	1,699	2,794	157	1555
1585–1590	6,633	3,78	2,388	194	1585
1605–1610	4,711	2,7	1,301	164	1605
1620–1625	5,919	4,287	997	163	1620
1650–1655	2,949	1,597	423	42	1650
1700–1705	1,895	547	268	50	1700
1805–1810	718	221	301	46	1805

Source: Compiled by the author based on Kagan (1974), pp. 247 and 250–251.

Spain further harbored cultural values that ran counter to the “Protestant ethics” which, according to Max Weber, served as the spiritual foundation of capitalism.⁹ The Spaniards celebrated leisure and nobility and despised manual labor and business people. They preferred to invest in a noble title – or educational credentials – that would give them plum jobs in the royal court or the Church, rather than investing in a business.

Table 1 shows how the rise and fall of Spanish GDP per capita is reflected in the number of university foundings. The emergence of the Spanish empire, in the 16th century, was accompanied by an explosion of universities. The decline of Spain, in the 17th and 18th centuries, was met with zero university foundings.

The same story can be told in student numbers. By the end of the 16th century, Spanish universities were educating about 20,000 students annually. With over 5% of the 15- to 24-year-old males entering college (admittedly, many of them failed to graduate), Spain sported the most

educated society in Europe. By 1700, the number of students had collapsed to 5,000; by 1820, to 1,000.¹⁰

Let us take a closer look at student matriculations in Salamanca, which dates back to 1218; it is Spain’s oldest university and one of oldest universities in Europe. Table 2 shows total matriculations along with matriculations in canon and civil law; grammar, the arts, and theology; and medicine from 1555 to 1810. (Other universities in Spain exhibit roughly the same pattern.)

The explosion and collapse of total student matriculations was driven by a bubble in the number of law students. In the course of the 16th century, there was a shift away from the study of grammar, arts, and theology and towards the study of canon and civil law. The number of students studying medicine, which rose and fell with the total number of students, remained low compared to the number studying law.

The increase in the total number of students, and in particular the shift towards canon and civil law, is con-

⁹ Weber (1934 [1904/05]).

¹⁰ Kagan (1974, p. 200).

sistent with human capital theory. With the emergence of strong monarchical government and a militant church, which had an empire and an inquisition to run, royal and church bureaucracies needed to be staffed, and the positions went to university-educated men who had studied civil or canon law. At about the same time, Spanish society developed and complexified, and the number of lawsuits exploded as disputes over rights and boundaries were typically carried out in court. For all of these reasons, the study of law was the ticket to wealth, influence, and status.

Next, signaling theory – or rather, a variant of signaling theory – explains the deterioration of higher education. Not only can employers not observe students' productivity; they also cannot look into students' minds to see how educated they are; all employers can observe are the students' educational credentials. For this reason, there is a powerful incentive for universities and students to collude in "hollowing out" the actual education on the ground. After all, it takes resources and time and energy to educate and to get educated – it is so much easier for universities to produce empty credentials and for the students to accept them.

This is exactly what happened in Spain. As a result, the increase in university-educated lawyers failed to contribute much of anything to the Spanish national product. At the same time, the vastly increased competition for the limited number of positions in government and Church implied that few law students succeeded in getting the prestigious jobs they aspired to. Another possibility is that their prospective employers in-

creasingly saw through their empty credentials and thus stopped hiring them in great number. Either way, law degrees dropped in value, and the law school bubble burst.

Finally, culture shift theory explains how the crowding out of liberal arts education contributed to the decline of Spain. The Spanish universities were disconnected from the larger intellectual and political developments in Europe between the 17th and 20th centuries: the Scientific Revolution and the Enlightenment, capitalism and democracy. They were



missing the experimental sciences, the modern languages, history and political economy: these fields of study, which gradually emerged in the 17th and 18th centuries, were adopted by the 19th century German research university, which in turn was widely copied across Europe. Spain lacked a channel by which all of these developments could have entered the minds of the university-educated elite.

The Spanish universities failed their country by allowing the unproductive cultural values of the Spanish elite to fester, which dragged down Spain – for centuries on end.

What lessons does the Spanish experience hold for university reform in Europe today?

Lessons for Modern Europe

The Spanish case study points to two unfortunate tendencies in higher education. First, higher education of the human capital kind tends to deteriorate into a higher education of the signaling kind. Second, higher education of the human capital kind tends to crowd out higher education of the liberal arts kind.

The first tendency is present in Europe today. Alison Wolf, of “Does Education Matter?” (2002) fame, argues that government-sponsored “growth through educational engi-



neering” is a failure precisely because it is giving rise to an arms race for empty credentials. The result is over-education and waste.

How can this tendency be kept in check? How can we encourage professors and students to care about learning for its own sake? Enter the 19th century German research university as envisioned by Wilhelm von Humboldt.¹¹ Because it selects professors for their research competence, there is a good chance that the professors will inherently care about their field and preserve the integrity of the teaching standards even if they have no immediate incentives to do so.

Moreover, since the German research university bundled research and teaching, the research professors were involved in the teaching enterprise, and they required their student to engage in creative inquiry rather than rote learning. (Even if daily educational practice in the 19th century German research university did not live up to Humboldt’s ideals, we must compare the result not to some non-existent ideal university but to the alternative, as embodied by the moribund Spanish universities.)

While the modern research university has its roots in the 19th century German university, the idea that teachers should be intellectually active dates back to the Middle Ages. In Bologna and Paris, the masters of law and theology rode the cutting edge of the collective belief systems of their time, and they passed on their improved understanding to their students, who took on positions in royal households, city governments, and the Church bureaucracy. The medieval university thus enabled medieval society to move out of the Dark Ages into the Light. They thereby contributed to the increase in GDP per capita between 1000 and 1500 and beyond.

The idea of a liberal arts education, too, goes back to the Middle Ages. The *artes liberales* served the purpose of training the free man (*liber* is Latin for free), in contrast to the *artes illiberales*, which are pursued for their economic value. Undergraduate students received a liberal arts education consisting of grammar, rhetoric,

¹¹ Humboldt (1956[1810/1896]).

dialectic, arithmetic, geometry, astronomy, and music, and then some subset of them moved on to graduate school where they received a professional training in law, theology, or medicine. (A Master's degree in theology, which prepared students for a career in the Church, was the equivalent of a modern Master's of Business Administration.)

Buried in here is the second lesson for modern Europe. "Useless" liberal arts education and "useful" professional training are not mutually exclusive. The educational ideal is to combine an education that builds cultural capital with an education that creates human capital.

Today, the Bologna process is forcing national university systems to partition university degrees into bachelor's, master's, and doctoral degrees that are easily comparable and transferable across countries. In Germany, the replacement of the one-part Diplom degree with two degrees, the bachelor's and master's, has been discussed mainly as a means to reduce overcrowding at universities (by moving people who take five years to get a Diplom into the three-year bachelor's) or to conform to the European standard; there is also talk of declining standards.¹² But the partitioning of higher education degrees into a non-utilitarian general-education bachelor's degree and a utilitarian specialized master's degree is critical for an altogether different

reason: it balances the two kinds of higher education that Do Good for society – the culture shift kind and the human capital kind.

Higher education of the culture shift kind is urgently needed in Europe today. Europe is a multi-ethnic and multi-religious society, and Europeans must learn to live with the religious "other." They must grapple with women's higher education and the integration of women into the labor force, which requires a rethinking of values relating to family, children, sexuality, abortion, divorce, equal rights in the workplace, and sexual harassment. As the number of old retired people increases relative to the number of young working people, with ominous implications for the solidity of retirement systems, people's attitudes towards work, vacation, and retirement will be challenged. Meanwhile, global warming calls for a change in mindset about the consumerist foundations of capitalism.

Once again, all of these changes do not drop out of the sky. The Spanish experience tells us that cultural values contribute to the rise and decline of nations just as surely as economic or environmental constraints. The universities of Europe can support or thwart the necessary changes to the collective belief system, as a result of which Europe will fly or die: this is the lesson of higher education in early modern Spain. ❧

¹² Wiarda (2005).

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