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An Introduction to the Economics of Fake Degrees

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Abstract : This paper critiques the multifarious ways whereby academic qualifications may be falsified in the international marketplace. The objectives are fourfold: (1) defining the main terms used such as fake degrees and diploma mills; (2) providing a brief history of fake degrees and identifying the factors that explain their recent development; (3) developing a theoretical framework to analyze fake degrees; and (4) exploring the costs and benefits of this activity and its net impact on a given society. Degrees serve instrumental and ceremonial purposes. It is argued that degree holders may be considered as members of a club. They confer to their holders excludable but non-rival property rights such as abilities, signaling and status. The paper contends that holders of fake degrees can be considered as “free riders” on these property rights, especially the status tied to legitimate degrees.

Keywords: accreditation, diploma mills, fake degrees, and status good

JEL Classification Codes: A23, A29, K11

“A fake degree is just the click of a mouse and a cheque away.” (Gillan 2004)

Evidence suggests that diploma mills have existed since the American Civil War, with the trade in fake degrees currently reaching epidemic proportions throughout the world. The growth in fake degrees has attracted the attention of the international education community, including media, governments and universities. Firms now hire specialized private services to verify college degrees and other educational qualifications. Several countries have undertaken investigations of their public service departments to assess the prevalence of fake degrees and the results are frequently alarming (Cramer 2004). In January 2005, two experts in the area called the fake degree business a “billion dollar industry that has sold more than a million fake college diplomas” (Ezell and Bear 2005). According to Bahur (2003), most individual diploma mill operators (estimated at 800) gross well over \$20,000,000 per year and this figure rises each year.

Despite these alarming statistics, no attention has been paid to the economic impact of fake degrees, although the falsification of other valuable goods is well documented (Grossman and Shapiro 1988a; 1988b; Frey 1999; Liebowitz 2002; Bosworth and Young 2006; Van Kempen 2003). To explore these issues, this paper investigates the following questions: What are fake degrees and diploma mills? Who produces fake degrees and who consumes them? And, what are the costs and benefits of the fake degree industry? Given that fraud does not lend itself easily to standard quantitative analysis, official reports, case studies, popular and educational press are analyzed¹. In parallel, we also explored the literature devoted to counterfeiting, mostly of branded products, in order to assess how this theory can be applied to the business of fake degrees. We contend that degrees can be usefully analyzed by using the Veblenian dichotomy between ceremonial and instrumental institutions. Degree holders can be considered as belonging to a club. Members of this club benefit from exclusive and non-rival property rights. These rights conferred by degrees include the traditional functions of degrees, *i.e.*, signaling and human capital functions, and a less studied use, that is, providing status. In some circumstances, holders of fake degrees are status seekers. Therefore, fake degrees allow their holders to “free ride” on the rights and benefits normally tied to legitimate degrees, without the normal investment of human capital.

¹ “A lot can be done with simple economic theory combined with historical or even journalistic methods of empirical research as distinct from regression analyzing and other methods of empirical research that use random sampling and statistical inference rather than anecdote and narrative” (Posner 1993, 203).

The paper is organized as follows. In the next section, the definitions of several key terms are addressed, namely fake degrees, diploma mills and accreditation mills. In the third section, it is argued and demonstrated that although fake degrees are an old phenomenon, there is recent and significant concern pertaining to their burgeoning increase. The authors offer several reasons explaining this development. The next section develops an analytical framework to analyze how fake degrees may allow their holders to free ride on the rights tied to legitimate degrees. The fifth section outlines the costs and benefits that can be associated with fake degrees. The economic viewpoint may differ substantially from the legal and educational views that frequently advocate repressive policies. The final section provides several policy implications and conclusions.

The Nature and Definitions of Fake Degrees

According to Freedman (2002, 161), “definitions are indispensable to communication, to the vital process of persuasion which underlines any academic discipline. Economists must begin their own peculiar campaigns of persuasion by getting their readers to abide by certain terminological choices. As a consequence, a sign of maturity in any academic endeavor is the development of a widely accepted distinct language composed of precise definitions.” In the world of fake degrees, definitions are numerous and reaching a consensus is an elusive task. Nonetheless, we offer an overview of available definitions in order to identify an array of convergent constitutive elements for fake degrees and related concepts (Table 1).

There are no definitive criteria to characterize a fake degree or a diploma mill and the lack of consensus on terms may generate some confusion (Brown 2004). We define fake degrees as counterfeit degrees bearing the names and signs of real and fully accredited universities and/or degrees from bogus universities, sold outright and that can require some academic work, but significantly less than comparable, legitimate accredited programs. In other words, fake degrees are defined by reference to unauthorized use of intellectual property. Our definition of fake degrees includes both replica testamurs from bona fide institutions and testamurs that can either be bought or earned with little work from an entity of some description. The former definition corresponds to a business that markets counterfeit degrees while the second definition corresponds to a somewhat legal institution that produces its own products, i.e., that sells “degrees” that are both real and sometimes legal, but not emanating from a recognized institution (for a more elaborated discussion of this point see Brown 2001, 76-97). One may

question how counterfeiting theory applies to a legal entity that sells its legally produced bogus degrees. Despite its usefulness, such level of precision is beyond the scope of this contribution. Moreover, the point may be more difficult if we introduce the fact that some bogus universities borrow intensively their “virtual” presentation such as mission statement, front page, history section, domain name and so on from real universities while delivering their own degrees (Gollin 2003). In the following, we mainly focus on unaccredited degrees delivered by fake schools, not on counterfeit degrees, i.e., fake MIT degrees.

Diploma mills are schools or universities selling or awarding diplomas requiring less than the minimum level of standard academic work. Diploma mills are normally unaccredited or accredited by “accreditation mills,” *i.e.*, by illegitimate or unrecognized accreditors. Sometimes, other institutions delivering good quality diplomas without full accreditation or non-traditional degrees (online degrees) can be labeled “diploma mills.” For example, an institution in the United States may take several years to obtain legitimate accreditation and may, in the process, be confounded with bogus universities and suffer from negative reputational spillovers. These last types are out of the scope of the present contribution. Accreditation mills correspond to statements made by unrecognized – sometimes only virtual – accrediting agencies that do not meet the legitimate accreditor standards in compliance with public regulations (see Council for Higher Education Accreditation (CHEA) (2003) for more detailed discussion). Such dubious procedures of accreditation echo Juvenal’s statement: “*Quis custodiet ipsos custodes?*” (*Who will guard the guardians?*) (Juvenal 120, Satyres). The lack of coherence and harmonization in national and international policies and procedures for the accreditation of institutions leaves an open door for dubious quality assurance systems (Brown 2004; Hallak and Poisson 2007).

Table 1: Overview of Terms and Definitions of the World of Fake Degrees

Terms and synonyms	Definitions and references
Fake degrees / diploma Phony degrees Counterfeit degrees	<p>“A fake degree is just the click of a mouse and a cheque away” (Gillan 2004)</p> <hr/> <p>“Counterfeit and substandard university degrees.” (Queensland Government)²</p> <hr/> <p>“Degrees (. . .) that are meant to give the impression of academic achievement, but in reality represent little or no study” (Katz 2004)</p>
Diploma / degree mills Bogus universities Phony universities	<p>“A diploma or degree mill is an organization or individual producing and selling diplomas, degrees, transcripts, or other academic records that are meant to give the impression of academic achievement, but in reality represent little or no study” (Katz 2004).</p> <hr/> <p>“A diploma mill is a person or an organization selling degrees or awarding degrees without an appropriate academic base and without requiring a sufficient degree of postsecondary-level academic achievement” (Stewart and Spille 1986 quoted by Ezell and Bear 2005).</p> <hr/> <p>“Non-traditional, unaccredited, post-secondary schools that offer degrees for relatively low flat fee, promote the award of academic credit based on life experience, and do not require any classroom instruction.” (Cramer 2004)</p> <p>“Diploma mills, sell academic degrees based upon life experience or substandard or negligible academic work. Some diploma mills require no academic work at all and merely sell degrees for a fee.” (Cramer 2004)</p> <hr/> <p>“Diploma mills would not pass the initial screening of accrediting organizations (review for eligibility, candidacy, or initial accreditation) and thus fall outside the purview of these bodies” (Council for Higher Education Accreditation (CHEA) 2003).</p> <hr/> <p>“A diploma mill, in its simplicity, is an unaccredited and fraudulent institution of higher education” (Bahur 2003).</p>
Accreditation mills Unrecognized accreditors	<p>“Accreditation mills would struggle with the pre-screening for recognition and thus escape this scrutiny as well” (CHEA 2003).</p> <hr/> <p>“Accrediting agency” “not recognized by the US Department of education.” (Ezell and Bear 2005).</p> <hr/> <p>“An accreditation mill typically is a firm that accredits schools without onsite visits and has little to no requirements for granting accreditation. Schools basically pay for the accreditation” (Harrison-Martin 2004)</p>

² <http://education.qld.gov.au/strategic/accreditation/university/bogus-quals.html> (accessed July 24, 2006).

Historical Overview of Diploma Mills and Fake Degrees

The history of fake degrees can be traced back to the time of the first academic degrees. According to Ezell and Bear (2005, 30), “the earliest explicit mention of diploma mills is Wooton (1883) who complained about ‘bogus degrees that may claim to have issued from some university which is non existent’” According to Wooton, the selling of academic degrees was common place since at least 1730. In 1876, John Eaton, a U.S. Commissioner of Education, called diploma mills a “scandal and disgrace to American education.”

In 1924, the U.S. Subcommittee of the Committee on Education and Labor reported that there were “at least 25,000 fraudulent doctors, doctors who have fraudulent (. . .) medical diplomas, practicing in the United States” (Ezell and Bear 2005, 31). Vaughan (1926) provides many interesting details on the importance of fake degrees and diploma mills in the medical profession.³ Several attempts to close diploma mills are presented but “the low-grade medical school had too much political influence at that time.” By 1957, the dubious Association of Home Study Schools representing many phony colleges and universities was “claiming that total enrollment in their schools was 750,000 students, paying an annual tuition of \$75 million” (Ezell and Bear 2005, 32).

Ezell and Bear (2005) distinguish between two more recent periods in the development of degree mills, primarily in the United States. The first period includes two major events, i.e., the creation of a special department in the Federal Bureau of Investigation (FBI), the DipScam (1980-1991) to address the problems of diploma mills and the Pepper hearings. DipScam closed in 1991 when Allen Ezell – the official in charge of the department – retired. According to U.S. official sources (1985) quoted by Bear and Ezell (2005, 33) the issue was very disconcerting:

Applying the rate of bogus [health credentials] to all other occupations, there would be as many as 2 million bogus practitioners in the country (. . .) The American Council on Education estimates there are (. . .) about 400-500 diploma mills in operation around the country (. . .) The National Council for Accreditation of Teacher Education estimated that fully one sixth of all doctorates in education were phony. If one generalizes from this estimate to all doctorates granted [in the past five years], this would translate to nearly 40,000 Americans holding bogus doctorate degrees alone.

³ Burlingame (2005) reports the case of several diploma mills among medical schools in Kansas such as the Kansas City College of Medicine and Surgery (opened in 1915)

The second period (1991 to present) is characterized by an “explosion” of the degree mill industry. *Technological advances* and *globalized education/labor markets* have dramatically increased the ease, speed and quality with which fake degrees can be made (see Marginson 2004 for a stimulating discussion). Distance learning combined with information and communication technologies have created the optimum environment for both legitimate and, of more concern, illegitimate universities to thrive. Historically, education services were mainly provided at a local level making accreditation and regulation relatively easy. The advent of the internet has reversed this trend, and the fake industry can now affect all countries in the same way. Anecdotal evidence ⁴ supports that larger education markets like the English speaking countries are more affected by the fake diploma industry (Brown 2006) than smaller educational markets, e.g., the French speaking market. For example, according to some sources quoted by Brown (2006), employers suggest that “up to 25-30% of all résumés contain some falsehood about claimed qualifications.”

Degree mills have expanded their operations across the globe (Ezell and Bear 2005) in many countries benefiting from a concurrent “technology push” and “degree race.” Indeed, digital technology in a globalized market has made the design and production of fake credentials easier and cheaper than ever before. The use of “documents such as certificates and diplomas to facilitate the decision-making process as opposed to personal interviews and informal recommendations” (Brown 2006; see also Zucker 1986) has reinforced the impersonal relationships allowed by digital technology. Moreover, degrees frequently constitute a major determinant of an individual’s rank in the competition process in order to obtain a given position and subsequent earnings (Hirsch 1976). Furthermore, degree mills have developed several measures aimed at reassuring consumers such as accreditation mills. While the problem of diploma mills and fake degrees is acknowledged as being serious, it is difficult to estimate their full impact because it is an illegal activity and there is an obvious lack of data and rigorous studies. Several official investigations point to the considerable magnitude and implications of this dubious activity (Table 2). These investigations appear to underestimate the expanding scale and dimensions of this multimillion dollar industry.

⁴ Anecdotal evidence includes pieces from several sources, such examples, case studies and surveys reported in books (e.g., Ezell and Bear 2005), reports (e.g., Hallak and Poisson 2007), published academic articles (Brown 2006) and numerous newspaper articles (see Table 2). Rather than a systematic and quantitative evaluation of fake diplomas (see Table 3), several contributions emphasize individual cases where *a priori* “trustworthy” individuals, e.g., the MIT admission dean, have been convicted of using fake and misleading credentials (Bombardieri and Jan 2007).

Fake Degree Holders as “Free Riders” on the Rights Tied to Authentic Degrees

Veblen has proposed a distinction between instrumental and ceremonial institutions that may be used to inform the analysis of (fake) degrees. In Veblenian terms, institutions stem from instincts of individuals that can either support the life process generally (workmanship, idle curiosity, parenting) or provide “contaminants” of that process (predation, invidious emulation, vested interests) (Tool 1998). “Good” instincts lead to instrumental behavior that is problem-solving behavior (*e.g.*, scientific discoveries, technical innovation), while “bad” instincts lead to predatory and ceremonial behavior (*e.g.*, conspicuous display). Many behaviors frequently result from a mixture of these two components and the role played by particular institutions in determining actions is a question of identifying what component instrumental or ceremonial dominates (Bush 1987). We contend that the drivers behind the acquisition of degrees draw from ceremonial and instrumental aspects. Indeed, as indicated below, degrees confer to their holders’ different kinds of benefits that may in return drive them to seek their acquisition.

Degrees confer to their holders several property rights not available to those that do not hold these qualifications. If we retain the distinction proposed by Furubotn and Pejovitch (1972) about property rights, degrees transfer to graduated individuals the right to use the degree, *e.g.*, to get a job or acquire a social status (*usus*) and the right to appropriate the returns from the degree (*fructus*), *e.g.*, obtaining a wage increase thanks to a given degree. A significant driver behind the purchase of fake degrees are the hopes of generating additional income and not necessarily the utility or human capital they yield (*e.g.*, skills acquisition). For example, Hallak and Poisson (2007) report on cases of recruitment or increased salaries based on fake diplomas (in Liberia, six teachers were found guilty of having bought their degree). Due to these fake degrees, they received a total US\$29,702 in additional pay, with individual amounts ranging from US\$2,300 to US\$7,200. The role of degrees as determinants of merit in labor markets can be questioned. In this perspective, analyzing the purchase of fake degrees as an investment decision is more accurate than as a consumer good.

Table 2: Some Official Investigations on Fake Degrees and Diploma Mills

Country	Anecdotal evidence	Reference
United States	“The GAO searched a government-sponsored Internet resume database and found about 1,200 resumes that included degrees from 14 of 43 diploma mills.”	Berlant (2003)
	“In summary, 3 of the 4 unaccredited schools responded to our requests for information and provided records that identified 463 students employed by the federal government. Two of the four schools provided records that federal agencies paid them \$150,387.80 for the fees of federal employee students. (. . .) Data provided by 8 agencies indicated that 28 senior-level employees have degrees from diploma mills and other unaccredited schools. (. . .) However, for reasons set forth below, this number is believed to be an understatement of the actual number of employees at these 8 agencies who have degrees from diploma mills and other unaccredited schools.”	Cramer (2004)
Israel	“One of the most persistent ethical problems in Israeli society is the scandal of fake academic degrees. The credentials of thousands of public servants have been cast into doubt; hundreds have faced disciplinary action, including a Knesset member and a senior official in the Department of education.”	Meir (2004)
El Salvador	“Supreme Court suspends 38 jurists for alleged purchasing of legal credentials (. . .). Under mounting pressure to clean up El Salvador's judicial system, the Supreme Court in recent weeks has suspended Canas [a Salvadorian judge] and 37 other judges over allegations that they do not have legitimate law degrees. Court officials said the purge could affect 40 percent of the nation's 628 judges.”	Elton (2002)
China	“China is cracking down on the forging and dealing of bogus degrees and diplomas as the latest census revealed at least 500,000 people are using fake education documents.”	Shenzhen Daily (08/27/02)
Italy	“There are 40,000 regular dentists, and 45,000 impostors. Some turn themselves into dentists and use false documents; others operate under a false name.”	Reuters Health (2003) ^a
Vietnam	“More than 1,700 policemen in Vietnam have been caught using fake degrees and certificates to get promotions and raises, state-controlled media reported. A total of 1,076 got demoted and another 97 were dismissed from the police force for falsifying their education and training (. . .). In recent years, thousands of government civil servants have been caught falsifying their degrees.”	The Asian Reporter (2005) ^b

^a Phony dentists a major problem in Italy. Northwest Community Healthcare, *Reuters Health*, March 20, 2003. <http://www.nch.org/index.html> (accessed July 24, 2006).

^b More than 1,700 police found using fake degrees. *The Asian Reporter*, January 04, 2005.

Obtaining a degree does not confer to the holder the right to change its form and substance (*abusus*), and the right to transfer each of the three previous mentioned rights to another party (*successionis*). Note that these rights are frequently assigned to legitimate institutions, such as universities or other bodies that can change the nature of the degree or attribute a similar degree to another individual. More formally, the property rights embedded in the degree make the benefits from being graduated excludable and non rival. Therefore, holders of legitimate degrees can be considered as members of the same club (Buchanan 1965). Several sub-clubs can be distinguished such as the club of doctors for all people holding Ph.D.s regardless of the field or the graduating institution and the sub-club of doctors in economics from the Massachusetts Institute of Technology. Analyzing communities of graduated individuals with analytical tools derived from club theory (Sandler and Tschirhart 1997) constitutes a challenging but promising area of research.

In addition to traditional and well studied functions of education, i.e., the signaling function (Spence 1973) and the human capital function (Becker 1964), degrees can be considered as delivering a certain prestige or social status (Hirsch 1976; Marginson 2004; see Solnick and Hemenway 1998 for empirical evidence). In a positional society, as wealth increases, consumers are not driven by their basic material needs, but by the attainment of “the esteem and envy of fellow men” (Veblen 1899). Goods are thusly valued more for their role as markers of relative success or social status than for their intrinsic properties. Obviously, degrees are “attention- getting” goods in some human groups (Fershtman 2006). Applying Veblen’s (1899) argument upon degrees rather than on wealth, he contends, “in order to gain and to hold the esteem of men it is not sufficient merely to possess wealth or power [or education]. The wealth or power must be put in evidence, for esteem is awarded only on evidence” (Veblen 1899, 23). Degrees confer esteem to their holders, including honor and achievement. But, to gain status, an individual must display this claim. Exhibiting or displaying the degree achieves this, because degrees have no social meaning if they are not displayed.

In modern societies, education is a marker of status. Consumers seek degrees to show that they are members of a class above (holders of the same degree) and to distinguish themselves from those below (holders of lower degrees). These two motives are directly inspired from Veblen’s distinction between “pecuniary emulation” and “invidious comparison.” Pecuniary emulation arises when an individual from a lower class consumes conspicuously to imitate a member of the upper class and invidious comparison occurs when an individual from a higher class consumes conspicuously to distinguish himself from an individual from a lower class (Fershtman 2006). According to Marginson (2004,

178), the “struggle for status is a powerful motivating force for both students and institutions in higher education, *i.e.*, in relation with both ‘supply’ and ‘demand.’” Status goods confer happiness to their holders only at the expense of others who consume less of the good and are duly impressed.

The three functions or drivers mentioned above (*i.e.*, signaling, human capital and delivering status) are not mutually exclusive and are likely to be mixed in individual decisions. When the purchase of fake degrees constitutes an investment decision rather than a consumption act, it questions the role played by degrees in labor markets. As outlined above, in a material economy, degrees ensure skill acquisition or signalling unobserved characteristics such as individual ability. Interestingly, if an individual for several reasons possess desired skills or abilities (*e.g.*, learning on the job, innate abilities) using a fake degree to get the position can be seen as beneficial. Indeed, it lowers the overall cost of training and selecting people. Despite some anecdotal evidence, we contend that this situation is more the exception than the rule. In a positional world, irrespective of their ability to demonstrate skill abilities or signal unobserved characteristics, degrees matter not for themselves but in comparison with others’ degrees. This degree race, like the well-known military arms race can cause significant welfare losses (Frank 2005).

Fake degrees may allow fake graduated individuals to free ride on benefits procured by legitimate degrees. In other words, individuals with fake credentials can benefit from club benefits without incurring the “membership costs” that normally ensures effective exclusion. On the supply side, *i.e.*, bogus institutions, the marginal cost of producing a fake degree is very low and varies according to the services delivered – *e.g.*, transcripts, recommendation letters, and verification services – but remains very cheap compared to the equivalent legitimate degree. On the demand side, if the fake degree is a consumer good conferring mainly status benefits, the individual balances the utility resulting from the fake degree against the incurred costs. The costs here are broadly defined and include the purchasing costs but also other “costs,” such as psychological costs associated with the fear of being discovered, and stigmatized. If the degree is considered as an investment good tied to earnings, the individual weighs the present value of costs associated with a fake degree acquisition against the present value of additional earnings/benefits earned by virtue of that degree. Without purporting to be exhaustive, such a free riding behavior can arise at different levels, not mutually exclusive. First, degrees frequently confer to their holders several exclusive rights such as titles (*e.g.*, doctors or engineers). Such titles provide to their holders several benefits such as the possibility to signal developed skills, access to certain positions or responsibilities, wage increases,

prestige and social status. Fake degrees allow individuals without legitimate degrees to claim titles and to profit from the prestige and other related rights. Second, fake degrees are frequently delivered by institutions that bear names that resemble those of reputable accredited schools (e.g., Columbia State University vs. Columbia University, Loyola University vs. Loyola College). Diploma mills free ride on the reputation of these legitimate institutions (Ezell and Bear 2005).

Degrees can thusly be considered in a simplified three-dimensional attribute space, *i.e.*, signaling ability, human capital formation and positional benefits. A credible legitimate degree ensures that functional and positional attributes are higher than minimum levels. We assume that an individual purchasing a fake degree gets none of the human capital formation, but can attempt to deceive prospective employers or recruiting education institutions and/or fool the eyes of others. Hence, a fake degree allows to free-ride not only on the functional attributes of legitimate degrees but also on the positional attributes (Hallak and Poisson 2007; Van Kempen 2003).

Costs and Benefits of Fake Degrees for the Main Stakeholders

It is well documented that the fraudulent consumer good industry imposes significant costs and confers a variety of benefits to several stakeholders. These stakeholders consist of consumers of the fake goods, legitimate producers and the society as a whole. Without purporting to be exhaustive, the costs and benefits for the higher education sector (namely universities) may be as follows: (1) those universities whose degrees are more or less directly faked; (2) consumers who knowingly or unknowingly purchase fake degrees that are inferior to the original or legitimate degrees; and (3) the economy more generally.

Costs of Fake Degrees to Legitimate Right Holders

(1) Costs to legitimate universities. There are obvious costs to universities because they can be forced to compete directly against degree mills for market share. First, consumers' resources investing in purchasing fake degrees may be at least partially considered as tuition losses for legitimate institutions. Although we provide some raw estimates about the business of fake degrees (Table 3), reliable data are scarce for obvious reasons.

Second, legitimate universities incur significant expense protecting their intellectual property rights by conducting investigations and mounting litigation against fakers. The budget for anti-counterfeiting is rarely well defined within

an organization, but spans across several departments making a precise evaluation difficult (Organization for Economic Cooperation and Development (OECD) 1998). They also incur protection costs to design degrees that may be more difficult to counterfeit. Third, fake degrees are likely to generate negative reputational spillovers and project a negative image on legitimate universities, especially for non-traditional institutions such as distance learning and virtual schools. In turn, legitimate institutions, especially web-based distance learning institutions may experience difficulties in signaling their quality and lose future sales or ability to charge price premiums.

Table 3: Some Estimates of the Business of Fake Degrees Worldwide

Number of unaccredited universities	300 operating on the U.S. market (800 operating worldwide)
Number of accrediting agencies that, as of late 2004, are not recognized either by CHEA or by the U.S. Department of Education	> 200
Aggregate income of diploma mills	> \$200 million a year
Usual price for a fake degree (Ms, PhD)	From \$100 to \$5000 with an average cost of \$1000
Number of fake degrees sold	More than 2 million fake degrees in United States alone

Sources: Bear 2004; Ezell and Bear 2005; Bertreau 2006.

At this stage, distinguishing high quality institutions from low quality institutions allows us to go further in the analysis (Akerlof 1970). Indeed, it seems intuitively convincing that diploma mills compete directly with low quality institutions rather than with high quality institutions. Low quality degree institutions must invest in reputation to distinguish themselves from diploma mills. Because of diploma mills, their perceived value falls, making it harder to price high unless they show that this spending increases reputation. We assume that employers cannot (without incurring additional costs) tell low quality institutions apart from diploma mills. Rather than practicing a wage gap between individuals with fake degrees (W_f) and individuals with low quality degrees (W_l), the wage paid to both groups (W) is the average of the two wages that would be paid if detection was perfect. The probability of having a fake degree (pf) is common knowledge. This average wage paid to both fake degree holders and low quality degree holders will be lower than the wage that the low quality degree people would get under perfect detection. In equilibrium where degrees are not distinguishable, the wage will be:

$$W = (1 - p_f) W_1 + p_f W_f$$

Because of this phenomenon those who ideally want low quality degrees and the proper wage associated with it will either opt for the high quality degree or the fake degree (Akerlof 1970).

(2) Costs for consumers. Consumers can be harmed by fake degrees because they could have bought them without being aware of their falsified nature. Indeed some diploma mills invest significant resources in delivering fake degrees that give consumers the perception that the delivered degrees are true ones. For instance, they can require from students some work, *e.g.*, writing papers, sufficient to generate the perception that delivered degrees are true but lower than the standards expected of legitimate degrees. Moreover, they frequently propose to convert previous work or life experience into accredited university degrees.⁵ “Degree mills are very skilled at playing a word and legal game in making themselves appear legitimate” (Markiewicz 2000). Sometimes, an individual attends a virtual university he believes to be accredited, but the institution turns out *ex post* not to be accredited at all (or accredited by a bogus accreditation institution). This is a particularly relevant problem in many developing countries, where control over the higher education system is weak and substandard private “universities” are proliferating. Diploma mills may also advertise in well-known magazines such as the Economist⁶ in order to induce false beliefs in consumers’ mind. “Because of magazine reputation, many readers assume if a school advertises in the Economist, it must be OK” (Bear 2004).⁷

The counterfeiting of a degree for status reasons deceives not only the individual who knowingly purchases the fake degree, but also the observer who sees the fake degree being consumed and is duly impressed (Grossman and Shapiro 1988a, 82)⁸. Consumers are generally left without any legal recourse and are likely to incur extra- cost, such as shame and image loss. Fake degree holders may also harm legitimate degree holders because they are forced to compete unfairly with

⁵ See for example the Belford University website <http://www.belforduniversity.org/> (accessed May 26, 2005)

⁶ “The Economist is one of the worst offenders. Every weekly issue for at least the last five years has had 20 ads for schools that range from totally phony to merely unaccredited and bad” (Bear 2004).

⁷ The magazine or newspaper decision to run an ad of a phony school deserves further attention. Indeed, the concerned media have to balance the opportunity costs of running such an ad against that of refusing it. Several factors are likely to play a significant role such as the transaction costs to identify ads of diploma mills and the potential reputational loss resulting from running such ads

⁸ The contributions of Grossman and Shapiro (1988a; 1988b) do not explicitly consider fake degrees but more conventional counterfeit products, *e.g.*, jeans

holders of fake degrees. Other consumers of fake degrees know exactly what they buy and the purchased degrees are non-deceptive. To counter the falsification of legitimate degrees some costs incurred by legitimate institutions to increase the reputation and strengthen enforcement are passed on to consumers, which is wasteful.

(3) Costs to the broader economy. The economy of a given country may suffer from recruiting unskilled people as shown by several examples and surveys (e.g., Cramer 2004). Fake degrees may cause a cascade of negative consequences especially when they are used in some jobs such as doctors or professors. As reported by CBS,⁹ holders of fake degrees occupy positions as “safety engineers at nuclear power plants and biological weapons experts. They work at NATO headquarters, at the Pentagon and at nearly every other federal agency.” It seems obvious that a lack of competencies in such jobs could have dramatic consequences (Geber 1999; Armour 2003).

Several years ago, Bear testified at the trial of a Florida man who bought a degree for \$600 and worked for several years as a psychologist in the Florida penal system. He was unmasked by a suspicious colleague who called the state board of licensing and discovered he had no license or training in psychology. In another case, Bear says, a man in Syracuse, NY, with a high school education bought a \$100 Ph.D. degree from the Universal Life University, a religious degree mill. He then opened a sex- therapy clinic and, as the head “doctor” counseled unsuspecting patients. He was finally discovered when a dissatisfied client called the state medical board, triggering an investigation. (Geber 1999)

Fake degrees are frequently used to gain unfair advantages “with the intention of gaining corrupt entry into professions where competencies, honesty and trust are essential” (Gollin 2003, 108; Elton 2002). According to Markiewicz (2000), “at least three percent of all doctorate degrees [in U.S.] in occupational safety and health and related areas came from either a diploma mill or a degree mill.” Employers are likely to spend more resources to check the legitimacy of degrees presented to them for employment. Similarly, governments in countries where counterfeits are sold may also have to spend increasing amounts of money in funding investigation and enforcement operations. When fake degrees are

⁹ We do not discuss what determines the probability of success/failure of deception on the part of the fake degree holder, even though these are crucial for the welfare outcome (see Van Kempen 2003).

<http://www.cbsnews.com/stories/2004/05/10/eveningnews/main616664.shtml> (accessed October 5, 2007).

widespread in a given country, they may generate negative spillovers and tarnish the image of all degrees from this country. Fake degrees have the potential to threaten the whole education system because individuals may believe that every diploma could be a fake or poorly accredited. While several other reproaches are easily formulated against the industry of fake diplomas such as reducing tax revenues because operations are achieved in the “black economy,” their effect on social welfare *sensu stricto* is not obvious.

Benefits of Fake Degrees

Unlike the legal and educational viewpoints that consider that fake products do not generate benefits and tend to prescribe repressive policies, an economic analysis suggests that fake degrees may have some beneficial effects (Frey 1999; Barnett 2005).

(1) *Benefits for legitimate universities.* In some cases, fake degrees may increase demand for legitimate degrees, resulting in an overall higher demand. For instance, if holders of fake degrees anticipate screening of their qualification will occur and they may be discovered with the fake qualification, *e.g.*, resulting in being fired or shamed, they can decide to substitute their fake degrees with legitimate ones. Although the economic literature has suggested some other mechanisms – the so-called “exposure effect” (Liebowitz 2002), the price discrimination in the presence of network externalities (Slive and Bernhardt 1998) – by which counterfeiting may benefit the original industry, these are unlikely to apply in the case of fake degrees. Moreover, recent empirical and theoretical contributions cast doubt on the validity of the previous arguments (King and Lampe 2002). A third argument related to the counterfeiting of fashion goods has been proposed by Barnett (2005, 1422) to explain how piracy may profit the pirated firm. The argument, to a limited extent, can be applied to fake degrees:

Consumers’ preferences for the status benefits conferred by fashion goods, and the resulting interdependence of consumer purchasing behavior, give rise to the possibility that fashion-goods producers may prefer some counterfeiting to no counterfeiting at all, irrespective of enforcement costs. This unusual outcome may arise for two reasons. First, the introduction of copies, provided they are visibly imperfect, may increase the snob premium that elite consumers are willing to pay for a fashion good. Second, the introduction of copies may lead non-elite

consumers to adjust sufficiently upward their estimate of the status benefits to be gained by acquiring the relevant good, thereby translating into purchases of the original. Both effects would increase the producer's revenues on sales of the original: the first by increasing price per unit, the second by increasing total units sold.

Anecdotally, unexpected benefits can arise such as the case of the Hollywood executive David Geffen who once used a fake degree from the University of California, Los Angeles to obtain his first position in the entertainment industry. He has subsequently repaid his fictitious alma mater with a donation of \$200 million.¹⁰ Of course, the benefit reported here relates to the donation given to the University of California, independently of other effects that may make the overall effect less conclusive.

In a world without fake degrees, some consumers who would decide not to obtain a high quality degree will get a high quality degree as their second choice. Having fake degrees can also harm the reputation of low quality institutions, giving high quality institutions protection from their low quality competitors. Degree mills may also create an entry barrier for low quality institutions who are trying to become a high end institution.

(2) Benefits for consumers. Consumers that knowingly buy fake degrees can either experience a utility gain from such fakes, possibly at the expense of others¹¹ or expect returns from an investment decision or both. The utility gain can include prestige, self-improvement, and status attainment and is reflected in the individual's willingness to pay. The benefits from the investment decision include the ability to qualify for a higher paying job.¹² High ability workers unable to get the original degree because they cannot assume its costs may gain utility from buying a fake one at a lower cost. By preventing diploma mills, low-quality products that could otherwise be marketed to the benefit of both buyers and sellers are precluded from sale. Given that degree seekers are rational agents (Becker 1968), they decide whether to pursue a legitimate degree or a fake one on the basis of a cost-benefit analysis. This involves comparing expected costs to earning a legitimate degree (i.e., years of schooling, tuition costs and so on that will allow

¹⁰ Reported in Nature, May 16, 417 (2002): 214

¹¹ Some purchasers of fake degrees may seek psychic satisfaction only, regardless of any desire to fool someone else.

¹² It is frequent to pay higher wages for people holding higher degrees, sometimes regardless of the job itself. For example, "Huron teachers with a master's degree are paid \$69,369 annually. For those with a doctorate, the salary increases to \$ 83,243 annually" (Harrison-Martin 2004). For empirical evidence, see also Ferrer and Riddell (2002).

degree requirements to be met) with the costs of buying a fake degree (i.e., purchase cost, penalties, potential shame and so on that can be at least theoretically monetarized) and choosing the least-cost option. Holding fake degrees will only be sanctioned within the terms of a certain probability. The costs of buying a fake includes the purchase cost and the statistical expectation of the sanction $s = pL$, where p is the probability of being detected and L the severity of the punishment. Being detected means that the individual will lose the additional earnings associated with the degree and possibly the position itself. According to Bombardieri and Jan (2007), the “most celebrated and outspoken admissions dean in America, Marilee Jones of MIT, has resigned after acknowledging that she fabricated her academic credentials.” The costs to the individual are difficult to quantify but anecdotal evidence suggests they are severe in the majority of cases.

(3) *Benefits to the broader economy.* The production and distribution of fake degrees constitute an economic activity in itself and, as such, may provide some benefits to the economy of the country where it takes place. For example, fake degrees may generate considerable economic activity in other sectors, such as postal services and advertising. Anecdotal evidence shows that well-known media such as the Economist, Time, Newsweek, Forbes, Money, Business Week, Investors Business Daily and USA Today run ads for diploma mills (Bear 2004). Accordingly, this activity could be considered as an offsetting “benefit” when assessing the net impact of counterfeiting on the economy (The Allen Consulting Group 2003).

The Net Impact

Although theoretically possible, the circumstances under which fake degrees are welfare enhancing are unlikely. In other words, social costs imposed to all stakeholders are prone to far exceed the social benefits resulting from such activity. While it can be argued that consumers benefit from counterfeiting because they gain access to degrees that they would otherwise have to pay (more) for, this is a short term benefit that needs to be balanced against the considered significant costs to legitimate institutions, the harm inflicted on people (enterprises or individuals) who are fooled, and the longer-term costs to the whole economy. In particular, acceptance of property right violations undermines the fundamental rule of law that underpins most modern economies (Grossman and Shapiro 1988b; The Allen Consulting Group 2003).

Policy Considerations and Concluding Remarks

Several policy considerations can be drawn. First, a counterintuitive insight is to consider that fake degrees may satisfy economic needs that do not necessarily interfere with legal issues. Indeed, some degree sellers indicate on their web site that they sell fake degrees “for novelty purposes only.” Such mentions may exempt the bogus institutions from legal issues and make the consumer informed of the real nature of the purchased good. The claim “for novelty purposes only” transfers the problem to another place where individuals buy fake degrees for “non-novelty purposes.” According to the distinction suggested by Grossman and Shapiro (1988b), these fake degrees are non-deceptive ones unlike deceptive fake degrees where purchasers are misled by bogus institutions claiming that they deliver true, recognized and legitimate degrees.

Second, using fake degrees is not a victimless activity. Among numerous points, fake degrees may devalue legitimate institutions, deceive potential students and employers (or universities) who hire (enroll) employees (students) that do not have the expected qualifications (degrees). In 2000 a survey of 1,500 top British companies found that 49% were concerned about applicants lying about qualifications (Gillan 2004). Several investigations have stressed that significant amounts of public funds are wasted to finance the purchase of fake degrees by officials (Ezell and Bear 2005)¹³. From a legal standpoint, protecting the rights tied to legitimate degrees seems compulsory while economists prescribe a cost-benefit analysis (see Frey (1999) for an insightful economic analysis of the differences between the legal and historic views and economic reasoning). The effectiveness of the exclusion device is justified if the welfare gains from protecting, minus protection costs, are higher than the welfare losses caused by a “laissez-faire” approach (Coase 1960). “Zero fake degrees” whilst theoretically reachable, may not be desirable from an efficiency viewpoint because the marginal cost of fake elimination would be extremely high for the last units of fakes, and the marginal benefits would be very low. The resources allocated to decrease the number of fake degrees should be set equal to the pecuniary value of the marginal social damage caused by the existence of fakes, at the point of optimal level of fakes. At this point the net benefits to society will be the greatest. However, determining the optimal level of fakes seems difficult (due to difficulty in measuring the value of the

¹³ See also the 2004 report of the U.S. Senate Committee on Homeland Security and Governmental Affairs: Bogus Degrees and Unmet Expectations: Are Taxpayer Dollars Subsidizing Diploma Mills?
http://www.nasulgc.org/Washington_Watch/testimony%202004/Diploma%20Mills.pdf (accessed February 8, 2005).

damage and the cost of eliminating it completely). The measurement of costs and benefits can be further complicated because of the several uses of fakes. Indeed, if someone buys a fake just for prestige, the social cost may be lower than its use to obtain a wage increase or an employment position.

The identification of degrees that are both counterfeit and socially damaging is essential. Such identification may enable an increase in the efficiency of invested resources. Indeed, “blind” research can be very costly while “targeted” research may economize on transaction costs. At first glance, diplomas that allow one to obtain an employment position in “credence services” (Darby and Karni 1973) are more likely to be counterfeit. Indeed, credence services frequently involve “causal ambiguity” on the sources of deficiencies, making the holder of a fake degree less likely to be detected. Anecdotal evidence supporting without proving this hypothesis may be found in the contribution of Gollin (2003). Consumers of such services cannot check the quality of the delivered services. Moreover, non-traditional institutions, *e.g.*, distance learning universities that are legitimate ones are more likely to be threatened by diploma mills. A refinement of these criteria can help enforcers such as public authorities to target their efforts toward sectors where fake degrees are used more frequently and socially harming.¹⁴

Third, the rationale for protecting degrees is relatively close to that of patents. Legitimate institutions invest in establishing credible degrees. Repeated consumption by satisfied consumers in a broad sense, *e.g.*, prospective students and recruiters generates goodwill and reputation. When governments grant institutions exclusive property rights to their degrees, they protect institutions’ investments. Without such protection, institutions would find it difficult to appropriate the benefits from maintaining the quality of their degrees and would have less incentive to do so (Grossman and Shapiro 1988b). Such enforcement is likely to benefit from economies of scale and learning by doing. Consequently, legitimate institutions and accreditation bodies (which may be considered as “host clubs”) may have interest in fighting fake degrees at a collective level rather than individually. Identifying the agent(s) who can enforce the selected level of protection at the lowest cost constitutes a challenging issue.

Fourth, the development of fake degrees is likely to generate an increase of transaction costs on both sides of the degrees related transaction, *i.e.*, the supply and demand sides for genuine degrees. On the supply side, in order to protect property rights on degrees, implied institutions, *e.g.*, legitimate universities, accreditation bodies, are likely to engage in procedures to prevent fakers to “free-

¹⁴ An obvious candidate where the use of fake degrees is likely to be socially detrimental is the medical sector

ride” on their business and reputation by undertaking investigations, litigation and so on. In several countries, institutions have engaged resources in order to fight fake degrees, such as outlets informing potential students on how to distinguish legitimate degrees from counterfeit ones.¹⁵14 On the demand side, fake degrees notably interfere and disturb the signaling/screening functions of legitimate degrees and their use as minimal quality standards. Indeed, job-seekers have to incur additional costs to signal their competences and recruiters spend more resources to detect fake degrees. This situation opens a new area for firms proposing verification services (Brown 2006). For example, recruiters may have recourse to the competences of specialized firms such as Kroll MIE (www.mie.co.za/) or Verifdiploma (www.verifdiploma.com/) whose core business is to check the legitimacy and validity of degrees presented by job applicants. Note that universities are also “recruiters” and can be victims of students with fake degrees. For example, Clayton (2003) reports the decision of the University of California to give special attention to all overseas applications because of several fake transcripts submitted by Chinese students.

Last, but not least, normative economics literature models the detection probability p and the penalty L as constituting the variables of available political actions from which the regulator can start in order to discourage the use of fake degrees (Becker 1968).¹⁶ The regulator can, therefore, either raise the probability of detection and conviction – for example via an increase in the monitoring frequency and/or by applying advanced monitoring technologies, or by changing legal rules to increase the probability of conviction (*e.g.*, requiring less evidence) – and/or the severity of the monetary or non-monetary sanction (*e.g.*, increasing the level of penalties or shame imposed on holders of fake degrees). It is suggested that in order to save on detection costs, an arbitrary increase in L in the form of a monetary fine could be compensated by an equal percentage reduction in p , leaving the expected penalty pL unchanged, if agents are risk neutral.

Faking degrees appears to be a fast growing and profitable business. Although fake degrees and diploma mills are not recent, they are experiencing a considerable expansion allowed by globalized markets and technological advances. We stressed the considerable scale of this economic activity, its costs, benefits and net impacts. Fake degrees share common features with other fakes, but also have particularities.

¹⁵ See for example the State of Michigan list of unacceptable degree suppliers http://www.michigan.gov/documents/Non-accreditedSchools_78090_7.pdf (accessed October 5, 2007).

¹⁶ Although Becker’s efforts to explain all things by way of isolated, rational, calculating individuals maximizing utility may seem to some extent not compatible with an institutionalist approach, we present this argument because it emphasizes how the legal system interferes with economic choices

Defining fake degrees and related terms – diploma mills, accreditation mills – constitutes a challenging but necessary step. Discussions about definitions are not unimportant quibbles over words and can change the way we think. A major contribution of this paper is to emphasize that degrees, regardless of their authenticity, serve instrumental and ceremonial purposes. By extending the economic analysis to the issue of fake degrees, the authors have introduced a new way to consider diplomas as club goods delivering some exclusive rights which are non-rival to some extent. Among benefits delivered by such clubs, we emphasize the status or positional considerations (in addition to more conventional functions) that are likely to play a strong role in the economics of fake degrees. For policy, status does matter and has economic implications. If status gets jobs, or goods redistributed toward those with status, then purchasing status via a fake degree will cause a reallocation of resources. It may also cause a waste of resources as obtaining a fake degree may be a form of wasteful rent seeking behavior. Welfare loss may also arise because having fake degrees limits the mobility of labor and transfer of skills since a local low quality institution is not clearly distinguishable from a fake degree in the international labor market. People may end up delaying an education decision until after a move, or may end up not moving because their low end degree will not be distinguishable from a fake degree outside of their local area of residence.

In sum, the authors have shown that fake degrees disturb the traditional functions of diplomas and are likely to generate a significant increase in transaction costs. As opposed to an exhaustive analysis, our contribution constitutes a first step, an appeal for further research on the application of economic concepts and tools to the analysis of degree markets either legitimate or fake. More questions than answers have been raised such as the analysis of degrees with analytical tools of club theory, the introduction of the status function of degrees, the optimal level of protection against fake degrees, and the effects of fake degrees on related markets. The liability allocation among the different parties (*e.g.*, providers of fake degrees, users of fake degrees) deserves further attention.

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