ALEX: OVERALL, YOU’VE COVERED SEVERAL IMPORTANT ARTICLES AND STUDIES. YOUR WRITING NEEDS TO BE TIGHTENED UP, AND MORE THOUGHT TO EFFICIENT CITATION. YOU MAKE A NUMBER OF GENERAL REFERENCES TO CONCLUSIONS BASED ON THE STUDIES YOU CITE, BUT THE DEPTH OF YOUR RESEARCH IS UNCLEAR BASED ON HOW YOU CITE THE STUDIES IN THE NARRATIVE. MORE SPECIFICITY WOULD BE HELPFUL, AS WELL AS MORE CROSS REFERENCING OF STUDIES/REPORTS YOU HAVE CITED. SRS

Literature Review of The Bennett Hypothesis and Related Research

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In 1987 the former Education Secretary of the United States William Bennett wrote a piece in *the New York Times* titled *Our Greedy Colleges,* which among other things introduced the idea of a link between increased federal post-secondary tuition aid programs and rising tuition costs (Bennett 1987). This link suggests that because colleges and universities try to better themselves, they will appropriate some amount of an increase in federal aid through increases in tuition or other means to improve the quality of their school. Those institutions that do not initially raise tuition to capture an increase in aid will need to do so at a later point in time in order to catch up to the competition that did (Gillen 2012). This hypothesis, later named the “Bennett Hypothesis,” has been debated and researched for the last several decades (Archibald, Feldman, 2012). Research in this hypothesis is relevant to the central hypothesis of this paper: Federal Post-Secondary Education Financing Programs, by their mere existence or their proliferation over the last thirty years, have led to some of the rise in cost of attendance at public universities in the United States.

Researchers have not reached a consensus on the relationship between Federal aid and cost of attendance. Even though a majority of the papers seem to agree that a link exists between the introduction or increase of federal tuition aid and a subsequent increase in cost of attendance, there is a discrepancy on which variables are relevant and in which contexts this is hypothesis is valid. VAGUE. CITATIONS? WHICH STUDIES ARRIVE AT WHICH RESULT?

Larry Singell and Joe Stone’s paper *For whom the Pell tolls: The response of university tuition to federal grants-in-aid* found no relationship between increases in federal post-secondary tuition aid and increases in cost of attendance for instate resident students at public non-profit universities. However, they did find that private universities raised their cost of attendance nearly one-to-one with increases in Pell grant funding. Furthermore, tuition costs for out-of-state students at public universities seemed to behave similarly to that of for-profit college tuition. (Singell, Stone 2007).

*Does Federal Student Aid Raise Tuition? New Evidence on For-Profit Colleges*, authored by Stephania Cellini and Claudia Goldin, uses a more inclusive definition of Post-Secondary Education Institution in order to compare schools that receive federal funding to those that do not. In order to make a direct comparison between programs with and without access to Federal aid programs the researchers compared otherwise identical Cosmetology programs at for-profit schools. They found that among the observed for-profit schools, the difference between average tuition at schools that were eligible for federal tuition assistance programs and those that weren’t was roughly equal to the average amount of federal tuition assistance given. This result suggests that the average out of pocket cost of attendance at both types of schools is roughly equal. This result also suggests that the Federal Tuition aid eligible schools had increased tuition to appropriate the full amount of the Federal Tuition aid (Cellini, Goldin 2014).

Both papers discussed above find support for the Bennett Hypothesis in the realm of for-profit post-secondary education institutions, while one finds no support for the same hypothesis in public non-profit institutions. This suggests that non-profit and for-profit schools behave differently under similar situations and should be examined individually. Many other papers suggest or explicitly state a similar observation.

Andrew Gillen, in his paper: *The Bennett Hypothesis 2.0*, addresses many of the flaws in the original hypothesis. He points out several areas of elaboration which adjust the original hypothesis to more closely fit previous empirical findings, the first of which involves the type of aid. Different types of Federal Aid affect different subsets of students and therefore have different effects on the cost of attendance. Grants, for example, only affect low income students whose willingness to pay for tuition may be below the current level of tuition. Therefore, rather than increasing the entire market demand for higher education, grants increase demand of those consumers whose willingness to pay was below the current price up to that market price. This change can be visualized as the introduction of a kink in the demand curve at the current price of tuition. In this paper he also points out the inelasticity of supply due to enrollment constraints, and the competition among institutions to maintain reputation and a high volume of applicants each year. (Gillen 2012)

Another complication to estimating the link between federal tuition aid and cost of attendance is the difference between resident and non-resident costs. Non-residents of a state typically pay more tuition at a state-funded university than resident students. The Bennett Hypothesis is based on the institution’s need to raise revenues, which based on the above discussion of in and out of state student tuition costs, can be achieved another way. If Institutions can raise additional revenues by accepting more out-of-state students rather than increasing tuition prices, then the Bennett Hypothesis may have less support. Michael Rizzo and Ronald Ehrenberg (2004) found that public institutions do not use out-of-state enrollments to increase revenues. Rather, they found evidence of falling out-of-state tuition prices during times of lower quality of in-state applicants as measured with SAT scores. This result suggests that these institutions were using non-resident applicants as a source of applicant quality rather than additional revenue (Rizzo, Ehrenberg 2004).

The federal tuition aid programs addressed in the original Bennett Hypothesis were given on a need basis, rather than on a merit basis. Therefore, the original hypothesis and much of the following research focused on scholarships, grants, and loans given to low-income students. This research focus has different implications on overall tuition level compared to merit-based scholarships available for all students (Gillen 2012). The effect that merit based scholarships have on tuition setting was researched in *Tuition-Setting Authority and Broad-Based Merit Aid: The Effect of Policy Intersection on Pricing Strategies.* In their paper, the researchers found that institutions without legislatively constrained tuition levels increased tuition and fees following the adoption of broad-based merit aid. (Kramer, Ortagus, Lacy, 2018).

João De Mello and Insper Isabela Ferreira Duarte find direct support for the original Bennett Hypothesis by looking at the introduction of “Fundo de Financiamento Estudantil,” (FIES) in Brazil. FIES is similar to the United States’ federal student loan program and was originally introduced in 1999 and gained popularity over the course of the next 10 years. Their paper uses Brazilian census data from 1995 – 2012, as well as College-level data on program applicants and enrollees, and Salary and wage data. They found that the availability of credit did have an effect on tuition, specifically it lowered Demand-Tuition Elasticity (Mello, Duarte 2015).

Since education institutions compete for the best applicants with merit scholarships, applicants receiving these scholarships have a lower willingness to pay than less qualified applicants for the same education (Archibald, Feldman, 2016). Andrew Gillen’s theoretically oriented paper explores this idea in another context (2012). In his second adjustment to the original Bennett Hypothesis he discusses how tuition caps and enrollment limitations can lead to the same tradeoff between quality of applicants and revenue. Beginning with a model of a single university and giving applicants tuition aid, leads to an increase in demand, a higher tuition cost and a larger enrolment. However, because universities have an upper enrolment limit, the tuition would increase further while quantity would remain unchanged. In many cases, tuition at state-supported universities is capped at a certain level by the legislature, which leads to a shortage of enrolment spots and a surplus of applicants. Faced with a surplus of applicants, the university will fill its seats with the best applicants it can and without necessarily intending to, trade some additional revenue for the increased student quality (Gillen, 2012).

Larry Singell and Joe Stone find evidence that in-state tuition is unaffected by increases in federal tuition aid while out-of-state tuition raises in amounts roughly equal to increases in Federal tuition aid (Singell, Stone, 2007). However, Michael Rizzo and Ronald Ehrenberg find evidence supporting the opposite conclusion. In their paper they present evidence that in-state tuitions increase with increases in federal tuition aid and out-of-state tuition is correlated with the quality of in-state applicants. (Rizzo, Ehrenberg, 2004)

Given the distinction between for-profit, non-profit, public, and private universities and colleges, carefully controlling for institution type in further research will be important. Quality, or perceived quality, of each institution should also be controlled for in further research because of its effect on applicants’ willingness to pay.

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