ACADEMY of ECONOMICS and FINANCE JOURNAL

AEF

VOLUME 12 2022

editors

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ACADEMY of ECONOMICS and FINANCE JOURNAL

Volume 12 2022

Aims and Scope of the *Academy of Economics and Finance Journal*:

The *Academy of Economics and Finance Journal (AEFJ)* is the refereed publication of selected research presented at the annual meetings of the Academy of Economics and Finance. All economics and finance research presented at the meetings is automatically eligible for submission to and consideration by the journal. The journal and the AEF thrive at the intersection of economics and finance, but special topics unique to each field are suitable for presentation and later publication. The *AEFJ* is published annually. The submission of work to the journal will imply that it contains original work, unpublished elsewhere, that is not under review, nor a later candidate for review, at another journal. The submitted paper will become the property of the journal once accepted, and not until the paper has been rejected by the journal will it be available to the authors for submission to another journal.

Volume 12:

Volume 12 of the *AEFJ* is sponsored by the Academy of Economics and Finance and Georgia Southern University's departments of Economics and Finance.

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Academy of Economics and Finance Journal: 11 Year Review

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Abstract

This article reviews the first 11 years of the *Academy of Economics and Finance Journal* (AEFJ), a blind peer-reviewed general interest academic research periodical in economics and finance. Summary statistics for the eleven volumes published indicate increasing diversity of research topics in recent years. This review also presents journal metrics pertaining to acceptance rate, citations in Google Scholar, and university affiliation of the board of editors by Carnegie Basic Classification. Findings show favorable trends across these metrics generally starting in 2017 under the guidance of the AEF Board of Directors with the goal of enhancing the value of the journal to members of the Academy and thereby enhancing the reputation of AEFJ among general interest journals in economics and finance.

JEL Classification: I23
Keywords: Acceptance Rate, Citations, Review

Introduction

The *Academy of Economics and Finance Journal* is a peer-reviewed, general-interest journal associated with the Academy of Economics and Finance (AEF). The AEF also supports the peer-reviewed *Journal of Economics and Finance, Journal of Economics and Finance Education* and the AEF Conference *Papers and Proceedings* (non peer-reviewed).

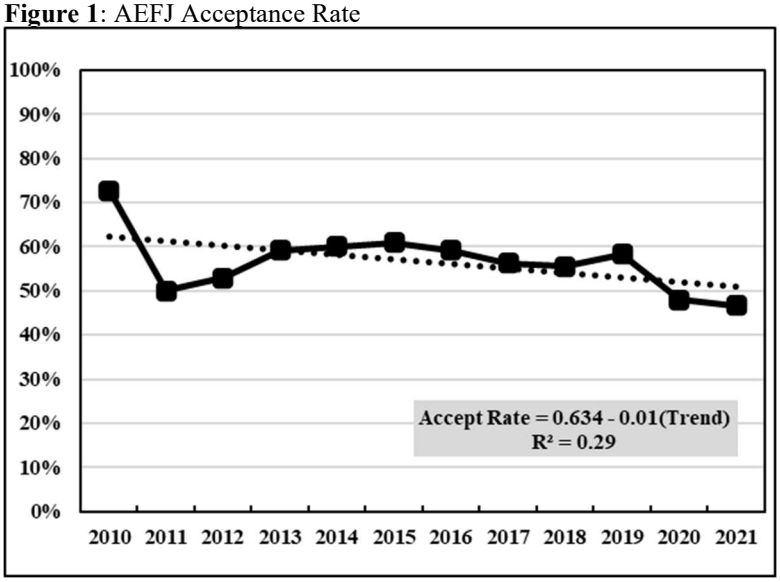
For over a decade (2010-2020), the AEFJ has published articles of great topical and methodological diversity across the fields of economics and finance. This review article marks the 11-year anniversary of the AEFJ and accomplishes several goals. Basic journal metrics pertaining to acceptance rate, citations in Google Scholar, and affiliation of the board of editors by Carnegie Basic Classification of their universities is presented. Second, basic statistics of published articles are presented along with the arc of topics as measured by author-reported JEL classifications per issue. Third, the 11-year trajectory of analytical and empirical methodologies employed is discussed. Special attention is given to novel datasets involving surveys and case studies, new fiscal policy tools, and new financial securities. Lastly, the review article identifies the scope of markets, countries, and segments of market participants that clusters of AEFJ articles have covered over the last 11 years.

Journal Statistics from 2010-2021

Basic Journal Metrics

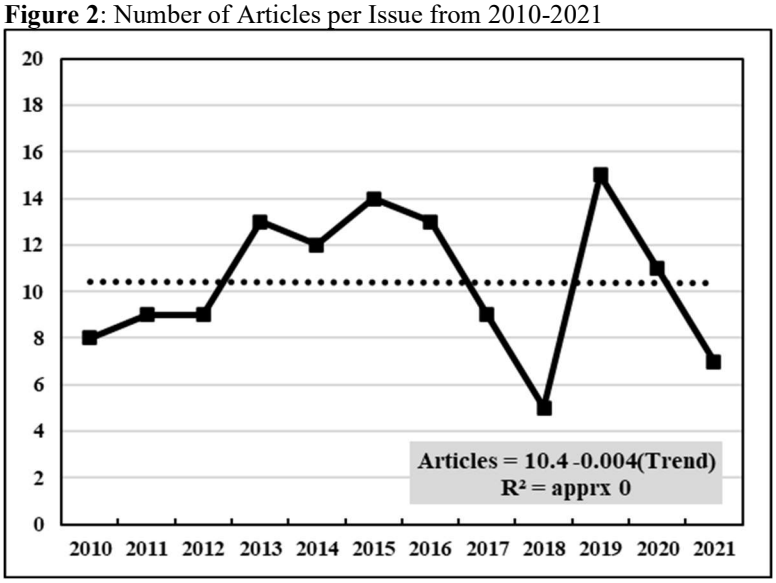
The AEFJ published a total of 118 articles across 12 annual issues from 2010 through 2021. The article acceptance rate (provided in Figure 1) has trended downward one percent per year since inception of the journal in 2010. From 2010 through 2015, the acceptance rate was 59%, falling to average 54% from 2017 to 2021, and dropping below 50% in 2020 and 2021.

Figure 1: AEFJ Acceptance Rate



Conversely, the number of published articles per issue has displayed no trend around a typical value of 10 articles per issue. Since 2017, there have been three issues with nine or fewer articles and two issues with 11 or more articles. Figure 2 plots the number of AEFJ articles published per issue from 2010 through 2020.The average AEFJ issue included 10.4 articles with minimum values of five (2018) and maximum values of fourteen (2015 and 2019). A line fitting the data yields no discernible trend and an R-Square approaching zero.

Figure 2: Number of Articles per Issue from 2010-2021



Authorship Statistics

There were roughly 62 different institutions represented across all AEFJ articles based on corresponding author affiliation. This figure likely underestimates the absolute number of different institutions represented by authorship as most articles were co-authored. There were 248 total authors across 118 articles from 2010 to 2020. This includes 34 repeat authors contributing to more than one AEFJ article. There were 33 solo-authored articles and one article with five authors. The average number of authors for a given article was 2.1. By comparison, Wohlrabe and Bornmann (2022) note the average number of authors of approximately 207,159 articles published from 1990 to 2013 in 307 economics journals was 2.2. In 17 high-impact Finance journals, Grossman and Lee (2022) find the average number of authors is approximately 2.5 in 6,394 articles published from 2015 to 2019.

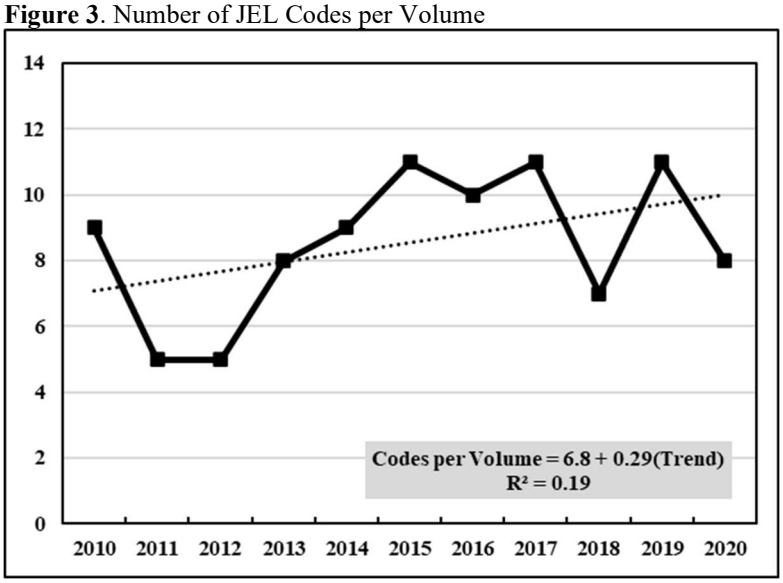
Although most author institutions are Carnegie classified R2 or DPU, there were numerous articles (nearly 18% of total) published by authors at R1 institutions such as Auburn University (2), Syracuse University (8), Texas Tech University (2), Tulane University (1), University of Georgia (1), University of Southern Mississippi (6), and West Virginia University (1).

Research Topic Statistics by JEL Classification

Articles published in the AEFJ have spanned a wide range of research areas across economics and finance over the years and the number of research topics represented in published articles is increasing through time. Figure 3 demonstrates the upward trend in the increasingly diverse portfolio of research topics appearing in each volume of the journal. From a baseline of 6.3 codes, on average, in the first three volumes of AEFJ, the number of codes represented has increased to 8.7 codes in the three most recent volumes published from 2018 to 2020. The number of codes per volume has been increasing at a pace of nearly 0.3 per year since 2010.

The growing diversity of research topics published in AEFJ is demonstrated in Table 1. This table provides the most frequently listed JEL codes as a percentage of published AEFJ articles per issue. This average value can exceed one since two JEL codes are listed per article.

Figure 3. Number of JEL Codes per Volume



The most frequent JEL codes over the 11 years, ranked by highest average percent per article, are G: Financial Economics (.74), F: International Economics (.15), E: Macroeconomics and Monetary Economics (.15), R: Urban, Rural, Regional, Real Estate, and Transportation Economics (.11), J: Labor and Demographic Economics (.10), D: Microeconomics (.10), O: Economic Development, Innovation, Technological Change, and Growth (.09), Q: Agricultural and Natural Resource Economics, Environmental and Ecological Economics (.08), L: Industrial Organization (.07), and I: Health, Education, and Welfare (.07).

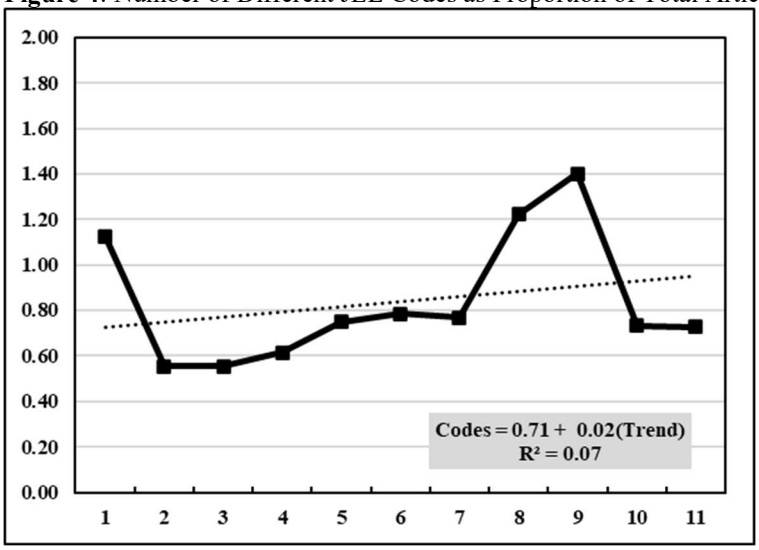
Table 1: JEL Codes as a Percentage of Articles per Issue from 2010 to 2020

	Avg.	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
G. Financial	74%	63%	111%	111%	85%	92%	86%	54%	56%	60%	64%	33%
F. International	15%	25%	11%	22%	23%	8%	0%	15%	11%	20%	14%	17%
E. Macro and Monetary	15%	13%	22%	11%	15%	17%	7%	0%	22%	20%	21%	17%
R. Urban, Rural, Regional	11%	13%	0%	22%	0%	8%	21%	15%	22%	0%	7%	8%
J. Labor and Demographics	10%	0%	0%	0%	0%	17%	7%	38%	11%	0%	21%	17%
D. Microeconomics	10%	13%	0%	33%	0%	0%	14%	0%	11%	0%	14%	25%
O. Eco Dev, Tech, Growth	9%	13%	0%	0%	15%	0%	0%	0%	11%	20%	14%	25%
Q. Ag and Nat'l Resources	8%	0%	0%	0%	15%	17%	7%	15%	22%	0%	0%	8%
L. Industrial Organization	7%	0%	0%	0%	23%	0%	14%	8%	0%	20%	14%	0%
I. Health, Ed., Welfare	7%	25%	22%	0%	8%	0%	7%	0%	11%	0%	0%	0%

Articles reporting the JEL code for Financial Economics, "G", represent an obvious outlier, however, the percentage of AEFJ studies related to financial economics has significantly decreased from a value of 111% in 2011 to 33% in 2020. Alternatively, JEL codes "J," "O," and "E" (Labor and Demographics; Economic Development, Innovation, Technological Change, and Growth; and Macroeconomics and Monetary Economics, respectively) have experienced increasing frequency in AEFJ articles over the last five years.

Moreover, Table 1 and Figure 4 indicate the diversity of JEL codes has not been constant through time. Figure 4 plots the number of different JEL codes per year as a proportion of the number of articles per issue. Although the data series is increasing with a low-magnitude slope of m=.02 over the entire sample, there is a strong upward trend in JEL code diversity from 2012 through 2018, peaking, and then declining for the last two years. This supports the general-interest nature of the AEFJ spanning a wide scope of research topics across economics and finance.

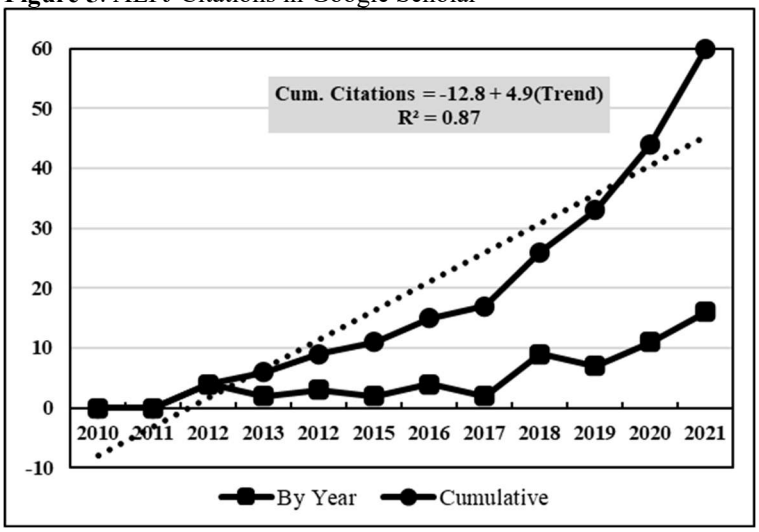
Figure 4: Number of Different JEL Codes as Proportion of Total Articles



Citation Statistics

The number of citations of AEFJ articles has a significant upward trend and is increasing at an increasing rate. Acceleration in the number of citations begins in 2018. As indicated in Figure 5, in the year leading up to 2018, the average number of citations per year was 2.125. From 2018 to 2021[2], the number of citations averaged 10.75, a nearly five-fold increase. Further, the cumulative number of citations is increasing at a rate of nearly five citations per year and reached a total of 60 citations to date in 2021 as compared to 17 cumulative citations in 2017.

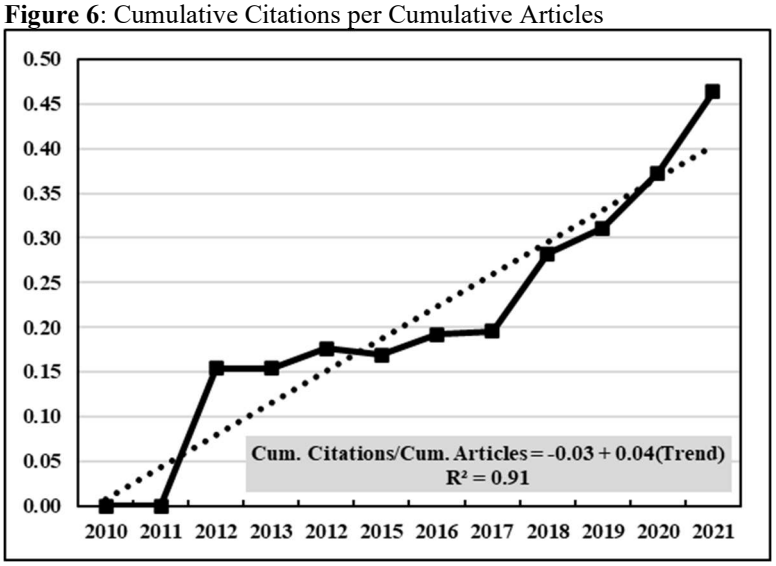
Figure 5. AEFJ Citations in Google Scholar



The AEFJ's market penetration, as measured by cumulative citations per cumulative articles published, is also increasing at an increasing rate. As indicated in Figure 6, in the years prior to 2018 the average number of cumulative citations per cumulative articles was 0.13, while from 2018 to 2021, the number is accelerating rapidly and nearly tripled to 0.36, reaching 0.48 in 2021.

The period of accelerating citations and cumulative citations per cumulative articles corresponds to a period in which the composition of the AEFJ Board of Editors emerged from a relatively long period of stability and experienced a notable change. This evolution in the editorial board is discussed next.

Figure 6: Cumulative Citations per Cumulative Articles



Board of Editors

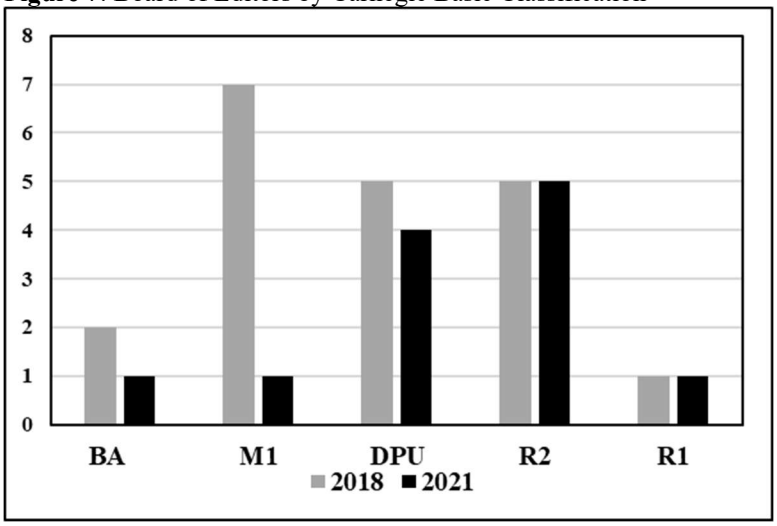
The board of editors of the AEFJ has undergone substantial evolution since 2018. The number of members on the editorial board has been reduced by approximately one-third since 2018. Also, an increasing proportion of the editorial board has affiliation with institutions classified as doctoral universities (R1, R2, DPU) in the Carnegie Basic Classification hierarchy.

The number of persons comprising the editorial board was stable from 2012 to 2018 at 20 members and the composition of the board was static. From 2018 to 2021 the editorial board was reshaped and reduced in size to 13 members. Nine previous members exited the board and two persons were added to the board of editors.

As the composition and the size of the board of editors evolved, the proportion of editorial board members with affiliations at doctoral universities increased substantially. Figure 7 depicts the editorial board members' affiliations by Carnegie Basic Classification. As is clear from the figure, the proportion of board members at doctoral universities has increased. In fact, the proportion of board members at doctoral universities increased from 55% in 2018 to 77% in 2021. Current plans for continued evolution of the board through marginal changes have a readily attainable target goal within two years of 85% to 90% of the board having affiliation with Carnegie doctoral universities.

An analysis of the aggregate Carnegie score of the board of editors indicates an upward trend in the aggregate score consistent with the visualization of the affiliations presented in Figure 7. Define the scoring system such that a baccalaureate college (including both Arts and Science Focus, and Diverse Fields) has a score of one, a large master's college and university (M1) has a score of two, a doctoral/professional university (D/PU) has a score of 3, R2 institutions have a score of 4, and R1 institutions have the highest score of 5.

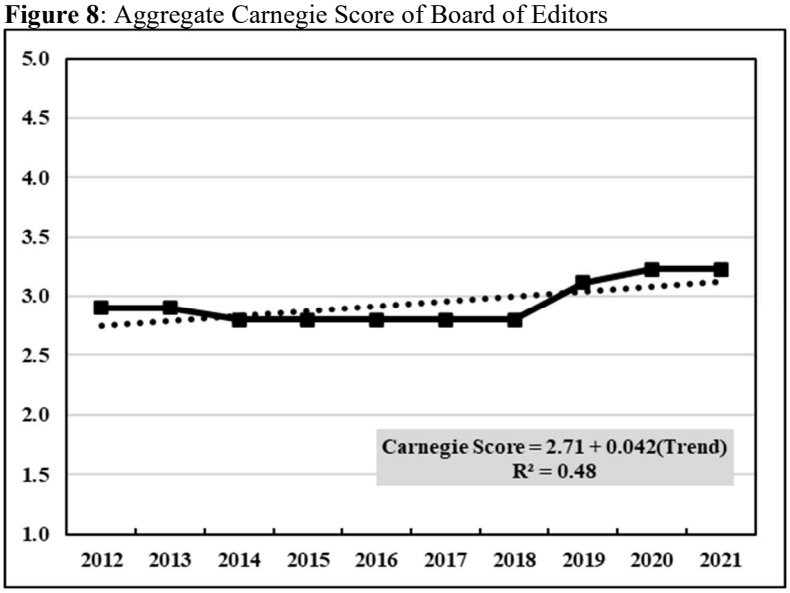
Figure 7: Board of Editors by Carnegie Basic Classification



Given this scoring system, the aggregate average score for the members of the editorial board has increased from 2.8 in 2014 to 3.2 in 2021. The two-year target goal for proportion of the editorial board with affiliation at doctoral universities is expected to further increase the aggregate Carnegie score of the board to 3.5.

Figure 8 provides the aggregate Carnegie score for the editorial board indicating a positive slope from 2012 to 2021. In 2018, prior to recent evolution in editorial board membership, the aggregate score was 2.8 thus indicating the increase in the aggregate Carnegie score has been concentrated in the three years from 2019 to 2021.

Figure 8: Aggregate Carnegie Score of Board of Editors



Methodologies and Empirical Approaches

Not only does the AEFJ publish on a wide range of economics and finance topics, the methodological and empirical approaches are quite diverse as well. This speaks to the journal's goal of serving as a general interest journal encouraging contributions from researchers working in a variety of fields.

Most AEFJ papers involve formal empirical analysis. For example, roughly 90% of articles in each issue involve some form of regression analysis, or other statistical methods of inferential statistical analysis, over the eleven-year period and this proportion has remained roughly consistent since inception. The empirical sophistication also covers a wide range. Numerous macro-finance studies, exploring domestic or international markets, have employed the cointegrated systems-approach of the CVAR and the short-run versus long-run framework (Bai and Gerado, 2010; Tangaoui and Farmer, 2013; Mustafa and Selassie, 2014; Hegwood et al., 2019; Margetis et al., 2020). Other clusters have explored the higher-frequency volatility of macro-finance variables (Tarwater, 2020; Gilbert and Loi, 2019).

Another popular approach in AEFJ published articles has involved event studies and analysis of so-called abnormal returns in the equity market (Deb and Schiereck, 2011; Fraunhoffer and Schiereck, 2012; Fang et al., 2015; Sherrill, 2016) as well as reexaminations of value premia and other effects in the Fama-French factor models (Moore and Chichernea, 2011; Moore et al., 2013; Pettengill et al., 2015; Pettengill and Chang, 2017). Other article clusters empirically investigate tracking error in the ever-expanding investment world of ETFs (Burney, 2016; Al-Nassar, 2018). Alternatively, Lewin and Sardy (2019) discuss liquidity mismatch and tracking error of ETF and underlying asset in a descriptive analytical framework. Numerous AEFJ articles have also considered the effects of structural change in regression analysis (Tangaoui and Farmer, 2014; Hegwood et al, 2019; Tarwater, 2019) and have explored non-parametric approaches explaining returns (Moore et al., 2010).

Some areas of contribution involve the proposal and analysis of new fiscal policy frameworks (Kao and Lee, 2013, 2015), new structured financial products (Hernandez et al., 2014), new firm risk metrics (Codina and Vu, 2015), and new breakeven point parameters (Echevarria, 2019). Survey-based research is another popular methodological approach for AEFJ papers investigating consumer healthcare preferences (Frederick and Gan, 2013), cryptocurrencies as investment tools (Nukenova et al, 2018), micro-finance efficacy in developing countries (Ghimire et al, 2019), and property manager decisions in real estate markets (Jubelt, 2019), but also perceptions of student learning (Zhang et al, 2018). In fact, even though the AEF-based *Journal of Economics and Finance Education* is pedagogically-focused, the AEFJ has published numerous articles investigating student

learning outcomes (Mustafa and Singh, 2010; Arias and Folk, 2014; Reese and Robins, 2019), and even business school publishing records (Jackson and Brown, 2011).

The AEFJ continues to encourage case-studies and investigations of underrepresented groups and markets. Studies published from 2010-2020 have reflected the regional influence of AEF members by exploring educational achievement in the southeastern United States (Mustafa and Singh, 2010), medical tourism in North Carolina, textile worker trends in the Carolinas (Stow, 2015), real estate activity in Georgia (Beck, Naspinsky and Toma, 2020), sustainable investment opportunities using case studies from Florida and Georgia (Jubelt, Lewin, and Sardy, 2020), but have reached domestically to San Diego's coastal real estate market (Conroy and Sandy, 2012) and to the recreational markets of Long Island (Li et al, 2016).

AEFJ articles also reflect international, cultural, and global influence in their analyses. For instance, studies have explored Nigerian exchange rate pass-through (Nwani, 2011), intra-industry trade in South America (Bonadies, 2012), economic growth in developing countries in southern Europe (Davis and Lowe, 2013), the triangular trade networks of South Africa, India and Brazil (Thaver, 2013), home investment bias in Asian markets (Kim, 2014), waste-picker policies in Santiago de Chile (Hernandez, 2015), peer-to-peer investment projects in Germany (Balasubramanian et al, 2016), tracking error of Saudi ETFs (Al-Nassar, 2018), business prospects in rural Nepal (Ghimire et al., 2019), international fertility across OECD member countries (Saadatmand and Sapp, 2019), and more.

Consistent with the dual disciplinary emphasis of the AEFJ, many published papers have explored the intersection of economics and finance. For instance, studies have considered the overlap of environmental markets with financial markets from M&A activity in the European energy sector (Fraunhoffer and Schiereck, 2012), M&A activity in the electric utility industry (Davis, 2013), natural disasters and financing economic growth in Latin America (Messick, 2016), renewable energy investment in the G6 (Farinella and Fellahi, 2017), FDI and foreign energy needs (Gorgulu, 2018), environmental factors in regional technological collaboration in China (Wang et al, 2019), and environmentally-related tax revenue and total greenhouse gas emissions in OECD countries (Kuklenski, 2020).

Lastly, one would be remiss without recognizing the breadth of AEFJ research in sports economics. Such studies have focused on behavioral biases in college football wagering (Farinella and Moffett, 2013), sports betting in the NBA (Paul et al., 2013), MLB attendance factors (Paul et al., 2015), managerial decisions and team performance (Paul et al., 2016), professional hockey league attendance factors (Paul, 2018; Paul et al., 2020) and player-performance effects (Riccardi, 2019), fan intensities for MLB players (Hebert et al., 2019), MLB catcher salaries and new performance metrics (Carnes et al., 2020), and gender equality issues in women's FIFA soccer performance (Kahane, 2020).

Conclusion

This article reviews the first eleven years of published works in the *Academy of Economics and Finance Journal*, an outlet of general interest research in economics and finance. In addition to identifying clusters of research topics based on popular empirical methodologies and the scope of various markets under investigation, this review presents journal metrics pertaining to acceptance rate, citations in Google Scholar, and institutional affiliation of the board of editors by Carnegie Basic Classification.

Summary statistics for the eleven volumes published to date, including author affiliation and JEL code trajectories were presented. Rudimentary time-series evidence suggests that the diversity of research topic has increased during recent years.

Elementary time series analysis of basic journal metrics from 2010 to 2020, and 2021 where available, identify a downward trend in article acceptance rate, an increasing trend in citations and cumulative citations per cumulative articles published, and a downward trend in the aggregate Carnegie score of the board of editors given a scale that assigns the lowest score (one) to R1 institutions and the highest score (five) to baccalaureate institutions.

An acceleration of these favorable trends in journal metrics since 2018 coincides with a restructuring of the board of editors in a multi-year process launched in 2017. The progress recorded to date is a direct result of deliberative action by the Board of Directors of the Academy of Economics and Finance with the intended goal of enhancing the appeal and value of the journal to members of the Academy and thereby enhancing the reputation of AEFJ among general interest journals in economics and finance.

Notes

1. Statistics for the 2021 issue are projected based on number of articles submitted and currently under review.
2. Data through December 15, 2021.

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Double or Nothing: A Median Voter Model Examination of Maine's 2010 Casino Referendum

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Abstract

Maine voters rejected a referendum on the construction of a casino in Oxford County during the 2008 presidential election. This same question was brought to the ballot in 2010, where it passed by a thin margin. A cross-section of 483 municipalities is used to understand what caused this shift in support for the legislation. The median age of residents is positively related to the percentage of yes votes for the casino, while per-capita income is negatively associated with the percentage yes votes.

JEL Codes: H70, Z30
Keywords: Gaming, Casino, Median Voter, Social Exchange Theory

Introduction

The 2008 Presidential election brought with it a large turnout from the excitement surrounding Senator Barack Obama's bid for the Presidency. The citizens of Maine were also tasked with approving two statewide referenda. The second question on this referendum ballot was requesting the approval of a casino in Oxford County, a large area in the western part of the state, on the border of New Hampshire. While a measure to allow slot machines at horse racing tracks was approved in 2003, Maine had been without a traditional casino that allowed patrons to indulge in table games as well. This initial referendum failed by a margin of over 50,000 votes (Bureau of Corporations, Elections, & Commissions, 2020).

The supporters of the casino did not cease their efforts after the initial refusal to pass the legislation. Immediately, the pro-casino crowd began rallying once more in hopes of bringing the proposal to a vote in a subsequent election. Their efforts were successful, and the Oxford Casino was brought to a vote once again in the gubernatorial election of 2010, where it was approved by a narrow margin. It has been documented that voter turnout in Presidential elections can double, or even triple, the turnout for Gubernatorial and other state-specific elections (Dunne et al., 1997). In the same article, the authors investigate the effect of politicians self-selecting the median voter, by placing legislation on ballots during different periods where the individuals who value the legislation will have incentive to turnout. While there may still be some in the dissent, the costs for those individuals exceed the value they receive from expressing their opinion against the legislation. However, Gersen and Pol (2011) suggests that while voter turnout may differ between elections, the impact it has on policy is modest at best and lacks any statistical significance.

There may be many reasons for citizens to vote against the construction of a casino, one of which may be the impact on crime rates. Gazel et al. (2001) explored how crime rates were affected by the existence of casinos in Wisconsin counties, and found that the existence of a casino in a county lead to higher crime rates, and those in counties adjacent to ones with casinos saw spill-over effects of a higher expected crime rate. However, Walker (2004) concisely questions the attitude of much of the literature on gambling, particularly how the social costs of gambling are calculated and interpreted.

The question on the ballot in 2010 differed slightly from the one proposed in 2008. The syntactical differences are not of particular concern for this study, though the disbursement of casino revenue to the state saw an expansion in the 2010 ballot, extending the language to include local and tribal programs in addition to the common state program funding. This action of voter approval of casinos is largely ignored in the literature on casinos and gambling, though there have been analyses on the perception of how these institutions will affect crime rates and tourism.

Social Exchange Theory (Emerson, 1976) provides a possible framework for our analysis. This theory posits that individuals are willing to engage in an exchange with another party if they perceive that the exchange will provide them some benefit. Looking at the raw vote totals by county, voters who approved the measure tended to be in the area immediately surrounding Oxford County, with the dissenters were far away from the county where the casino was to be located. Another possible explanation for this pattern could be the lack of realized consumption benefits from the counties considerably distant from the location of the casino. This framework was also utilized by Deccio and Baloglu (2002) in their evaluation of the spillover effects from the 2002 Olympics, hosted by Salt Lake City. The authors found that while many citizens in Garfield County (located a few hundred miles south of the event location) were indifferent to the Olympics, there was overwhelming support for the promotion of the businesses within the county. This same promotion could be expected by citizens in the counties surrounding Oxford, as Maine is a state that relies heavily on the tourist industry. If the casino were to attract more residents to the state those areas around the casino may expect to see an increase in visitors as well.

Data

Voting records at the municipal level were provided by the Bureau of Corporations, Elections, and Commissions (2020) for over 500 municipalities in the State of Maine. The American Community Survey 5-year estimates were used to gather information on employment and income characteristics for each municipality, with the Census Bureau also providing information on population and demographics for the State in 2010. Missing data across data sets leaves us with 483 municipalities. Descriptive statistics for these 483 municipalities are provided in Table 1.

Table 1: Descriptive Statistics

Variable	Mean	St. Dev.	Min	Max
% Yes Vote 2010	48.15	10.97	17.24	81.25
% Change in Voter Turnout	-20.50	7.37	-53.90	22.75
Per Capita Income	23.15	6.10	5.33	49.73
Oxford County Dummy	0.075	0.26	0.00	1.00
Median Age	45.77	5.28	21.80	61.70
% Yes Vote 2008	42.77	11.01	15.38	73.86
% White	98.17	1.63	87.28	100.0
% Employed in Service Industries	18.34	8.16	0.00	100.0
Change to Rep. Dummy	0.41	0.49	0.00	1.00
High Population	0.13	0.339	0.00	1.00

The percentage of the vote in the affirmative was just under 50%. This winning plurality, an increase of 5 percentage points of the vote tipped the scales in favor of its approval. Median age was included to account for the varying demographics of counties. With Maine being the oldest state, there was justification for the inclusion of the percentage of the population that was over sixty-five. However, these results did not prove to be robust, while the replacement with median age was. Oxford County is extensive in land coverage, though it lacks size in population and total municipalities. However, a large portion of the population is located in the adjacent counties of York, Cumberland, and Androscoggin, which includes 16 of the 20 most populous cities in the state (Office of Policy and Management, 2020). The percentage of the municipality employed in the service industry was also included to account for the amount of businesses that are reliant on the transient population. It is expected that the higher percentage of the municipality that works in the service industry, the more in favor the county will be if the Social Exchange Theory holds and these individuals assume to receive some benefit from the expected increase in tourism. These spillover effects, of course, will only be expected for counties that are near Oxford, and it is expected that these effects may be small or nonexistent for counties on the Eastern side of the state. The variable High Population is a binary variable capturing whether the city has a population over 5,000 residents. This variable is an attempt to capture the difference between urban and rural Maine. Lastly, the racial make-up within the state does not offer enough diversity to warrant inclusion. With a lower bound of 87% white, racial disparities will have little to no relevance to the study as there is no way to discern how many from each race turn out to vote, and there is too little variation to imagine they would overwhelmingly affect the outcome of the vote.

In the 2008 Presidential election, Maine overwhelmingly supported Democratic candidate Barack Obama, with 321 out of the 483 municipalities casting a majority of votes in his favor. Of these 321 municipalities, 117 voted in favor of the casino, making up about 53% of the municipalities that voted in favor of the referendum. Interestingly, 197 towns saw their support shift to the Republican Party in the gubernatorial election, with 103 of these municipalities voting in favor of the casino two years prior. This may suggest that there was a disparity in the number of Democratic voters that saw importance in the mid-term election. This possibility is accounted for within the dummy variable for changing to Republican support in the 2010 election. However, out of the 103 that switched support, 101 still supported the casino when it resurfaced on the 2010 referendum ballot. This speaks to the possibility of large third-party support splitting the vote of the Democratic Party, leaving Republican candidate Paul LePage with a plurality of the vote, though this is an investigation for another study.

Empirical Results

The results from the OLS regressions suggest that voter turnout played a major role in the passage of the legislation, especially when controlling for the percentage of voters who voted in favor of the referendum in 2008. The results are presented in Table 2.

Table 2: OLS Estimations Where Dependent Variable is % Yes Vote 2010

Variable	Model 1	Model 2	Model 3	Model 4
Per Capita Income	-0.10*	-0.10*	-0.09*	-0.09*
	(0.04)	(0.04)	(0.04)	(0.04)
Median Age	0.14**	0.13**	0.14**	0.13**
	(0.05)	(0.05)	(0.05)	(0.05)
% Change in Voter Turnout	0.07*	0.07*	0.06	0.06
	(0.03)	(0.03)	(0.03)	(0.03)
Oxford County Dummy	-0.58	-2.75	0.77	-1.44
	(0.94)	(2.39)	(1.96)	(2.74)
Changed to Rep. Dummy	0.76	0.81	0.75	0.81
	(0.52)	(0.53)	(0.52)	(0.53)
% Employed in Service Industries	0.03	0.02	0.03	0.02
	(0.03)	(0.03)	(0.03)	(0.03)
% Yes 2008	0.89***	0.89***	0.89***	0.89***
	(0.03)	(0.03)	(0.03)	(0.03)
High Population	0.55	0.55	0.50	0.49
	(0.74)	(0.74)	(0.74)	(0.74)
% Employed SI x Oxford		0.10		0.12
		(0.11)		(0.11)
% Change Voter Turnout x Oxford			0.08	0.10
			(0.10)	(0.10)
R-squared	0.80	0.80	0.80	0.80

Standard errors in parentheses. N = 483. Constant included but not reported. ** significant at the 5% level, *** significant at the 1% level

We present four different model specifications in Table 2. Model 1 is our preferred specification as it controls for observable demographic and municipality characteristics as well as all of our variables of interest. Models 2-4 expand upon this specification by including two interaction terms. First, in Model 2 we include the percentage employed in service industries interacted with the dummy variable of Oxford County. This is to capture the economic benefits of tourism, which are expected to be positive for counties near Oxford. Model 3 includes a different interaction term, namely the interaction between the change in voter turnout and being in Oxford County. We include this interaction term to capture the possibility that voters in Oxford County changed their behavior between 2008 and 2010 as they had a greater incentive to become informed and engaged on the casino issue. Model 4 includes both interaction terms.

Per capita income is negatively related to voting yes in 2010 across all four models at the 10% level of statistical significance. We interpret this as suggesting that lower income voters are more responsive to the jobs created by the casinos. Median age represents the median age within the municipality and it is statistically significant at the 5% level in all four models. The positive sign on the coefficient tells us that for each additional year of the median age within a county is associated of votes in favor of the casino by about 0.14 percentage points, other things being equal. The coefficient on the dummy variable for municipalities within Oxford County shows no statistically significant relationship between living in the county that would have hosted the casino and voting for the casino. We interpret this finding, consistent across all four of our models, as being inconsistent with Social Exchange Theory, as these municipalities could expect to reap the majority of the benefits from constructing a casino in the area. Similarly, the percentage of residents employed in service industries is not related to the 2010 percentage yes vote in a statistically significant manner. To further the point about benefits, we see that for a one percent increase in the percentage of a municipality employed in the service industry leads to an increase in the percent that voted in favor by about a tenth of a percentage point.

All four models include the important variable of the percentage of voters voting yes when the casino was previously on the ballot in 2008. This allows for the controlling of unobservable demographic characteristics and preferences of voters. This variable is unsurprisingly statistically significant at the 1% level in all four models. While we cannot say anything about who turned out in 2008 vs. 2010, the inclusion of this variable is useful in controlling for the aspects that are unable to be measured effectively. Within these models, the dummy variable representing a switch from Democratic majority to Republican majority is never statistically significant. A one percent decline in voter turnout leads to a 0.6-0.7 percentage point decline in the fraction of the voters that voted in favor of the casino but is only statistically significant at the 10% level in Models 1 and 2. This finding suggests that it was not the decrease in turnout between 2008 and 2010 that led to the passage of the casino referendum but should be interpreted with caution. Finally, the interaction terms are never statistically significant, suggesting that the economic

benefits of tourism to Oxford County and the greater incentive to become informed and engaged as voters between 2008 and 2010 did not play a role in the percentage of yes votes on the casino in 2010, *ceteris paribus*.

Conclusion

The impact of this vote on the Maine economy is not negligible. The development of the Oxford Casino has led to legislation that has created another casino in Bangor, a city located towards the middle of the state. This is consistent with the work of Neto et al. (2016), who find that nearby casinos increase the likelihood of adoption. It appears as though breaking the first barrier proved to be a formidable task, but since then the state has warmed to the idea of allowing traditional gambling within its borders. As more casinos begin construction, it would not be surprising to see the voters who will not directly or indirectly receive the benefits of the casino to diminish for some parts of the state, and possibly increase in others that do not see an increase in accessibility due to spite. In November 2017, state residents voted on a proposal to construct a casino in the resort town of Old Orchard Beach. Understanding the effect of voter turnout on the result of the Oxford referendum may prove useful in the explanation of why the vote did not pass in this recent off-cycle referendum.

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A Game-Theoretic Approach to Student Entitlement and Incivility in the College Classroom

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Abstract

This paper presents a game-theoretic approach to the development of an integrated plan to help faculty members create a civil and harmonious relationship between faculty and students. The plan is designed to provide students an academic environment which maximizes the opportunity to develop their intellectual confidence and avoid the cost that an uncooperative student or group of students can impose on their classmates. The intended audience is faculty members working in teaching institutions where classes are small and faculty are expected to have a professionally intimate relationship with students. The premise of the paper is that faculty members can create a sequential game, which anticipates and diminishes the disruptive behavior of a few entitled students using a first-mover advantage and the use of credible threats.

JEL Codes: A20, C70
Keywords: Civility, Entitlement, Game Theory, Classroom

Introduction

This paper presents a game-theoretic approach to the development of an integrated plan to help faculty members create a civil and harmonious relationship between faculty and students. The plan is designed to provide students an academic environment which maximizes the opportunity to develop their intellectual confidence and avoid the cost that an uncooperative student or group of students can impose on their classmates. The intended audience is faculty members working in teaching institutions where classes are small and faculty are expected to have a professionally intimate relationship with students. The premise of the paper is that faculty members can create a sequential game, which anticipates and diminishes the disruptive behavior of a few entitled students using a first-mover advantage and the use of credible threats.

The problems associated with incivility is well documented in the literature (e.g., Boysen, 2012; Cain et al., 2012; Feldmann, 2001; Schroeder and Robertson, 2008; Williams and Lauerer, 2013) and the related issue of increased narcissism among college students has been empirically verified (e.g., Twenge and Foster, 2008; Twenge et al., 2008; Westerman et al., 2012). A characteristic of entitled or narcissistic students is their tendency to react with anger and hostility toward anyone who criticizes them or evaluates them in a way that is inconsistent with their somewhat inaccurate grandiose sense of self (American Psychiatric Association, 2013). With the level of narcissism rising among college students (e.g., Twenge and Foster, 2008; Twenge et al., 2008; Westerman et al., 2012) the likelihood of conflict situation continues to increase for faculty (Twenge and Campbell, 2009).

Any faculty member who has experienced an emotional outburst by an argumentative or combative student will attest to how unsettling the experience can be for the entire class. These episodes can unexpectedly occur in response to the return of graded material or a casual reminder of a violation of the "rules of engagement" (Williams and Lauerer, 2013) as outlined in the syllabus. The situation can escalate into a public feud between the faculty member and the student. The offended student may cop an attitude and, in some cases, relentlessly work to undermine the faculty member's efforts to promote a learning and teaching environment while recruiting fellow students to their cause. The passive-aggressive options available to the "resistance" are wide-ranging, easy to implement, and remarkably disruptive. Groans, side conversations, leaving class early, packing up before the class ends, asking questions unrelated to the material during lectures, texting, browsing the web, glaring, or never looking at the professor are some examples of disruptive behaviors employed by these students. As such, they are akin to academic terrorists willing to ruin a class for themselves, their peers, and the professor for the sake of retribution and power.

Faculty members who have had one of these "classes from hell," or even the typical class with daily misbehavior and disruptions, realize the threat to the learning environment created by incivility (Appleby, 1990; Nordstrom et al., 2009). The "discipline" problem has always existed for teachers of elementary or high school students but is increasingly prevalent at the college level (Ausbrooks et al., 2011), leading some to conclude that incivility and misbehavior is one of the biggest challenges facing college instructors in the 21st century (Braden and Smith, 2006). The options available to a faculty member facing this decline in civility are limited. Calling students out for these individual minor infractions such as those listed above is likely to result in a further escalation in the conflict, and even the positive students in the class are likely to conclude that the faculty member is petty and vindictive.

In strategy classes, students are taught that threats can be creatively turned into opportunities. In game theory classes, students are taught decisions of players can be predicted and outcomes can be predetermined by the payoffs in sequential games. Using backward induction, we can "look ahead and reasoning backward" (Dixit and Nalebuff, 1993) to anticipate at each turn the choices players will make based on the payoffs they earn at the end of the game. If college educators can control the structure of the game and its payoffs, incentives can be changed to alter the choices that students make and improve the level of civility displayed in the college classroom.

The next section of this paper outlines a list of best practices as found in the literature to encourage classroom civility and discourage misbehaviors. A recommended outline of optimal reaction to anticipated noxious behaviors characteristic of students reflecting entitlement and incivility is provided. A description follows regarding how these techniques can be built in a game-theoretic framework to create a strategic plan before the beginning of the semester, which encourages students to engage in civil behavior for the benefit of not only themselves, but their fellow students and faculty alike.

Approaches to Student Incivility and Entitlement

Researchers have responded to empirical and anecdotal evidence of incivility and student entitlement by offering an array of techniques to improve course policy creation and implementation as a means to mitigate disruptions to the classroom and learning environment. Below is a list of approaches prescribed by those who have studied and researched the problem.

- Clearly define expectations in the syllabus, discuss them the first day of class, and outline which behaviors are unacceptable and lack civility (Lippmann et al., 2009; Schroeder and Robertson, 2008; Williams and Lauerer, 2013). Explain why certain behaviors negatively impact the learning environment, such as the imposition of negative externalities on other students and the diminished ability of the faculty to deliver lectures and promote educational opportunities for the entire class. Invite students to respond to the class policy.
- Present the code of conduct and civility in a positive way (Baker et al., 2008). Emphasize the idea that civility makes everyone's life better and enables the student to learn more easily, promoting collegiality and a friendly, stress-free, fun learning environment.
- Co-create the rules and policies with students (Ward and Yates, 2014; Williams and Lauerer, 2013).
- Respond to incivility immediately and "intervene quickly" (Boysen, 2012; Feldmann, 2001; Schroeder and Robertson, 2008; Williams and Lauerer, 2013).
- Ensure there are consequences for engaging in any act of entitlement and incivility (Schroeder and Robertson, 2008; Williams and Lauerer, 2013). For example, if students insist on having exams regraded, then understand that a regrade may result in scores increasing or decreasing.
- Provide students with examples of excellent work and behavior (Lippmann et al., 2009).
- Get institutional backup that complements faculty efforts (Cain et al., 2012; Lippmann et al., 2009). Department heads should support the faculty member when students complain or give poor teaching evaluations (Ward and Yates, 2014).
- Document incidents of incivility and forward this information to the administration (Feldmann, 2001; Schroeder and Robertson, 2008).
- Model behavior (Schroeder and Robertson, 2008; Ward and Yates, 2014) by arriving on time to class, honoring office hours, referring to colleagues using their proper title, etc.
- Put space between graded material and interactions with students who want to contest the answers on exams or argue for higher grades. Require students to submit written responses to why they believe their grades should be improved (Lippmann et al., 2009). In particular, do not engage in debates about questions on the exam right after the exam when the student's emotions are the highest.

Difficulties in Implementing Recommended Strategies

While there is evidence that the strategies listed above are effective, there is little, if any, empirical evidence that they can be easily and cohesively implemented. That is, in the implementation process several problems might arise. First, a series of best practices is not a comprehensive, strategic plan. Guidelines are helpful, but the faculty member does not yield their full benefits without a structured, enforceable means to implement them. Second, narcissistic and entitled behavior, even if amongst a small group of students, may reflect in unexpected ways outside the scope of those best practices, resulting in a hostile class environment. Third, hostility might continue throughout the semester in which this small group of students "enroll" other students on their side, escalating a combative relationship between faculty and students until the end of the semester.

For example, several authors (Boysen, 2012; Feldmann, 2001; Schroeder and Robertson, 2008; Williams and Lauerer, 2013) recommend responding rapidly to incivilities, rule infractions, or misbehavior, such as a violation of a rule against texting during class. If the faculty member immediately reminds the student of the no texting rule, there is the risk, particularly with

an entitled student, of setting up a confrontation, which creates a battle for the rest of the semester. If the faculty member waits until after the class for a one-on-one interaction with the student, the other students may believe the behavior went unnoticed or assume the faculty member does not take the rule seriously. In addition, as students line up to ask post-class questions, the offending student may escape without any consequence for breaking classroom policies.

Braden and Smith (2006) suggest that the choice of the right approach is likely to be determined by the personality type of the instructor. For instance, extroverts will respond extemporaneously, and introverts will likely choose to wait until a private discussion can be had at a later time. Regardless, of the faculty member's personality type what the faculty members needs is a plan, a strategy plan, which promotes civility in the classroom and solicits cooperation from all students regardless of their narcissistic or entitled tendencies. What follows is an example of a game theoretic based plan designed to promote a dominant strategy of cooperation.

A Game-Theoretic Approach to Civility and Entitlement

Before the Class Starts

The literature conveys that defining expectations is critical (Baker et al, 2008; Lippmann et al., 2009; Schroeder and Robertson, 2008; Williams and Lauerer, 2013). The first day of class represents an opportunity for faculty and students to discuss and agree on their mutual responsibilities. Not surprisingly then first day attendance is mandatory in some schools. This rule sets the stage for the rest of the year avoiding a wide range of communication problems which can easily lead to student/faculty conflicts later. Faculty members can hardly hold students accountable for rules they do not know and students surely are not responsible for the first assignment if they did not know about it. In schools without mandatory first day attendance rules some students may make the choice to simply show up for the second class extending their break by a few days assuming they will not be marked absent and they will not be responsible for any rules or assignments announced on the first day.

In game theory terms, the student has gained a first-mover advantage in the sequential-move game called a semester. An approach to this problem is for the faculty member to assume the first move in the form of a pre-semester email like the following:

"Dear Students,

We are about two weeks from the start of a new semester, and you are registered for Eco 101. Please plan on attending the first class during which we will negotiate the syllabus, you will be given an opportunity to discuss critically important aspects of the class, and we will define our mutual obligations. You are experts since you have had at least 12 years of experience in the behaviors of good and bad teachers. Come to class ready to negotiate for more of the "good" behaviors and fewer of the "bad" with the goal of making me the best teacher I can be. (Please note if you are receiving this email, you are registered for this class. If you do not attend, you will be marked absent just as you would for any class during the semester. In addition, you will be required to follow the same rules and receive the same consequences that will apply to the students who attend the first class.)

I won't agree to everything you ask for, but I think you will be surprised at what I am willing to do to enhance the value of the class for you. I doubt that you have ever been given this opportunity from any previous teacher, but there is a catch. I will ask you to reciprocate. I will, in a symmetrical way, ask you to agree to behaviors that will make you the best student you can be. This process will also be your first economics lesson; "you have to give up something to get something." If you like agreements that are clearly defined and mutually beneficial, and if you pride yourself on fulfilling your promises, this course is for you.

We will write down my "Promise" to you and include it in the syllabus. We will also include your responsibilities in the syllabus. If you miss this first day, you are likely to be confused and frustrated for the entire semester, which is a problem for you, me, and the rest of the class. For example, we will discuss and negotiate whether you are permitted to use electronic devices, computers, and smartphones during the class. We will also discuss rewards for abiding by our contract and penalties for not doing so."

The pre-semester email is designed to set the tone for the entire semester. The letter could be modified even in schools with mandatory attendance explaining why the first class is so important. Students are expected to attend class, and there will be consequences for their choices. The students without knowing it are asked to engage in backward induction and make a choice accordingly. At the very least, the letter helps to avoid the "helpless me; I did not know" tactic, which generally allows students to escape the consequences of the decisions they make.

The First Class

You never get a second chance to make a good first impression. What happens in these first few hours is critical. Gone are the days when a faculty member could afford to meet, greet, announce the assigned reading for the second class, and expect civility and professional behavior for the rest of the semester. Rather, now is the time to define institutional behavioral expectations as well as the "rules of engagement" which apply in your class. It is critical for students to be well informed of both sets of expectations since the alternative is for students to guess the rules and test them through trial and error. The latter approach is a recipe for disaster as students test their boundaries and other students observe what they can get away with. If the faculty member is not continuously correcting students, the class can become a free-for-all, including texting, side conversations, and entitled demands.

Fortunately, some colleges and universities have created institutional policies to define acceptable behavior and reduce entitled behavior. As one example, the College of Business at the University of Tampa worked collaboratively with students to construct a code of conduct called the "Professional Expectations Partnership" (PEP). The name signifies the co-creation of the document recommended by Baker et al. (2008). The preamble to the PEP reads as follows:

> "We the students and faculty of the John H. Sykes College of Business understand learning is a process of **interaction, cooperation, and professional relationships.** Wishing to maintain a commitment to educational excellence in our community, we have recommended and approved the following Professional Expectations Partnership…"

The PEP contains a list of expectations of faculty members for students and a corresponding list of student expectations for faculty as follows:

Faculty Expectations of Students

- Count on us to be prepared for class
- Count on us to come to class on time
- Count on us to be attentive and participatory
- Count on us to hand assignments in on time
- Count on us to turn electronic devices off during class
- Count on us to respect others by not having real or virtual side conversations
- Count on us to make arrangements to get information from another student when we miss a class
- Count on us to leave the classroom clean
- Count on us to understand and abide by the Professional Expectations Partnership
- Count on us to wear appropriate dress

Each expectation is reviewed, and an explanation is provided for why these behaviors are acceptable, civil, and consistent with the common goals of learning and teaching. Students are reminded that the expectations were created by a group of students in a workshop, and then all the students in the College of Business were surveyed on a 5-point Likert scale with no expectation receiving less than a 4.0. In addition, the reciprocal nature of the PEP is demonstrated by the list of student expectations for faculty included in the document as follows:

Student Expectations of Faculty

- Count on us to treat all students equitably and with respect
- Count on us to come to class prepared
- Count on us to return work in a timely fashion
- Count on us to honor posted office hours
- Count on us to understand support and abide by the Professional Expectations Partnership
- Count on us to provide opportunities to review graded material
- Count on us to start and dismiss class on time
- Count on us to require books that best reflect material taught in class
- Count on us to meet student expectations relative to technological communication
- Count on us to support and cooperate with student assistance services
- Count on us to provide a mechanism to reduce the "free-rider problem" in team projects

The construction of the PEP recognizes and manifests a commitment to the mutual nature of civility consistent with the recommendations of Schroeder and Robertson (2008). It represents a minimal level of civility and focuses on the behaviors which are most concerning to students and faculty. In addition to the PEP, faculty may want to add their own list of acceptable and unacceptable behaviors. One way of conveying this information is by listing mechanisms for success.

Mechanism for Success

The concept of "Mechanisms for Success" is borrowed from a book called *Built to Last*, written by Collins and Porras (1994). Through an exhaustive study of 18 successful companies, Collins and his fellow researchers noted the "gold" companies consistently engaged in specific patterns of behavior "mechanisms," which ultimately resulted in the achievement of the goals of the company as well as sustainable profits. Calling the rules "mechanisms for success" suggests the positive outcomes which result from engaging in civil behavior for the student as well as to the faculty and student body as a whole (Baker et al., 2008). The following are lists of mechanisms for success in the form of do's and don'ts.

Do:

- get notes from classmates when you can't be in class
- come to class and be on time
- read, understand, and abide by the syllabus
- speak up when you don't understand
- seek help from me or the student center for excellence
- make appointments even during office hours
- see me if you have a documented disability and need special consideration
- read chapters before coming to class
- be prepared for tutoring sessions, review material beforehand, and have questions ready
- get the name and number of another student in the class on the first day of class so you can get missed material when you miss a class

Don't:

- miss an exam or come late to class
- ask me to try and solve problems with your electronic devices, ever
- ask to see your exam if you missed the in-class test review
- ask to review course material just prior to an exam
- plead for a higher grade
- ask to re-review previously reviewed exams
- email me to ask questions already answered on the syllabus such as office hours
- argue you should get credit for the right answer when you have bubbled in the wrong answer on your scantron
- argue that the rules which apply to everyone do not apply to you
- become argumentative or combative during the semester when you discover a part of the syllabus you don't like
- study during class time (i.e., turn the class into a study hall)
- lie or cheat on an exam
- schedule airline flights on or before the date of your final exam

This list of troublesome behaviors helps avoid contentious confrontations occurring more frequently over the years and diminishes the likelihood that an entitled student will request special treatment and overreact when it is denied. Some of the mechanisms for success are designed to reduce the likelihood that the faculty member has not met student expectations and have, therefore, over promised and under-delivered.

Writing the rules and convincing students to comply with the rules are two different things. What motivation do the students have to abide by any of the rules defined by the PEP and the Mechanism for Success? This is where a game-theoretic approach becomes relevant.

The Game Theory Approach

In order to gain leverage, bargaining power, and, ultimately, cooperative behavior from an entitled student, a faculty member needs to create "value" for the student, which can be taken away if the student engages in acts of incivility. Entitled students experience great pleasure from getting privileges unavailable to others. The idea that others may have advantages not afforded to the entitled student is at the very least, distasteful, and at worst, intolerable.

The process begins on the first day of class after the PEP and the Mechanisms for Success have been outlined and are commonly understood. The next step is to, in a workshop fashion, divide the class into groups of three where, over the next 10 or 15 minutes, the group can define what they value and what behavior they expect of the class to make it meet their standard of what a perfect class would be. This step is critical in the process since it manifests the faculty members commitment to cooperate in contrast to the typical syllabus which is written by the faculty without the input from the students.

The faculty member reserves the right to agree, disagree, or modify requests. Accommodations made by the faculty member create value to the student which may remain uncovered without the negotiation, a deadweight loss. By the next class, "The Promise" is presented to the class, it becomes the payoff to the student for abiding by the contract. It is not difficult for the faculty member to convince the student of their commitment to "The Promise" since the students know if they had reneged in previous semesters, they would have heard about it.

An example of what students negotiated in "The Promise" is listed below:

The Promise

(All elements of The Promise are contingent on students abiding by the Mechanisms for Success and the student portion of PEP)

- Count on me to drop your lowest of the six quiz grades (a missed quiz is the one dropped)
- Count on me to provide bonus points (3% added to your final grade) for perfect attendance and deduct .5 points for each absence and .33 points for each late. Late is defined as not being in your seat when your name is called; students who argue this issue will receive a .5 deduction for a late.
- Count on me to provide practice quizzes, which are very similar to the in-class exams (posted by Friday late afternoon or early evening), before each Tuesday quiz.
- Count on me to respect all opinions and be civil in all interactions with students.
- Count on me to create fair tests, review all questions, explain all answers and drop any multiple-choice questions in which more than 65% of the students get wrong (i.e., give everyone credit for getting the question right).
- Count on me to make the class interactive, encourage open discussion during class, and use vivid real-life examples to illustrate concepts and new vocabulary.
- Count on me to honor office hours or email as soon as possible when I can't be there.
- Count on me to return emails (if I am in town and if email is working) within 24 hours during the week (M–F) while school is in session. Weekend emails will be answered by noon on Monday.
- Count on me to provide two slacks* to eliminate an absence or late.
- Count on me to drop the lowest homework grade.
- Count on me to not to give pop quizzes.
- Count on me to give quizzes back the day of the test and post grades on BB by Thursday the week of the quiz.
- Count on me to provide a schedule of exams throughout the semester.
- Count of me to provide one bonus point when a student catches me violating "The Promise."
- Count on me to provide unlimited tries for the first two homeworks and two tries thereafter.
- Count on me to post each week's homework by Saturday morning for homework the following week beginning as early as Monday.

*Slack will be applied at the end of the semester eliminating two absences or lates.

"The Promise" is loaded with value-added components. Three points for perfect attendance, dropping the lowest of six quiz grades, and providing two slacks for absences without excuses are elements treasured by students. Throughout the semester, students will be faced with decision nodes. Do I come to class? Do I text? Do I surf the Net? Do I ask the faculty member to review the material I missed when I cut class? These are choices with real consequences with the potential of costing violators a letter grade.

Of course, some students will slip up, and some students will just test the waters. The student who misses classes and sends the "did I miss anything important?" and "could you tell me what I missed which is going to be on the test?" is problematic. The question cannot be answered, but neither can it be ignored. To maintain civility, a gentle reminder that this question violates the "Mechanisms or Success" should be sufficient. When it is not, notice that this behavior may result in a loss of all or a portion of "The Promise" should end the debate.

Threatening to remove all or part of the privileges from a student is a confrontational act. There are occasions when the faculty member has to respond on the spot and in person (e.g., when a student asks a question just before an exam). Generally, a reminder that this situation is addressed in the syllabus should stop the student from persisting. In all cases, a simple reminder that continuing to argue risks them losing all or part of "The Promise" should resolve the issue.

Figure 1 shows a classic setup of the prisoner's dilemma in a simultaneous-move game between a professor and a narcissistic student. The instructor's strategies are along the rows, and the student's strategies are across the columns. Payoffs are given in units of happiness called utils.

The professor values civility and voluntary student adherence to the syllabus, and they want student engagement and classroom participation and monitoring and disciplining students distasteful. The student enjoys engaging in entitled behaviors during class such as chats with friends, texting, and Youtubing. The dominant strategy for both individuals is to "not cooperate," and each earns a payoff of 1 util.

Figure 1: Simultaneous-Move Game Model

	Student Cooperates	Student Does Not Cooperate
Faculty Cooperates	4, 4	0, 5
Faculty Does Not Cooperate	5, 0	1, 1

Game theorists explain this outcome by analyzing what each player would do if they knew for sure which strategy the other player was going to pick. For example, the faculty member does not know whether the student is going to cooperate or not cooperate but if the student cooperates the best strategy for the faculty member is to not cooperate since his payoff it 5 for not cooperating and 4 for cooperating. If the student chooses to not cooperate the best faculty strategy is to not cooperate since not cooperating leads to a payoff of 1 versus a strategy of not cooperating which yields a payoff of 0. So no matter which strategy the student picks the faculty member is always better off not cooperating.

Similarly, if the faculty member chooses to cooperate, the student achieves a payoff of 5 by not cooperating and 4 by cooperating. If the faculty member chooses to not cooperate, the student is still better off choosing to not cooperate since their payoff is 1 by not cooperating and 0 for cooperating.

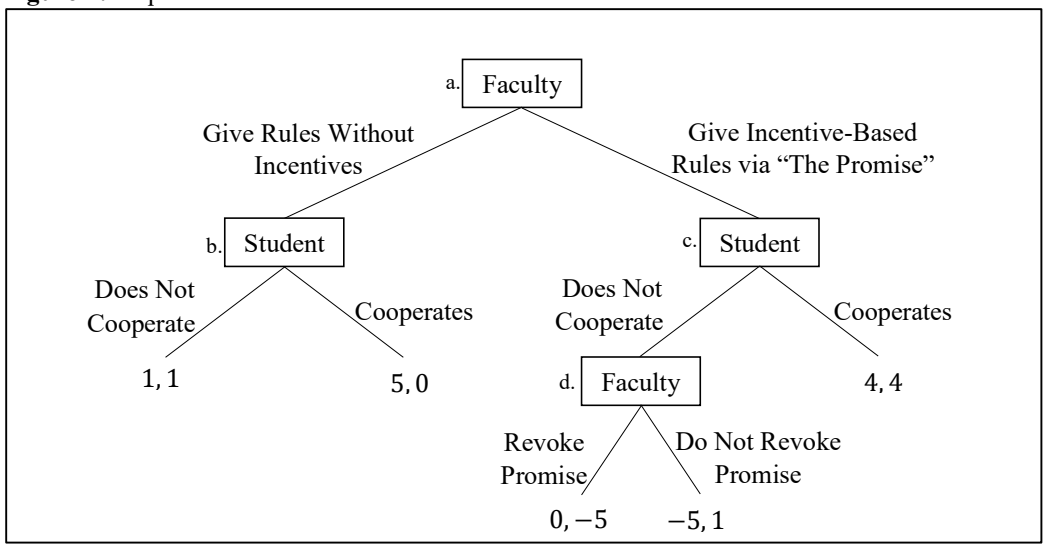
Since both the faculty member and the student have a dominant strategy to not cooperate, the equilibrium of the game is for neither party to cooperate. Here, both have a payoff of 1 when they could each have had a payoff of 4. Game theorists call this outcome the prisoner's dilemma. Clearly, both the faculty member and the entitled student would be better off if they both chose to cooperate, but in this simultaneous game neither party has an incentive to change to a strategy of cooperation. In addition, other students who are by nature intrinsically motivated to cooperate are also negatively affected. Entitled students arrive late, text, watch YouTube, engage in side-conversations, and generally impose negative externalities on everyone else.

This outcome may be nothing more than a minor annoyance to some faculty and some students. However, in other cases it can become an impediment to the learning process. At this stage the alternatives to the frustrated faculty member are limited. What does a faculty member do to a defiant student, call security? Attempts to regain civility in the classroom can appear to be confrontational to the entire class.

A Game Theory Approach – The Sequential Game Model

There is an alternative approach. Thinking sequentially and using the "first mover" advantage, the faculty member can avoid the "prisoner's dilemma" outcome of the simultaneous game. By engaging and cooperating with students on the first day of class the faculty member can jointly produce a payoff which will induce the entitled students to engage in civil behavior throughout the semester. The diagram shown in Figure 2 depicts the outcomes of the above simultaneous game but with the payoffs altered to account for the faculty member's ability to reward students for engaging in civil behavior and the threat of the withdrawal of withdrawing all or part of the value granted the student via "The Promise."

Figure 2: Sequential-Move Game Model



When the faculty moves first at node a., if they choose to give rules without offering incentives, the student will not cooperate at node b., and they will end up at the prisoner's dilemma described in the simultaneous game with its resultant poor payoffs and deadweight loss. However, if the professor thinks sequentially at node a., they will instead choose to provide an opportunity to add value for the student through a framework like The Promise. Once the value is created, the student now has something to lose by not cooperating, and the optimal choice for all students, including the entitled students, is to cooperate; at node c., the student will choose to cooperate to ensure they keep the value added by The Promise, and each participant earns a payoff of 4. It is precisely the opportunistic behavior of the narcissists that makes this strategy most effective.

Game theorists explain that if the student believes the threat of having the privileges removed is credible, then the solution to this game is for the faculty member to cooperate and the student to cooperate. Once the faculty member in the sequential game has chosen to cooperate, the student is faced with a payoff of 4 for cooperating and a -5 for not cooperating. The faculty member can reinforce the credibility of the threat by explaining to the class at the outset that if the faculty member had not followed through on all of The Promise then they would have heard about it informally or through Rate-My-Professor. The faculty member has no choice but to follow through with the game even if is inconvenient or distasteful.

If an entitled student chooses the strategy of "not cooperate" after receiving a warning, the faculty member follows through on the threat and revokes The Promise at node d. The student loses bonus points for attendance, dropping the lowest quiz grade, and all other elements of The Promise. This is the worst potential outcome and any rational student will accept the rules which apply to everyone.

The Ethics of Creating Value

This game-theoretic approach could clearly be interpreted as an attempt to manipulate the student. To avoid this problem, an analogy can be used to explain the approach. Apple clearly gets a premium price with their iPhone by creating value. Why are you willing to pay the extra price for the iPhone, and what does Apple do to encourage you to do so? In fact, all firms seek to add value so the customer is encouraged to cooperate and buy the firm's products. The Promise creates value to the student, and openly uses the creation of value to gain their cooperation with the intent of creating a civil environment that promotes teaching and learning.

In markets, we trust the other party to fulfill their side of the exchange. When we hand over our $2.80 for a Burrito Supreme, we assume that the person behind the counter will produce the product. This happens so consistently that we never even consider the possibility that Taco Bell is going to renege. Both parties win from this mutually beneficial exchange. By analogy, the instructor is handing over "The Promise," and they expect the students to hand over their cooperation by following the "Mechanisms for Success" and the "PEP." What would they expect to happen if they did not? The instructor is going to follow through and expects the students to do the same.

The instructor reminds the students that the threat to take away all or part of "The Promise" is credible since a failure to do so would signal to everyone that the instructor was not serious, and everyone would realize that they do not have to pay for the burrito and could get it for free. They understand both the metaphor and the credibility of the threat.

As such, throughout the semester, the sequential game not only promotes civility in the classroom, but it provides opportunities for experiential learning of many economic concepts. It is a work in progress that has promoted civility in the classroom with great effectiveness.

Conclusion

The student created preamble to the Professional Expectations Partnership in the College of Business at the University of Tampa says it well. "We the students and faculty of the John H. Sykes College of Business understand learning is a process of **interaction, cooperation, and professional relationships."** Incivility, entitled students and increasing narcissism suggests that for some faculty this is a large and growing problem. The threat of misbehavior and disruptions to the learning environment is well-documented and increasing (Appleby, 1990; Ausbrooks et al., 2011; Nordstrom et al., 2009). Incivility and misbehavior is one of the biggest challenges facing college instructors in the 21st century (Braden and Smith, 2006).

This paper outlines the process and a plan by which game theory can be used to change the decisions made by entitled students so all or nearly all students engage in cooperative behavior. Faculty members can model cooperative behavior at the beginning of the semester by negotiating the syllabus, thereby adding value to the learning process for students. The value-creating "Promise" constitutes the payoff to the student for engaging in cooperative behavior. As such the more the professor gives the greater the cost to a student from violating the syllabus. When students make the right choices, the learning environment is enhanced for everyone and the prisoner's dilemma avoided.

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The Impact of College Conference TV Networks on College Football Attendance

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Abstract

Conference networks introduce a new source of revenue for major collegiate athletic conferences. While this financial windfall is unequivocally positive for conference member institutions, this paper analyzes if the proliferation of college football games on television is responsible for the decline in college football attendance over the previous decade. Results show that appearing on national television and belonging to a conference affiliated with a conference network increases attendance. Television does not appear to be the source of declining attendance numbers.

JEL Codes: L83, Z20
Keywords: College Football, Conference Networks, Attendance, Television

Introduction

Unequivocally the greatest source of increasing revenues in college football over the previous two decades has come from television. Using the Atlantic Coast Conference as an example, on their Form 990 for fiscal year ending June 2003, football television revenue is listed at $22,186,000 (compared to $28,186,813 for basketball television revenue), football bowl revenue at $23,946,708, and other football revenue at $7,033,730 (nine universities total).[1] In comparison, on their Form 990 for fiscal year ending June 2019, total television revenue is listed at $288,602,493 (the form does not allocate television revenues by sport) and post season bowl revenue is listed at $88,418,605.[2] Starting with the 2019–20 academic year, the Atlantic Coast Conference (ACC) launched the ACC Network, which is expected to lead to an even greater revenue windfall for member institutions.

The Atlantic Coast Conference is not the only conference to launch their own conference network. The Big 10, Pac-12, and Southeastern Conference (SEC) have also launched dedicated conference networks over the previous 15 years.[3] Conference networks provide conference member institutions with an additional vehicle to nationally broadcast various athletic events, including football, increasing the financial gap between wealthy and mid-tier programs. In 2019, these four conference networks broadcasted approximately 160 games over the 14-week season (between 35 and 48 broadcasted games for each network).

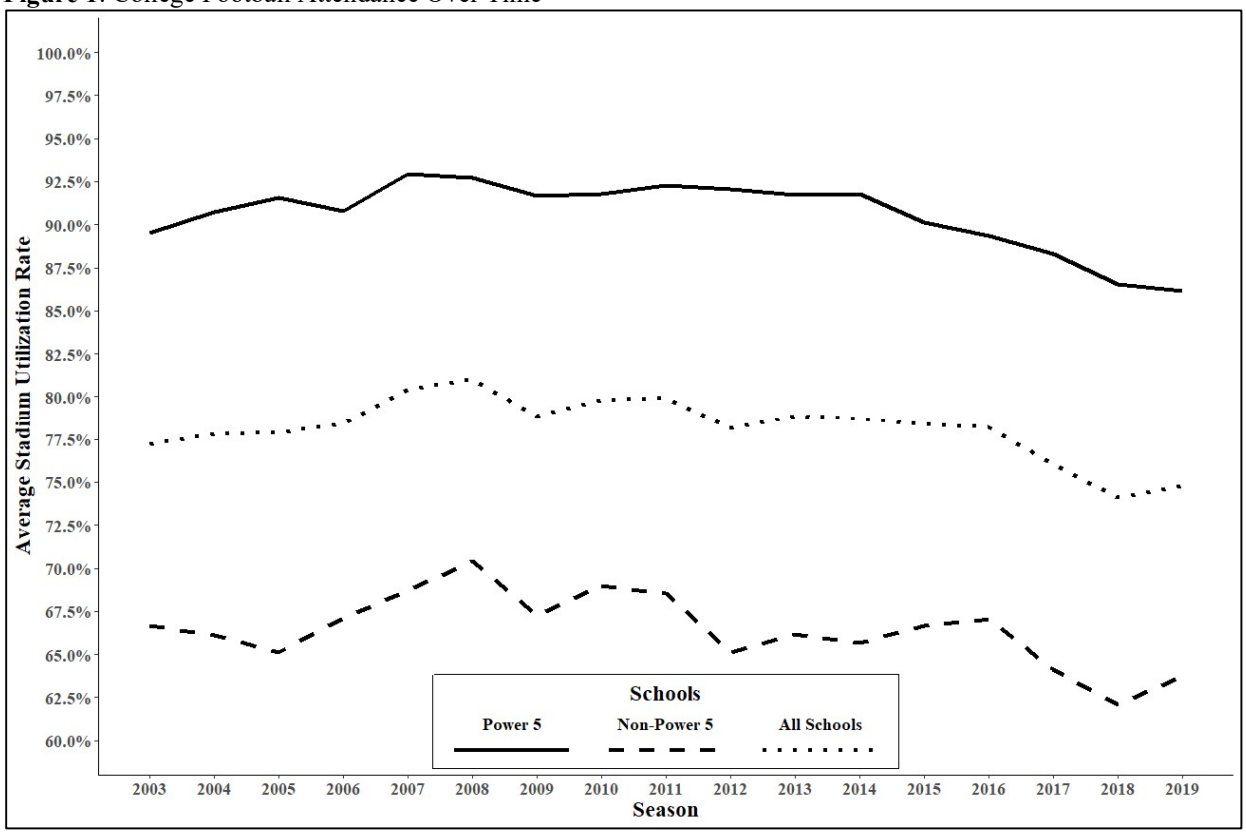
The financial impact of launching a conference network is unequivocally positive for member institutions, especially for their non-revenue or low-revenue sports. These conference networks offer year-round and all-sport coverage, providing increased exposure for participating athletes and institutions. While the total effect for conferences is surely positive, there may be negative consequences related to increasing the availability of college football on television. Despite revenues continuing to increase, live attendance to college football games has declined over the past decade. As seen in Figure 1, average stadium utilization rate (average attendance divided by stadium capacity) has steadily declined across Football Bowl Subdivision (FBS) schools since 2008. The purpose of this paper is to identify if this decline can be attributed to the increase in televised college football games, partly driven by the launch of conference networks. If a game is available on television, live attendance would decline—demand would decrease—if television is a substitute for the in-person experience.

The literature surrounding the role of broadcasting in sports (Noll, 2007) and demand in college football (Tainsky and McEvoy, 2012; Brown and Salaga, 2018; Falls and Natke, 2014; among others) is expansive, as is the literature on factors that impact the demand for sporting events (see Borland and MacDonald, 2003; Coates et al., 2014; Ge et al., 2020; among others).

Perceptions related to the impact of live broadcasts on attendance have shifted over time. Early papers by Baimbridge et al. (1996), Allan and Roy (2008), Garcia and Rodriguez (2002), Buraimo and Simmons (2009), and Solberg and Mehus (2014) show declines in attendance when matches are broadcasted on television. Baimbridge et al. (1996) show that although live broadcast reduces attendance in the English Premier League, net revenues increase from television money. Forrest et al. (2004) show that television has a negligible effect on Premier League attendance, although Forrest and Simmons (2006) do find that televised midweek Champions League matches involving English Premier League clubs have sizeable negative impacts on lower division gate revenues. Allan and Roy (2008) find that Scottish Premier League matches broadcasted live reduce pay-at-the-gate home team supporters by 30% using 2002–2003 data. For Spanish soccer, Garcia and Rodriguez (2002) discover that television has a negative effect on attendance, but the effect is stronger for free-to-air games rather than for games on subscription channels. This suggests that the accessibility of the game impacts the effect television coverage has on attendance.

Buraimo and Simmons (2009) illustrate that this effect is more strongly negative for midweek games. Solberg and Mehus (2014) document using 2010 data that Norwegian football league fans were less likely to attend matches at the stadium when broadcasted.

Figure 1: College Football Attendance Over Time



Two recent papers by Kringstad et al. (2018) and Falls and Natke (2014) tell a different story. Kringstad et al. (2018) use Norwegian football matches from 2005–2011 and show that free live broadcasts serve as a complement to stadium attendance. Specifically for American college football, Falls and Natke use an unbalanced panel of 4,317 football games played at the home stadiums of FBS football teams and show that attendance increases with video coverage.

Results from this paper using a longer panel data set between 2003 and 2019 support the conclusions from Falls and Natke (2014). Schools that appear on national television see an increase in average attendance and stadium utilization. The implementation of conference networks also seems to have a positive effect on attendance. While it is true that better schools are more likely to be selected to play on national television, results hold after including school fixed effects and other measures of team quality. These results suggest that television is not the cause for the decline in college football attendance, and in fact, could be lessening the negative attendance trend.

Empirical Strategy

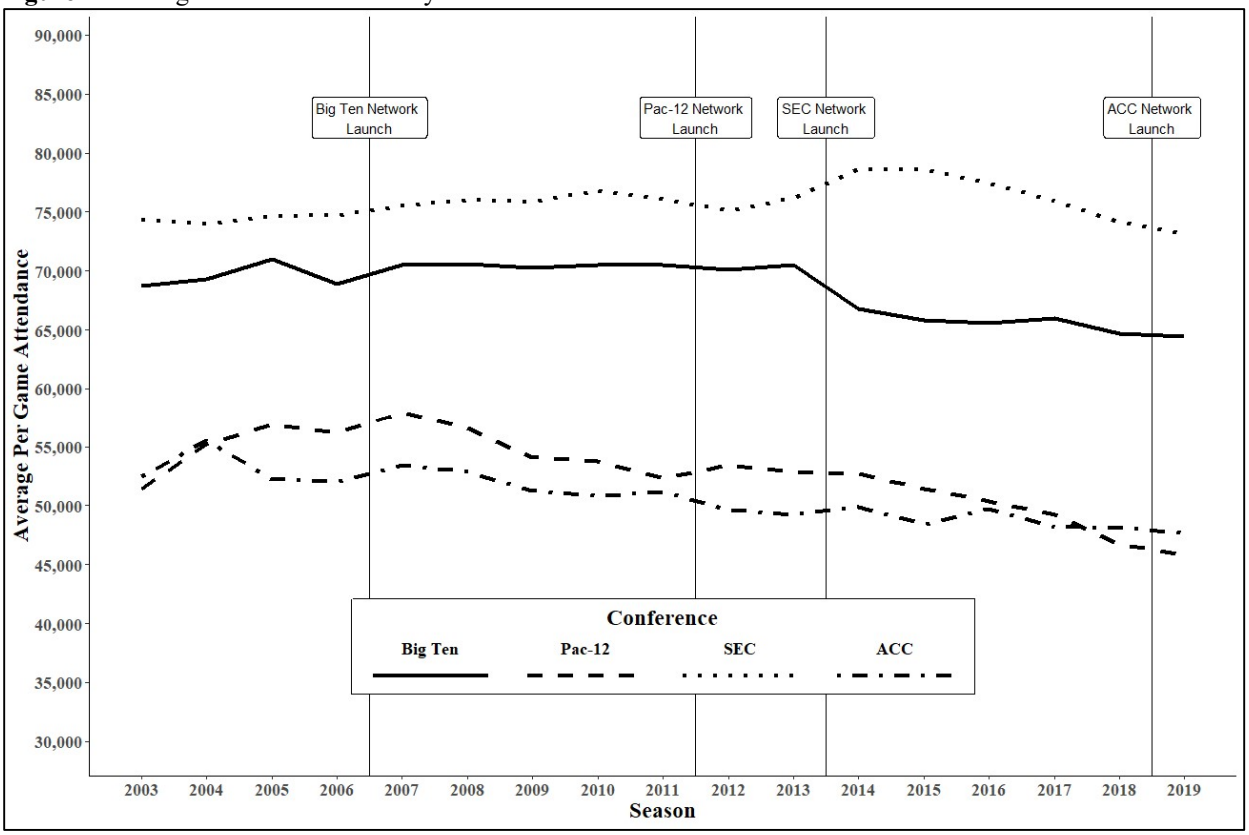
This study's unit of observation is measured at the school-year level, covering all home college football games at FBS schools from 2003–2019. More specifically, it covers single-year average measures for all non-postseason games at a school's primary home venue. Schools who switched to FBS during the sample are only represented during their seasons in an FBS conference, the highest level of collegiate college football. Factors that impact the demand for in-person attendance for college football games are analyzed, primarily through schools' average home attendance figures and stadium utilization measures. Attendance and capacity data are primarily pulled from ESPN historical box scores, supplemented by data from archived game box scores available on school athletic pages, and cross-checked with school football media guides when available.

To measure the impact of college networks and the proliferation of television on conference networks, this paper considers the following reduced form linear model specification,

$$Attendance_{i,c,t}=\beta_0 + \beta_1 CN_{c,t}+\beta_2 TV_{i,t}+\boldsymbol{\beta_3 S_{i,t}}+\boldsymbol{\beta_4 E_{i,t}}+\boldsymbol{\beta_5 Q_{i,t}}+\beta_6 Trend_t +\beta_{7,c} Trend_t \times C_c +\boldsymbol{\beta_8 A_{i,t}} +I_i+C_c+T_t+\varepsilon_{i,c,t}. \quad (1)$$

$Attendance_{i,c,t}$ is the outcome of interest, measured as either the log of the average per game attendance or as the stadium utilization rate for all home games for school i part of conference c in season t.[4] $CN_{c,t}$ is an indicator if conference c operates or is part of a conference network in season t. Four of the Power Five (P5) conferences are affiliated with a conference network in the sample period, except for the Big 12.[5] The conference networks have staggered start years, with the Big Ten starting its conference network in 2007, the Pac-12 in 2012, the SEC in 2014, and the ACC in 2019. Figure 2 illustrates the change in average attendance for conference members over time, with the implementation of conference networks illustrated by vertical lines. This staggered nature of the variable means that it should not be picking up general attendance trends contained in season fixed effects T_t, nor general attendance variation due to general conference affiliation captured in conference fixed effects C_c. A time trend variable ($Trend_t$) is also included to capture the general decline in attendance over time and is interacted by conference to capture conference-specific declines in attendance over time not relating to the conference network. What the conference network variable should be picking up is sustained deviation in attendance from the time trend corresponding with the implementation of the conference network.

Figure 2: Average Game Attendance By Conference Before And After Network Launch



Notes: Vertical lines represent the launch of a conference network.

Exposure via a conference network is not the only way in which a school's game can appear on television. Within our sample, between approximately 9–12% of games each season are nationally available on broadcast networks including CBS, NBC, FOX, and ABC. These networks are typically accessible in most homes throughout the United States and can be accessed via satellite. Another 15–22% of games each season are nationally broadcasted on national basic tier networks including ESPN, Fox Sports 1 (FS1), and NBC Sports, among others. These networks are generally included with a basic cable subscription. In comparison, conference networks are typically only available to television subscribers that purchase add-on packages to their basic cable subscription.[6] To control for the general impact of national television exposure on college football attendance, the $TV_{i,t}$ variable takes the percentage of a school's home games that appear nationally on either a broadcast or basic tier network. Broadcast data were collected from ESPN, the website sportsmediawatch.com, the website nationachamps.net, and school media guides when available.

Table 1: Summary Statistics (2003–2019, n = 2,092); (2003, n = 117); (2011, n = 119); (2019, n = 130)

Variable	*Mean*	*2003*	*2011*	*2019*	*Median*	*SD*	*Min*	*Max*
Per Game Attendance	42,718	43,182	43,908	39,912	37,051	25,679	3,928	112,252
Stadium Capacity	52,002	53,511	52,459	50,648	50,000	22,446	15,000	109,901
% Average Stadium Utilization Rate	78.1	77.2	79.9	74.8	81.6	20.3	13.0	119.2
% National TV Home Games	28.9	27.9	27.2	33.1	25.0	25.9	0	100
% Conference Network	17.1	0	10.1	41.5				
Team Win %	51.6	51.0	52.0	52.2	53.9	22.1	0	100
Total Games Played	12.6	12.6	12.7	12.8	13	0.77	10	15
Home Games	6.18	6.17	6.24	6.41	6.00	0.85	2	11
Point Ranking	2.54	2.60	2.68	2.46	0	5.53	0	25
Population (1000s)	1,819	1,635	1,805	1,940	655	2,938	30	19,346
Income ($)	41,160	30,905	39,953	52,560	39,588	11,021	20,851	114,080
% Home Opponents Top 10	6.02	5.99	6.16	5.48	0	9.64	0	50
% Home Opponents Top 11-25	9.58	10.3	9.83	9.51	0	12.4	0	80
Recruiting Strength	161.3	135.4	148.4	182.2	158.5	62.4	0	324.6
% Conference Champion	8.41	10.3	9.24	7.69	0	27.8	0	100
Stadium Age (years)	58.1	53.6	58.1	62.6	56	27.7	1	111
% Power 5 (P5) School	48.5	46.2	47.9	49.2				
% Move To P5 Conference (n=10)	0.48							
% Non P5 Conference Switch (n=47)	2.25							

Stadium characteristics are contained in $S_{i,t}$. The age of the stadium, as well as its quadratic, are included to control for consumer preferences for newer (or older) facilities. $E_{i,t}$ contains economic variables including population and personal income collected from the Bureau of Economic Analysis (BEA), both measured within the school's metropolitan statistical area (MSA). Average measures for these variables should be contained in school fixed effects I, although local economic shocks could impact a school's single-season attendance.

Measures of game quality are contained in $Q_{i,t}$, including the team's season win percentage, the percentage of a team's home games against opponents ranked in the top 10 at the time of the game, and the percentage of a team's home games against opponents ranked outside the top 10, but within the top 25. Given differences between competition played between P5 and non-P5 schools, the win percentage variable is interacted with a P5 indicator variable to allow for sensitivity to winning to differ between the two groups. The perceived strength of the team is also included via their recruiting rankings, obtained from 247Sports. The measure considers the 247Sports composite rating for each recruit in a recruiting class, with better recruits accounting for a higher weight of the team's overall recruiting score.[7] This measure captures any hype or excitement that generally comes with bringing on a strong recruiting class. We also include a recruiting ranking lag variable to capture expectations of the red-shirt freshmen and sophomores. To capture a potential "honeymoon effect" associated with being a reigning conference champion, we include an indicator if the team won their conference championship in the prior season. We interact that indicator variable with the P5 indicator to allow the effect to differ for the two groups. Finally, the team's average poll ranking for the season is included by assigning 25 points for being ranked first in a given week, one less point for every additional rank lower up until one point for being ranked 25th, and zero points for being unranked. The team's point rankings are averaged across the games, providing additional context to team strength relative to other schools. One general concern is that the decision to put a school on television is highly correlated with team quality and other school characteristics. By controlling for these selection biases in the model, the television variables should only be capturing the effects of appearing on television. Finally, two variables are included to control for any short-term shocks associated with conference alignment. An indicator variable is included if school i moves from a non-P5 to a P5 conference in season t.[8] Another indicator variable identifies if school i moves from either a non-P5 to another non-P5 conference, or from a P5 conference to another P5 conference in season t.

Summary statistics for each of the variables are included in Table 1. Average attendance is right-skewed, motivating the decision to take the log. For notable games, teams often have the capability to expand attendance past capacity, using standing room only tickets, temporary bleachers, and more.[9] Home teams appear on either broadcast networks or basic tier networks 29% of the time, on average. The remainder of the time their games are either untelevised, available via online streaming, broadcasted nationally on premium tier networks, or only available locally on regional networks. By the end of the sample period, over 40% of teams in the sample are affiliated with a conference television network. Teams, on average, play 6.2 home games per season and 12.6 total games per season (includes any postseason games). Most teams are unranked in a given season, and most do not face ranked opponents, with many of the ranked matchups coming in P5 conference play. There were fifty-seven instances of teams switching conference affiliation during the sample period, the majority of which joined their new

conferences in 2005 (15 teams) and during major conference realignment from 2012 to 2014 (30). Eleven teams entered the sample between 2011 and 2019, all of which jumped from either the Football Championship Series (FCS) level or outside Division I entirely.

Results

Table 2 considers the general effect of television coverage on attendance without the inclusion of the conference network variable. Column 2a includes the base model with season fixed effects. Column 2b introduces the conference realignment variables. Column 2c introduces school and conference fixed effects. Column 2d introduces the interaction of conference season fixed effects, estimating a different intercept for each conference in each season. This allows us to consider single season shocks to attendance at the conference level (which may be driven by conference realignment among other potential factors). Finally, Column 2e removes the TV variable to analyze the sensitivity the variable has on other covariates in the model.

Table 2: OLS Results, Log Attendance

Model Number	***(2a)***	***(2b)***	***(2c)***	***(2d)***	***(2e)***
Variable					
% National TV Games	0.458***	0.458***	0.133***	0.125***	
	(0.033)	(0.033)	(0.018)	(0.021)	
Win %	0.289***	0.290***	0.373***	0.384***	0.402***
	(0.042)	(0.042)	(0.031)	(0.031)	(0.031)
X P5 School	0.379***	0.383***	-0.219***	-0.233***	-0.227***
	(0.035)	(0.035)	(0.036)	(0.037)	(0.037)
Point Ranking	-0.008***	-0.008***	-0.0001	0.001	-0.002***
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Population (million people)	-0.013***	-0.013***	0.073***	0.102***	0.104***
	(0.003)	(0.003)	(0.025)	(0.026)	(0.026)
Income ($1,000)	-0.001	-0.001	-0.0005	0.0005	0.0003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
% Opponents Top 10	0.539***	0.542***	0.114***	0.117***	0.164***
	(0.077)	(0.077)	(0.031)	(0.032)	(0.032)
% Opponents Top 11–25	0.309***	0.310***	0.038	0.045*	0.074***
	(0.057)	(0.057)	(0.024)	(0.025)	(0.025)
$Recruit_t$	0.003***	0.003***	0.001***	0.001***	0.001***
	(0.0003)	(0.0003)	(0.0001)	(0.0001)	(0.0001)
$Recruit_{t-1}$	0.002***	0.002***	0.0003**	0.0003**	0.0003**
	(0.0002)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
Conference Champ	-0.0005	0.0002	0.039**	0.042**	0.048***
	(0.033)	(0.033)	(0.017)	(0.018)	(0.018)
X P5 School	-0.034	-0.034	-0.026	-0.033*	-0.039**
	(0.044)	(0.044)	(0.019)	(0.020)	(0.020)
Stadium Age	-0.004***	-0.004***	-0.003***	-0.002*	-0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Stadium Age^2	0.00005***	0.00005***	0.00002*	0.00002	0.00002
	(0.00001)	(0.00001)	(0.00001)	(0.00002)	(0.00002)
Move To P5 Conference		-0.100	0.039	0.038	0.040
		(0.116)	(0.033)	(0.037)	(0.038)
Non P5 Conference Switch		0.015	-0.010	-0.010	-0.008
		(0.047)	(0.024)	(0.028)	(0.029)
Constant	9.513***	9.512***	10.504***	10.527***	10.571***
	(0.059)	(0.059)	(0.090)	(0.100)	(0.101)
Season FE	YES	YES	YES	YES	YES
School, Conference FEs	NO	NO	YES	YES	YES
Conference X Season FE	NO	NO	NO	YES	YES
Observations	2,092	2,092	2,092	2,092	2,092
R^2	0.785	0.785	0.955	0.960	0.959

Robust standard errors in parentheses; statistical significance denoted at the * 10% level, ** 5% level, *** 1% level.

Most of the coefficient signs are as would be expected in Column 2a. Teams that win more and face better opponents garner higher attendance numbers. There also appears to be a hype factor, as teams with better recruiting classes, controlling for team quality, also have higher attendance totals. The lag recruiting coefficient is positive and statistically significant, but of less magnitude than the recent year recruiting rankings. While there is residual hype generated by a good recruiting class, the most recent recruiting class generates a greater attendance response. Stadium age is negative while the quadratic term is positive, suggesting that consumers prefer newer stadiums, but also vintage/historical stadiums. Point ranking is negative and statistically significant in the initial specifications but loses statistical significance after introducing school and conference fixed effects. There is no evidence of a "honeymoon effect" created by switching conferences.

Introducing school and conference fixed effects drastically reduces the magnitude of many of these coefficients. This makes sense as there are likely school-specific factors that impact both attendance, as well as the likelihood that they appear on national television. Belonging to certain conferences also likely increases the frequency in which a school plays a certain caliber of competition, and the general success consumers expect on the recruiting trail. The population coefficient, which was initially negative, is now positive and statistically significant, although the effect is economically small (a one thousand person increase in population leads to a 0.007% increase in average game attendance according to Column 2c). The interaction between win percentage and P5 is negative, suggesting non-P5 schools are more greatly impacted by variation in winning. Winning a conference championship has a positive and statistically significant effect on attendance, although the effect is less for P5 schools.

The variable that captures the percentage of home games appearing on national television on either broadcast or basic cable is positive and statistically significant, suggesting that appearing on television has a positive effect on in-stadium attendance. Fixed effects reduce the magnitude of the coefficient, although it is still positive and statistically significant. The coefficient for the TV variable is 0.133 in Column 2c, suggesting that for a team with a six-game home slate, playing one additional game on national television corresponds to a 2.25% increase in average per game attendance (13.5% increase for a single game) holding all else equal.[10] This supports the conclusion that television coverage acts as a complement to in-person attendance.

To test for model robustness and to see the potential correlation between the TV variable and other variables in the model, the TV variable was removed in Column 2e. Removing that variable impacted the magnitudes of several team and game quality variables. This highlights potential selection bias in appearing on television, further emphasizing the need for strong game quality control variables. Column 2c is our preferred specification, as conference and school fixed effects seem critical to controlling for time-invariant school and conference effects, while the conference by season interactions did not prove to be overly critical to drawing conclusions and potentially led to overfitting of the model.

Table 3 introduces the conference network variable into the model. Column 3a provides our preferred specification including the conference network variable. Column 3b excludes all schools that changed conference affiliation during the sample period, removing 47 teams from the sample. Column 3c removes the TV variable to check for robustness in the conference network variable. Columns 3d–3g run the model separately for schools in the Big 10, Pac-12, SEC, and ACC, respectively. The purpose of this is to analyze if the effect of conference networks is homogenous or varies between conferences. The conferences also introduced conference networks at different times, which may impact the effect of the conference networks on attendance. In each of the models a time trend variable is included to capture general declines in attendance over time. If attendance was declining prior to the launch of conference networks, it is important to capture that trend in the model. Otherwise, the conference networks may simply be capturing the general decline over time. The time trend variable is interacted with each conference (ACC is the excluded group) to allow for conference-specific trends. Results are only listed for P5 conferences, although complete results are available upon request.

In Column 3a, the non-television covariates retain similar coefficient signs and levels of statistical significance. The time trend is negative, suggesting general declines in attendance for the reference group (ACC) of approximately one percent per year. Trends for the Big 10 and SEC are not statistically different than the ACC, while attendance trends appear better for the Big 12 (not statistically different than zero overall), and especially poor for the Pac-12 (minus approximately two percent per year).

Both TV variables are positive and statistically significant. According to Column 3a, having an additional home game appearing on broadcast or basic cable increases average per game attendance for a six-game home slate by 2.09%. Belonging to a conference network increases per game average attendance by approximately 2.91%. These positive and statistically significant coefficients are robust to the exclusion of teams that switched conferences. The conference network coefficient is robust to the exclusion of the national television variable. Examining the conference-specific models, there is not enough evidence to identify a causal relationship between conference network affiliation and attendance, although all the coefficients are at least positive.[11] The smallest coefficient in magnitude, the ACC's, makes sense given the lack of data following the launch of their network (only one season of data prior to the COVID-19 pandemic impacting in-stadium attendance). The percent of games on national television variable is positive and statistically significant for each conference, supporting prior conclusions that television acts as a complement to in-stadium attendance.

Table 3: OLS Results, Log Attendance, Conference Network

Model Number	***(3a)***	***(3b)***	***(3c)***	***(3d)***	***(3e)***	***(3f)***	***(3g)***
Variable				Big 10	Pac-12	SEC	ACC
Conference Network	0.029**	0.023*	0.027**	0.311	0.229	0.472	0.029
	(0.012)	(0.014)	(0.012)	(0.776)	(0.549)	(0.373)	(0.032)
% National TV Games	0.124***	0.115***		0.094**	0.112***	0.086***	0.148***
	(0.019)	(0.025)		(0.044)	(0.041)	(0.026)	(0.041)
Win %	0.372***	0.428***	0.390***	0.065	0.139***	0.122***	0.197***
	(0.031)	(0.054)	(0.031)	(0.051)	(0.042)	(0.038)	(0.048)
X P5 School	-0.212***	-0.262***	-0.204***				
	(0.036)	(0.058)	(0.036)				
Point Ranking	0.0003	-0.0001	0.001*	-0.0002	0.002	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Population	0.094***	-0.105***	0.097***	0.055	-0.092**	-0.452**	0.114**
(million people)	(0.025)	(0.038)	(0.025)	(0.208)	(0.039)	(0.183)	(0.053)
Income ($1,000)	0.001	0.002	0.001	0.005	-0.0002	-0.002	-0.0004
	(0.001)	(0.001)	(0.001)	(0.008)	(0.002)	(0.002)	(0.003)
% Opponents Top 10	0.097***	0.075**	0.140***	0.143*	0.096	0.094**	-0.029
	(0.031)	(0.034)	(0.031)	(0.085)	(0.070)	(0.037)	(0.074)
% Opponents Top 11–25	0.039	0.032	0.067***	0.068	0.009	0.044	-0.020
	(0.024)	(0.028)	(0.024)	(0.062)	(0.042)	(0.038)	(0.055)
$Recruit_t$	0.001***	0.0005***	0.001***	0.001***	0.001***	0.0005***	0.001***
	(0.0001)	(0.0001)	(0.0001)	(0.0003)	(0.0003)	(0.0002)	(0.0003)
$Recruit_{t-1}$	0.0003**	0.0004***	0.0003***	0.001***	0.001**	0.0003*	0.001**
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0003)	(0.0002)	(0.0003)
Conference Champ	0.042**	0.034	0.048***	0.015	0.005	0.012	-0.016
	(0.017)	(0.028)	(0.017)	(0.020)	(0.028)	(0.010)	(0.015)
X P5 School	-0.032	-0.022	-0.037**				
	(0.019)	(0.030)	(0.019)				
Stadium Age	-0.002	-0.002	-0.002*	0.004	0.004	-0.069*	0.003
	(0.001)	(0.002)	(0.001)	(0.004)	(0.004)	(0.037)	(0.004)
Stadium Age^2	0.00001	0.00001	0.00001	-0.00002	-0.00002	0.0002***	-0.0001*
	(0.00002)	(0.00002)	(0.00002)	(0.0001)	(0.00004)	(0.00003)	(0.00004)
Move To P5	0.047		0.046	0.382***	0.013		0.045
	(0.033)		(0.034)	(0.081)	(0.039)		(0.035)
Move To Non P5	-0.021		-0.017	0.033	0.134***	0.024	
	(0.025)		(0.025)	(0.110)	(0.048)	(0.112)	
Time Trend	-0.010***	-0.007**	-0.011***	-0.034	-0.024	0.006	-0.004
	(0.003)	(0.003)	(0.003)	(0.052)	(0.036)	(0.046)	(0.005)
X Big 10	-0.0001	-0.0005	0.001				
	(0.002)	(0.003)	(0.002)				
X Big 12	0.008**	0.005	0.013***				
	(0.003)	(0.003)	(0.003)				
X Pac-12	-0.010***	-0.006**	-0.006***				
	(0.002)	(0.003)	(0.002)				
X SEC	0.002	0.001	0.003				
	(0.002)	(0.002)	(0.002)				
Constant	10.454***	10.281***	10.491***	10.181***	10.295***	15.209***	9.657***
	(0.089)	(0.091)	(0.090)	(0.273)	(0.132)	(2.715)	(0.359)
Season FE	YES	YES	YES	YES	YES	YES	YES
School, Conference FEs	YES	YES	YES	YES, NO	YES, NO	YES, NO	YES, NO
Observations	2,075	1,297	2,075	208	187	220	214
Schools	130	83	130	14	12	14	15
R^2	0.956	0.962	0.955	0.957	0.932	0.975	0.956

Robust standard errors in parentheses; statistical significance denoted at the * 10% level, ** 5% level, *** 1% level.
All conferences are included in the time trend (ACC is the reference group), although only P5 conferences are shown.

Table 4 replicates the models in Tables 2 and 3, except replaces log attendance with stadium utilization rate. The model names listed correspond to model specifications in Tables 2 and 3. For brevity, only the TV and conference network coefficients are included in the table as the other results remain robust. The two preferred specifications in Table 4 come from Column 2c and Column 3a. In Column 2c, having one additional nationally televised game in a six-game home slate is associated with a 1.74 percentage point increase in average stadium utilization rate, approximately 900 people per game in a 52,000-seat stadium (the average stadium capacity in the sample). That increase is 1.67 percentage points (870 people per game) according to Column 3a, in addition to a 3.07 percentage point (1,600 people per game) average stadium utilization rate increase for belonging to a conference with a conference network.

Table 4: OLS Results, Stadium Utilization Rate, TV And Conference Network Variables

Model Number	***(2a)***	***(2b)***	***(2c)***	***(2d)***	***(2e)***		
% National TV Games	0.207***	0.206***	0.104***	0.095***			
	(0.024)	(0.024)	(0.019)	(0.023)	–		
Model Number	***(3a)***	***(3b)***	***(3c)***	***(3d)***	***(3e)***	***(3f)***	***(3g)***
Conference Network	0.030**	0.032**	0.029**	0.353	0.316	0.532*	0.032
	(0.013)	(0.014)	(0.013)	(0.753)	(0.592)	(0.296)	(0.037)
% National TV Games	0.100***	0.101***	–	0.096**	0.090*	0.102***	0.117***
	(0.021)	(0.026)		(0.044)	(0.048)	(0.023)	(0.043)

Robust standard errors in parentheses; statistical significance denoted at the * 10% level, ** 5% level, *** 1% level.

Discussion

This paper is interested in the impact television appearances have on college football attendance. This question is especially prevalent with the launch of conference sport networks creating additional mechanisms for schools to gain exposure and appear on television. There are clear monetary incentives for schools to be part of conferences that have their own television networks. However, at the same time content creation and availability has exploded in college sports, in-person football attendance has declined. The purpose of this paper is to identify if the proliferation of television is the cause of this decline.

Ultimately, there is no evidence to suggest that conference networks, or television in general, are specifically the reason for the decline in college football attendance. Declines in attendance have been seen across college football for both P5 and non-P5 schools. In fact, appearing on national television and belonging to a conference with a conference network seems to have a complementary effect on attendance. There are several potential reasons for this. First, contracts between networks and conferences usually have a specified amount of promotion that the networks must provide to build awareness of upcoming games. This broadcast promotion may create advertising benefits that increase awareness and demand for the game. Second, there may be a prestige effect associated with attending games that are nationally televised. Many people are watching the game, more than a non-nationally televised game, but only a restricted number of people (restricted by capacity and access and ability to afford tickets) can attend live.

While attendance has declined in college football, watching the game on television is not a good substitute for watching the game live. While the launch of conference networks could have been seen as a catalyst for declining attendance, results show no evidence supporting this conclusion. The true causes for declining attendance are worth further investigation in future research

Acknowledgement

Financial support provided by the Atlantic Coast Conference (ACC) and Center for Research in Intercollegiate Athletics as part of their Innovation Initiative Small Grant Program. Helpful feedback was provided by the Syracuse University Sport Management faculty, especially Dr. Rodney Paul for providing suggestions for the econometric approach and Dennis Deninger for providing expertise in terminology used when discussing sport media markets. Participants of the 2020 NAASE Virtual Economics Conference and the 2021 Academy of Economic and Finance Conference and thanked for their feedback and questions. Finally, Shannon Losak is thanked for providing feedback and copy edits and anonymous AEFJ journal referees for their invaluable comments.

Notes

1. 2003 ACC tax filings are available here:
https://projects.propublica.org/nonprofits/display_990/560599082/2004_02_EO%2F56-0599082_990_200306.
2. 2019 ACC tax filings are available here:
https://projects.propublica.org/nonprofits/organizations/560599082/202001929349301935/full.

3. The Big 12 did have a conference network from 2008–2014, but it only broadcasted college basketball games.
4. Certain single game attendance totals exceed stadium capacity. For all models incorporating average per game attendance, we also test specifications that cap individual game attendance to capacity prior to calculating average attendance. These return similar results as the main specifications and are available upon request.
5. The University of Texas at Austin, in partnership with ESPN and Learfied, launched a network specifically focused on the Texas Longhorns known as the Longhorn Network. This network launched preceding the 2011 college football season. Since then, 20 of the 54 home games in the sample were broadcast on that network. Due to the uniqueness of Texas having their own exclusive network, the school was dropped from the sample for models including the conference network variable.
6. The exact availability of conference networks varies by cable provider and location. Certain providers include the conference networks as part of their basic cable package for households in the conference's geographic footprint. Others require an upgrade that includes other premium sport networks. Having access to the conference network via a cable provider typically includes access to online streams of programming as well.
7. A more complete explanation of 247sports recruiting score methodology can be found on their website: https://247sports.com/season/2021-football/compositeteamrankings/.
8. For the purposes of this paper the former Big East, which became the American Athletic Conference (AAC) for remaining football members in 2013 as part of major national conference realignment, is not considered a P5 conference. Of the ten schools classified as having "moved up", eight of them are from the former Big East. Three of them (Boston College, Miami, and Virginia Tech) switched to the Atlantic Coast Conference (ACC) well before (2004 and 2005) conference realignment. Three other schools (Syracuse, Pittsburgh, and Louisville) joined the ACC as part of conference realignment (2013 and 2014). The remaining former Big East schools—West Virginia and Rutgers—went to the Big 12 (2012) and Big 10 (2014) respectively. The other major schools to move from a non-P5 to a P5 conference include Utah (Mountain West to Pac-12) and TCU (Mountain West to Big 12).
9. In addition to OLS specifications, censored regressions were also implemented, restricting average attendance to capacity and stadium utilization rate to 100%. Results were similar to OLS models and are thus not reported.
10. To calculate the marginal effect of having one additional televised game for a six-game home schedule: $e^{0.133/} - 1 \approx 0.0225$ for the average per game attendance for the season. It can be shown that attendance for a single game would have to equal $0.0225 \times 6 \approx 0.1349$ to equate to a 0.0225 increase in average per game attendance for a six-game schedule.
11. Interestingly, one model specification not reported here considers the Pac-12 model without the time trend variable. In that instance, the coefficient on conference network is negative and statistically significant. This emphasizes the importance of the time trend variable. The Pac-12 began seeing declines in attendance well before the launch of their conference network in 2012. Not including a time trend variable led to the conference network variable picking up that trend.

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How Different ESG Factors Across Cultures Affect Financial Performance

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Abstract

This paper examines the financial performance of publicly traded companies based on their culturally driven choices of ESG factors and shows abnormal performances from those choices across different cultures. Using ESG ratings from HIP Investor Inc. on companies and cultural dimensions defined by Geert Hofstede, the average stock returns of companies were compared to countries' main stock indices. The results show that most of the analyzed combinations of ESG factors and cultural dimensions outperformed the main stock indices between 2016 and 2020. Moreover, it seems that for ESG committed companies, culture plays a role in ESG practices alongside financial performance.

JEL Codes: G10, G150
Keywords: International Financial Markets, ESG Practices, Portfolio Choice

Introduction

For the last several decades there has been a great debate over the position of shareholder value vs stakeholder value. Dating back to the positions espoused by Milton Freidman (1962, pp. 133), his view was that "There is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits." Others such as Oliver Williamson (1964) suggested that managers that were not focusing on shareholder value might be doing it for the purpose of maximizing their own value. Yet the concept of stakeholder value dates back much further. Merrick Dodd (1932) in the early 1930s saw the role of companies and their managers to extend beyond their roles to shareholders to include a wider spectrum of stakeholders. This concept was debated but largely ignored for the next several decades after Friedman's and Williamson's seminal articles. However, in more recent years, there has been a rise in the activism by shareholders to demand more consideration of stakeholders in the operation of the firm. The most common form of this activism falls into the demand for environmental, social, and governance reporting by the firm for the purpose of giving shareholders a chance to evaluate the efforts being made by the firm to address the various stakeholders.

Integration of environmental, social, and governance factors in organizations' decision-making processes has been around for decades. In the past 25 years, the world has seen significant growth in the number of companies that measure and report environmental data (e.g., carbon emissions, water consumption), social data (e.g., product safety, product information), and governance data (e.g., lobbying, board diversity) – in short, ESG data (Amel-Zaeh and Serafiem, 2018). But only in the most recent years, has investing in companies that adhere to ESG principles when conducting business gained attention. Interestingly, the search for a relationship specifically between ESG criteria and corporate financial performance (CFP) can be traced back to the 1970s, however, it was not used or publicized as much as it is today (Friede et al., 2015). Part of the reason is that very few companies disclosed their data in the 1990s and before, making it hard to track and compare companies' ESG performance on a larger scale. With the increase in companies reporting their ESG practices and the availability of ESG data, investor interest increased as well. With governmental and state policies requiring companies to reduce carbon emissions by a certain year amongst many other requirements, the companies that can and will be able to follow those requirements will also better position themselves to perform well over a longer period of time and sustain their competitive advantages as well as avoid paying penalties. Furthermore, with many social issues such as racial inequality, gender pay gap, and the lack of affordable housing amongst many others, how companies address those issues will be important to consider for investors when deciding in what companies to invest into and for funds when they face pressure from investors that are looking beyond just the financial returns but also at the impact their investments create.

With ESG practices differing across countries, understanding how they affect financial returns plays a role in ESG investing. With several recent studies finding a correlation between certain cultural aspects and ESG practices, considering culture when investing in ESG-oriented companies is inevitable. Gaining a better understanding of how ESG practices differ across cultures and how companies perform financially based on what ESG category they focus on would provide investors and companies with additional clarity about cross-cultural ESG investing. For example, ESG investors might be financially incentivized to invest in companies focusing on certain ESG practices that are more emphasized in each culture. From a company's perspective, following culture emphasized ESG practices would make it more attractive for investors as it could

also lower the cost of capital without selling equity as debt would be decreased through higher earnings. With the focus on culture valued ESG factors, the company's growth does not come at the expense of investors but rather with value for them as both investors and the firm benefit. Thus, looking at how different ESG factors across different cultures affect the financial performance of companies was analyzed in order to provide investors and companies with invaluable insights.

Literature Review

In recent years, more and more funds, as well as investors, are investing in companies that have a strong commitment towards ESG performance. "Environmental, social, and governance" are by themselves not financial factors; however, they do seem to affect stock returns based on previous studies. In their study, Boadi and Amegbe (2017) found that the quality of governance significantly affects stock market performance. In another study, Amel-Zadeh and Serafiem (2018) concluded that investors are financially motivated to use ESG data. Furthermore, they found out that the information that investors use varies systematically across countries depending on the major issues in those areas. Han et al. (2016) in their study of the effects of the broader ESG factors based on Bloomberg ESG disclosure scores on the financial performance of the Korea Stock Market (KOSPI) concluded that environmental responsibility prevents negative financial performance and that governance responsibility presents a positive relationship with better financial performance. Moreover, Jieqiong Sun et al. (2019), in their research, concluded that corporate social responsibility affects corporate financial performance. Additionally, and relevant for the analysis of this paper, they found that corporate social responsibility (CSR) has a weaker effect on CFP in firms located in indulgent countries. Research by Friede et al. (2015) looked at the ESG's effect on financial performance and found evidence from more than 2000 empirical studies that roughly 90% of studies find a nonnegative ESG-CFP relation. Moreover, they concluded that most studies find positive results. Many studies support the findings that culture or geographical difference does affect ESG practices around the world. Halkos and Skouloudis (2017) found that culture does impact CSR. According to their study, companies should pursue knowledge on how cultural distance affects CSR practices to establish a more effective CSR agenda and enhance their CSR performance. Their findings also pointed out that cultural perspectives pertaining to "long-term vs short-term orientation" as well as "indulgence vs restraint" affect the composite CSR index positively, while "uncertainty avoidance" has a negative impact. In contrast, their research concluded that the effects of other Hofstede cultural values of "power distance," "individualism," and "masculinity" are found to be insignificant. Another study by Eriksson and McCollum concluded that the 6 Hofstede's cultural dimensions have a significant effect on any of CSRHub's CSR categories (2019).

The existing research papers in most cases cover the relationship between either the ESG practices and the stock market performance or between ESG practices and culture. This paper is ultimately one of the first efforts to not just examine the relationship between returns, ESG factors, and culture but to identify whether culture does play a role in ESG investing activity, decision making, and how profitable these culturally driven decisions are for investors.

ESG and Cultural Dimensions Data

In order to conduct the analysis, a dataset comprised of ESG ratings of publicly traded companies around the world was used. Collaboration with HIP Investors Inc. provided access to the company's propriety data and ratings of ESG factors through their HIP pillars ratings. Based on their practices, the ESG rating assessment of each company is conducted through detailed research from publicly available information and third-party data collectors. Through that process, the so-called HIP Rating, which stands for "Human Impact + Profit", is assessed. The HIP rating provides us with a detailed breakdown of the company's ESG practices. The total HIP Rating is comprised of 7 HIP Pillars, which are Health, Wealth, Earth, Equality, Trust, Management Practices, and Products and Services. The Health pillar is comprised of the health effects from the firm's behavior with the employees, shareholders, and customers. More specifically, the rating evaluates the employees' access to healthcare, overall job safety, employee retention, and customer satisfaction. The Wealth pillar is rated based on how the firm affects the financial status of everyone involved. Specifically, it consists of employee access to stock options, employee pay, as well as the company's investments in community development. The Earth pillar is derived from the company's resource efficiency, carbon reductions, water usage, waste production, and more. The Equality pillar is assessed from the data of board diversity, LGTBQ+ policies, the number of women employees and managers, the supplier sourcing, and the diversity of the population served. The Trust pillar consists of the firm's lobbying, customer guarantee policies, and data disclosure. Company's Management Practices are valued based on the firm's long-term vision, decision making, financial performance – considering beta and return on equity, as well as accountability to public commitments. Lastly, the Products and Services pillar is rated based on the impact that the firm's products and services cause and its extent of solving real human problems.

To evaluate the effect of cultural differences and ESG practices on financial returns globally, the different aspects of culture must be measured. Culture is known to be a collective phenomenon because it is shared with people who live in the same social environment. "Culture is ultimately the collective programming of the mind distinguishing members of one group of people

from others" (Hofstede et al., 2010, pp. 6). To measure the cultural values of each culture, a widely accepted Hofstede's concept of the culture was used. In his research, Geert Hofstede has conducted different work-related values typical for different cultures. Those values are power distance, individualism-collectivism, masculinity-femininity, uncertainty avoidance, long-term orientation, and indulgence-restraint. Each country's culture can be accurately described based on their score from zero to one hundred for each value, and it is critical to comprehend what each of them represents.

The power distance index (PDI) measures inequality by assessing the dependence of relationships in a country. Countries scoring low in PDI will have a limited dependence of subordinates on bosses with a preference for consultation (Hofstede et al., 2010). On the other hand, people living in countries scoring high in PDI will be unlikely to approach their bosses. Hofstede et al. (2010, pp. 61), ultimately define power distance as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally." The individualism index (IDV) addresses the fact that societies are based on relationships, as there is always a dependence between the individual and the group. A society where the interests of an individual prevail over the interest of the group is referred to as an individualistic society, scoring high in IDV. If the interests of the group are found to be more important and integrated from birth, the society is known to be collectivistic, scoring low in IDV. The masculinity score (MAS) looks at the systematic difference between the genders. A society with a high MAS score will have more distinct gender roles – men are supposed to be assertive, tough, and focused on materialistic success, and women are supposed to be more modest, tender, and focused on quality of life. A more feminine country will score lower in MAS because the gender roles will overlap more as both genders will be expected to be modest, tender, and concerned about the quality of life (Hofstede et al., 2010). The uncertainty avoidance index (UAI) measures the extent to which the members of a culture feel threatened by ambiguous or unknown situations (Hofstede et al., 2010). The higher the UAI, the more the people within the society will try to avoid unknown situations and minimize unusual occurrences. Countries with lower UAI will display more ease towards uncertainty and more tolerance towards change. Hofstede et al. (2010, pp. 239) define long-term orientation (LTO) as "the fostering of virtues oriented toward future rewards—in particular, perseverance and thrift", which is typical for countries scoring high in LTO. Thus, more short-term oriented countries, with a low LTO score, will focus more on fostering virtues related to the past and the present. Finally, the indulgence versus restraint index (IVR) looks at the national levels of happiness and the perception of life control. People in indulgent countries, scoring high in IVR, have a tendency to allow relatively free gratification related to enjoying life and having fun. On the other hand, a restraint culture with a low IVR score reflects a conviction that gratification needs to be curbed and regulated by strict social norms (Hofstede et al., 2010).

Methodology

The data used from HIP Investor Inc. tracks several thousand companies across 72-78 countries with between 5249- 8356 companies per year in total, depending on the selected year. Most of the firms are components within the nationally regarded stock indices. However, not all countries and companies analyzed by HIP Investor Inc. were usable for this research. For example, several countries lacked or had no Hofstede cultural dimensions ratings. In such cases, the comparison of the HIP data with the Hofstede dimensions was excluded. There are also many countries that do not have a sufficient number of firms that are publishing ESG related practices, and thus, those countries are not included in the analysis. If a country had fewer than 30 firms that were publishing ESG practices to be able to receive the HIP rating, those countries were then excluded from the analysis. The United States was also excluded from the analysis because of the country's largest dataset available dominating the cultural ranks in order to get a better understanding of the global effects of culture and ESG practices. Accordingly, the number of countries fell from 72 to 28 in 2016 and from 78 to 38 in 2020. A list of countries analyzed per each year is found in Appendix, Exhibit 1.

All analyzed countries were given their Hofstede dimension rankings, and their respective companies had their HIP pillar ratings. Firms were ranked by their HIP numeric ratings within each country and were broken into 3 groups called high (for high numeric HIP rating), middle (middle third), and low (for bottom third) relative to other firms ranked in the country based on their numeric HIP rating. Countries were ranked by their Hofstede scores. All countries used were then split into three groups based on the Hofstede score by category. The highest numeric Hofstede score for each cultural dimension was given a ranking and then broken into three groups, high for the highest numeric Hofstede score, medium for the middle third numeric Hofstede score, and low for the lowest third of numeric Hofstede score. From this, the combined ratings of HIP by Hofstede or as referred to, HIP by Hof scores, were combined. If they had a high HIP rating and a high Hofstede dimension score, that would show as high HIP by high Hofstede, then High HIP by medium Hofstede, then high HIP by low Hofstede; the same was repeated for medium HIP rating and low HIP rating to assess all combinations. Thus, there were nine groups for each Hofstede dimension and each HIP pillar. This was repeated for each Hofstede dimension. In place for each company ranking, the annual abnormal return of the firm was used. The data is considering yearly returns. Although, for 2020, data from January to November was used because the December returns were not available. In Equation 1, R_{hh} represents the abnormal return of the firm found from the joint rank of the union of HIP by Hof. The Hof score by each dimension is the same for each country so there is no variation at the country level, only at the international level.

$$R_{hh} \Leftarrow \underset{n}{\bigcap_{HIP=1}^{n}} HOF \tag{1}$$

The abnormal return by the firm is the annual firm return subtracted by the annual benchmark index return for the country. Ri represents the return for each firm and Rm represents the respective market index. For each country, the average abnormal returns were calculated.

$$R_{HH} = \sum_{i=1}^{n} Ri - Rm \tag{2}$$

The R_{HH} value represents the average return for the HIP by Hof score across all companies in the country. From these averages, all values are calculated across all included countries. The standard deviations of each country are used to calculate variance, which can be summed as all countries are aggregated to get an overall abnormal return of HIP by Hof. The variances are summed up and t-values are calculated across each HIP by Hof measure. This process is repeated for the five years of data available.

$$R_{HH}^{Year} = \sum_{j=1}^{c} \sum_{i=1}^{n} Ri - Rm \tag{3}$$

Equation 3 shows the average R_{HH} value across all firms, across all countries, for a given year. As the number of firms is above 30, t-values are used, as the N would meet the minimum number for approximation to a normal distribution. Typically, they would be ranked and then a Mann-Whitney test would be performed, but since "N" is high in most cases, t-values were used. The significance values are calculations by one variable t-tests on all firms and variance across those firms over the period of the 5-year window.

Results

The results of the abnormal returns for Hofstede's dimensions with Health, Wealth, Earth, and Equality pillars are found in Table 1. The combinations with the rest of the pillars – Trust, Management Practices, and Products and Services - are found in Table 2 alongside the abnormal returns for the Total HIP Ratings across different Hofstede's cultural dimensions.

Table 1: Average Yearly Abnormal Returns 2016-2020 (in %)

			HIP Rating Pillars											
			Health			Wealth			Earth			Equality		
			High	*Med*	*Low*	*High*	*Med*	*Low*	*High*	*Med*	*Low*	*High*	*Med*	*Low*
Hofstede Cultural Dimensions	PDI	*High*	4.90	3.22+	3.06+	3.93	3.04*	3.06	3.58+	4.78+	2.37	3.92+	4.73	2.06
		Med	0.54	3.84	0.66	0.16	0.53	5.26	1.16	2.71	0.11	0.97	0.68	4.83
		Low	2.92	4.68*	5.82**	5.29*	2.55	5.51*	3.43+	4.45*	5.14*	4.34	4.33*	4.85*
	IDV	*High*	2.91	12.48	9.66*	5.07+	4.00	9.03*	4.19	11.02*	11.46+	2.98	9.88	17.28+
		Med	2.41	1.25	1.79*	2.77+	0.68	2.62+	0.16	1.98	1.17*	0.38	1.81	1.16+
		Low	4.77	4.38+	3.50+	2.93	4.26*	3.54	3.38+	5.83	3.16+	4.76+	5.46+	2.33
	MAS	*High*	2.37	2.13	4.99*	3.94*	1.76	4.99+	3.83+	3.86	1.42	4.47+	3.70	0.64
		Med	4.77	1.11	3.46	1.79	-0.29	8.99+	1.94	1.73	4.99**	-0.40	5.50	4.40*
		Low	3.80	6.04*	2.81**	4.53+	3.79*	4.22**	3.23+	5.90*	2.99*	4.64+	3.48+	5.07*
	UAI	*High*	3.92	0.61	2.71*	2.17	1.51	2.71*	1.40	3.35	1.62*	1.99*	3.25	1.48+
		Med	2.87	9.76+	2.94+	5.35	2.77	8.25+	4.48	6.59+	4.06	4.83	5.13	7.18
		Low	3.60+	3.11*	5.57+	4.47**	3.26*	4.36	4.15*	4.00+	4.11+	4.34*	3.85+	3.94+
	LTO	*High*	4.51	3.07+	3.29+	3.78	2.58	3.29+	2.77	5.42+	2.08+	5.30+	2.74	1.98+
		Med	2.39	3.97**	3.68+	3.63+	2.25*	4.51**	2.57+	4.02*	3.57*	2.71+	3.88*	3.94*
		Low	4.31	4.35	3.68*	3.90	2.54	6.23	4.04	4.33	2.85+	2.97	4.90	4.87+
	IVR	*High*	4.72+	4.42+	7.60**	5.43+	3.33+	7.60**	5.30+	3.36+	8.24*	3.98	7.01+	7.13*
		Med	3.09	5.09*	3.15	3.79	3.22	4.30+	2.71+	5.47	2.49	3.34	4.01+	3.94
		Low	3.04	1.13	2.03	2.24	0.41	3.26	2.09	2.71	0.75	3.09	1.85	0.67

**significant at 1% level, *significant at 5% level, +significant at 10% level

Table 2: Average Yearly Abnormal Returns 2016-2020 (in %)

			HIP Rating Pillars											
			Trust			Management			Products and Serv.			Total HIP Rating		
			High	*Med*	*Low*	*High*	*Med*	*Low*	*High*	*Med*	*Low*	*High*	*Med*	*Low*
Hofstede Cultural Dimensions	PDI	*High*	5.42+	3.27	2.16+	3.96	2.79	4.56*	2.48	1.42	9.13	3.25+	3.51*	4.10+
		Med	2.54	-2.17	4.71	0.75	0.00	4.17	1.78+	5.38	0.22	1.17	-0.75	5.48
		Low	5.81*	1.69	6.25*	3.92*	3.55+	6.43+	4.38+	4.26**	6.40	4.90*	2.69+	6.17*
	IDV	*High*	4.60	6.65	14.90*	2.70	4.82+	19.67*	3.98	9.50*	13.53	3.93	3.07*	24.56
		Med	3.31	0.20	0.91+	2.10	1.12	0.89+	2.82+	0.90+	3.88	1.06+	1.08	1.46+
		Low	6.23*	3.33	3.29+	4.50	4.18	3.61+	3.92+	1.23	7.66	3.44+	5.43+	2.85
	MAS	*High*	5.04	2.33	1.79	3.70+	2.67	2.78	4.44*	4.54+	2.68	3.99+	3.50	1.17
		Med	4.72	0.42	4.71*	1.83	0.05	8.41*	-0.21	-1.64	16.55	0.69	-0.73	10.58
		Low	5.22*	2.31	5.03*	3.93	3.53	5.39**	3.37+	4.76*	4.78	4.15*	3.40+	5.33*
	UAI	*High*	4.09	1.11	1.81+	2.32	0.71	4.06*	3.60**	0.75	5.49	2.35	2.24	2.05*
		Med	5.45	3.25	7.02+	4.44	4.28	7.39+	2.17	5.40+	9.78	3.82	2.51	10.87+
		Low	5.91**	1.46	5.07*	4.02*	3.18+	5.54*	3.03	4.94*	5.07	4.40*	3.03*	4.78
	LTO	*High*	3.89+	3.37	3.13+	3.56	3.42	4.06+	4.64**	3.84+	2.59	4.45+	2.93	2.83+
		Med	4.41*	2.36	3.47**	2.70	3.52*	4.12*	3.04	3.00+	5.15	2.50*	2.97*	4.69**
		Low	6.56	0.31	5.57*	3.93	0.69	7.83+	1.12	3.29	12.01	3.35	1.88	7.93
	IVR	*High*	6.38+	2.60	8.79*	3.89*	3.50	10.92*	4.06+	2.55+	12.06+	4.52+	2.94+	11.24*
		Med	4.61+	2.50	4.06	2.72	3.01*	5.60	3.45*	4.90	4.34	3.64*	3.58	4.27
		Low	4.20	0.82	0.77	3.82	0.79	1.34	1.43	0.67	6.40	1.94	0.77	2.72

**significant at 1% level, *significant at 5% level, +significant at 10% level

The findings suggest that between the years 2016 and 2020, on average, companies that were at least sufficiently reporting their ESG practices and showing some initial commitment, as well as those that are the most committed to ESG practices as evaluated by HIP Investor Inc., have, in most cases, performed better than their indices, looking at the different HIP by Hof combinations. Moreover, it is interesting to note that even in the cases where the selected HIP by Hof combination has not outperformed the main countries' indices, the biggest 5-year average underperformance was -2.17%. That being said, only 5 total HIP by Hof combinations underperformed (having a negative return compared to the indices' average) out of 378 total HIP by Hof combinations looking at the 7 HIP pillars. On the other hand, there were 80 HIP by Hof combinations of the 7 HIP pillars that have, on average, outperformed the main indices by at least 5%. The rest of the combinations – 293 of them – outperformed the main indices between 0% to 4.99% for the 5-year average of abnormal returns. In total, 98.7% of the HIP by Hof combinations for the 7 HIP pillars have matched or outperformed the main market indices.

Table 3: Recommended HIP Pillars Focus for Best Performing Cultural Dimensions

Hofstede Cultural Dimension	Recommended HIP Pillars Focus		
Low PDI	Low Health	High Wealth	Low Trust
High IDV	Med Earth	Low Equality	Low Management
High IVR	Low Wealth	Low Earth	Low Management

The summary of findings is shown in Table 3, as the three cultural characteristics have shown to have ESG rated companies with higher abnormal returns performance. For each culture, the top three recommended HIP Pillar focuses were selected based on calculated outperformance in Tables 1 and 2. In countries with lower power distance such as Austria, Denmark, and Germany, companies with lower Health rating (the rating evaluates the employees' access to healthcare, overall job safety, employee retention, and customer satisfaction), higher Wealth rating (consists of employee access to stock options, employee pay, as well as the company's investments in community development), and lower Trust rating (the firm's lobbying, customer guarantee policies, and data disclosure) have achieved an even higher financial outperformance compared to country main indices. This might suggest that where there is low power distance, not much is expected as leadership and subordinate workers have more direct communication and shared support but more is directly translated into the stakeholder wealth and less from softer policies and disclosures. In countries with higher individualism scores such as Australia, the United Kingdom, and the Netherlands, companies with medium Earth rating (consists of the company's resource efficiency, carbon reductions, water usage, waste production, and more), lower Equality (based on board diversity, LGTBQ+ policies, the number of women employees and managers, the supplier sourcing, and the diversity of the population served) and lower Management ratings (the firm's long-term vision, decision making, and financial performance) achieved an even higher outperformance. Perhaps that is suggesting that in the more individualistic cultures, such countries are more focused on environmental responsibility within

limits yet are less egalitarian and management-focused. Lastly, in high indulgent countries such as Mexico, Sweden, and New Zealand, companies with lower Wealth, lower Earth, and lower Management ratings outperformed indices even more significantly. In these countries where indulgence is more prevalent over a constraint culture, such companies are doing more than the average firms in their market but low by standards of ESG globally. In all cases, it is important to note that even companies with low HIP scores are perhaps taking more ESG initiatives than those firms not ranked as unranked firms do not have disclosures of these types of activities.

Conclusion

The results provide us with the financial performance of each combination of companies scoring either high, medium, or low in a specific Hofstede's cultural dimension score, and a specific HIP Pillar or the total HIP Rating for the years between 2016 and 2020. As noted, in total, 98.7% of the HIP by Hof combinations for the 7 HIP pillars have not underperformed compared to the main market indices on a 5-year average basis. Also, many combinations are found to be significant. As the analysis suggests, the companies that have enough ESG data available to be rated by HIP Investor Inc. are, in the majority of the cases, outperforming the respected main countries' indices over the selected period of 5 years.

For investors considering where to invest their capital over longer periods of time, the results imply that investing in firms that are ESG oriented is more likely to lead to better financial returns compared to investing in the main market indices or firms that do not disclose their ESG data. Furthermore, considering how the COVID pandemic affected financial markets in 2020, ESG investing seems to provide better downside risk limits during a crisis like that. For the companies, it implies that incorporating ESG practices in their operations leads to better financial performance and higher investor interest.

In terms of cultural dimensions, looking at the results, it seems that the companies exercising some ESG practices in cultures with low PDI scores tend to do better than those in countries with medium or high PDI cultures. This could mean that companies within environments where the relationships between subordinates and bosses are not necessarily very distant – possibly enhancing teamwork and encouraging innovations – might lead to better financial performance. Examples of such cultures from those countries analyzed in this paper are found in Austria, Denmark, and Germany. Furthermore, the results imply that companies in cultures with high IDV scores tend to do better return-wise than those with medium and low IDV scores. This could mean that companies integrating ESG practices are doing better in cultures where the company's performance is at the forefront and where people are not as dependent on others. Such cultural characteristics can be found in Australia, the United Kingdom, and Sweden. Moreover, the results imply that companies in cultures with high IVR scores tend to outperform those companies with ESG practices in cultures with medium or low IVR scores. This could suggest that firms incorporating ESG practices are going to perform better return-wise in cultures where there is some gratification allowed and where the work-life balance is more prevalent than a restrained way of life. Examples of such cultural characteristics are most known for Mexico, Sweden, and New Zealand.

As shown in Table 3 many lower HIP rated companies performed better than companies with a high or medium HIP rating. This trend has also been observed across other Hofstede's cultural dimensions. While companies with lower HIP ratings outperforming those that have better ESG practices might initially seem counterintuitive, there might be several reasons to explain that. Companies with a lower HIP rating are more likely to be in an earlier stage where incorporating ESG practices prior to doing none or few, has a larger impact on financial returns. On the contrary, companies with a high HIP rating that have been adhering to higher ESG standards have possibly already squeezed out some of the potential profits. Also, companies with a higher HIP rating are likely to have less room for error based on the standard they have set for themselves. In other words, any deviation from high standards has negative repercussions. For example, mistreating employees might have a larger negative impact on a high Health rated firm because of the high standards they have been achieving up to such an event. Despite that, it is important to keep in mind that all groups – high, medium, and low HIP ratings – in total, 98.7% of the HIP by Hof combinations with sufficient ESG reporting within countries with Hofstede's cultural dimension data available have outperformed or had the same performance as the main indices across the 7 HIP pillars, and many of them were found to be significant. This implies that companies with any or desirably increasing commitment towards ESG practices outperform the respective countries' main stock indices. Incorporation of at least some ESG practices seems to be awarded financially and investors can use this information when allocating funds based on different ESG and financial objectives.

This research opens many doors towards connecting the ESG practices across different cultures with financial returns benefiting both investors and companies. Future research should focus on a country-specific analysis to provide more specific information to investors to complement the findings of this paper. Moreover, understanding how companies' age is in line with the cultural environment and ESG values is another topic to be analyzed as cultural values could be attributed based on the age of the company. It could be possible that older companies hold more traditional cultural values than companies founded more recently. Future research should also analyze the financial returns of different industries based on ESG performance. Determining if there are different financial implications when allocating capital to certain sectors due to different ESG standards would be valuable because a company achieving a high ESG rating in one industry might not achieve the same rating if they

were operating in a different industry. Also, the financial performance of ESG focused funds would be another topic to analyze in-depth in the future. Such studies can provide investors and companies with additional results to help them make better investment and business decisions – that will lead to better financial performance as well as a better environment and society.

Acknowledgments

The ESG rankings data and companies' annual returns data were provided by HIP Investor Inc. The countries' main indices return data was used from FactSet at https://www.factset.com/; for exceptions, see Appendix, Exhibit 2. Hofstede's cultural dimensions data was acquired from https://www.hofstede-insights.com/product/compare-countries/.

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Appendix

Exhibit 1: List of Countries Observed Based on a Specific Year

2016: Australia, Belgium, Brazil, Canada, China, France, Germany, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Korea (South), Malaysia, Mexico, Netherlands, New Zealand, Poland, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, United Kingdom

2017: Australia, Belgium, Brazil, Canada, Chile, China, Denmark, France, Germany, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Korea (South), Malaysia, Mexico, Netherlands, New Zealand, Poland, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, United Kingdom

2018: Argentina, Australia, Belgium, Brazil, Canada, China, Chile, Denmark, Finland, France, Germany, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Korea (South), Malaysia, Mexico, Netherlands, New Zealand, Peru, Poland, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom

2019: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Chile Denmark, Finland, France, Germany, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Korea (South), Malaysia, Mexico, Netherlands, New Zealand, Norway, Peru, Poland, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom

2020: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Chile, Denmark, Finland, France, Germany, Greece, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Korea (South), Luxemburg, Malaysia, Mexico, Netherlands, New Zealand, Norway, Peru, Poland, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom

Exhibit 2: List of Stock Indices Used to Compare with the Firms' Returns Data

Argentina*: S&P MERVAL*, Australia: *ASX 200*, Austria: *ATX*, Belgium: *BEL 20*, Brazil: *IBOV*, Canada: *S&P/TSX*, China *SSE*, Chile: *IPSA*, Denmark: *OMX Copenhagen 20*, Finland: *OMX Helsinki*, France: *CAC 40*, Germany: *DAX*, Greece: *ATHEX*, Hong Kong: *Hang Seng*, India: *S&P BSE 100*, Indonesia: *JSX*, Ireland: *ISEQ*, Italy: *FTSE MIB*, Japan: *Nikkei*, Korea (South): *KOSPI*, Luxemburg: *LUXX*, Malaysia: *Bursa KLCI*, Mexico: *S&P/BMV IPC*, Netherlands: *AEX*, New Zealand: *NZX*, Norway: *OBX*, Peru: *S&P BVL PERU***, Poland: *WIG*, Russia: *IMOEX**, Saudi Arabia: *TASI*, Singapore: *FTSE STI*, South Africa: *FTSE JSE 40*, Spain: *IBEX 35*, Sweden: *OMX Stockholm 30*, Switzerland: *SMI*, Taiwan: *TAIEX*, Thailand *SET*, Turkey: *BIST 100*, United Kingdom: *FTSE 100*

Yearly returns on those indices were acquired from www.FactSet.com

*Data on *IMOEX* was acquired from www.FactSet.com for years 2016-2018 and from www.moex.com for 2019-2020

**Data on *S&P BVL PERU* was acquired from https://www.spglobal.com/spdji/en/indices/equity/sp-bvl-peru-general-index/#overview for the years 2016-2020

What Shapes the Way We Borrow: Parental Debt or Behavior Problems?

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Abstract

This paper investigates the role of behavioral problems and parental debt in credit card and student loan use among young adults. The results show that behavior problems do not predict credit card ownership, carryover balances, and a high level of indebtedness. Higher behavior problem scores are linked to a decrease in the probability of having student loans and in the student loan balance. The results also show that parents' use of unsecured debt influences young adults' financial behavior. When parents have unsecured debt, the likelihood of having credit cards, carryover balances, and the balances on these credit cards are higher for young adults. The results show an even stronger, positive effect when student loans are considered.

JEL Codes: G51, G41
Keywords: credit card debt, student loans, behavioral factors, intergenerational transmission

Introduction

Since the Great Recession, credit card debt and borrowing behavior, in general, have made the headlines. The worry that "if we end up overleveraging ourselves again, it's going to be the same thing repeated in a few years" (White, 2011) is still relevant today. According to the Federal Reserve Bank of New York (2021), aggregate household debt has constantly increased for the last ten years, reaching $14.64 trillion at the end of the first quarter in 2021. Credit card debt represents 18.55 percent of non-housing debt and is the slowest growing component of total household debt. However, this image can be misleading. At the end of 2019, credit card debt was higher than at its peak at the end of 2008. Even though the factors that led to the financial crisis, such as relaxed lending standards and new types of adjustable-rate mortgages (Mian and Sufi, 2010; Verick and Islam, 2010; Taylor, 2009) are not an issue anymore, one cannot overlook the importance of the level of indebtedness for households' wellbeing and the risks associated with it.

Credit card debt becomes even more critical when young adults are considered. In 2020, a study on collegiate financial wellness revealed that almost 74% of respondents are stressed about their finances (OSU, 2020). The same study also showed that 32% of undergraduate students make at least the minimum payment, but they do not pay the entire balance at the end of the month. Another two percent of respondents are not even paying the minimum balance. These actions have dire consequences (e.g., finance charges, lower credit scores) on young adults' financial wellbeing. Sallie Mae (2019) looks at the borrowing behavior of college students, young adults who earned a college degree, and young adults who left before completing their education. The study concludes that the last group is more likely to pay only the minimum balance and have higher balances over a 12-month period.

Another cause of concern for young adults is borrowing money to pursue higher education. Student loan balances have continued to rise in the last few years. According to FRBNY (2021), from 2009 to 2021, student loans increased by 242 percent, and this number continues to grow. Student loans combined with credit card debt can represent a serious burden for younger generations later in their lives.

Considering the current borrowing trends and the multiple consequences credit card and student debt can have on young adults (e.g., lower grades and dropping out of college; McMurtrie, 1999, stress, anxiety, suicide; Mannix, 1999, Manning, 1999, decreased financial wellbeing; Norvilitis et al., 2006), it is essential to determine the factors that lead to high indebtedness. Even though most research focuses on economic causes, non-economic factors such as personality and behavior cannot be ignored. This paper investigates behavior as one of the factors that determine credit use among young adults. It considers behavior problems instead of personality because behavior is easier to observe. Parents can monitor how their children act and determine whether they manifest behavior problems such as withdrawn or aggressive behaviors. If behavior problems are related to a high level of indebtedness, parents can more carefully advise their children about the risk of using unsecured debt. For example, the Credit Card Act of 2009 requires anyone under the age of 21 to have a cosigner (parent or guardian) or show proof of income to qualify for a credit card. Parents who have children with behavior problems can take the necessary cautions before cosigning and avoid enabling access to unsecured credit.

This paper is the first to examine the effect of behavior problems on credit card debt and student debt among young adults and the effect of parents' debt usage on their children's attitudes toward debt. It adds to the literature in different ways. First, it considers behavior problems and parents' use of unsecured debt as potential determinants of young adults' borrowing habits.

The nature vs. nurture aspect cannot be ignored when it comes to financial behavior because financial education relies on the assumption that sound financial practices can be learned. Second, it addresses the endogeneity between debt and behavior. The behavior variables are based on responses provided by caregivers several years before the value of debt is recorded. Third, using caregivers' answers, the paper mitigates false answer problems. Caregivers are more likely to give honest answers than the young adults themselves. According to Almlund et al. (2011, pp. 54), individuals may try to "exaggerate their strengths and downplay their weaknesses" or portray themselves as "virtuous." Fourth, behavior changes over time, and this paper addresses this problem. Lastly, previous research uses small samples and individual questionnaires. This paper uses a national representative longitudinal data set.

The results show that behavior problems generally do not predict credit card ownership, intensive credit card use, and high indebtedness. Higher behavior problem scores are linked to a decrease in the probability of having student loans and a drop in student loan balances. The results also show that parents' use of unsecured debt influences young adults' financial behavior. When the family has unsecured debt, the child's likelihood of using credit cards and the balances on these credit cards are higher. One of the first indicators of financial distress is having carryover balances. The analysis shows that the probability of not paying the credit card balance in full increases when parents have unsecured debt. The results show an even stronger and positive effect when students loans are considered.

The paper is organized as follows: Section 2 reviews the literature regarding the effect of personality and behavior on the use of debt; Section 3 describes the data sets and the methodology used for the analysis and presents the descriptive statistics of the sample; Section 4 presents the results; and Section 5 concludes the paper.

Literature Review

The literature has mainly studied indebtedness from an economic perspective, considering life-cycle household determinants and market conditions (e.g., Dynan and Kohn, 2007; Johnson and Li, 2007). Even though factors such as interest rates, access to credit, family income, and consumption are important, personality and behavior can also play a role in credit card use. Considering economic, social, and behavioral components together, one can better understand debt financing decisions.

On the one hand, personality is the unique combination of characteristics of each individual, and these characteristics will determine his actions (Kamphaus et al., 2005; Kleinmuntz, 1967). Larsen and Buss (2001) define personality as a collection of traits that do not substantially change over time and determine how individuals react. On the other hand, behavior is what people do, how they react, and what is easily observable (Martin, 1988; Kamphaus et al., 2005). Leikas et al. (2012, pp. 1007) consider that behavior is "the topic of interest….something that really matters." Examining personality and behavior together, Back et al. (2009) study the effect of personality on actual behavior and conclude that personality can predict how people react. Roberts (2006) designs a framework that starts with genes, personality traits, motives and values, abilities, and memories and ends with observed behavior. Using backward induction, he uses this framework to determine personality traits (cited in Almlund et al., 2011). This also suggests that personality is one of the factors that affect behavior.

Research suggests that some personality characteristics may determine borrowing behavior, but a consensus has not been reached. For example, Nyhus and Webley (2001) show that emotional stability, introversion, and agreeableness reduce debt, while autonomy increases the likelihood of having debt. For this analysis, they use a sample of 1,266 persons interviewed by the CentER Saving Survey (a Dutch data set) and a hierarchical multiple regression. The strategy is to gradually introduce income, demographic, and personality variables into the models and to observe the explained variance in saving or borrowing behavior. On the other hand, using a sample of 254 students from private universities in New Jersey and Texas, Pirog and Roberts (2007, pp. 71-72) suggest that introverted students are more likely to misuse credit cards. They cite three reasons: "credit cards may be a tool to create excitement, … [and] to achieve a higher social profile, … and introverted students may be more prone to use the Internet."

To study some of the factors that influence credit card debt, Norvilitis et al. (2003) use a sample of 227 college students in the northeastern United States. Students are interviewed about the number of credit cards, financial wellbeing, attitudes toward money and debt, and their personality. The study fails to demonstrate that external locus of control, impulsiveness, and positive attitudes toward debt will lead to higher credit card debt. Nevertheless, the authors point out some of the study's limitations that can influence the results, such as missing answers and personality and attitude measures. Using an original data set involving 2,000 households in Italy, Cosma and Pattarin (2012) find that fatalistic individuals (with an external locus of control) are less likely to use consumer credit. Important to notice is the difference between the direct and indirect effect of locus of control on debt. Locus of control may not directly affect the level of debt, but it affects the attitudes toward debt that, in turn, are linked to debt (Davies and Lea, 1995; Norvilitis et al., 2003).

Another investigated characteristic is materialism. Watson (2003) investigates whether or not materialistic people are more likely to have higher debt levels, and he concludes that materialism plays a significant role in debt accumulation. This study relies on a sample of 322 households from Pennsylvania. Ponchio and Aranha (2008) study low-income families and conclude

that materialists are more likely to have debt. The same conclusion is reached by Donnelly et al. (2012), who show that materialists manage their money less, leading to higher credit card debt.

Expectations and impulsiveness also play an important role in debt accumulation. Brown et al. (2005) show that optimistic financial expectations positively affect debt at the individual and the family level. They use the 1995 and 2000 waves of the British Household Panel Survey, a longitudinal and nationally representative survey. This paper uses a random effects tobit model and acknowledges the problem of reverse causality between debt and optimistic expectations. To solve this problem, the authors replace current expectations with their lagged values. These also have a statistically significant effect on debt.

Using a convenience sample of 628 undergraduate students from Southern California, Brougham et al. (2011) suggest that college students who focus on the present and disregard the future are impulsive buyers. Therefore, they are more likely to misuse credit cards. Wang and Xiao (2009) also use a sample of college students at a state university in the U.S., but they fail to prove that impulsiveness is linked to credit card debt. However, they successfully link compulsive buying to credit card debt.

Research shows that consumers do not always employ rational behavior when making financing decisions (Elliehausen, 2010). Considering that high levels of revolving debt, especially credit card debt, hurt young adults, and that high levels of household leverage (the ratio of debt to disposable income) can be considered one of the factors that triggered the last recession (Glick and Lansing, 2010), understanding the factors that affect the borrowing decisions is more important than ever. The easiest way to help young adults make sound financial decisions is through financial planning education. Knowing the factors that lead to high indebtedness can make teaching personal financial planning more effective because it can focus on particular areas of risk.

The literature that investigates intergenerational influence on borrowing behavior is limited. Using a survey that asks respondents how comfortable they and their parents are with debt, Almenberg et al. (2021) conclude that debt attitudes are transmitted from parents to children. However, they point out that the causal effect should be interpreted with caution. Similarly, Tang (2017) shows that responsible financial behavior is passed from parents to children. Financial behavior is measured using four criteria: debt, cash flow, saving, and credit management. Using a sample of 980 Canadians, Lachance (2012) concludes that young adults have positive attitudes toward credit when perceiving that their peers and parents are credit users.

Lately, more attention has been given to the social network influence on spending and borrowing behavior. "57% [of millennials] said that social media caused them to spend money due to a fear of missing out. Credit Karma found that 39% of millennials had even gone into debt just to keep up with their friends." (cited in Daly, 2019). Parents are an important part of young adults' social networks. Therefore, studying how parents' attitude toward debt affects young adults' level of indebtedness becomes paramount.

Data and Methodology

Data

This paper uses data from the main questionnaire of the Panel Study of Income Dynamics (PSID) and two of its supplements: the Child Development Supplement (CDS) and the Transition into Adulthood Study (TA). The PSID is a nationally representative longitudinal survey that started in 1968. It collects economic and demographic information about every member of the interviewed family, but it focuses on the head of the household and spouse. Children of the participating families are considered sample members, and they are followed by the PSID when they start their own households. Until then, additional information about children is provided by the CDS. The CDS started in 1997, and it has three subsequent waves in 2002, 2007, and 2014. The CDS gathers developmental data for some of the children of the families followed by the PSID. Because the CDS interviews only children under 18, and many young adults do not set up their households until later, there is a potential gap in interviews between sample members turning 18 and establishing their own households.

The TA study was developed to link the CDS and the core PSID and bridge the gap. Participants in the TA supplement are too old to be included in the CDS but are not independent to be included in the PSID. The TA collects demographic, employment, education, health, personal characteristics, and responsibilities information. The interviews are conducted biennially. Currently, there are seven waves available from 2005 to 2017. This paper matches individual information from the CDS and TA using a specific strategy. Because individuals can show up multiple times in the CDS and/or TA surveys, it uses the latest appearance in the CDS sample and the first appearance in the TA sample.[1] On the one hand, this combination provides enough observations, and no individual shows up twice in the final sample, and on the other hand, the elapsed time is not too long. The sample includes young adults (surveyed by the TA) between 18 and 25 years. As imposed by the TA study selection criteria, the members have graduated from high school and have participated in the CDS.

This paper's first main explanatory variable is the Behavior Problems Index (BPI). The BPI is part of the CDS, and it is constructed using a set of 30 questions that ask about children between 3 and 18 years of age and are answered by primary caregivers.[2] This index relies on a scale developed by Peterson and Zill from the Achenbach Behavior Problems Checklist

(Peterson and Zill, 1986; Achenbach and Edelbrock, 1981). A higher score represents a higher level of behavior problems. Behavior problems include sudden changes in mood, cheating, anxiousness, bullying, worrying, and feeling worthless or inferior. The CDS also provides two additional scores for two subscales: Externalizing and Internalizing. The Internalizing score measures withdrawn or sad behavior and includes 14 questions, while the Externalizing score measures aggressive behavior and includes 17 questions. When a caregiver's answer to one of the questions is "sometimes true" or "often true," a score of one is recorded. Final scores for Total, Internalizing, and Externalizing indexes are the sum of individual items. Appendix 1 presents the questions on which Total, Externalizing, and Internalizing scores are built (Child Development Supplement, User Guide). Because children are followed later under the TA, this project can use this variable to indicate behavior problems.

The BPI has been used in economics research to study the effect of different factors such as participation in the Head Start program (Currie and Neidell, 2007), welfare programs (Levine, Zimmerman, 2005), family's income (Blau, 1999), and homeownership (Haurin et al., 2002; Holupka and Newman, 2012) on children's behavior. McGee (2011) uses the index to measure noncognitive skills to examine education and labor market outcomes for youth with learning disabilities.

The second main explanatory variable is whether parents have unsecured debt. This variable is part of the PSID main family data set. Unsecured debt includes credit/store card debt, medical and legal bills, student loans, and loans from relatives. Starting in 2011, the PSID differentiates among these types of debt. However, to be consistent with the 2005-2009 waves, total unsecured debt is used throughout this paper.

The dependent variables are provided by the TA study. They are as follows: whether the individual has a credit card in his name, whether the individual has a carryover balance, whether the individual has student loans, the amount of credit card debt, and the value of student loans. For the 2005 and 2007 waves, the amount of credit card debt is not available by itself. It is included in the value of unsecured debt together with medical and legal bills and loans from relatives. Starting with the 2009 wave onward, the same question includes only credit card debt. Given the age of my sample, one can safely assume that medical and legal bills are insignificant, hence the paper considers that value to represent only credit card debt for all waves.

The reason this paper uses the PSID and its supplements is twofold. First, the TA study collects various information about young adults such as education, employment, living arrangements, and money management. More importantly, the value of debt is provided. To my knowledge, this data set is the only one that provides both the BPI and the value of debt. Second, the young adults included in the TA sample also have an interview completed at the household level. This makes it possible for me to employ parents' use of debt in the analysis and to include different individual and family characteristics.

Empirical Model

The goal of the paper is to examine whether behavior problems are a predictor of high levels of unsecured debt for young adults. The equation is as follows:

$$Y_{is} = \alpha + \beta_1 \text{Behavior\_Problems}_{\text{is}} + \beta_x X_{is} + \beta_T T + \epsilon_{is} \quad (1)$$

where Y_{is} represents either the value of credit card debt, whether the individual has a credit card in his own name, whether the individual has carryover balances, whether the individual has student loans, the value of student loans, or the ratio of credit card debt to income. X is a vector of individual and family characteristics. These include age, gender, race, education, marital status, whether the individual works, whether he is a student, whether he owns a car, and family's total income. I also include a variable, whether the individual has a checking or a savings account, because credit history can help qualify for credit cards. T represents year fixed effects and ε_{is} is the error term. Year fixed effects are included in the model in an attempt to capture changes in the credit environment that took place during the analyzed period.[3] The coefficient of interest is β_1.

Several problems may bias the results. First, there may be a feedback relationship between behavior problems and unsecured debt. For example, the individual does not have behavior problems because he does not have too much debt, and/or the individual does not have debt because he does not have behavior problems. Using a BPI score that relies on answers given several years before the value of unsecured debt is recorded addresses this problem. Thus, the model becomes the following:

$$Y_{ist} = \alpha + \beta_1 \text{BPI}_{\text{is(t-n)}} + \beta_x X_{ist} + \beta_T T + \epsilon_{ist} \quad (2)$$

BPI alternately takes the value of total, internalizing, and externalizing scores.

Another source of endogeneity can be an omitted variable. Unobserved characteristics in the error term can be correlated with one of the independent variables and with the dependent variable. Therefore, the assumption that the error term is uncorrelated with the regressors is violated, and the coefficients are invalid. This paper tries to mitigate this problem by including various characteristics at the individual and the family level. Because the main PSID interview provides data about

the individual's family, the paper utilizes these. This approach intends to reduce the unobserved characteristics left in the error term. Third, the BPI is determined based on answers provided by the main caregiver. This solves the problem of "faking" (Almlund, 2011, pp. 54-55). Persons may alter their answers if they believe their answers can change the outcome. Caregivers can also be subjective when answering these questions, therefore introducing bias in the data. The BPI Total scores for young adults who appear in both 2002 and 2007 waves are compared to investigate this possibility. The average of the difference between scores is four, meaning four more or fewer problems. Sixty-two percent of observations (1,319 young adults are included in both waves) have a difference in scores of four or less. Only one percent has a difference of 15 or higher. In conclusion, the caregivers' subjectivity can be a problem but not major.

Using a previously recorded index of behavior problems solves the reverse causality issue. Still, it can only shed light on the predictive role of behavior problems in using unsecured debt. Personality traits are primarily responsible for one's behavior (Funder, 2001), and researchers agree that personality traits are not constant over time (Borghans et al., 2008; Almlund et al., 2011). Therefore, behavior most likely will change with age. The instability of behavior constitutes another potential problem. The paper uses the last appearance in the CDS sample and the first in the TA sample to address this issue, even though each individual can appear in multiple CDS and TA waves. This approach minimizes the elapsed time between the CDS and TA information, giving less time to encounter drastic changes in behavior.

Whenever the parents' debt is considered, BPI is replaced in Equation 2 first by whether the family has unsecured debt and second by the value of unsecured debt. Only young adults who do not live with their parents are included in the sample to perform this analysis. This way, children's debt is not included in the total value of debt at the family level. All other control variables remain unchanged.

Descriptive Statistics

Table 1 presents descriptive statistics for the entire sample and two subgroups: young adults who have credit cards and young adults who do not have credit cards. The average age of the sample is 19 years, with a slightly higher average for young adults who do not have a credit card. In the subgroup of young adults with credit cards, there is an even distribution between men and women, while in the other subset, men represent 65 percent of the subsample. In general, the PSID considers that young adults have set up their own households when they start living in a different housing unit (but have not moved to college or other institutions such as prison) and are financially independent. Therefore, young adults can be married, have children, or work and still be included in the TA study. Two percent of individuals are married in the entire sample, and nine percent have children.

Table 1: Descriptive Statistics (Main Independent Variables)

	Entire Sample	Have Credit Card	Do not Have Credit Card
Age	18.50	18.38	18.55
	(0.103)	(0.145)	(0.131)
Female	0.39	0.50	0.35
	(0.031)	(0.059)	(0.036)
Married	0.02	0.04	0.02
	(0.008)	(0.022)	(0.008)
Have Children	0.09	0.06	0.11
	(0.026)	(0.023)	(0.035)
Working	0.49	0.47	0.49
	(0.033)	(0.059)	(0.039)
Student	0.49	0.66	0.43
	(0.033)	(0.056)	(0.039)
Education	11.66	11.87	11.57
	(0.084)	(0.120)	(0.107)
Living with Parents	0.79	0.83	0.78
	(0.025)	(0.037)	(0.032)
From Single-Mother Family	0.28	0.19	0.32
	(0.030)	(0.044)	(0.037)
No. of Obs.	3,040	823	2,217

Note: The descriptive statistics are weighted. Standard errors are presented in parentheses.

Working and/or being a student is important for credit card ownership. On the one hand, earned income leads to a higher probability of being approved for a credit card. On the other hand, credit card companies target students because of their future higher earnings potential (Warwick and Mansfield, 2000). Often, credit companies wave the requirements, do not check the

ability to repay, and offer incentives and gifts to students (Hawkins, 2012). As a result, one would expect that the likelihood of having a credit card is higher for students or young adults who are working. Table 1 shows that 66 percent of the young adults who have a credit card are students, while only 43 percent of those who do not have a credit card are students. This difference is statistically significant at the five percent level. It also shows that 47 percent of young adults with credit cards are working compared with 49 percent of young adults without credit cards, but the difference does not reach statistical significance.

The descriptive statistics also show that 79 percent of the sample live with parents. The ratio is 83 percent when only the young adults with credit cards are considered. Even though a high percentage of young adults in the sample still live with their parents, almost 50 percent of them consider themselves financially independent. When asked about financial responsibility, more than half of young adults with credit cards answered that they are entirely responsible for managing their money.

Table 2: Descriptive Statistics (Dependent Variables)

Have Credit Card	0.28
	(0.029)
Have Carryover Balance	0.05
	(0.012)
Credit Card Debt	56.16
	(19.016)
Have Student Loans	0.20
	(0.025)
Student Loans Balance	1,184.00
	(189.777)
Credit Card Debt/Income Ratio	0.45
	(0.365)
No. of Observations	3,040

Note: The descriptive statistics are weighted. Standard errors are presented in parentheses.

Table 2 presents descriptive statistics for the dependent variables. It shows that 28 percent of the young adults in the sample have at least one credit card in their names, and five percent have a carryover balance. Because many of the young adults included in the sample are students and student loans have been growing at an alarming rate in the last decade, this paper also focuses on student debt. Twenty percent of the young adults have student loans. It is important to notice that for the 2005 and 2007 waves, carryover balances do not refer only to credit cards; they also include other forms of unsecured debt such as student loans, loans from relatives, and medical or legal bills. Therefore, all young adults who have student loans have a carryover balance. However, carryover balances represent only credit card debt for all other waves. Given that only 6% of the entire sample have student loans and are observed in the 2005 or 2007 waves, it is unlikely that student loan balances will impact the results significantly. Therefore, the analysis considers carryover balances to represent only credit card debt. Very important is the level of indebtedness. Descriptive statistics show that the average credit card balance is \$56[4,5] while the average student loan is \$1,184.

Table 3: Conditional descriptive statistics (dependent variables)

Have Carryover Balance	0.18
(cond. on having a credit card)	(0.042)
	[823]
Credit Card Debt	182.26
(cond. on having a credit card)	(64.915)
	[823]
Have Student Loans	0.36
(cond. on being a student)	(0.043)
	[1,597]
Student Loans Balance	1,942.55
(cond. on being a student)	(324.442)
	[1,597]
Student Loans Balance	5,934.88
(cond. on having a student loan)	(660.095)
	[704]
Credit Card Debt/Income Ratio	0.30
(cond. on having a credit card)	(0.248)
	[580]

Note: The descriptive statistics are weighted. Standard errors are presented in parentheses. Number of observations are presented in square brackets.

Additionally, because a large proportion of the sample does not have credit cards or student loans, Table 3 presents the descriptive statistics for the dependent variables conditional upon having a credit card, being a student, or having a student loan. When only young adults who have at least one credit card in their names are considered, almost 30 percent of the sample has a carryover balance, which is $182. Thirty-six percent of students have student loans, and the debt balance is almost $2,000. Considering that the average age for the sample is 19 years, many individuals are still students liable to continue accruing educational debt.

The value of credit card or student debt is informative, but it is also important to consider this value in relationship with income. For the entire sample, credit card debt represents 45 percent of income.[6] This value also includes young adults with no credit card debt. If only individuals with credit cards are considered, the ratio becomes 30 percent. Investigating even further, the ratio becomes 654 percent when the sample is restricted to young adults with carryover balances. This means that young adults do not earn enough money to pay off current credit card debt creating a stressful situation and possible financial problems later in life.

Figure 1: Credit Card and Student Loan Trends

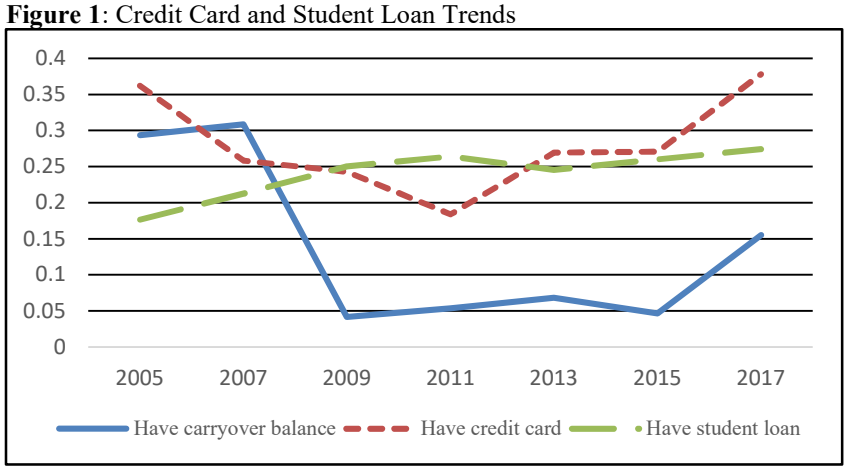

Figure 1 shows the trends of the probabilities of having a credit card, a carryover balance, and a student loan for the analyzed sample. After the Great Recession, the likelihood of having credit cards and carryover balances decreased drastically, but they have started to pick back up after 2015. The probability of having a student loan is the only one that has constantly increased. These changes mimic the national trends provided by the Federal Reserve Bank of New York.

Figures 2, 3, and 4 present the distribution of BPI Total, Internalizing, and Externalizing scores. The BPI Total score is based on 30 questions about children's behaviors, and a higher score implies more behavior problems. Figure 2 shows that almost 70 percent of the sample has a score of ten or less than ten, and only four percent has a score higher than 22. The Externalizing score is based on 17 questions and has a right-skewed distribution. Almost 87 percent of the sample has ten or fewer behavior problems related to aggressiveness. The Internalizing score is based on 14 questions. As seen in Figure 4, almost 28 percent of the sample does not show any internal or withdrawn behavior problems. One question is included in both Internalizing and Externalizing scores.

Figure 2: Behavior Problems Total Score

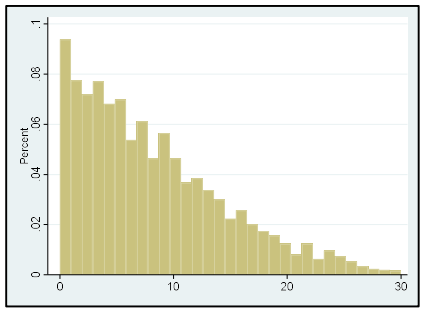

Figure 3: Behavior Problems Externalizing Score

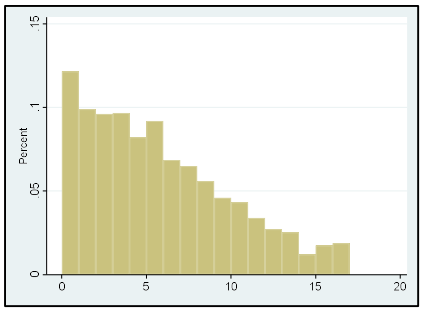

Figure 4: Behavior Problems Internalizing Score

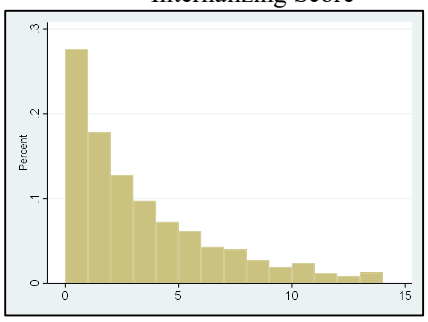

Table 4 presents the weighted average for the behavior problem scores of different subgroups. The descriptive statistics show that young adults who have a credit card have, on average, fewer behavior problems than their counterparts who do not

have a credit card. On average, the total BPI score is two points lower, meaning that caregivers answered "yes" to two fewer questions. The difference mainly comes from the externalizing component that is 1.36 points lower. All these differences are statistically significant. One possible reason for lower behavior problem scores for young individuals with credit cards is that owning a credit card is not necessarily bad. Young adults could experience financial problems only if they misuse credit cards. Another explanation can be the indirect effect of behavior problems. For example, young adults with behavior problems may have lower education levels or employment difficulties (low-paid jobs, unemployment) that can prevent them from obtaining a credit card in the first place. The descriptive statistics also show that young adults without carryover balances have fewer behavior problems, but the difference is not statistically significant. The largest difference in behavior problem scores is between young adults with and without student loans. Individuals who have student loans have, on average, scores lower by three points. Research has linked behavioral problems with academic problems such as school drop-out (see Darney et al., 2013). This means that young adults who experience behavior problems are less likely to go to college and need a student loan.

Table 4: Descriptive Statistics for BPI Scores

	Have Credit Card	Do not Have Credit Card	Difference	Have Carryover Balance	Do not Have Carryover Balance	Difference	Have Student Loans	Do not Have Student Loans	Difference
Behavior Problems Total Score	6.06	8.01	-1.95*	7.61	7.45	0.16	5.32	8.00	-2.68**
	(0.756)	(0.555)	(1.021)	(1.482)	(0.475)	(1.331)	(0.718)	(0.536)	(1.053)
Behavior Problems Externalizing Score	4.04	5.40	-1.36**	5.31	5.00	0.31	3.51	5.39	-1.88**
	(0.470)	(0.354)	(0.648)	(1.036)	(0.302)	(0.863)	(0.417)	(0.344)	(0.667)
Behavior Problems Internalizing Score	2.52	3.22	-0.7	2.95	3.03	-0.08	2.13	3.24	-1.11*
	(0.428)	(0.295)	(0.550)	(0.737)	(0.255)	(0.704)	(0.380)	(0.289)	(0.566)

Note: The descriptive statistics are weighted. Standard errors are presented in parentheses. ** significant at the 5% level. * significant at the 10% level. T-test is used to test the difference of two means.

To better understand the indirect effect of behavior problems determined by the access to credit cards and attending college on having carryover balances and student loans, the analysis investigates the three scores conditional on having a credit card and being a student. Table 5 presents these descriptive statistics and shows that the BPI Total score is two points higher for young adults with carryover balances. The externalizing score drives this difference. This is expected because impulsiveness was previously linked to credit card ownership and inappropriate use of credit cards. Impulsiveness is an external behavioral problem included in the externalizing score. The total and externalizing scores have the same trend when investigating student loans. They are higher for young adults with no student loans even when only students are considered, but the difference is much lower this time. There are two aspects one must notice. First, the BPI Internalizing score is slightly (but statistically significant) higher for students who have student loans. Second, all BPI scores are lower for the student subsample. This concurs with previous research that suggests young adults with behavior problems are less likely to attend college.

Table 5: Conditional descriptive Statistics for BPI Scores

	Have Carryover Balance	Do not Have Carryover Balance	Difference	Have Student Loans	Do not Have Student Loans	Difference
	Conditional on having a credit card			Conditional on being a student		
Total Score	7.49	5.76	1.73**	4.75	4.85	-0.10**
	(1.532)	(0.855)	(0.084)	(0.759)	(0.541)	(0.033)
Externalizing Score	5.21	3.79	1.42**	3.14	3.26	-0.12**
	(1.071)	(0.518)	(0.056)	(0.439)	(0.337)	(0.020)
Internalizing Score	2.95	2.42	0.53**	1.95	1.88	0.07**
	(0.765)	(0.493)	(0.045)	(0.399)	(0.300)	(0.018)

Note: The descriptive statistics are weighted. Standard errors are presented in parentheses. ** significant at the 5% level. * significant at the 10% level. T-test is used to test the difference of two means.

Because the analysis of parents' influence on children's debt includes only individuals who do not live with their parents, Tables 6 and 7 present the descriptive statistics for this sample. Young adults who live with their parents are younger, less likely to be married, have children, work, and more likely to be students. At the same time, they are less likely to have a credit

card in their names, carryover balances, and student loans. The statistics show that their credit card and student loan balances are also lower. This may result from lower living expenses and still accumulating student debt. These descriptive statistics are based on more observations than the previous analysis. Because the BPI scores are not used, the sample is not excluding observations with missing values for the behavior problem indexes. Also, because the study relies on two conditions (living without parents and having a credit card/being a student), all observations are kept to maximize the number in each model. For example, few observations miss the value of credit cards, but they are not excluded from the probability of having a credit card model.

Table 6: Descriptive Statistics (Main Independent Variables)

	Entire Sample	Live with parents	Do not live with parents
Age	20.59	19.38	22.80
	(0.153)	(0.150)	(0.256)
Female	0.46	0.41	0.56
	(0.022)	(0.027)	(0.034)
Married	0.09	0.02	0.22
	(0.013)	(0.009)	(0.029)
Have Children	0.27	0.09	0.59
	(0.032)	(0.021)	(0.077)
Working	0.58	0.55	0.63
	(0.022)	(0.028)	(0.034)
Student	0.39	0.45	0.29
	(0.021)	(0.028)	(0.031)
Education	12.35	12.06	12.88
	(0.082)	(0.096)	(0.142)
From Single-Mother Family	0.30	0.30	0.29
	(0.020)	(0.026)	(0.029)
No. of Obs.	4,058	2,779	1,279

Note: The descriptive statistics are weighted. Standard errors are presented in parentheses.

Table 7: Descriptive Statistics (Dependent Variables)

	Entire Sample	Live with parents	Do not live with parents
Have Credit Card	0.38	0.34	0.44
	(0.021)	(0.027)	(0.034)
	[4,058]	[2,779]	[1,279]
Have Carryover Balance	0.16	0.10	0.26
	(0.016)	(0.017)	(0.030)
	[4,058]	[2,779]	[1,279]
Credit Card Debt	314.58	214.05	499.07
	(67.980)	(88.042)	(104.411)
	[4,026]	[2,755]	[1,271]
Have Student Loans	0.27	0.24	0.34
	(0.019)	(0.023)	(0.032)
	[4,058]	[2,779]	[1,279]
Student Loans Balance	2,147.95	1,317.15	3,652.46
	(249.423)	(176.215)	(607.548)
	[3,998]	[2,737]	[1,261]
Credit Card Debt/Income Ratio	2.84	2.55	3.29
	(1.007)	(1.473)	(1.188)
	[2,745]	[1,822]	[923]

Note: The descriptive statistics are weighted. Standard errors are presented in parentheses. Number of observations are presented in square brackets.

Table 8 presents summary statistics for the dependent variables conditional on having a credit card, being a student, and having a student loan. Young adults who do not live with their parents have a higher likelihood of having carryover balances and higher credit debt. Also, they are more likely to have student loans and higher student loan balances. These trends are similar to previous findings when the entire sample is used.

Table 8: Conditional descriptive statistics (dependent variables)

	Entire Sample	Live with parents	Do not live with parents
Have Carryover Balance	0.35	0.27	0.48
(cond. on having a credit card)	(0.033)	(0.043)	(0.050)
	[1,195]	[763]	[432]
Credit Card Debt	811.43	618.31	1,084.58
(cond. on having a credit card)	(171.024)	(248.701)	(215.455)
	[1,180]	[751]	[429]
Have Student Loans	0.41	0.40	0.46
(cond. on being a student)	(0.034)	(0.040)	(0.063)
	[1,938]	[1,491]	[447]
Student Loans Balance	2,432.47	1,816.75	4,106.08
(cond. on being a student)	(347.901)	(269.461)	(1013.357)
	[1,888]	[1,451]	[437]
Student Loans Balance	8,354.88	6,053.16	11,115.02
(cond. on having a student loan)	(806.035)	(619.742)	(1528.723)
	[994]	[643]	[351]
Credit Card Debt/Income Ratio	5.79	6.43	5.00
(cond. on having a credit card)	(2.284)	(3.737)	(2.197)
	[874]	[533]	[341]

Note: The descriptive statistics are weighted. Standard errors are presented in parentheses. Number of observations are presented in square brackets.

Results

Table 9 shows the coefficient of interest from different specifications for the entire sample. The total BPI score does not have a statistically significant effect on whether the individual owns a credit card or not. Childhood behavior problems are not predictors of owning a credit card during young adulthood. The results are similar for the probability of having carryover balances and the credit card balance. If the BPI Total score increases by one unit, meaning that the individual has one additional behavior problem, the probability of having student loans decreases by 0.4 percentage points, and the student loan balance falls by $35 or three percent of the average balance. The change seems small when one unit change is considered, but one standard deviation increase in the BPI is associated with a decrease of $232 in student loans, or 20 percent of the average student loan balance. These coefficients are negative, which contradicts the hypothesis that behavior problems lead to debt problems. At the same time, this may be the result of an indirect effect of behavior problems. Previous research shows that having behavior problems reduces the likelihood of going to college and, therefore, the need for student loans.

Table 9: Results (Entire Sample)

Independent Var.	Behavior Problems	Behavior Problems	Behavior Problems
Dependent Var.	Total Score	Externalizing Score	Internalizing Score
	Model 1	Model 2	Model 3
Have Credit Card	-0.001	-0.002	0.000
	(0.001)	(0.002)	(0.003)
Have Carryover Balance	-0.001	-0.002	-0.004*
	(0.001)	(0.001)	(0.002)
Credit Card Debt	3.211	5.454	4.069
	(3.142)	(4.053)	(7.714)
Have Student Loan	-0.004**	-0.005**	-0.009**
	(0.001)	(0.002)	(0.003)
Student Loan Balance	-35.253**	-44.979**	-69.328**
	(11.906)	(19.392)	(23.406)
Credit Card Debt/Income Ratio[1]	0.035	0.592	0.037
	(0.028)	(0.048)	(0.029)
No. of Observations	3,040	3,040	3,040

Note: Marginal effects for dichotomous dependent variables are estimated by probit models. Standard errors are presented in parentheses. ** denotes significance at the 0.05 level. * denotes significance at the 0.10 level. [1]This model is based on 2,005 observations.

The results are not very different when the BPI Externalizing score is considered. Because this score measures problems such as impulsiveness, misbehaving, or getting in trouble, one would expect the inappropriate use of credit cards to be more common with high score values, but the results do not support this assumption. Externalizing behavior problems are associated with a reduced likelihood of having student loans and high student loan balances. The BPI Internalizing score yields similar results. A one-unit increase in the BPI Internalizing score is associated with a decrease of 0.4 percentage points in the probability of having a carryover balance, suggesting that young adults with withdrawn or sad behavior are less likely to use their credit cards and not pay the balance in full at the end of the month. Considering that 27 percent of the sample does not exhibit internalizing behavior problems and that the remaining 73 percent of the sample has on average four internalizing behavior problems, the latter group is four percentage points less likely to have student loans than the former. Their student loan balances are, on average, $277 lower than the balances owed by the former group.

The level of indebtedness is also considered. One can determine whether the use of debt is irresponsible or not by analyzing the ratio of debt to total income. The results show that behavior problems do not predict debt problems during young adulthood. Even though Table 9 includes only the coefficient for the independent variable of interest (behavior problems), there are several other noteworthy coefficients. Females are four percentage points more likely to have credit cards, and for every one-year increase in age, the predicted probability of owning a credit card increases by two percentage points. Working, being a student, and being married also increase the probability of owning a credit card by three, five, and 15 percentage points.

Table 10: Conditional results (entire sample)

Independent Var.	Behavior Problems	Behavior Problems	Behavior Problems
Dependent Var.	Total Score	Externalizing Score	Internalizing Score
	Model 1	Model 2	Model 3
Have Carryover Balance	-0.004	-0.006	-0.008
(cond. on having a credit card)	(0.003)	(0.004)	(0.006)
	[823]	[823]	[823]
Credit Card Debt	9.248	8.896	23.321
(cond. on having a credit card)	(9.564)	(11.790)	(22.241)
	[823]	[823]	[823]
Have Student Loan	-0.004*	-0.004	-0.009*
(cond. on being a student)	(0.002)	(0.003)	(0.005)
	[1,597]	[1,597]	[1,597]
Student Loan Balance	-61.323**	-74.548**	-126.386**
(cond. on being a student)	(24.117)	(38.793)	(46.322)
	[1,597]	[1,597]	[1,597]
Student Loan Balance	-79.229*	-107.261	-157.141
(cond. on having a student loan)	(49.408)	(78.023)	(98.667)
	[704]	[704]	[704]
Credit Card Debt/Income Ratio	0.030	0.053	0.045
(cond. on having a credit card)	(0.025)	(0.043)	(0.040)
	[580]	[580]	[580]

Note: Marginal effects for dichotomous dependent variables are estimated by probit models. Standard errors are presented in parentheses. Number of observations are presented in square brackets. ** denotes significance at the 0.05 level. * denotes significance at the 0.10 level.

Some do not have carryover balances because they do not qualify for credit cards, given their behavior problems. In the same way, some young adults do not go to college and accumulate student debt due to their behavior problems. Table 10 presents the conditional results to control for this indirect effect. Having a carryover balance and the value of credit card debt again do not reach statistical significance. Meanwhile, having a student loan and the value of student debt conditional on being a student continue to have negative values similar to the results presented in the initial analysis. Therefore, these results do not support the previous assumption that childhood deviant behavior indirectly affects the probability of having student debt. In conclusion, conditional results show that behavior problems do not translate into financial problems and even reduce the likelihood of having student debt. Future research can investigate whether parents dedicate more time to educating children who display behavior problems when using unsecured debt as a potential explanation.

The young adults included in the sample may or may not live with their parents. When they do not live with their parents, their debt balance is not included in the family's total value of unsecured debt. This allows including whether the family has unsecured debt as an independent variable. Table 11 presents the results for young adults who do not live with their parents. This approach tries to observe the effect of families' financial behavior on their children's behavior. Because these young adults are not considered completely independent, even though they do not live with their parents, they are more likely to mimic their parents' behavior and learn to make financial decisions from them. The coefficients for whether the family has unsecured debt are not only statistically significant, but they also have economic significance. These results show that families' attitudes toward

unsecured debt proxied by the dummy variable, whether the family has unsecured debt, play an important role in young adults' borrowing behavior. When families have unsecured debt, the probability that young adults have at least a credit card in their name increases by five percentage points. The likelihood of having carryover balances increases by 12 percentage points. The value of credit card debt also increases by $161. This value represents 32 percent of the average value owed by young adults in the selected subsample.

Young adults with parents who have unsecured debt are also more likely to have student loans. The probability of having a student loan increases by 22 percentage points, and the value of student loans rises by $1,921. Considering that the average balance of student loans for this subsample is $3,652, this increase represents 53 percent of the subsample's average.

Table 11: Results (Live-Without-Parents Sample)

Independent Var. / Dependent Var.	Parents have unsecured debt	Parents' value of unsecured debt[i]
Have Credit Card	0.05*	0.011*
	(0.029)	(0.006)
	[1,279]	[1,254]
Have Carryover Balance	0.12**	0.013**
	(0.023)	(0.005)
	[1,279]	[1,254]
Credit Card Debt	160.90**	13.16
	(64.190)	(12.991)
	[1,271]	[1,246]
Have Student Loan	0.22**	0.03**
	(0.027)	(0.007)
	[1,279]	[1,254]
Student Loan Balance	1921.03**	643.193**
	(350.662)	(167.343)
	[1,261]	[1,236]
Credit Card Debt/Income Ratio	2.57**	0.11
	(1.244)	(0.265)
	[923]	[906]

Note: Marginal effects for dichotomous dependent variables are estimated by probit models.
Standard errors are presented in parentheses. Number of observations are presented in brackets.
** denotes significance at the 0.05 level. * denotes significance at the 0.10 level.
[i]Results are presented for changes of $10,000 in the independent variable.

Noteworthy is the coefficient for the credit card to income ratio. This ratio is an important indicator of the overall financial health, and it is one of the main criteria used in assessing the applications for credit (e.g., mortgages, auto loans). When parents have unsecured debt, the ratio increases by 2.57 points.

For additional evidence, the amount of unsecured debt is used instead of the binary variable. The only coefficients that change their statistical significance are the value of credit card debt and the credit card debt to income ratio. All others remain statistically and economically significant. These results indicate that parents' use of unsecured debt has a significant influence on children's behavior. This may be preliminary evidence that young adults learn to use unsecured debt from their parents, and the environment is very important in teaching personal finance.

Table 12 displays the conditional results. In addition to having a credit card and being a student, the analysis includes parents' total income. This approach tries to capture the reason for the high likelihood of having credit cards and high balances. If parents have high-income levels, one can assume that high indebtedness is a preference and not a necessity. For low-income families, the opposite is true. Both situations are not without consequences. Even though the high level of unsecured debt results from a need, it suggests that the family does not have access to other cheaper resources, and in the long term, it can endanger the family's financial wellbeing. This analysis uses the income limits for each fifth provided by the U.S. Census Bureau. For a family to be classified as high income, it must belong to the upper two quintiles, and the annual income must be higher than $62,434. The estimates show that the probability of having a carryover balance increases by eleven percentage points when only high-income parents are considered. This estimate is statistically and economically significant. However, the estimate loses statistical significance when the balance value is considered. It is worth mentioning that these models use a lower number of observations because of the double conditions imposed (leaving without parents and parents' income level). All other conditional results are consistent with the previously presented estimates.

Table 12: Conditional results (Live-Without-Parents Sample)

Independent Var.	Parents have	Parents' value of
Dependent Var.	unsecured debt	unsecured debt[i]
Have Carryover Balance	0.19**	0.03**
(cond. on having a credit card)	(0.056)	(0.010)
	[432]	[421]
Have Carryover Balance	0.11**	0.01**
(cond. on parents' income)	(0.042)	(0.005)
	[399]	[388]
Credit Card Debt	345.82**	14.03
(cond. on having a credit card)	(125.884)	(22.884)
	[429]	[418]
Credit Card Debt	-115.416	-14.29
(cond. on parents' income)	(230.931)	(21.331)
	[396]	[385]
Have Student Loan	0.24**	0.04**
(cond. on being a student)	(0.052)	(0.012)
	[447]	[433]
Student Loan Balance	2,418.96**	556.16**
(cond. on being a student)	(750.076)	(203.770)
	[437]	[423]
Unsecured Debt/Income Ratio	2.38	0.46
(cond. on having a credit card)	(1.522)	(0.623)
	[341]	[331]

Note: Marginal effects for dichotomous dependent variables are estimated by probit models. Standard errors are presented in parentheses. Number of observations are presented in square brackets. ** denotes significance at the 0.05 level. * denotes significance at the 0.10 level.
[i]Results are presented for changes of $10,000 in the independent variable.

Table 13 presents the results for young adults who are financially responsible. The TA study defines the financial responsibility variable based on the responses to four questions: how much responsibility for earning a living, paying rent, paying bills, and managing money.[7] For this analysis, an individual is considered financially responsible if he answered that he is responsible most of the time or always to all of these questions. The TA study includes young adults who are financially responsible, as well as young adults who are not.

Table 13: Results (Financial-Responsible Sample)

Independent Var.	Behavior Problems Total Score	Behavior Problems Externalizing Score	Behavior Problems Internalizing Score	Parents Have Unsecured Debt[i]
Dependent Var.	Model 1	Model 2	Model 3	Model 4
Have Credit Card	-0.001	-0.004	0.003	0.03
	(0.002)	(0.003)	(0.004)	(0.036)
	[1,480]	[1,480]	[1,480]	[771]
Have Carryover Balance	-0.001	-0.001	-0.003	0.13**
	(0.002)	(0.002)	(0.003)	(0.029)
	[1,480]	[1,480]	[1,480]	[771]
Credit Card Debt	1.956	4.658	-0.214	155.99*
	(3.637)	(6.073)	(6.838)	(93.948)
	[1,480]	[1,480]	[1,480]	[767]
Have Student Loan	-0.007**	-0.009**	-0.015**	0.22**
	(0.002)	(0.003)	(0.004)	(0.032)
	[1,480]	[1,480]	[1,480]	[771]
Student Loan Balance	-60.864**	-81.694**	-117.173**	1742.26**
	(16.343)	(26.967)	(31.812)	(402.147)
	[1,480]	[1,480]	[1,480]	[761]
Credit Card Debt/Income	0.050	0.082	0.052	1.41
Ratio	(0.048)	(0.079)	(0.049)	(0.988)
	[1,016]	[1,016]	[1,016]	[554]

Note: Marginal effects for dichotomous dependent variables are estimated by probit models. Standard errors are presented in parentheses. Number of observations are presented in square brackets. ** denotes significance at the 0.05 level. * denotes significance at the 0.10 level.
[i]Live-without-parents sample is used for this analysis.

Analyzing the subgroup of young adults who assume financial responsibility most of the time can provide additional information. If a young individual relies on his family to pay his bills and rent and to manage his money, the decision to use debt may not be entirely his. The estimates show that childhood behavior problems do not predict an increase in the likelihood of using credit cards, having a carryover balance, and the credit card balance. The probability of having student loans is one percentage point lower if there is one additional behavior problem. The student loan balance decreases by $410 (25 percent of the average balance[8]) when the behavior problems score increases by one standard deviation. When the BPI Internalizing and Externalizing scores are used, the results remain similar to previous specifications. If the behavior score is replaced by the dummy variable indicating whether parents have unsecured debt, results show a significant impact. The probability of having a carryover balance increases by 13 percentage points, and the credit card balance increases by $156. In line with previous samples, the likelihood of having student debt and the balance of student debt goes up by 22 percentage points and $1,742.

Table 14 presents the conditional results for the financially responsible sample. The estimates consistently show a reduction in the probability of having a student loan and the student loan balance even when conditional (on being a student) measurements are used. The change in student debt declines by $114 for each additional behavior problem. This is almost double compared with the unconditional estimate.[9]

Table 14: Conditional results (Financial-Responsible Sample)

Independent Var.	Behavior Problems Total Score	Behavior Problems Externalizing Score	Behavior Problems Internalizing Score
Dependent Var.	Model 1	Model 2	Model 3
Have Carryover Balance	-0.004	-0.004	-0.010
(cond. on having a credit card)	(0.004)	(0.006)	(0.008)
	[434]	[434]	[434]
Credit Card Debt	-2.657	-2.304	-5.959
(cond. on having a credit card)	(8.946)	(15.423)	(15.535)
	[434]	[434]	[434]
Have Student Loan	-0.007*	-0.007	-0.015*
(cond. on being a student)	(0.004)	(0.006)	(0.008)
	[594]	[594]	[594]
Student Loan Balance	-114.146**	-135.938*	-245.61**
(cond. on being a student)	(42.037)	(70.372)	(76.313)
	[594]	[594]	[594]
Student Loan Balance	-122.270*	-151.097	-264.654*
(cond. on having a student loan)	(68.679)	(111.252)	(134.586)
	[334]	[334]	[334]
Credit Card Debt/Income Ratio	0.018	0.035	0.022
(cond. on having a credit card)	(0.019)	(0.039)	(0.023)
	[313]	[313]	[313]

Note: Marginal effects for dichotomous dependent variables are estimated by probit models. Standard errors are presented in parentheses. Number of observations are presented in square brackets. ** denotes significance at the 0.05 level. * denotes significance at the 0.10 level.

Conclusion

High levels of debt owned by households in the United States have led to a careful examination of borrowing behavior. Understanding what factors influence financial decisions and debt use can help teach personal financial planning and avoid irresponsible borrowing. Research has mostly focused on economic determinants, but recent papers emphasize the importance of personality characteristics and behavior as potential factors that affect unsecured debt. This paper focuses on two different factors. First, it studies the effect of behavior problems on credit card and student debt for young adults. Second, the paper investigates whether parents' attitudes toward debt are transmitted to their children. Together, these two factors represent the nature vs. nurture debate, and they extend it into a new area: personal finance. If individuals exhibit behavior problems, and behavior problems are linked to credit card use and high unsecured debt balances, parents can properly advise their children about the risks of using debt before irresponsible decisions are made. Parents can also positively influence their children's financial decisions by making proper choices themselves. However, that is possible only if children simulate their parents' behavior.

The main independent variables are the Behavioral Problems Index and its two subscales provided by the PSID to measure behavior problems and whether parents have unsecured debt to measure parental influence. The paper analyzes the use of unsecured debt (credit cards and student loans) with several dependent variables, the first being whether young adults have a credit card in their name. However, because owning a credit card is a problem only if there is a substantial carryover balance

or if the value of debt is too high, the paper also considers whether young adults have carryover balances and the amount of credit card debt. In addition, the paper investigates whether the individual has student loans and the value of student loans. These two last outcomes are of potential interest because recently, the value of student loans has reached alarming levels and many experts are afraid that student loans can trigger the next financial crisis.

The results show that behavior problems do not predict higher probabilities of owning a credit card or higher amounts of credit card debt. Young adults with internalizing behavior problems are less likely to have carryover balances. Behavior problems may have an indirect effect on credit card debt use. For example, young adults who manifest behavior problems before they turn 18 may have lower education levels and lower-paid jobs. This can affect their ability to qualify for a credit card. To account for this possibility, conditional results are also estimated. Even when the effect of behavior problems conditional on having a credit card is considered, the results are not different.

In all three specifications (using the BPI Total, Internalizing, or Externalizing scores), higher scores are linked to lower probabilities of having student loans and lower student loan balances. These results can be influenced by the indirect effect of behavior problems on student loans. First, research has linked behavior problems to low educational achievement. Second, if the young adult does not go to college, there is no need for student loans. Therefore, the analysis further investigates the effects conditional on being a student or having student loans. Imposing these restrictions does not change the conclusions.

This paper also considers the effect of parents' borrowing behavior on children's use of credit cards and student loans. Young adults included in this analysis do not live with their parents, but they are not entirely financially independent.[10] For this reason, they are more likely to copy their parents' financial behavior and learn how to make financial decisions from them. The results show that young adults with parents who have unsecured debt are more likely to have credit cards, carryover balances, and higher credit card debt values. If a higher probability of having credit cards does not always signal debt problems, a higher likelihood of having carryover balances is the first indicator. The magnitude of the coefficients is also noteworthy. The probability of having carryover balances increases by 12 percentage points and the value of credit card debt by $161 (32 percent of the average value of the subsample). This can be considered evidence that parents' behavior can influence young adults' borrowing decisions. To better understand the cause of these effects, the analysis also looks at the conditional results. Using the parents' income level, the paper investigates whether the use of unsecured debt is caused by preference or necessity. High-level income families are more likely to use credit card debt as a choice and not as a necessity. Either way, the consequences can be negative and harm the family's financial wellbeing. The results show that the probability of having a carryover balance conditional on parents' income level is eleven percentage points. That continues to be statistically and economically significant.

The results show an even stronger effect when student loans are considered. The likelihood of having student loans increases by 22 percentage points, and the balance goes up by $1,921. When the student debt behavior of young adults who are students is investigated, the results maintain their sign and significance. However, the magnitude of the coefficients increases.

The increase in the probability of using credit cards for young adults whose parents have unsecured debt can be determined by different factors. First, young adults may observe their parents' behaviors and imitate them. Second, parents who have a positive attitude toward credit cards are more likely to support their children getting a credit card and are willing to cosign if necessary. Third, these young adults may qualify for a credit card more easily because of income levels or credit history. Regardless of these reasons, the effect of parents' borrowing behaviors on young adults' credit card and student debt use is not negligible and must be considered when providing financial education to young adults.

Notes

1. For example, for a child who is interviewed in both 2002 and 2007 CDS waves, only the information from 2007 will be used. Similarly, for a young adult who participates in both 2007 and 2009 TA interviews, only 2007 information will be kept.
2. In this analysis, the BPI is the only variable provided by the CDS.
3. If state fixed effects are used, final results do not change. However, the estimation relies on fewer observations because some observations predict failure perfectly and are dropped.
4. All dollar variables are expressed in 2011 dollars.
5. Debt does not include the debt of other family members.
6. Income does not include the income of other family members.
7. For example, one of the questions is "How much responsibility do you currently take for managing your money?" and the answers range from "Somebody else does this for me all the time" to "I am completely responsible for this all the time."
8. The average value of student loan debt for financial responsible sample is used for this analysis.
9. Conditional results for the parents' influence on young adults are not estimated because of fewer observations. Imposing the third condition next to being financially responsible and living without parents reduces the samples to around 200-250 observations.
10. This subsample is used only for additional models that study the impact of parental behavior.

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Appendix

Appendix 1: Survey Items in the Behavior Problems Index*

	External	Internal	Total
He/She has sudden changes in mood or feeling	X		X
He/She cheats or tells lies	X		X
He/She argues too much	X		X
He/She has difficulty concentrating, cannot pay attention for long	X		X
He/She bullies or is cruel or mean to others	X		X
He/She is disobedient	X		X
He/She does not seem to feel sorry after he/she misbehaves	X		X
He/She is impulsive, or acts without thinking	X		X
He/She is restless or overly active, cannot sit still	X		X
He/She is stubborn, sullen, or irritable	X		X
He/She has a very strong temper and loses it easily	X		X
He/She breaks things on purpose or deliberately destroys his/her own or another's things	X		X
He/She demands a lot of attention	X		X
He/She hangs around with kids who get into trouble	X		X
He/She is disobedient at school	X		X
He/She has trouble getting along with teachers	X		X
He/She feels or complains that no one loves him/her		X	X
He/She is rather high strung, tense and nervous		X	X
He/She is too fearful or anxious		X	X
He/She is easily confused, seems to be in a fog		X	X
He/She feels worthless or inferior		X	X
He/She is not liked by other people his/her age		X	X
He/She has a lot of difficulty getting his/her mind off certain thought		X	X
He/She is unhappy, sad or depressed		X	X
He/She is withdrawn, does not get involved with others		X	X
He/She cries too much		X	X
He/She is too dependent on others		X	X
He/She feels others are out to get him/her		X	X
He/She worries too much		X	X
He/She has trouble getting along with other people his/her age	X	X	X

The Price Effects of Regulation in the Funeral Industry

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Abstract

Regulation of an industry is often associated with costs to consumer; the funeral industry is no different. This paper estimates the effect of funeral industry regulation on the costs of funeral services using a data set collected from online advertised prices. This provides an accurate measure of the direct costs to the consumers of funeral services. The results are consistent with previous literature. Increased regulation is associated with higher funeral service prices, except in the case of casket regulation. This supports the theory of a one monopoly rent argument in which a monopoly firm, in this case a funeral home, can place rents on any of their products in any proportion, funeral services or funeral goods. There is also evidence of the potential for demand inducement. As well, the traditional occupational regulation wage premium is present.

JEL Classification: K23, L51
Keywords: Funeral, Regulation, Occupational Licensing, Death Care

Introduction

The end of a life can be very taxing on those surviving the deceased. This can be true both emotionally and financially. Fan and Zick (2004) estimate that the median income share spent on funeral/burial expenditures is approximately 25 percent. A notable aspect of the funeral industry is that the regulation required to own and operate a funeral home or mortuary varies widely from state to state. Regulation can be seen as a barrier to entry which restricts competition or an additional input in providing goods or services, and both of these views would result in higher prices of funeral goods and services. Because regulation of an industry can further exasperate the financial burden of a loss by restricting competition, increasing costs, or opening up the potential for rent seeking or demand inducement, it is important to understand how regulation affects the prices consumers pay. This paper explores that question by using a data set of funeral industry regulations that both restrict and promote competition as well as increase the costs of doing business for firms.

Regulation is typically promoted under the assumption of consumer protection, but it is often misused by industry to increase wages and construct barriers to entry. The argument for consumer protection is the main support for regulation in the funeral industry and forty-nine states regulating the funeral industry via occupational licensing laws as well as other restrictions (Ellig, 2015). Even when regulation is blatantly protectionist, it is upheld by some state governments (Harfoush, 2011; Smith and Trudeau, 2019).

This paper studies the effects of regulation on the costs of funeral services in the United States. Using data collected online via web scraping techniques, it analyzes how different regulations affect the individual costs of a funeral service. Then by comparing the results of this empirical work on funeral services to previous works regarding funeral revenues, it draws conclusions on the effects of regulation on funeral goods. This paper finds that the major regulations that affect funeral service prices are cemetery goods prohibitions, casket selling restrictions, and the availability of direct disposition licenses. In the case of a traditional funeral, cemetery goods prohibitions appear to lower the cost of a funeral service by just over $380. However, the effect on the price of cemetery goods cannot be observed, and since these goods are often consumed in conjunction it is possible that the price of cemetery goods increases to cover the loss to firms. These regulations affect not just the cost of traditional funerals; they also effect the costs of direct cremations and direct burials where applicable.

It is important to understand the effects regulation has on the prices consumers face because of how regulation is promoted as a way to protect consumers. If more regulation results in higher prices while service quality remains the same, then regulation is inherently doing what it is meant to protect against.

This paper will proceed as follows: Section II provides a review of the literature, Section III discusses the methodology and data used, Section IV discusses the results of the empirical testing, and Section V concludes.

Occupational Regulation and the Funeral Industry

Occupational regulation has become more of the norm than the exception throughout the 20th century. Estimates show that over 20% of occupations and 29% of employees are licensed (Kleiner, 2006; Kleiner and Krueger, 2013). Regulation, specifically licensing, is associated with a wage premium. Thornton and Timmons (2013) show that the entry restriction of licensing of massage therapists is associated with a wage premium as high as 16.2%. Pizzola and Tabarrok (2017) show that the licensing wage premium effect is causal, specifically using the funeral industry in the United States as evidence.

Many economists have studied the effects of different regulation on the funeral industry. The main theories that have come from these studies are that regulation affects final price through either demand inducement (Harrington and Krynski, 2002) or through different barriers to entry into the market (Agarwal and Ellig, 2006; Harrington, 2007; Sutter, 2005, 2006; Ellig, 2015).

Regulation is often promulgated under the assumptions of protecting ignorant or otherwise endangered consumers. Furthermore, regulation is often passed and upheld not based on empirical evidence, but based solely on small samples of anecdotal evidence that lacks substantial proof (McChesney, 1990; Harrington, 2007). McChesney (1990) investigates the assumptions underlying the FTC Funeral Rule, a 1984 regulation dictating the provision of adequate information to consumers and finds that not only are the assumptions faulty but the institution of the Funeral Rule had zero or negative effects on consumers. Daniel (1988) empirically tests to find if the Funeral Rule was associated with reduced funeral expenditures and finds that the implementation of the Funeral Rule was not associated with a general reduction in funeral expenditures. In addition, the Funeral Rule was passed such that there were standardized practices required by funeral homes and mortuaries, such as providing a general price list instead of bundling funeral goods together. Surveys received by the FTC showed that not only were funeral homes already doing this, the percent of funeral homes that were not was representative of the percent of consumers that would prefer having bundles pre-packaged (McChesney, 1990).

Ellig (2015) highlights all the regulations that affect the funeral industry which include: casket regulations that restrict the sale of caskets to only funeral directors, cemetery goods prohibitions that prevent cemeteries from selling any/all funeral goods, requirements for funeral directors to also be embalmers, requirements for funeral homes to have embalming rooms, requirements for crematories to be in cemeteries, mortuary-cemetery combination prohibitions, and direct disposition licenses which increase competition by allowing licensees to transport bodies, perform cremations, and return remains without having to acquire a funeral director license. Ellig (2015, p.120) finds that the largest regulations impacting funeral expenditures, according to evidence from the 2002 and 2007 Economic Census, are direct disposition licenses and funeral goods prohibitions, and according to the author, "Granting direct disposition licenses and allowing cemeteries to sell funeral merchandise could each reduce death care costs by about $1200."

Of the regulations that affect the funeral industry perhaps the one that has been the most highly investigated is that of laws requiring anyone who sells caskets to be licensed as a funeral director. Sutter (2005) argues specifically against these laws in Oklahoma and finds that there are considerable markups on caskets sold in funeral homes versus those available from online retailers. Sutter (2006) further investigates this topic across all states to find that casket sales restrictions increase the number of funeral establishments in states that require more training. Despite being shown to have zero or negative effects on consumers these laws are upheld under the rational basis test. Smith and Trudeau (2019) argue against this in the case of Powers v. Harris, a district court case which upheld Oklahoma's casket sale laws.

A theoretical fix to the problem of higher prices for consumers would be to remove the regulations in question. In the case of casket selling laws, Chevalier and Scott Morton (2008) find that because caskets and funerals are consumed one to one there is a one monopoly rent argument regarding the provision of funeral services and caskets. They test revenues of funeral homes in different states and find that while the prices of caskets decrease when regulation is removed, the price of funeral services increases an equal amount (Chevalier and Scott Morton, 2008). Ellig (2015) finds that the casket sales restriction does not appear to affect total expenditure on funerals as well, further supporting the one monopoly rent argument.

Regulation often, if not always, causes higher prices for consumers. Harrington and Krynski (2002, p. 223) postulate that increased regulation enables more demand inducement on the part of funeral directors and also find "very little demand inducement occurs in unregulated states," implying that demand inducement may be the cause of increased prices paid by consumers. Regulation may also result in higher prices because higher regulation makes the entrance into the market more difficult thus restricting competition (Harrington and Krynski, 2002; Harrington, 2007).

Another regulation prevalent in funeral industry is that of regulation preventing cemetery and mortuary combinations also known as "combos." Harrington and Treber (2012) investigate "anti-combo" laws and find that savings could be anywhere from $492-$880 if a funeral was handled by a combo as opposed to a stand-alone funeral home.

Others have tried to provide a more consumer-friendly approach to funeral regulation. Slocum and Carlson (2011) provide a very thorough overview of the grieving process, the death care industry, and include sections for specific regulation pertaining to each state in their book Final Rights: Reclaiming the American Way of Death.

Methodology and Data

This study uses the regulation coding presented in Ellig (2015) along with the funeral director licensing database from the Knee Center for the Study of Occupational Regulation (2021) to explore how different regulations affect costs of the different aspects of a funeral. Specifically, it tests regulations that include: preventing casket sales by non-funeral directors, the prohibition of cemetery goods sales by non-funeral directors, requiring funeral directors to be embalmers, requiring embalming rooms to be in every funeral home, prohibiting mortuary-cemetery combinations, requiring crematories to be in cemeteries, the availability of direct disposition licenses, the number of exams required to receive a license, minimum licensing fees,

apprenticeship length, and whether state's superficially require an associate's or bachelor's degree. The effect of regulation is tested on the price of a traditional funeral service, the price of direct burial, and the price of direct cremation. In general, states often use a mixed bag of these regulations and two states often do not regulate in exactly the same way. There is a bit of spatial correlation in regulation that seems consistent across the occupational licensing literature.

The general price list data used in this study is taken from Parting.com, a privately owned website that obtains general price lists from funeral homes across the United States in order to help grieving families make funeral home comparisons (noa, 2016). It includes price lists, addresses, phone numbers, websites should the funeral home have one advertised, and was obtained in November 2016. The data was then geocoded to acquire the county within which each funeral home is located. The final data set includes 9,169 observations across all 50 states. Demographic data on county religious affiliation was retrieved from the Association of Religion Data Archives and demographic data on median income, race, and percent 65 and over was retrieved from the American Community Survey (Grammich et al., 2018; U.S. Census Bureau, 2016).

Whether the price lists should be adjusted according to cost-of-living standard as well as controlled for demand factors such as median income at the county level is of interest. To account for potential changes in cost-of-living prices for traditional funerals, direct burial, and direct cremation are adjusted according to the BEA's Regional Price Parities by state for 2016. Regressions with and without cost-of-living adjustments are provided.

It is of note to mention how this data is different from that used in previous studies. Most former studies use data from the Economic Census divided by the number of deaths to get an idea of average cost per death (Harrington and Krynski, 2002; Harrington, 2007; Sutter, 2006; Chevalier and Scott Morton, 2008; Harrington and Treber, 2012; Ellig, 2015). This study uses surveyed general price lists, so it is unnecessary to control for the number of deaths per year. It also only contains price data for different funeral services. No funeral goods are listed among the price lists.

The data was then coded according to the regulations presented in Ellig (2015), with dummy variable coding for each state's specific regulations as well as a set of commonly used demographic variables at the county level. The descriptive statistics can be found in Table 1.

Table 1: Summary Statistics

Variables	N	Mean	SD	Min	Max
Traditional Funeral	9,169	4,772	1,291	1,325	17,775
Direct Burial	2,085	2,540	1,013	175	9,300
Direct Cremation	9,124	2,081	813.0	295	9,950
Casket Sales Restriction	9,169	0.0743	0.262	0	1
Cemetery Goods Restriction	9,169	0.107	0.309	0	1
Embalmer	9,169	0.510	0.500	0	1
Embalming Room	9,169	0.731	0.444	0	1
Mortuary Cemetery Prohibited	9,169	0.225	0.418	0	1
Crematories Must be in Cemeteries	9,169	0.0462	0.210	0	1
Direct Disposition Licenses Available	9,169	0.0531	0.224	0	1
Licensing Fees	9,169	214.3	143.8	0	571
Number of Exams	9,169	1.736	0.676	0	3
Months of Training	9,169	24.37	17.15	0	84
Population Density	9,169	1,284	4,953	0.900	69,468
Percent 65+	9,169	15.55	3.721	7	53.10
Percent White	9,169	76.22	16.31	15.80	99.70
Percent African American	9,169	13.53	14.42	0	83
Percent Asian	9,169	3.379	4.606	0	42.90
Percent Hispanic	9,169	11.83	13.53	0	99
Household Median Income	9,169	52,984	14,267	20,800	125,672
Evangelical Rate	9,169	192.4	145.0	0	1,036
Mainline Protestant Rate	9,169	90.36	71.25	0	771.3
Catholic Rate	9,169	171.2	140.6	0	853.4
Jewish Rate	9,169	2.944	4.572	0	132.9

Of the 9,169 observations only 2,085 offer direct burial and only 9,124 offer direct cremation as a service. Casket sales restrictions affect just over 7% of the observations, cemetery goods restrictions just over 10%, embalmer requirements 51%, and embalming room requirements 73.1%. Approximately 22.5% of the observations are in states that prohibit mortuary and cemetery combos and approximately 4.6% of the observations are in states that require crematories to be in cemeteries. Direct disposition licenses only affect competition for just over 5% of the funeral homes in the data set.

Licensing requirements vary significantly across all 50 states. The highest minimum sum was $571. Number of exams range from 0 to 3. Months of training takes both apprenticeship time and degree requirements into account. Aside from states that do not license, the minimum time to apprentice was Maryland at 1000 hours, and the maximum were Kentucky and Minnesota requiring a 3-year apprenticeship. 14 states require an associate degree for licensure while 2, Minnesota and Ohio, require a bachelor's degree. Thus, Minnesota requires the most training to become licensed at 84 months. Only one state, Colorado, explicitly does not license funeral directors. Of note, Hawaii technically does not license funeral directors but does license embalmers and requires funeral homes to keep a licensed embalmer on staff as well as keep an embalming room. For this purpose, the licensing requirements are 0 but they are coded such that they embalmer and embalming room are both indicated.

To address potential issues regarding multicollinearity Appendix A contains a correlation matrix for the covariates included as explanatory variables. The largest correlation occurs between the percent of population that is white and the percent of population that is black, -0.837. The second largest correlation is between the mortuary and cemetery combos prohibition and the cemetery goods restriction, 0.641. Otherwise, there is low correlation, <0.6 between any other two variables.

It may also be of interest to simply know which states' environments lead to the highest funeral costs. Appendix B shows the results of regressing cost-of-living adjusted traditional funeral prices on a state fixed effect. Colorado is used as the base comparison as Colorado does not license funeral directors. 95% confidence intervals from robust standard errors are included.

Effect of State Regulation on Funeral Costs

Table 2 shows the regression results for the effects of regulation on funeral costs. Three different dependent variables are tested: (1) Traditional Funeral Price, (2) Direct Burial, and (3) Direct Cremation. These three dependent variables encompass the basic services of a funeral home. Heteroskedastic robust standard errors are in paratheses.

These regressions support monopoly rent argument presented in Chevalier and Scott Morton (2008). The one monopoly rent argument states that a firm with monopoly power can place rents on any or all of their products and in any proportion. The negative coefficient on Casket Sales Restriction and Cemetery Goods Restriction implies that in states where these restrictions apply the rents can be and are placed on those goods. For revenues of funeral homes in restricted states to make the same revenue of a traditional funeral in an unregulated state the average price of a casket will have an average markup of approximately $261. Cemetery goods can include anything from monuments to flowers and for a funeral home to make similar revenue the markup on these goods would be approximately $381. When accounting for cost-of-living adjustments, the cemetery goods restriction is insignificant. This might be explained by the cemetery goods restriction only being in New York, New Jersey, and Massachusetts which all had high costs of living in 2016. Specifically, they were the 3rd, 4th, and 6th most expensive states according to the BEA.

The positive coefficient of Direct Disposition Licenses Available on the price of a Traditional funeral may also be explained by the one monopoly rent as well. If individuals can obtain a license to cremate and transport bodies without having to be licensed funeral directors, then the funeral directors may raise their prices in other places such as the price of a traditional funeral to make up for lost revenue. We can see the competition effect of Direct Disposition licensing on the Direct Cremation variable as well. Allowing for non-funeral directors to be able to perform what is essentially a direct cremation reduced the price of direct cremations by $100.

None of the price lists contained prices for caskets or other cemetery/burial goods so it is still not evident from this study alone that the costs of these goods would be higher, but previous literature using receipts/revenue show that this is the case (Chevalier and Scott Morton, 2008; Ellig, 2015). Therefore, because these results only show the effect on the various aspects of funeral services, they can be compared to the results found in Ellig (2015) to imply the effect of regulation on funeral goods. The regulations on funeral goods also open the door for demand inducement. If an individual is not shopping around for funeral goods, then the only place they would see the prices are from funeral directors and potentially at cemeteries. By restricting the sales to only funeral directors the regulation removes the only other direct competition.

Preventing "combos" as stated by Harrington and Treber (2012) does significantly increase the price of a traditional funeral at the 1% level, however the coefficient is less than that estimated in previous literature. While Harrington and Treber (2012) estimates a minimum savings of around $480 by allowing for mortuary and cemetery combos, this study estimates the savings to be approximately $183. When accounting for cost-of-living adjustments, the additional cost is insignificant. It is not explicitly stated whether Harrington and Treber (2012) account for cost-of-living adjustments therefore that could explain the difference.

Requiring crematories to be in cemeteries also increases the cost of a funeral. This could be because of the increase in cost of entry through needing to establish a cemetery with a crematory or the number of crematories being limited by the number of established cemeteries.

Requiring funeral directors to be embalmers is associated with significantly higher costs across the board. This follows economic logic because forcing funeral directors to be trained as embalmers imposes a higher up-front cost to becoming a funeral director and acts as a barrier to entry for future competition. This cost is easily transferred to the consumer.

Table 2: Regression Results for Traditional Funeral, Direct Burial, and Direct Cremation Prices

Variables	Traditional Funeral	Traditional Funeral	Direct Burial	Direct Burial	Direct Cremation	Direct Cremation
Constant	2,432*	1,975*	118.9	-55.38	236.0	-17.65
	(293.6)	(293.6)	(464.2)	(467.6)	(179.2)	(174.8)
Casket Sales Restriction	-260.9*	-159.2*	-222.8***	-157.6	20.58	74.59**
	(53.70)	(52.75)	(114.5)	(112.1)	(35.32)	(34.67)
Cemetery Goods Restriction	-381.7*	-15.49	-237.3**	-44.96	-310.0*	-165.2*
	(61.06)	(63.72)	(99.67)	(104.1)	(39.26)	(41.15)
Embalmer	298.8*	339.6*	279.5*	280.2*	198.1*	218.7*
	(34.71)	(34.16)	(62.61)	(61.06)	(22.53)	(21.96)
Embalming Room	252.8*	240.0*	206.9*	169.4*	135.9*	139.1*
	(38.57)	(38.09)	(61.30)	(59.54)	(23.61)	(22.55)
Crematories Must be in Cemeteries	238.7*	281.7*	354.6*	152.2**	82.98	186.2*
	(75.66)	(44.99)	(119.7)	(74.13)	(50.94)	(31.25)
Mortuary and Cemetery Combos Prohibited	183.1*	80.22	68.68	260.2**	131.3*	10.59
	(45.62)	(77.72)	(73.45)	(120.8)	(31.17)	(51.55)
Direct Disposition Licenses Available	333.3*	371.5*	73.80	35.03	-100.3**	-76.09***
	(69.43)	(70.41)	(93.03)	(93.30)	(45.11)	(45.09)
Licensing Fees (in dollars)	0.0683	0.328*	0.624*	0.738*	0.481*	0.592*
	(0.113)	(0.113)	(0.188)	(0.189)	(0.0735)	(0.0725)
Number of Exams	-28.39	-45.49**	-8.941	-14.89	10.43	3.336
	(21.05)	(20.53)	(35.77)	(35.40)	(13.27)	(12.81)
Months of Training	-0.0906	1.429***	-2.215	-1.102	0.842	1.590*
	(0.762)	(0.757)	(1.486)	(1.455)	(0.537)	(0.524)
County Level Demographics[1]	YES	YES	YES	YES	YES	YES
Cost of Living Adjusted	NO	YES	NO	YES	NO	YES
Observations	9,169	9,169	2,085	2,085	9,124	9,124
R-squared	0.131	0.209	0.166	0.189	0.141	0.160

*significant at the 1% level, **significant at the 5% level, ***significant at the 10% level

[1] County Level Demographics include: Population Density, Percent of Population 65+, Percent White, Percent African American, Percent Asian, Percent Hispanic, Household Median Income, Evangelical Rate, Mainline Protestant Rate, Catholic Rate, and Jewish Rate

If the assumption that funeral directors shift rents to funeral goods in highly regulated states is true, then overall, the results do support the claim made by Ellig (2015) that states with higher regulations will tend to have higher funeral costs.

Licensing requirements appear to not have a statistically significant effect on the price of a traditional funeral. The largest cost in licensing requirements is by far the time cost of months of training. When considering months of training with the other regulatory variables it becomes insignificant. The cost of fees is easily covered by performing one funeral and there is very little variation in number of exams as well.

Conclusion

While regulation is often associated with consumer protection, it is also associated with higher prices and rent seeking. Increased regulation of the funeral industry is correlated with higher funeral prices. Funeral regulation associated with funeral

goods, particularly casket selling restrictions and cemetery goods selling prohibition, are associated with lower costs of funeral services. Other literature implies that these regulations are associated with no change or higher funeral revenues so they must have much larger effects on funeral goods than on funeral services.

As with previous literature, this study finds that states with less funeral industry regulation experience lower funeral costs to consumers. The major regulations that affect funeral service prices are cemetery goods prohibitions, casket selling restrictions, and the availability of direct disposition licenses.

In examining the effect of funeral regulation on the advertised prices of funeral services the assumptions of a one monopoly rent, demand inducement, and traditional occupational wage premiums can all be seen. More regulation allows practitioners to shift rents, potentially induce demand, and ultimately pass costs on to consumers such that consumers pay more in highly regulated states.

Suggestions for future study into this subject would be to compare regulations in neighboring states to see if there are interstate effects in states with highly different regulation. One problem with this is that states tend to pass regulations that are similar with one another. Further surveying of the prices of funeral goods could be done to create a comprehensive data set of both funeral goods and funeral services. A data set containing that as well as prices of funeral services used in conjunction with data from the Economic Census would be able to provide nearly indisputable evidence of demand inducement or rent seeking as well as through which channels it is done.

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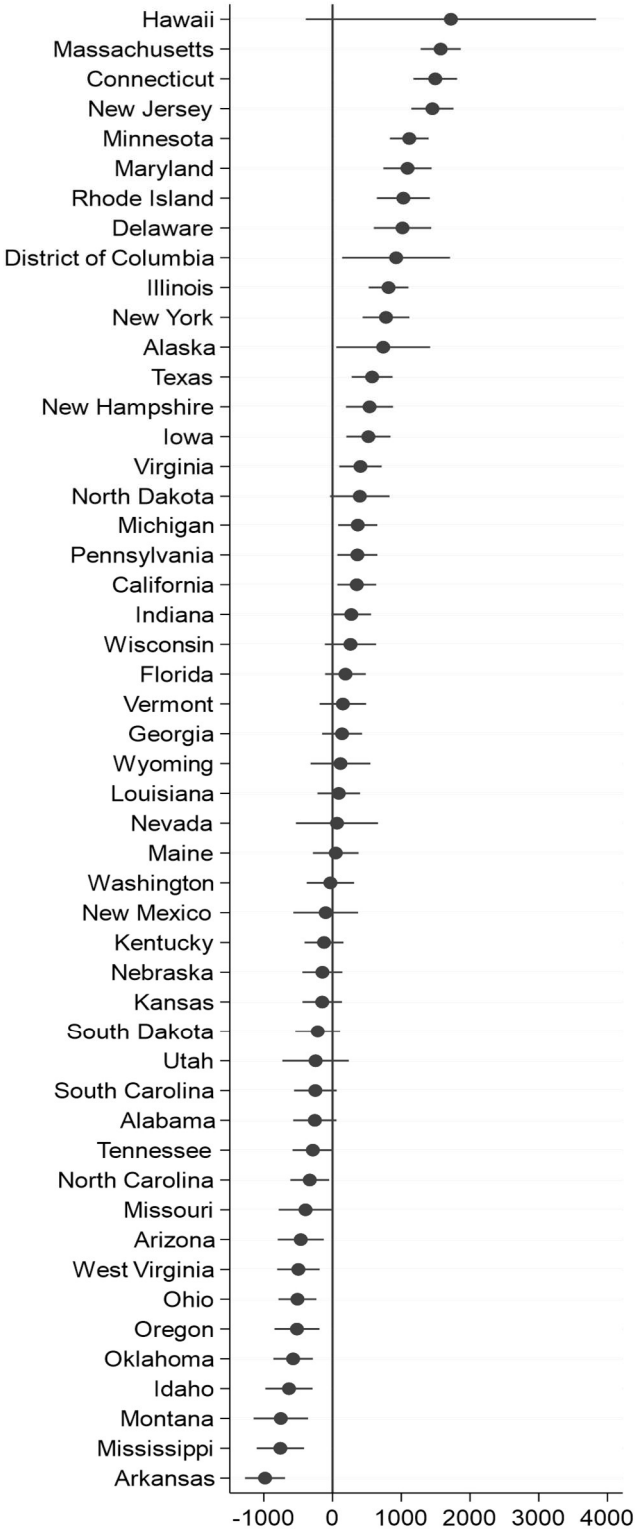
Appendix

Correlation Matrix for Explanatory Variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1) Casket Sales Restriction	1.000																				
(2) Cemetery Goods	-0.098	1.000																			
(3) Embalmer	0.113	0.339	1.000																		
(4) Embalming Room	-0.015	0.210	0.427	1.000																	
(5) Mortuary	-0.153	0.641	0.496	0.327	1.000																
Cemetery Prohibited																					
(6) Crematories	-0.062	0.489	0.216	0.134	0.409	1.000															
in Cemeteries																					
(7) Direct Disposition	-0.067	-0.082	-0.225	-0.390	-0.128	-0.052	1.000														
Licenses																					
(8) Population Density	-0.036	0.260	0.123	0.069	0.174	0.003	-0.026	1.000													
(9) Percent 65+	0.040	-0.031	0.072	-0.032	0.004	0.027	0.215	-0.137	1.000												
(10) Percent White	-0.117	-0.013	0.154	-0.016	0.070	0.108	0.029	-0.254	0.448	1.000											
(11) Percent Black	0.128	-0.086	-0.142	0.182	-0.106	-0.132	-0.014	0.118	-0.252	-0.837	1.000										
(12) Percent Asian	-0.089	0.235	-0.023	-0.160	0.128	0.067	-0.037	0.285	-0.370	-0.403	-0.047	1.000									
(13) Percent Hispanic	-0.118	0.046	-0.200	-0.212	-0.067	-0.055	0.116	0.159	-0.384	-0.247	-0.096	0.388	1.000								
(14) Household Median Income	-0.074	0.384	0.239	0.053	0.373	0.220	-0.070	0.168	-0.276	0.031	-0.299	0.597	0.186	1.000							
(15) Evangelical Rate	0.243	-0.360	-0.357	-0.175	-0.471	-0.238	-0.039	-0.169	0.090	-0.032	0.209	-0.349	-0.207	-0.497	1.000						
(16) Mainline Protestant Rate	0.102	-0.147	0.259	0.194	-0.156	-0.114	-0.141	-0.096	0.307	0.285	-0.120	-0.273	-0.344	-0.093	0.057	1.000					
(17) Catholic Rate	-0.252	0.496	0.299	0.172	0.457	0.333	-0.083	0.141	-0.152	-0.023	-0.186	0.362	0.359	0.498	-0.637	-0.158	1.000				
(18) Jewish Rate	-0.105	0.365	0.232	0.128	0.319	0.220	-0.003	0.337	-0.167	-0.267	0.096	0.407	0.169	0.359	-0.395	-0.182	0.490	1.000			
(19) Licensing Fees	0.060	0.385	-0.046	-0.115	0.254	0.468	0.165	-0.005	0.027	-0.062	-0.049	0.198	0.149	0.253	-0.120	-0.177	0.193	0.161	1.000		
(20) Number of Exams	-0.011	0.123	0.206	0.199	0.202	-0.172	0.024	0.045	0.070	-0.043	0.091	-0.084	-0.033	0.007	0.047	0.134	-0.098	-0.022	0.060	1.000	
(21) Months of Training	-0.147	-0.089	-0.193	-0.229	-0.122	-0.037	0.161	-0.043	0.041	0.045	-0.140	0.176	0.065	0.125	-0.142	0.087	0.090	0.059	0.157	-0.170	1.000

State Fixed Effects Coefficients for Cost-of-Living Adjusted Traditional Funerals



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