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Academic Integrity and Debt Literacy of Finance Students: A Cross-national Study

Andrzej Cwynar¹, Wiktor Cwynar¹, Przemysław Szuba², Kelvin Leong³, Anna Yuk Man Sung³, Anna Ostrowska-Dankiewicz⁴, Paulino Manuel Leite da Silva⁵, Volodymyr Martynyuk⁶

¹*Department of Economics, Faculty of Administration and Social Sciences, University of Economics and Innovation, Projektowa 4, 20-209 Lublin, Poland,
e-mail: andrzej.cwynar@wsei.lublin.pl*

²*Exacto Sp. z o.o. Rzeszów, Poland*

³*Wrexham Glyndŵr University, Wales*

⁴*Politechnika Rzeszowska, Rzeszów, Poland*

⁵*ISCAP, Porto, Portugal*

⁶*Ternopil National Economic University, Ukraine*

Abstract

The purpose of the paper is to assess – based on a cross-national survey – academic integrity and debt literacy of finance students *vis a vis* their non-finance peers. Financial crises can be driven by both unethical actions of finance professionals and low financial literacy on either side of financial markets, as shown by the recent global crisis. Therefore, we checked whether these two issues are addressed at universities, where finance students are prepared to become future financial professionals. Additional goal is to learn factors related to academic integrity and debt literacy among university students. The study is based on self-reports of 1,022 students from 5 countries on their academic integrity and debt literacy (convenience sample, self-administered survey). We used categorical regression models, along with non-parametric statistical tests, to analyse the survey responses. We did not find support for the hypothesis that finance students were more dishonest than their non-finance peers. Yet, we established that the debt literacy of finance students is alarmingly low, though higher than the debt literacy of other students. This raises many concerns regarding the preparedness of today's students to make well-informed financial decisions and to perform as finance professionals in the future. The results of this study indicate shortcomings in the education of the finance elite and, therefore, call for a remedy.

Keywords: academic integrity, debt literacy, finance students, financial literacy

JEL Code: A2, D01, D12, D83, D91

1. Introduction

The recent global crisis has undermined public confidence in the finance profession (Owens, 2012; Edelman, 2014). The crisis revealed that moral hazard can be sizable in the financial services market. Moreover, the scale of the crisis suggests that the finance community as a whole had serious difficulty resisting the temptation to behave in an unethical way. Labaton Sucharow's survey (2012) shows that a significant percentage of professionals in the financial services industry, both in the UK and in the US, concede that it is possible that they would behave in an unethical way at work. The same survey shows that such behaviour may be widespread, because 26% of respondents indicated that they had witnessed misconduct in the workplace or had first-hand knowledge of it. On the other hand, empirical findings in the field of academic integrity suggests that business major students cheat more often than others (McCabe, Butterfield, & Treviño, 2006) and that among business majors, students with a concentration in finance are particularly willing to cheat (Brown et al., 2010). Such findings suggest that the financial profession may attract individuals having specific predispositions and personality characteristics, including the inclination to engage in dishonest activities. Hence, in our study we hypothesized that finance students behave dishonestly more often than their non-finance peers (H1).

It can be also supposed that business major students, especially those in finance, are more exposed to formal financial education than other students. Therefore, it seems reasonable to expect that they are more financially literate, too. This issue is important because many of them will professionally guide other people through the world of finance in the future. As experts, they will be responsible for the financial well-being of other individuals, let alone their own. To a degree, they will also be responsible for propagating financial knowledge and skills in society. Because little is known about the link between financial education and financial literacy in universities (particularly outside the US), we were curious whether increased exposure to finance-oriented education translates into higher financial literacy and if it does, then to what degree. The evidence on the effect financial education has on financial literacy in broader populations is mixed (Mandell and Klein 2009; Willis 2008; Fernandes et al. 2014) and this fact reinforced our motivation to investigate this effect among university students. We decided to focus on the little explored field of debt literacy instead of broader financial literacy. The justification for such a choice is twofold. Firstly, many recent shocks in the financial markets were driven by borrowing problems (e.g. the student loan default problem in the US or the Swiss franc loan problem in Poland). Secondly, the majority of recent financial scandals arose around borrowing issues (e.g. subprime mortgages or the LIBOR manipulation). Ultimately, we hypothesised that debt literacy of finance students is higher compared to other students (H2).

We examined both the academic integrity, considered to be a proxy for individuals' disposition to act unethically, and the debt literacy of finance major students in five European countries compared to students with other majors. We started from the premise that the combination of unethical behaviour and of low financial literacy on the part of finance major graduates might be particularly dangerous. The main purpose of the study was to obtain empirical evidence bearing on the presence of these two sources of risk among finance students in a single study. To the best of our knowledge, previous research has not examined these two issues together. The additional purpose of this study was to identify key variables explaining academic integrity and debt literacy of university students.

2. Methodology

2.1. Data

Data were collected at 26 universities in five countries: Bulgaria, Poland, Portugal, Ukraine and Wales, between 11 May 2017 and 18 July 2017 as part of a larger project being conducted at the University of Economics and Innovation (UEI) in Lublin, Poland. Initially, project leaders expertly selected groups of European countries different in terms of characteristics potentially significant in explaining divergences in academic integrity and debt literacy. The characteristics – such as economic development and welfare, social structure and institutions, culture profile, etc. – are closely linked to integration processes in Europe as reflected in the order in which consecutive countries were joining the EU. Then invitation letters were sent to partner universities of UEI in countries representing distinct groups (old EU members, new EU members, and countries applying for EU membership). 26 universities accepted the invitation and research leaders were selected at these universities. Because the leaders were supplied with a questionnaire written in English, translation into national languages (English, Bulgarian, Polish, Portuguese, and Ukrainian) was conducted.

Students were sent an e-mail inviting them to fill in the attached questionnaire. The questionnaire featured a cover letter introducing the survey to students as well as assuring them of the anonymity of their responses. The letter was followed by 56 questions, in total. Overall, we received 1,022 valid responses. Considering the risk of a technical error caused by the application that was saving the survey data, we allowed up to two empty fields in a given respondent's questionnaire and still considered it valid. If a questionnaire had more than two questions left blank, we did not include the data from that questionnaire in the analyses. There were 812 questionnaires without empty fields, 182 with one empty field, and 28 with two empty fields. This procedure resulted in data completeness exceeding 96%.

2.2. Measures

Following McCabe & Treviño (1993) and later researchers who adapted their instrument (McCabe, Butterfield, & Treviño, 2006), we used a composite measure (index) of academic integrity (labelled as AI). The index was calculated on the basis of responses to 13 questions concerning typical forms of dishonest behaviour of students: (i) cheating on exams, (ii) cheating on assignments, and (iii) plagiarism and falsification/fabrication (of data, information, citations) in any formal academic exercises. We allowed respondents to choose among three options converted into numbers: (i) 'Never engaged in this behaviour' (coded as 3), (ii) 'Engaged in the behaviour once' (coded as 2), (iii) 'Engaged in the behaviour more than once' (coded as 1). Therefore, AI values ranged between 13 and 39 with higher values indicating higher honesty levels. The index had a mean of 31.9, a standard deviation of 5.215, and a Cronbach's alpha of 0.809.

To measure debt literacy of respondents we used the only instrument proposed in the literature so far, designed by Lusardi & Tufano (2009). The instrument is a 3-question single choice test resulting from adaptation of a classic financial literacy instrument (for the first time used in 2004 and dubbed the 'Big Three' financial literacy questions – see Mitchell & Lusardi, 2015), adapted to debt specificity. Lusardi & Tufano's (2009) instrument allows measurement of knowledge and skills regarding: (i) interest compounding (first question), (ii) how credit cards work (second question), and (iii) the time value of

money concept (third question). To calculate an index of debt literacy (labelled as DL), we applied the following procedure: correct answers were coded as 1 while all remaining options (incorrect answers, 'Don't know' responses, and 'Prefer not to answer' responses) were coded as 0. Hence, the debt literacy index ranges between 0 and 3 in value. The higher DL, the more debt literate the respondent. The index had a mean of 0.84, and a standard deviation of 0.842.

We used a broad set of independent variables, both suggested by the existing literature on financial literacy and newly introduced by us, in our regression models explaining both – AI and DL. Given the main purpose of this article, major of study was used as key diagnostic variable. This variable was measured by asking the respondents to indicate their major of study out of the following categories: (i) Finance – comprising such majors as Finance / Finance and accounting / Banking or similar, (ii) Other economical – comprising such majors of studies, such as Economics, Management, Business (e.g. International business, Business administration), Entrepreneurship, Marketing, E-commerce or similar, (iii) Other non-economical (respondents were asked to specify them).

Further, to gauge academic orientation as the variable potentially explaining AI, we used the classic instrument introduced by Roedel, Schraw, & Plake (1994) and adapted by later researchers (e.g. Marsden, Carroll, & Neill, 2005). The instrument is a set of statements about attitudes and behaviours that are associated with learning and grade orientation (LO and GO, in brief, henceforth). Academic orientation reflects an individual's motivation to study for its own sake (LO), or to achieve better grades (GO). We do not provide details regarding LO and GO estimation to keep the length of this article within required boundaries (see Roedel, Schraw, & Plake, 1994 for details). To check whether cheating inclination is a pre-existing attitude or has been acquired during college, we asked respondents how they perceived their intention to engage in dishonest academic behaviours at the time when the survey was conducted as compared to the beginning of the study (the variable was labelled as PA – pre-existing attitude). Respondents had three answers available for selection: (i) 'Lower' (coded as 3), (ii) 'The same' (coded as 2), and 'Higher' (coded as 1). Additionally, to get a deeper insight into the drivers of respondents' academic integrity, we asked them how would they describe the attitude of their teachers – on average – towards academic dishonesty (the variable was labelled as TA – teachers' attitude). Again, respondents had three options they could choose among: (i) 'Resistive' (coded as 3), (ii) 'Indifferent or neutral' (coded as 2), and 'Acquiescent or consenting' (coded as 1).

Finally, we used also a broad gamut of standard socioeconomic variables applicable to university students as additional independent variables (the list with adequate summary statistics is available upon request from the authors).

Table 1: Key measures – descriptive statistics

	AI	DL	LO	GO	PA	TA
Mean	31.90	0.84	14.61	7.22	2.16	2.39
Median	33.00	1.00	15.04	7.35	2.00	3.00
Standard deviation	5.215	0.842	2.670	1.830	0.666	0.716
Minimum	13	0	5.135	3.411	1	1
Maximum	39	3	18.609	10.233	3	3
Observations	969	999	962	962	1,021	1,018

Source: Own study

2.3. Tests and models

Our analytical strategy provided for two stages. In the first stage the appropriate non-parametric tests were used to evaluate the statistical significance of mean comparisons for assumed hypotheses. In brief, we used the tests to conduct analysis of the differences in the means of AI and DL obtained for distinguished sub-samples (finance students versus others). Specifically, U Mann-Whitney tests were used to verify both H1, and H2. The selection of the tests were preceded by standard analysis of these tests applicability to the properties of examined data sets (Szwed, 2008).

In the second step, we went beyond the main purpose of our study and we estimated a series of categorical regressions (CATREG, in brief, henceforward) to measure the correlations between AI (and DL as well) and various independent variables indicated in previous section. We decided to do that to get broader view of factors related to AI and DL of our respondents and, thus, to better understand these phenomena. The selection of explanatory variables for DL regression model was preceded by sub-sample mean comparisons for various sociodemographic cohorts'. Ultimately, those respondents' characteristics that differentiated DL scores at statistically significant levels when running the comparisons, were used as independent variables in the regression.

3. Results and discussion

3.1. Academic integrity

Our findings confirm that academic dishonesty of students remains prevalent. A mere 7% of respondents reported that they never engaged in any of 13 dishonest behaviours enumerated in our questionnaire. The most prevalent forms of dishonest behaviours were those related to cheating during a test (using crib notes – 69.5% of respondents did it at least once; copying from other students with their knowledge – 65.3%; and helping other students to cheat on tests – 64.5%).

Major of study turned out to be a statistically significant explanatory variable of AI in our regression model (Table 3; for brevity, in all tables we demonstrate only statistically significant variables). The mean of AI for finance students (31.76) was slightly lower than mean of AI for other students, including other business students (31.89). This indicates that finance students behave honestly slightly less than other students. However, the difference turned out to be statistically insignificant (Table 2). Hence, our findings do not support H1. Such result is in itself positive, however the prevalence of unethical academic behaviours – also among finance students – raises many concerns regarding the education of the business elite and higher education in general.

Presumably our results – inconsistent with the evidence of Brown et al. (2010) who found finance students the most disposed to cheating among all surveyed majors – can be partly explained by differences in study design (Brown et al. distinguished accounting students from finance ones, whereas we considered both as representatives of the 'finance major' cohort). Perhaps the differences can also be attributed to the change of finance curriculum in recent years, following the global financial crisis. Nowadays ethical studies and CSR topics have become increasingly important in finance education.

Table 2: Statistical significance of the difference in AI levels (means) for finance and non-finance students

	All	Finance	Non-finance	U Mann-Whitney test result
AI (mean)	31.85	31.76	31.89	87913; $p > 0.05$
Observations	945	271	674	

Source: Own study

Both GO and LO were significantly linked to AI (the effect of LO on AI was stronger compared to the impact of GO – Table 3). Additionally, the regression revealed that GO and AI were inversely related (more grade oriented students were more likely to be dishonest in formal academic tasks and exercises), while LO and AI were positively related (more learning oriented students were more likely to be honest). Such findings bring support for the literature which posits that academic integrity is driven – among other factors – by academic orientation, i.e. that more goal-oriented students are more likely to behave in an unethical way and more tolerant of such behaviour (Marsden et al., 2005). Common sense suggests that grade orientation can be reinforced by students' predictions that their prospect employers will use GPA to evaluate them, instead of checking comprehensively what they really learned. Hence, grade oriented students' approach to learning may be more instrumental than other students', i.e., they can have an excessively mercenary view of learning in which grades are the strongest 'currency' when entering the labour market. This can adversely affect a student's ethical disposition (Brown et al., 2010).

We found also that higher levels of TA were associated with higher AI values, which is consistent with rational expectations. Interestingly, TA levels did not differ considerably across participating countries, except Ukraine. The value for TA was significantly lower in that country compared to the others, meaning that teachers' assent for unethical behaviour is more frequent in Ukraine than in other (i.e., EU) countries participating in our study. PA turned out to be insignificant in AI model. The results regarding TA and PA, taken together, provide no grounds for the claim that university is the environment entrenching the inclination to behave dishonestly.

Table 3: Results of categorical regression with AI as dependent variable ($R^2=0.203$)

Variable	β	F
LO	0.321	97.671***
GO	-0.139	20.363***
TA	0.133	15.368***
Gender	0.059	3.865**
Country	0.146	21.320***
Major	0.092	9.371***
Level of study	0.085	7.339**
Form of study	0.146	14.195***
Working while studying	0.052	2.793*

* Statistically significant at $p < 0.1$

** Statistically significant at $p < 0.05$

*** Statistically significant at $p < 0.001$

Source: Own study

3.2. Debt literacy

Generally, debt literacy in our sample was low. Only 25 respondents (2.5% of total sample) correctly answered all three DL questions, while almost half of the sample (422 respondents, 42.2% of all) incorrectly answered all of them. As evidenced by prior studies, the question regarding time value of money turned out to be the most difficult in our study, too. Only 89 respondents (8.8% of the total sample) correctly answered this question. In contrast, 46.4% of the sample correctly answered the question on interest compounding.

Finance students fared better than non-finance students on the DL test. The difference between means for DL (0.96 – finance students; 0.81 – all other students) was statistically significant (Table 4). Such result supports H2. On the other hand, despite the higher DL score of finance students, their absolute debt literacy is worrisome. Their DL close to 1 means that finance students, on average, responded correctly to only 1 question out of three that were asked. This raises doubts as to the effectiveness of the educational process with regard to financial literacy. We believe that there are at least three possible explanations of low levels of financial literacy possessed by college students: (i) inappropriate finance curricula, (ii) ineffective teaching ('supply' side factor), (iii) ineffective learning ('demand' side factor). However, examining them is not within the scope of our study.

Table 4: Statistical significance of the difference in DL levels (means) for finance and non-finance students

	All	Finance	Non-finance	U Mann-Whitney test result
DL (mean)	0.85	0.96	0.81	89318; p<0.05
Observations	974	291	683	

Source: Own study

Some prior studies found support for the first explanation. For instance, Bianco & Bosco (2011) point to the fact that finance is taught from a business entity perspective, while the consumer (personal finance) perspective is often neglected. This can result from concentration of universities' curricula on sophisticated financial issues and overlooking the need to build deep understanding of everyday choices which people usually encounter. Brau, Holmes, & Israelsen (2015) found experiential learning to be the strongest determinant of financial literacy of undergraduate students in their study. This suggests that more experience-based or simulation-based teaching is needed because the average student is unlikely at their age to have had significant financial market experiences. However, more experience-based teaching requires more experience-oriented teachers who are well-prepared to transfer not only knowledge, but also skills ('supply' side factor). Reconsideration of both – the content and the educational method – is suggested by previous researchers, based on empirical results they collected (e.g. Mandell & Klein, 2009). Finally, perhaps students perceive financial topics as unattractive or even boring ('demand' side factor), do not like learning finance and, consequently, fare poorly on financial literacy tests. Such an explanation gained empirical support in Polish studies (e.g. Kantar TNS, 2016). Likewise, Ford & Kent (2009) showed that the effect of disinterest in finance can explain low financial literacy scores of female students.

Table 5: Results of categorical regression with DL as dependent variable ($R^2=0.161$)

Variable	β	F
Gender	0.262	69.442***
Country	0.229	48.754***
Scholarship	0.092	7.205***
Major	0.135	11.047***

* Statistically significant at $p<0.1$

** Statistically significant at $p<0.05$

*** Statistically significant at $p<0.001$

Source: Own study

Out of the explanatory variables tested in regression models with DL as the dependent variable (Table 5), gender deserves a closer attention. Male respondents fared better than females in the debt literacy test for all measures. The gender difference between DL score – statistically significant in our study – was particularly sizable in terms of the share of respondents who answered none of the questions correctly (male – 26.5%; female – 51.7%). The gender gap was confirmed by numerous studies carried out around the world (see Bucher-Koenen, Lusardi, Alessie, & van Rooij (2017) for a comprehensive review), although there is a lack of consensus regarding factors responsible for the phenomenon. It was also found among students in prior studies (e.g. Chen & Volpe, 2002; Ford & Kent 2010; Butters, Asarta, & McCoy, 2012).

4. Conclusions

This study showed that finance students were not significantly less honest in formal academic tasks than their non-finance peers. Overall, our findings are consistent with the vast body of prior evidence suggesting that dishonest academic behaviour is a widespread phenomenon, also among finance students. The phenomenon can have significant implications not only for the financial services market, but also for the overall economic system because one cannot exclude that students will carry the unethical attitudes to the workplace.

As expected, in terms of debt literacy scores, finance students fared better in relation to their non-finance peers in our study. However, this study showed that literacy – considered in absolute terms – is, in fact, low (even among finance students). The observation seems to be a crucial, because the underlying evidence is very strong: low debt literacy levels were noted for all participating countries, all classes of age, and both male and female respondents. The observation is also crucial as it indicates that finance students are poorly prepared not only to make optimum financial decisions, but also to provide advice on financial issues as future finance professionals. Sooner or later, the shortcomings in financial literacy revealed in our study will eventuate in mistaken economic decisions. The decisions will further entail unnecessary costs, hindering wealth accumulation of our respondents and – in some cases – resulting in financial distress.

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