Global Economic Crisis
Leverage of Small Public Firms
Unveiling the Power of ESG
Banking Debts on Profitability

Discovering Thoughts, Inventing Future
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</table>
CONTENTS OF THE ISSUE

i. Copyright Notice
ii. Editorial Board Members
iii. Chief Author and Dean
iv. Contents of the Issue

1. Impact of Managerial Entrenchment on Financial Flexibility and Leverage of Small Public Firms: Policy Implications for Global Economic Crisis. 1-22
3. Impact of Bad Banking Debts on Profitability (Jordanian Banking Sector). 35-40

v. Fellows
vi. Auxiliary Memberships
vii. Preferred Author Guidelines
viii. Index
Impact of Managerial Entrenchment on Financial Flexibility and Leverage of Small Public Firms: Policy Implications for Global Economic Crisis

By Akwasi A. Ampofo & Reza Barkhi

University of Connecticut

Abstract—This paper examines the impact of managerial entrenchment on financial flexibility, and financial leverage decisions of small public firms compared to medium and large firms. We group firms into market capitalization quartiles where small public firms are within the first, medium firms are between the first and second, and large firms are above the third quartile. Results show that entrenched managers in small firms hold significantly less excess cash than entrenched managers in medium or large firms. Small public firms borrow significantly more money using short-term maturity compared to medium and large size firms, which borrow less money using long-term maturities. Compared to pre-2008 crisis levels, most firms borrowed more money and held more excess cash during and after the global economic crisis, though small firms had limited access to cheap long-term funding compared to medium and large firms. Managers adopted more antitakeover practices after the 2008 global crisis and they became more entrenched. Results have economic and policy implications.

Keywords: managerial entrenchment, financial flexibility, financial leverage, debt maturity, excess cash, small firms.

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Akwasi A. Ampofo & Reza Barkhi

Abstract- This paper examines the impact of managerial entrenchment on financial flexibility, and financial leverage decisions of small public firms compared to medium and large firms. We group firms into market capitalization quartiles where small public firms are within the first, medium firms are between the first and second, and large firms are above the third quartile. Results show that entrenched managers in small firms hold significantly less excess cash than entrenched managers in medium or large firms. Small public firms borrow significantly more money using short-term maturity compared to medium and large size firms, which borrow less money using long-term maturities. Compared to pre-2008 crisis levels, most firms borrowed more money and held more excess cash during and after the global economic crisis, though small firms had limited access to cheap long-term funding compared to medium and large firms. Managers adopted more antitakeover practices after the 2008 global crisis and they became more entrenched. Results have economic and policy implications. Public policy should prioritize timely (within 1.5 to 2 years) access to cash for small firms over medium and large firms to pre-crisis excess cash levels in a global economic crisis.

Keywords: managerial entrenchment, financial flexibility, financial leverage, debt maturity, excess cash, small firms.

1. Introduction

Financial flexibilityis a primary determinant of firms’ financing policy according to chief financial officers in the U.S. and Europe (Skiadopoulos 2019). This is because firms require access to cash to exploit investment opportunities and meet financing and operating cash flow needs (Hsu et al. 2017). Financial flexibility is also identified as a missing link in capital structure research (Yousefi and Yung 2022, Bates et al 2016, Byoun 2011 Marchica and Mura 2010). This is especially the case for small firms that are financially constrained (Nicolas 2022) and subject to reduced financial reporting requirements by securities regulators (U.S. Securities and Exchange Commission 2022). Small firms are the backbone of the global economy (de Carvalho Zinga et a. 2013), yet prior research does not focus on the impact of entrenchment on financial flexibility and leverage of small firms. Prior research provides mixed results on the relationship between managerial entrenchment and the extent of leverage in capital structure of the firm (Berger et al. 1997, Ji et al. 2019), and excess cash (Falaye 2004). While Berger et. al (1997) document entrenched managers tendency to borrow less using long-term debt, Ji et. al (2019) find that entrenched managers of diversified firms borrow more (Ampofo 2021), which could be different for small firms (Nicolas 2022). Past research find that managers in poorly governed firms keep less cash (Dittmar and Mahrt-Smith 2007), but it is not clear whether managers in small firms keep more or less excess cash (Jones 2022). This paper examines the impact of managerial entrenchment on financial flexibility, and financial leverage decisions of small public firms compared to medium and large firms during a Global Economic Crisis.

Some of the characteristics of small firms include fewer employees, limited financial resources, lower credit worthiness or collateral for secured borrowing, restricted access to cheap long-term debt, and external equity funding. Recognizing the critical value of small firms to the economy and the relative resource limitations compared to larger firms, U.S. Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) often modify accounting guidance to be more practical and less burdensome for small firms to implement in preparing financial statements and related disclosures. For example, FASB established the Small Business Advisory Committee in 2004 with a renewed focus in 2016 to actively provide feedback on matters important to small public companies in the accounting standard setting process (FASB 2022). Similarly, IASB publishes IFRS for small and medium-sized entities (SMEs) that is practically an accounting framework for entities that are not large enough to have the resources to use the full IFRS (IFRS 2023). Securities regulators including the U.S. Securities and Exchange Commission (2022) broadly define smaller reporting companies as those with a public float of less than $250 million, or $100 million in revenues and no public float or public float of less than $700 million. Prior research uses market capitalization (Jones 2022), and we categorize firms with market capitalization below the first quartile as small...
Accordingly, in this paper we posit that entrenched managers in small firms hold less excess cash than entrenched managers in medium and large firms.

Financial leverage refers to the proportion and maturity of debt in the capital structure. Consistent with prior research, financial leverage is primarily operationalized as debt to total assets (Faleye 2004, Ji, Mauer, and Zhang 2019). Berger, Ofek, and Yermack (1997) find evidence that firms that have entrenched managers often borrow less, and use long rather than short-term debt. However, Ji et al. (2019) finds entrenched managers borrow more in diversified firms. Prior research has not addressed the impact of entrenchment on the financial leverage of small firms. Small firms typically have less total assets and capital resources than medium and large firms. As a result, we expect the financial leverage ratio of small firms should be higher than the medium or large firms that often have significantly high equity capital and total assets. Also, small firms are not as reputable as medium or large firms that issue more equity capital subscribed by investors. Small public firms rely on limited equity capital and often have to borrow money at expensive short-term rates. Accordingly, unlike Berger et al (1997) this paper posits that entrenched managers in small firms borrow more money (H2) using short-term maturities (H3) compared to entrenched managers in medium and large firms that borrow less money using long-term maturities.

The findings of this paper indicate that entrenched managers in small firms hold significantly less excess cash than entrenched managers in large or medium sized firms that maintain higher amounts of excess cash. Small firms have significantly more financial leverage than medium, and large firms. Moreover, small firms borrow more money at short-term maturities, while medium size and large firms borrow less money at long-term maturities. In contrast to the levels observed before the 2008 global financial crisis, most firms experienced an increase in borrowing held larger amounts of excess cash during and after the global financial crisis. However, small firms faced limitations in accessing cheap long-term funding compared to medium and large firms. Consistent with agency theory, managers displayed a higher inclination towards implementing antitakeover measures to safeguard the interests of stakeholders in the aftermath of the 2008 global crisis. This led to an increase in the level of managerial entrenchment.

This paper provides new evidence that entrenched managers in small firms exhibit a tendency to borrow more money through short-term debt maturities, compared to their counterparts in large or medium firms who borrow less at cheaper long-term debt maturities (Berger et al. 1997). We also provide new evidence that entrenched managers in small firms tend to hold significantly less excess cash compared to entrenched managers in large or medium-sized firms,
who maintain higher amounts of excess cash. To supplement the E-index measure of managerial entrenchment, we also develop two direct measures of entrenchment based on four (DME 4), and six (DME 6) using anti-takeover provisions frequently used by firms after the Sarbanes-Oxley Act (2002). Public policy should place a higher priority on facilitating timely access to cash for small firms to restore their pre-crisis levels of excess cash within 1.5 to 2 years.

Section I of this paper discusses the theoretical background. Section II analyzes data and provides summary statistics. Section III describes the methodology, and Section IV discusses the results. Finally, the paper concludes with implications of our research in section V.

II. Prior Research and Hypotheses Development

a) Agency Theory and Resource-based Theory of the Firm

Traditional agency theory arises from its origins in risk-sharing, and agency problem perspectives (Jensen and Meckling 1976) in which principal and agent have different attitudes towards risks, and different goals (Eisenhardt 1989). Agency theory stems from the principal-agent conflict that arises from the separation of ownership and control of firms (McGuire, Wang, and Wilson 2014). The agency problem arises from conflicting goals between the agent (i.e., managers) and the principal (i.e., shareholders, debtholders), partly because it is difficult or expensive for the principal to verify the agent’s activities (Eisenhardt 1989). Agency theory postulates that managers are self-interested, and risk averse individuals whose decisions follow bounded rationality in contractual relationships (Jensen and Meckling 1976). Managers may extract firms’ cash flows, and make it difficult to replace them by investing in projects for which success is tied to the managers (Shleifer and Vishny 1989).

Positivist or contrarian agency theory posit that corporate governance mechanism, such as, goals alignment using outcomes-based contracts, or efficient information systems, limit agent’s self-serving behavior so that managers act in the interest of the capital providers (Blair 1996). Managers who work for capital providers are expected to act in the best interest of the stakeholders to maximize the value of the firm (Blair 1996). Prior research argues that agency theory and strategic management perspectives, such as, the positivists agency theory, yield opposing predictions (Denis et al. 1999, p. 1073). Shankman (1999) also indicates that agency and stakeholder theories offer competing explanations for firm outcomes. Using agency theory and related creditor alignment, and managerial entrenchment hypotheses Ji, Mauer, and Zhang (2019) find: (1) positive relation between managerial entrenchment and leverage in diversified firms (creditor alignment hypothesis), and (2) negative relation between managerial entrenchment and leverage in focused firms (managerial entrenchment hypothesis). A gap in prior research is the lack of consideration of financial flexibility in capital structure studies (Ariff et al. 2010, Bates et al. 2016, Byoun 2011 Marchica and Mura 2010), especially, for small firms across different economic cycles. We question the impact of managerial entrenchment on financial flexibility, and the amount and maturity of debt for small versus medium and large firms in a global economic crisis.

b) Managerial Entrenchment

Managerial entrenchment occurs when managers gain so much power that they are able to use the firm to further their own interests rather than the interests of shareholders (Weisbach 1988). Firms’ management exploits agency conflicts and information asymmetry to extract private benefits (Zwiebel 1996, Edlin and Stiglitz 1995). Managerial entrenchment hypothesis arises from agency conflicts between managers, shareholders, creditors, and even employees (Murphy and Zabojnik 2004). Shleifer and Vishny (1989) explain that entrenched managers make manager-specific investments that make it costly for shareholders to replace them, extract higher wages and larger perquisites from shareholders, and obtain more latitude in determining corporate strategy. Prior research uses the Gompers, Ishii, and Metrick (GIM, 2003) index, Alternative Takeover Index (ATI) of Cremers and Nair (2005), and Entrenchment (E) index of Bebchuk, Cohen, and Ferrell (2009) areas proxies for managerial entrenchment. Shleifer and Vishny (1989) use blockholders of at least 20% as a measure of entrenchment. CEO turnover, anti-takeover provisions, proxy contests, and managerial entrenchment index are also used in prior research (Faleye 2007, Chakraborty et al. 2014, Chakraborty, and Sheikh 2010, Jiang and Lie 2016, and Florackis and Ozka 2009). Lee, Matsunaga, and Park (2012) use CEO share ownership, CEO/chairman duality, and CEO tenure as measures of entrenchment. The underlying essence of the entrenchment measures mentioned above suggests that strong corporate governance practices (such as increased presence of blockholders, fewer antitakeover provisions, and enhanced managerial) reduce managerial entrenchment, while the reverse holds true as well.

Following Bebchuk et al. (2009) development of E-index, we also utilize different six antitakeover provisions that firms frequently use in the period after the Sarbanes Oxley Act (2002) namely: (1) blank check preferred stocks, (2) cumulative voting, (3) confidential or secret ballot, (4) fair price amendments, (5) limits to special meetings, and (6) limits to written consent to develop two direct measures of managerial entrench-
ment indexes (DME4, and DME6) (Ampofo 2021). The direct measures of entrenchment add to the nomological validity of the E-index and provide alternative measures of managerial entrenchment, and they are utilized as alternative proxies of managerial entrenchment.

c) Financial Flexibility

Financial flexibility refers to a company’s ability to adjust the amounts and timing of cash flows in order to meet unexpected requirements and capitalization on emerging opportunities (Ampofo 2021, FASB 2019). Prior research suggests that financial flexibility is the availability of cash, cash flows, or liquidity to meet unexpected needs or opportunities (Bates et al., 2016). Financial flexibility and financial performance of the firm are two constructs which are highly correlated (Arslan-Ayaydin et al. 2014, Lie 2005) but are not the same. Financial performance focuses on the profitability of the firm, and typically includes earned revenues less accrued expenses on the income statement (Ferris, Kumar, Sant, Sopariwala 1998). Prior research measures financial performance as return on assets, return on equity, or operating profit divided by total assets (Kumar and Sopariwala 1992, Rajan and Zingales 1995). The proportion of fixed versus variable costs of the firm is an aspect of operating flexibility that is closely related to the operating performance of the firm (Kumar and Sopariwala 1992). Prior research broadly measures financial flexibility as operating cash flows (DeAngel and DeAngel 2007, and Arslan-Ayaydin et al 2014, Hoberg, Phillips, and Prabhala 2014), retained earnings to total assets (Byoun 2011), excess or residual cash (Daniels et al. 2010, Faleye 2004), and debt capacity (Hess and Immenkötter 2014). We differentiate between operating and financing flexibility because operating flexibility is part of financial performance that is not independent from the broader construct of financial flexibility (Kumar and Sopariwala 1992).

The residual or excess cash perspective of financial flexibility (Faleye 2004) differs from free cash flow to the firm. Prior research also describes financial flexibility as unused debt capacity that firms can tap into for cash flows (Lo 2015, Gamba and Triantis 2008). In this paper, we describe free cash flow as operating cash flows after adjusting for interest tax shield (that is, plus interest expense (1-tax rate)), plus receipts from net debt proceeds, and less payments for long-term investments (Jensen 1986, Easterbrook 1984). The net proceeds from debt cash flows is a common factor of excess cash and free cash flows. Thus, financial flexibility in the form of untapped reserves of borrowing power is a crucial missing link in capital structure theory (Marchica and Mura 2010). This paper primarily operationalizes financial flexibility as the excess of the cash ratio of the firm over the median cash ratio of the 3-digits SIC industry (Daniels et al 1999), and free cash flow to the firm (Faleye 2004, Jensen 1986, Easterbrook 1984).

Prior research on managerial entrenchment and financial flexibility can be summarized as follows: (1) there is strong negative relationship between dividends and management stock options, (2) management stock ownership is associated with higher payouts by firms with potentially the greatest agency problems (Fenn and Liang 2001), and (3) following a period of low leverage, firms make larger capital expenditures and increase abnormal investment financed through new issues of debt (Fenn and Liang 2001). Also, there is evidence that (4) financially flexible firms invest more and better than firms that are not financially flexible (Marchica and Mura 2010), (5) self-interested managers are reluctant to disburse excess cash, and they will allow cash levels to remain high unless the firms are subject to external pressure (Jiang and Lie 2016), and (6) the cost of payout flexibility is correlated with governance and agency concerns (Bonaime et al. 2016, Rashidi 2020). However, prior research does not differentiate the evidence between small public firms versus medium and large firms despite the regulatory and economic importance of that distinction especially before and after a global economic crisis.

d) Development of Hypotheses

i. Hypothesis 1. Managerial Entrenchment and Flexibility Prediction for Small Firms

Agency theory suggests that managers are self-interested, risk-averse individuals (Jensen and Meckling 1976) who may invest excess cash balances in projects for which success is tied to the managers (Shleifer and Vishny 1989). In this view, the entrenched managers who can get away with sub-optimal decisions more than other managers who are closely scrutinized, may not be overly concerned with minimizing the opportunity cost of holding excess cash flows, as they prefer more to less financial flexibility. Utilizing agency theory, we explain that more entrenched managers are likely to prefer to hold more excess cash indicating a positive relationship between managerial entrenchment and financial flexibility. However, as the opportunity cost of having excess cash increases due to higher forgone expected returns from missed investment opportunities, the entrenched managers and shareholders lose out on the portion of expected returns that is tied up in excess cash flows. As a result, based on positivist agency theory and resource-based theory (Blair 1996, Hansen et al. 2004) that managers act in the best interest of the principal rather than their own best interest (Jensen and Meckling 1976), we expect entrenched managers to take advantage of lucrative investment opportunities rather than holding excess cash flows. Thus, entrenched managers hold less excess cash predicting a negative relationship between entrenchment financial flexibility.
Prior research suggests that firm size matters in the analysis of financial constraints in that small firms have less financial flexibility than medium or large firms (Farre-Mensa and Ljungqvist (FML) 2016). Given the limited resources that constrains self-interested behavior, managers of small firms are likely to be less entrenched than manager of medium or large firms managers (FML 2016). Given that small firms have limited access to external funding and they are financially constrained relative to medium or large firms (FML 2016), managers in small firms cannot afford to hold more excess cash compared to managers in medium or large firms. Accordingly, we hypothesize that entrenched managers in small firms will hold less excess cash compared to entrenched managers in medium or large firms (H1).

ii. **Hypothesis 2. Managerial Entrenchment and Financial Leverage Prediction for Small Firms**

Prior research find that managerial entrenchment is negatively related to leverage, such that more entrenched managers borrow less money (Berger et al 1997). This is consistent with the agency theory that self-interested, risk-averse, and boundedly rational entrenched managers prefer less to more debt due to the discipline imposed by timely repayment of debt (Jensen 1983). Positivist agency theory (Blair 1996), however, suggests that entrenched managers may utilize more debt if it is cheaper than other sources of financing (e.g., equity or retained earnings) to finance lucrative transactions (e.g., mergers and acquisitions) that add value to their entrenchment objectives. As a result, under these conditions, we expect that entrenched managers are likely to borrow more debt indicating a positive relationship between entrenchment and financial leverage.

FML (2016) find that small firms are typically financially constrained, but they are able to raise funds through private debt and equity markets with some difficulty. We argue that small firms primarily use debt finance because of the difficulty of raising equity capital. Accordingly, we posit that entrenched managers in small firms borrow more compared to entrenched managers in medium or large firms (H2).

iii. **Hypothesis 3. Debt Maturity used by Small Firms**

Prior research find that more entrenched managers use long-term rather than short-term debt (Datta et al 2005). Debt with maturities of less than 3 years is short-term, and more than 5 years is long-term (Datta et al 2005). Market place evidence suggests that companies are frequently issuing domestic and foreign medium-term notes to finance business activities. Medium-term debt (3 to 5 years debt maturity) is commonly used by firms because it is often cheaper than long-term debt, especially when the yield curve is positively sloping. Also, some investors may prefer to make debt investment decisions in the medium rather than long-term.

Self-interested managers in firms are expected to borrow less using cheaper long-term (after 5 years) rather than more expensive medium term (between 3 and 5 years), and short-term (less than 3 years) debt maturities. Compared to medium and large firms, we believe that small firms typically have limited financial resources and credit worthiness to qualify for cheap long-term maturities in debt markets. Accordingly, small firms are likely to utilize more short-term debt maturities than medium or large size firms. This suggests a positive relationship between firm size and debt maturity (H3).

![Figure 1: The Impact of Managerial Entrenchment on Capital Structure Decisions of Small and Medium Size Firms](image)
III. Sample, Data and Descriptive Statistics

a) Sample Selection and Definition of Variables

The final sample consists of 1,864 firms or 17,338 firm years for the period from 2000 to 2018. Managerial entrenchment is operationalized using E-index, DME4 and DME6 using entrenchment data obtained from ExecuComp, and Institutional Shareholders Services (ISS/formerly RiskMetrics) or Investors Responsibility Resource Center (IRRC). Financial flexibility is measured using excess cash, and free cash flows to the firm based on data obtained from Compustat. Financial leverage is operationalized as debt to total assets ratio, and average debt maturity. We collected data from different databases and joined them into the sample relational database using GvKey, fiscal year, and ticker as primary keys.

Consistent with prior research, we exclude firm year data for financial and utilities firms that are regulated entities with solvency requirements leading to different capital structure. We also exclude data for dual share class firms, and firms’ years with negative net sales, negative book or market value of assets, and missing SIC code (Giroud and Mueller 2012). Figure 2 is reconciliation of sample size including a sample period that overlaps the 2008 global financial crisis to test our predictions in times of such a crisis. Lagged values of independent variables are used to be consistent with empirical specifications in prior research, and appendix 1 defines the proxies for the variables used in this study.

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<tr>
<td>Original Compustat observations</td>
<td>213,567</td>
<td>25,110</td>
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<tr>
<td>Financial industry (4010-4030)</td>
<td>(26,242)</td>
<td>(2,695)</td>
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<tr>
<td>Utilities (5510-5550)</td>
<td>(6,040)</td>
<td>(472)</td>
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<tr>
<td>Firms with no GIC industry classification</td>
<td>(33,503)</td>
<td>(4,972)</td>
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<tr>
<td>Negative sales and book value of equity</td>
<td>(21,704)</td>
<td>(1,082)</td>
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<tr>
<td>Missing key data</td>
<td>(6,073)</td>
<td>(454)</td>
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<tr>
<td>Subtotal Compustat</td>
<td>120,005</td>
<td>15,435</td>
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<tr>
<td>Firm year data not on ExecuComp</td>
<td>(102,667)</td>
<td>(13,571)</td>
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<tr>
<td><strong>Final Sample Size</strong></td>
<td><strong>17,338</strong></td>
<td><strong>1,864</strong></td>
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</table>

¹ Additional data is lost when E-index joint is performed leaving about 10,399 firm-year observations in sample.
Figures 3 A: Shows time series of excess cash ratio of small (solid black line), medium (middle broken line), and large firms (top broken line) between 2000 and 2018. Small firms have significantly lower excess cash compared to medium or large firms over the period. In particular, excess cash ratios for small firms are predominantly negative over the sample period. Firms generally show increasing excess cash ratio from 2000 through 2003 (peak) that subsequently declined till 2005. Excess cash ratios immediately before the 2008 global economic crisis increased and peaked around 2009, but the firms utilized the cash reserves in periods after the 2008 crisis. While medium and large firms still maintained declining but positive excess cash from 2009 to 2018, excess cash of small firm declined below zero by the middle of 2010 (about 1.5 to 2 years after the crisis). See Figure 4A below for the graphs on debt ratio patterns for the small period to evaluate the extent of access to debt capital by small, medium and large firms.

b) Dependent Variables
In this paper, financial leverage is a dependent variable that is measured by debt ratio of interest-bearing debt as a percent of firms’ total assets or total capital (Ji et al. 2019, Byoun 2011, Denis and McKeon 2012). The average debt ratio of the sample of all firms is about 0.26 (SD = 0.17), which differs significantly for small (debt ratio = 0.33, SD = 0.25) versus large (debt ratio = 0.39, SD = 0.21, t = -14.10, p = .00) firms. Also, the debt ratios for small versus medium (debt ratio = 0.34, SD = 0.23) groups firms are significantly different (t = -2.83, p = .01). We find that the debt ratios do not differ significantly before, during, and after the 2008 global economic crisis for the sample firms. The average debt maturity is about 4.2 years (SD = 1.1), which are significantly different (p < .001) for small (M = 3.84 years, SD = 1.26) versus medium (M = 4.18 years, SD = 1.11), and large (M = 4.42 years, SD = 0.86) firm. The average debt maturities differ significantly before (M = 4.28 years, SD = 1.07) and during (M = 4.16 years, SD = 1.07), as well as, after (M = 4.20 years, SD = 1.06) the 2008 global economic crisis.

Financial flexibility is a second dependent variable for which the main proxies are excess cash (Daniels et al. 2010), and residual cash (Opler et al. 1999, Faleye 2004). An alternative proxy for financial flexibility is free cash flows to the firm (Arslan-Ayaydin et al. 2014, Marchica and Mura 2010, Denis and McKeon 2012). Excess cash is highly correlated with (r = .51, p < .001) residual excess cash used in Faleye (2004). The excess cash of small versus medium firms are not significantly different (p = .54), though that for small versus large firms are significantly different (t = 5.95, p < .001). Also, the median excess cash for the pre-2008 crisis period is significantly different from during the 2008 (t = -2.51, p = .01), and post 2008 (t = -6.81, p < .001). We group firms into quartiles of market capitalization (Jones 2022), where small firms are below the first (<= 25%), medium firms are between the first and second (25% and 50%), and large firms are above the third quartile (=> 75%). Tables 1 and 2 provide descriptive statistics and correlations.

c) Independent Variables
Managerial entrenchment is a key independent variable for which the E-index (Bebchuk et al 2009) is a primary proxy. Alternate proxies for entrenchment are the direct measures of entrenchment (DME 4 and DME 6) developed in this research. E-index is highly correlated with (r = .13, p < .001) the DME 4 index.

d) Descriptive Statistics
Tables 1 and 2 summarize the descriptive statistics of the key variables. About 17,338 firm years for 1,864 firms are included in the sample of which about 25 percent each are in the small, or medium, and 50 percent are in large market value firm year groups. Approximately seventy percent firm-year data are in the post-2008 global financial crisis period, while about 24 percent and 6 percent respectively firm years are in the pre-2008 and during this period. Excess cash, and residual excess cash are significantly positively correlated (r = .14, p < .001). Figures 3 A and 4 A describe the relationship between excess cash, firm size and managerial entrenchment over time. Also, Figures 3
B and 4 B depict the association between debt ratios, firm size, and managerial entrenchment over the sample period.

IV. Method

Ordinary least squares (OLS) panel regression is used to analyze data. Consistent with prior research, firm year data is grouped into small, medium, and large based on market values (Byoun 2011, FML 2016, Giroud and Mueller 2011). We evaluate univariate and multivariate regressions, and include standard controls for growth opportunities (market to book ratio), firm size (Log of total assets), asset tangibility (PPE to total assets), leverage (debt to equity), and profitability (return on assets) to minimize endogeneity (Rajan and Zingales 1995). Year, and firm, or industry fixed effects are included in regression models to minimize heterogeneity in the analysis. We also include alternative variables for managerial entrenchment (DME 4 and DME 6 as proxies for E-index), financial flexibility (free cash flows as alternate proxy for excess cash), and financial leverage (debt to equity ratio as proxy for debt to total assets ratio) in robustness tests. We also test predictions before, during, and after the 2008 global financial crisis for small, medium, and large sized firms. Consistent with prior research, results are robust to endogeneity as we use standard controls, firm and year fixed effects, and alternative proxies in regression analysis (Roberts and Whited 2013, Benlemlih 2019).

a) Hypotheses Tests

i. Managerial Entrenchment and Financial Flexibility

Hypothesis H1 states that entrenched managers in small firms will hold less excess cash compared to entrenched managers in medium or large firms. Correlation analysis in Table 1 panel A shows significant positive correlation between E-index and excess cash ($r = .02, p<.05$). Results of t-test in Table 2 panel A shows that small firms hold less residual cash than medium or large firms ($p<.01$). Table 3 panel B shows that E-index has significant positive beta in explaining the variance in excess cash ($t = 1.96, p<.05$) of all firm sizes. This is especially the case for medium size firms ($t = 2.29, p<.01$), but not small firms in Table 3 panel C. The evidence suggests that more entrenched managers keep more excess cash, but small firms utilize less excess cash than large firms. Results support H1 that entrenched managers in small firms will hold less excess cash compared to entrenched managers in medium or large firms.

Figure 4 A: Above shows the debt ratios of small, medium, and large firms from 2000 to 2018. Compared to figure 3 above, the debt ratio line for small firms lies on top while that of large firms lies at the bottom. This indicates that the small firms generally had higher debt ratios than the large or medium firms. Also, debt ratios for all firm sizes declined from 2000 through 2005, which partially explains the decline in excess cash from 2003 to 2005. The debt ratios increase through 2009 as firm needed access to cash to mitigate the effects of the 2008 global economic crisis. Thereafter, the debt ratios for all firm sizes have increased through 2018, although excess cash declined from 2009 through 2018.
Figure 4 B: Illustrates that debt to total assets ratio of more entrenched managers were lower than that of moderate or less entrenched managers over the sample period. It is interesting to note that debt ratios peaked around 2008 for all levels of managerial entrenchment, but it declined slightly through 2009. Thereafter, the debt ratios rose steadily through 2018. It should be noted that less entrenched managers tend to keep low excess cash, but increase borrowing to finance operating and investing activities over time. Accordingly, it is critical that small firms’ managers who typically have less resources and are less entrenched, have timely access to cash or debt markets.

Public Policy Implications
Public policy should prioritize small firms’ access to cash to pre-crisis levels within 2 years or less after a global economic crisis, given that small firms that are the backbone of the economy. Also, public policy should provide access to cash to medium and large firms in less than 3 years after the global economic crisis to minimize a liquidity crisis. It appears from figure 3A that firms increased borrowing after the 2008 crisis, although access to credit or debt markets dried up for small firms that needed cash the most immediately after the 2008 crisis. As a result, the Cares Act (2020) provides timely access to cash of about $1.8 trillion in economic stimulus package for individuals, and small firms through the paycheck protection program (PPP), and economic injury disaster loans (EIDL) in 2020 and 2021 during the COVID-19 pan
ii. Managerial Entrenchment, Financial Flexibility and Financial Leverage

Hypothesis H2 predicts that entrenched managers in small firms borrow more compared to entrenched managers in medium or large firms. Univariate results indicate significant positive correlation between firm size and debt ratio \( r = .30, p < .01 \). T-test in Table 2 shows small firms experience significantly less debt-to-equity ratio than medium \( t = -2.83, p = .01 \) or large firms \( t = -14.06, p < .01 \). Multivariate tests in Table 4 panel B shows that E-index has a significant positive beta in explaining debt ratio \( t = 4.47, p < .001 \), especially for small, but not medium or large firms (footnote 2 to Table 4). Market to book shows a significant positive beta in explaining debt ratio \( t = 1.89, p < .05 \), especially for small, but no t medium or large firms. This suggests entrenched managers in small firms borrow more compared to entrenched managers in medium or large firms, lending support to H2.

iii. Firms Size and Debt Maturity

Hypothesis H3 predicts that small firms utilize more short-term debt maturities than medium or large size firms. This suggests a positive relationship between firm size and debt maturity as shown in the correlation matrix \( r = .27, p < .05 \). Table 2 panel A shows the average debt maturities of small firms is significantly lower than medium \( t = -13.43, p < .001 \) and large \( t = -27.08, p < .001 \) firms. Multivariate test in Table 5 panel B shows that debt maturities significantly positively explain the variance in debt ratio \( t = .10, p < .001 \). Also, firm size significantly and positively explain the variance in debt ratio \( t = 20.68, p < .001 \). This suggests that large firms utilize more long-term debt than small firms, lending support to H3.

b) Robustness Tests

We control for omitted variables to minimize endogeneity (Black 2010) in the panel regression tests by including standard control variables (Rajan and Zingales 1995), firm and year fixed effects in our design (Roberts and Whited 2013). We include corporate governance and compensation variables of CEO pay slice, CEO tenure, CEO share ownership, and CEO dual role as chair in a robust model to test our predictions. We also utilize alternative proxies for the key variables (Ampofo 2021).

In robustness tests, we find that entrenched managers in all firms keep significantly more excess cash \( t = 2.97, p = .003 \) than managers who are not entrenched. Results do not change if we utilize residual excess cash \( t = 2.75, p = .006, \text{untabulated} \) instead of median excess cash as dependent variable. Market to book ratio shows significant positive relationship with excess cash suggesting that firms with small market to book have low excess cash relative to firms with large market to book ratios. Also, entrenched managers in all firms tend to borrow significantly less \( t = -2.11, p < .05 \) compared to managers who are not entrenched, consistent with prior research (Berger et al. 1997). Debt maturity is also positively related to debt ratio \( t = 23.8, p < .001 \), which together with the market to book ratio noted above suggest that small firms utilize more short-term debt. Robustness tests support the hypotheses.

However, results are not always consistent from using E-index, and DME 4 as proxies for managerial entrenchment in regressions with excess cash or financial leverage as dependent variables. This is because while E-index was developed in the 1990s by Bebchuk et al. (1999) for antitrust provisions that were frequently used during that period, the corporate American scandals in 2000s and related Sarbanes-Oxley Act (2002) reforms led to firms using different antitrust provisions (Bebchuk et al. 2011) that are reflected in the DME 4 and DME 6.

Finally, prior research indicates that unlike the E-index that reflects entrenchment of the entire senior leadership team, a CEO’s pay slice is a proxy for individual CEO’s managerial ability or efficiency of compensation contract (Bugeja et al. 2017). Therefore, an individual CEO may borrow more (not less) money compared to results from entrenchment indexes that entrenched managers generally borrow less money than managers who are not entrenched (Berger et al. 1997).

c) Economic Significance using Analysis of Actual Loans and Spread Data

We obtain data on actual loans, debt maturity, and spreads on 44,399 firm years from Deal scan from 1989-2011. Given the sample period of 2000 to 2018, and excluding 15,270 firm year missing data, we analyze the available 2,953 firm year data from 2000 to 2011. The average loan amount between 2000 and 2011 is about $467.6 million with a spread of 214 basis points over the London Interbank Offered Rate (LIBOR). Spreads range from a mean of 127.35 bps (SD 19.66) in the year 2000 to 188.16 bps (SD 7.30) in the year 2011.

ANOVA shows that the normalized spread is increasing for short to medium term debt, but declining for long-term debt. Also, we find that debt maturity is significantly negatively related to loan spreads \( \beta = -15.97, SE = 2.14, t (10) = -7.46, p < .001 \) in robustness test. This suggests the firms in the sample period receive cheaper spreads for using long-term rather than short-term debt maturities. The impact of excess cash on loan spreads is also significant \( t = 2.61, p = .009 \), which suggests that large firms that hold high excess cash often utilize cheaper long-term debt than small or medium firms that keep low excess cash.

Overall, the results of this research show that entrenched managers in large firms are able to keep more liquidity than small firms. With more resources and...
credit worthiness, large firms are able to borrow cheaply using long-term rather than equity to save on borrowing costs, which further increases excess cash for the firms. On the other hand, small firms with limited resources have less liquidity that allows them to borrow short to medium term debt with high borrowing costs. Accordingly, our results suggest that the inability of small firms to show more financial resources and credit worthiness to banks and other lenders raise borrowing costs for using expensive short to medium-term debt facilities. As a result, compared to large and medium sized firms, small firms have to make higher periodic payments on borrowed money, which must be repaid rather than rolled over into a new long-term loan at debt maturity. Taken together, the limited resources, lack of liquidity, and limited credit worthiness of small firms significantly reduce their ability to absorb shocks in the financial system including recessions, pandemic, and global financial crisis.

d) Global Financial Crisis

The global financial crisis of 2008 led to bankruptcy filings and business failures of many small, medium, and large firms causing havoc and shocks in the economic system. Typically, firms ability to obtain funding quickly dries up and loan rates spike to high levels. As a result, most businesses during such difficult times are not able to obtain new funding or make timely payments on existing obligations. This could lead to massive unemployment and a sharp decline in aggregate demand and gross domestic product. In particular, small businesses, which are the backbone of the economy, suffer economic consequences that could force them to close down.

Our panel data from 2000 to 2018 allows us to analyze our results during the 2008 global financial crisis in Table 2 panel B. We find that debt ratio was significantly lower before than during (t = -4.63, p<.001) and after (t = -11.12, p<.001) the 2008 global crisis. Also, debt maturities was significantly higher before than during (t = 3.30, p<.001) and after (t = 4.13, p<.001) the 2008 crisis. Also, firms had generally lower residual excess cash before than during (t = -2.51, p<.001) and after (t = -6.81, p<.001). Also, while managers were significantly more entrenched before than during 2008 (t = 3.28, p<.001), managerial entrenchment was significantly higher after (t = -7.88, p<.001) than before the global financial crisis. This suggests that cash infusion and firms access to short-term financing during the global financial crisis increased firms cash balances as more entrenched managers effectively deployed antitakeover policies to protect firms.

V. Summary of Results

The overall results of this research show that entrenched managers in small firms hold significantly less excess cash than entrenched managers in medium or large firms that keep more excess cash. Small firms have more financial leverage than medium and large firms. Also, small firms borrow more money at more expensive short-term maturities compared to medium and large firms that borrow less money at cheaper long-term maturities. Moreover, compared to pre-2008 crisis levels, most firms borrowed more money and held more excess cash during and after the global financial crisis, though small firms had limited access to cheap long-term funding compared to medium and large firms. Consistent with agency theory, managers adopted more antitakeover practices to protect stakeholders’ interests in the aftermath of the 2008 global crisis and managers became more entrenched in their positions of authority.

The results also suggest that entrenched managers in medium and large firms leverage their influence and networks to secure access to long-term debt markets at cheaper interest rates than less entrenched managers in small firms. Moreover, entrenched managers in medium and large firms tend to retain more excess cash in order to obtain more favorable loan spreads and mitigate the risk of liquidity crisis. In contrast to small firms, large and medium firms opt for borrowing less long-term debt (Berger et al. 1997) to reduce borrowing costs, while strategically building up debt capacity for future business needs. The 2008 global financial crisis resulted in a significant surge in borrowing compared to the pre-crisis period, particularly when credit availability declined and firms’ credit risk escalated. Unfortunately, small firms encountered challenges in securing inexpensive funding during this period.

Furthermore, the results of this research indicate that entrenched managers in medium and large firms enjoy easier access to affordable long-term funding, whereas managers in financially constrained small firms primarily rely on costly short-term financing options. As a result, public policy should prioritize facilitating timely access to cash for small firms, aiming to restore pre-crisis levels of excess cash during a global financial crisis, within a timeframe of approximately 1.5 to 2 years.

VI. Conclusions

This paper examines the impact of managerial entrenchment on excess cash, and financial leverage of small firms from 2008 to 2018. The evidence indicates a contrast between entrenched managers in large or medium sized firms, who tend to maintain higher levels of excess cash (Falaye 2004), and entrenched managers in small firms, who hold comparatively lower amounts of excess cash. Additionally, unlike entrenched managers in medium and large firms who borrow less money at cheaper long-term maturities (Berger et al. 1997), entrenched managers in small firms borrow more money through costly short-term maturities. In
comparison to pre-2008 crisis levels, the majority of firms experienced an increase in borrowing and held higher levels of excess cash during and after the global financial crisis. However, small firms had limited access to cheap long-term funding compared to medium and large counterparts. Despite the overall increase in borrowing during the 2008 crisis, especially in times of liquidity shortage and elevated credit risk for firms, small firms encountered difficulties in accessing the financial markets for borrowing purposes.

This paper makes several contributions to existing research. First, it presents novel findings that highlight the borrowing behavior of entrenched managers in small firms. Unlike their counterparts in medium or large firms, entrenched managers tend to acquire higher levels of short-term debt maturities. In contrast, entrenched managers in larger firms exhibit a preference for cheaper long-term debt maturities (Berger et al. 1997). We also provide new evidence that entrenched managers in small firms hold significantly less excess cash than entrenched managers in large or medium sized firms that keep more excess cash (Fajilaye 2004). To supplement E-index measure of managerial entrenchment, we develop two direct measures of entrenchment based on four (DME 4), and six (DME 6) anti-takeover provisions frequently used by firms after the Sarbanes-Oxley Act (2002).

This paper has important economic and policy implications, consistent with De Vito and Gomez (2020). It suggests that the COVID-19 health crisis may result in a significant liquidity crunch for most firms, potentially occurring within 6 months to 2 years. During the 2008 global financial crisis, firms typically increased borrowings to mitigate liquidity crisis. However, access to credit in the debt markets significantly diminished, particularly for small firms. In the aftermath of the 2008 financial crisis, Federal Reserve policies facilitated direct borrowing at a more favorable funds rate from the Feds for medium to large firms (Ampofo 2021). Conversely, individuals and small firms generally faced challenges in accessing debt capital when it was most needed during the 2008 global financial crisis.

Against this background, the economic stimulus policy implemented by the U.S. government in 2020 and 2021 aimed at ensuring easy access to cash for not only medium and large firms but also for individuals and small firms, is a positive and forward-thinking measure. Under the CARES Act (2020), the U.S. Congress approved about $2 trillion in COVID-19 relief that included $1.8 trillion direct aid to individuals and businesses to stimulate the U.S. economy. Also, regulatory policies that provide more time for individuals and small firms to pay cash for existing debt, or purchased goods and services should ease the cash crunch. Based on this study and existing evidence, it becomes apparent that the effectiveness of an economic stimulus package depends on the amount, timing, and the specific entities targeted. The findings suggest that in times of global financial crisis, public policy should prioritize supporting small firms timely access to cash over medium and large firms.

The limitations of this study provide opportunities for further research. This paper focused on small public firms that have publicly available financial data for analysis. Future research can investigate small private firms as well as firms that operate as Employee Stock Ownership Plan (ESOP) companies. Also, further research can study the trade-offs of keeping high excess cash versus investing excess funds during periods of global financial crisis depending on if the company is new and cash starved or cash cow companies that are more mature and are not cash starved. The impact of instrumental variables, such as significant tax cuts for businesses, payment protection programs, economic injury and disaster loans on firms’ outcomes may be other fruitful research topics to investigate in the future. Finally, it may be interesting to examine other variables during the global financial crisis and recommend additional policies for individuals, firms and governments.

Data Availability: Data is available from public sources cited in this paper.

References Références Referencias


76. Myers, Stewart C., and Nicholas S. Majluf, 1984. Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics 13, 187221.

APPENDIX 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition of Variable</th>
<th>Expected Beta</th>
<th>Measurement/Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial entrenchment</td>
<td>Independent variable (more/less) ME. Managerial entrenchment means managers gain so much power that they are able to use the firm to further their own interests rather than the</td>
<td>+</td>
<td>Main proxy: Entrenchment (E) - index</td>
</tr>
<tr>
<td>Variable</td>
<td>Definition of Variable</td>
<td>Expected Beta Sign</td>
<td>Measurement /Data Sources</td>
</tr>
<tr>
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<td>--------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>[ME]</td>
<td>interests of shareholders (Weisbach 1988). The measures of ME are as follows:</td>
<td></td>
<td>Alternate proxies</td>
</tr>
<tr>
<td></td>
<td><em>E-index</em> is a measure of entrenchment based on six anti-takeover provisions namely staggered boards, limits to shareholders bylaw amendments, poison pills, golden parachutes, and supermajority requirements for merger and charter amendments (Bebchuk et al. 2009)</td>
<td></td>
<td>Direct Measures of Entrenchment (DME)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+</td>
<td>Data Sources: ExecuComp, ISS (formerly RiskMetrics or IRRC).</td>
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<tr>
<td></td>
<td><strong>Financial flexibility</strong> <strong>[FINFLEX]</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><em>Excess cash</em> is the median SIC industry cash and cash equivalents/total assets ratio in year t less firm cash and cash equivalents/total assets ratio in year t.</td>
<td></td>
<td>Main proxy</td>
</tr>
<tr>
<td></td>
<td><em>Residual excess cash</em> is the error term of OLS regression of Opler et al. (1999) model per Faleye (2004).</td>
<td></td>
<td>Alternative proxies</td>
</tr>
<tr>
<td></td>
<td><em>Free cash flow to the firm</em> is operating cash flow plus after-tax interest expense, plus net debt proceeds less long-term investment.</td>
<td></td>
<td>Residual excess cash</td>
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<tr>
<td></td>
<td></td>
<td>+</td>
<td>Free cash flow to the firm</td>
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<td></td>
<td></td>
<td>+</td>
<td>Data sources: Compustat</td>
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<tr>
<td></td>
<td><strong>Capital structure</strong> <strong>[LEV]</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The term leverage (LEV) refers to the level of debt in the capital structure.</td>
<td>n.a.</td>
<td>Main proxy</td>
</tr>
<tr>
<td></td>
<td>It is measured as the proportion of interest-bearing debt divided by total assets of the firm.</td>
<td></td>
<td>LEV = Interest-bearing debt/Total assets</td>
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<tr>
<td></td>
<td></td>
<td>n.a.</td>
<td>Alternative proxy</td>
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<td></td>
<td></td>
<td></td>
<td>DE = Debt/Equity</td>
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<tr>
<td></td>
<td><strong>Debt maturity structure</strong> <strong>[DM]</strong></td>
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<tr>
<td></td>
<td>Debt maturity structure refers to the average terms (in years) of interest-bearing debt of the firm.</td>
<td>n.a.</td>
<td>Main proxy</td>
</tr>
<tr>
<td></td>
<td>Short-term debt has a term of 3 years or less, while long-term debt matures in more than 3 years. Barclay and Smith (1995), Datta, Iskandar-Datta and Raman (2005), and Johnson (2003) define long-term debt as the proportion of debt with maturities exceeding three years.</td>
<td></td>
<td>Average debt maturity</td>
</tr>
<tr>
<td></td>
<td>We operationalize debt maturities as follows: short-term debt (3 years or less), medium term debt (3 to 5 years), long-term debt (greater than 5 years).</td>
<td>n.a.</td>
<td>Short versus long-term debt.</td>
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<td></td>
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<td></td>
<td>Short versus medium versus long-term debt.</td>
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<td></td>
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<td></td>
<td>Data sources: Compustat</td>
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<tr>
<td></td>
<td><strong>FIXED EFFECTS</strong> <strong>[FE]</strong></td>
<td>n.a.</td>
<td>YFE, FFE, or IFE are individually and collectively included in the regression models to control for heterogeneity in these fixed effects. I do not include both FFE and IYE in the same regression since firms</td>
</tr>
<tr>
<td></td>
<td>Year fixed effects (YFE) are dummy variables to control for heterogeneity in year trends over the sample period.</td>
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<tr>
<td></td>
<td>Firm fixed effects (FFE) are dummy variables to control for heterogeneity in firm’s characteristics.</td>
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</tbody>
</table>
Variable Definition of Variable Expected Beta Sign Measurement /Data Sources

Industry fixed effects (IFE) are dummy variables to control for heterogeneity in industry characteristics rarely change industries and two are generally capture similar fixed effects.

Data sources: Compustat

Factors that are for the known to significantly affect capital structure and debt maturity including:

Firm size, Market to book, Profitability, Asset tangibility, or Leverage (Rajan and Zingales 1995).
The control variable minimize endogeneity in the regression models.

<table>
<thead>
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<th>Measurement /Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry fixed effects (IFE)</td>
<td>dummy variables to control for heterogeneity in industry characteristics</td>
<td>n.a.</td>
<td>rarely change industries and two are generally capture similar fixed effects.</td>
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<tr>
<td>Data sources: Compustat</td>
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<td>Data sources: Compustat</td>
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<tr>
<td>Controls (CNTRLS)</td>
<td>Factors that are for the known to significantly affect capital structure and debt maturity including:</td>
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<tr>
<td></td>
<td>Firm size, Market to book, Profitability, Asset tangibility, or Leverage (Rajan and Zingales 1995).</td>
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<td></td>
<td>The control variable minimize endogeneity in the regression models.</td>
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</table>

Table 1: Panel A: Correlation Matrix

This table shows the descriptive statistics and two-tail correlations of the key variables that are significant at **.01**, and * .05*

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
<th>1</th>
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<td>Debt to Total Capital</td>
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<tr>
<td>2</td>
<td>Debt to Total Assets</td>
<td>-0.933**</td>
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<td>Average Debt Maturity</td>
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Panel B: Descriptive Statistics

This Table Shows Descriptive Statistics Including the Number of Observations, Mean, Standard Deviation, Minimum and Maximum.
Table 2: Descriptive Statistics by Firm Size and Crisis Period

Panel A shows descriptive statistics of small, medium, and large firms using market value groups and test of differences in means.

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<th>Large</th>
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<th>Small</th>
<th>Medium</th>
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<th>N</th>
<th>Mean</th>
<th>SD</th>
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Table 3: Impact of Managerial Entrenchment on Excess Cash

This table reports results of testing hypothesis H1. Control variables and fixed effects for year, and firm fixed effects are included in regressions. Results are significant at *** .01, **.05, and *.10 p-value. Year, or firm fixed effects is excluded (no) or included (yes) in columns 1 (No, No), 2 (Yes, No), 3 (Yes, Yes) of panels A and B. Column 4 uses DME4 and DME6 as independent variables. "n.s." means not statistically significant.

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<td>1  2  3  4</td>
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<td>.086** (16.24)</td>
<td>.101*** (16.91)</td>
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<td>(18.91)</td>
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<td></td>
<td></td>
<td></td>
<td>n.a.</td>
</tr>
</tbody>
</table>

2 DME 4 or DME 6 each is significant predictor of excess cash for firms in small or large (p<.05), but not medium market value groups.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (Log of Total Assets)</td>
<td>-0.023***</td>
<td>-21.68</td>
<td></td>
</tr>
<tr>
<td>Market to Book (MTB)</td>
<td>n.s.</td>
<td>-1.70</td>
<td>0.17</td>
</tr>
<tr>
<td>Tangibility (PPE/TA)</td>
<td>-0.008***</td>
<td>-3.81</td>
<td></td>
</tr>
<tr>
<td>Return on Assets (ROA)</td>
<td>0.054***</td>
<td>7.21</td>
<td></td>
</tr>
<tr>
<td>Debt to Equity (Debt/Equity)</td>
<td>-0.00**</td>
<td>-2.28</td>
<td></td>
</tr>
<tr>
<td>Year Fixed Effects</td>
<td>N</td>
<td>Y</td>
<td>Y*</td>
</tr>
<tr>
<td>Firm Fixed Effects</td>
<td>N</td>
<td>N</td>
<td>Y***</td>
</tr>
<tr>
<td>Observations</td>
<td>17337</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.028</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Impact of Managerial Entrenchment on Financial Leverage

This table reports results of testing hypothesis 2 by regressing on financial leverage (debt to total assets) managerial entrenchment (E-index, DME4 and DME6). Control variables and fixed effects for year and firm fixed effects are included. Slope betas are significant at *** .01, **.05, and *.10 p-values.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.03*** (-4.67)</td>
<td>-0.003 (-0.37)</td>
<td>-0.029** (-2.80)</td>
</tr>
<tr>
<td>CEO Pay Slice</td>
<td>0.071*** (6.95)</td>
<td>0.057*** (5.60)</td>
<td>0.003* (1.89)</td>
</tr>
<tr>
<td>E-index</td>
<td></td>
<td></td>
<td>-0.001 (-0.10)</td>
</tr>
<tr>
<td>DME4 Index</td>
<td></td>
<td></td>
<td>0.003 (-0.94)</td>
</tr>
<tr>
<td>DME6 Index</td>
<td></td>
<td></td>
<td>0.003 (-0.95)</td>
</tr>
<tr>
<td>Log of Total Assets</td>
<td>0.069*** (38.94)</td>
<td>0.066*** (37.39)</td>
<td>0.069*** (37.39)</td>
</tr>
<tr>
<td>Market to Book</td>
<td>0.00*** (8.67)</td>
<td>0.00*** (8.74)</td>
<td>0.00*** (8.74)</td>
</tr>
<tr>
<td>Asset Tangibility</td>
<td>-1.3E-5 (-0.00)</td>
<td>0.005 (1.27)</td>
<td>-0.001 (-0.94)</td>
</tr>
<tr>
<td>Return on Assets</td>
<td>-1.97*** (-15.81)</td>
<td>-2.25*** (-18.11)</td>
<td>-2.25*** (-18.10)</td>
</tr>
<tr>
<td>Fixed Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year Fixed Effects</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Firm Fixed Effects</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Observations</td>
<td>17336</td>
<td>17336</td>
<td>17336</td>
</tr>
<tr>
<td>R²</td>
<td>.092</td>
<td>.108</td>
<td>.108</td>
</tr>
</tbody>
</table>

3 E-index is significant for firms in small (p<.05), but not medium or large market value groups (p>.05). "n.a." means variable not included in the model.

4 DME 4 and DME 6 each significantly negatively explain variance in leverage ratio. "n.s." means variable is included in the model but it is not significant.
Table 5: Robustness Test: Impact of Managerial Entrenchment on Excess Cash and Financial Leverage

This table reports results of hypotheses H1, H2 and H3. We include standard control variables, as well as, corporate governance variables of CEO pay slice, CEO tenure, CEO share ownership, and dual role as CEO and chairperson. Columns 1 to 3 use DME4, while column 4 only uses DME6. There are no fixed effects in column 1, year fixed effects in column 2, and both year and firm fixed effects in columns 3, and 4. Results are significant at *** .01, **.05, and *.10 p-values.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.081***</td>
<td>-0.167***</td>
</tr>
<tr>
<td></td>
<td>(9.36)</td>
<td>(-11.74)</td>
</tr>
<tr>
<td>E-Index</td>
<td>0.00</td>
<td>n.a.</td>
</tr>
<tr>
<td></td>
<td>(-0.71)</td>
<td>(-2.03)</td>
</tr>
<tr>
<td>DME4</td>
<td>0.01**</td>
<td>-0.01**</td>
</tr>
<tr>
<td></td>
<td>(3.34)</td>
<td>(-2.11)</td>
</tr>
<tr>
<td>DME6</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td></td>
<td>(n.a.)</td>
<td>(n.a.)</td>
</tr>
<tr>
<td>Debt maturity</td>
<td>-0.00</td>
<td>0.10***</td>
</tr>
<tr>
<td></td>
<td>(-0.74)</td>
<td>(23.73)</td>
</tr>
<tr>
<td>CEO pay slice</td>
<td>0.01</td>
<td>0.11***</td>
</tr>
<tr>
<td></td>
<td>(1.19)</td>
<td>(10.33)</td>
</tr>
<tr>
<td>CEO duality</td>
<td>-0.00</td>
<td>-0.00*</td>
</tr>
<tr>
<td></td>
<td>(-0.36)</td>
<td>(-1.13)</td>
</tr>
<tr>
<td>CEO tenure</td>
<td>0.00</td>
<td>0.00*</td>
</tr>
<tr>
<td></td>
<td>(1.12)</td>
<td>(1.14)</td>
</tr>
<tr>
<td>CEO share owned</td>
<td>0.00</td>
<td>-0.00**</td>
</tr>
<tr>
<td></td>
<td>(-0.96)</td>
<td>(-2.76)</td>
</tr>
<tr>
<td>Log Total Assets</td>
<td>-0.01***</td>
<td>-0.01***</td>
</tr>
<tr>
<td></td>
<td>(-13.46)</td>
<td>(-12.69)</td>
</tr>
<tr>
<td>Market to Book</td>
<td>0.00</td>
<td>0.10***</td>
</tr>
<tr>
<td></td>
<td>(1.95)</td>
<td>(10.53)</td>
</tr>
<tr>
<td>Asset Tangibility</td>
<td>-0.008***</td>
<td>-0.01***</td>
</tr>
<tr>
<td></td>
<td>(-2.90)</td>
<td>(-3.12)</td>
</tr>
<tr>
<td>Return on Assets</td>
<td>0.10***</td>
<td>0.10***</td>
</tr>
<tr>
<td></td>
<td>(8.65)</td>
<td>(3.31)</td>
</tr>
<tr>
<td>Debt to Equity (Debt/Equity)</td>
<td>-0.00**</td>
<td>n.a.</td>
</tr>
<tr>
<td></td>
<td>(-2.24)</td>
<td>(n.a.)</td>
</tr>
<tr>
<td>Year Fixed Effects</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Firm Fixed Effects</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>F-statistic</td>
<td>23.11</td>
<td>185.16</td>
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<tr>
<td></td>
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<td>197.41</td>
</tr>
<tr>
<td>No. of Obs.</td>
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<td>10371</td>
</tr>
<tr>
<td></td>
<td>10371</td>
<td>10371</td>
</tr>
<tr>
<td>R²</td>
<td>0.026</td>
<td>0.034</td>
</tr>
</tbody>
</table>
Unveiling the Power of ESG: A Cross-Market Exploration of Environmental, Social, and Governance Factors on Bond Pricing in European, Japanese, and US Corporate Bond Markets

By Lemuel Kenneth David, Nosheen Amjad, Meiling Luo 罗美铃 & Dr. Vanessa Angel

Xi'an Jiaotong University

Abstract- This study explores the influence of Environmental, Social, and Governance (ESG) factors on corporate bond markets, focusing on the European, Japanese, and US markets. The research demonstrates that ESG ratings have a significant impact on bond pricing and risk assessment. By examining yield curves, the study reveals that companies with lower ESG scores are perceived as riskier, leading to higher yield spreads on their bonds. This effect is consistent across the USA market, where responsible management practices are positively valued by creditors. In contrast, the European market displays variations in the relationship between ESG ratings and yield spreads, while the Japanese market demonstrates a negative perception of non-financial aspects in corporate management.

The findings highlight the growing importance of ESG-based evaluations in assessing investment opportunities. Investors are increasingly incorporating ESG factors into their decision-making processes, aiming for higher profits and effective risk management.

Keywords: ESG investments, corporate bond markets, risk assessment, non-financial factors.

GJMBR-C Classification: JEL: G11

Strictly as per the compliance and regulations of:

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Unveiling the Power of ESG: A Cross-Market Exploration of Environmental, Social, and Governance Factors on Bond Pricing in European, Japanese, and US Corporate Bond Markets

Lemuel Kenneth David °, Nosheen Amjad °, Meiling Luo 罗美玲 ° & Dr. Vanessa Angel °

Abstract - This study explores the influence of Environmental, Social, and Governance (ESG) factors on corporate bond markets, focusing on the European, Japanese, and US markets. The research demonstrates that ESG ratings have a significant impact on bond pricing and risk assessment. By examining yield curves, the study reveals that companies with lower ESG scores are perceived as riskier, leading to higher yield spreads on their bonds. This effect is consistent across the USA market, where responsible management practices are positively valued by creditors. In contrast, the European market displays variations in the relationship between ESG ratings and yield spreads, while the Japanese market demonstrates a negative perception of non-financial aspects in corporate management.

The findings highlight the growing importance of ESG-based evaluations in assessing investment opportunities. Investors are increasingly incorporating ESG factors into their decision-making processes, aiming for higher profits and effective risk management. The study emphasizes that financial decisions should not longer rely solely on financial indicators but also consider non-financial factors, such as environmental impact, social practices, and governance policies. This shift indicates that ESG-related risks are being integrated into investors' value judgments, influencing the pricing and risk assessment of corporate bonds.

The study utilizes comprehensive data from Refinitiv's corporate bond yield curves and applies robust methodologies, including weighted averages and credit rating categorization. By analyzing both cross-sectional and time series data, the study uncovers significant insights into the relationships between ESG ratings and bond pricing. The research methodology enables a deeper understanding of risk premia across different credit rating categories and maturities, providing valuable insights into the impact of ESG factors on bond pricing dynamics.

Keywords: ESG investments, corporate bond markets, risk assessment, non-financial factors.

Introduction

In this study, we examined the utilization of ESG factors (Environmental-Social-Governance) as a widely adopted measure for assessing responsible, green, and sustainable investments (Amel-Zadeh–Serafeim, 2019). Extensive literature exists on the relationship between return on equity and responsible investor behavior. Gunnar et al. (2020) synthesized the findings from approximately 2200 research studies concerning the connection between financial performance and ESG, while Orlitz et al. (2003) attempted to draw substantiated conclusions by summarizing the results of 52 studies. The majority of these studies concluded that investors in the capital markets do consider the impact of an issuer on the environment, society, and corporate governance practices and culture when making investment decisions.

According to a study by Bennani et al. (2018), conducted as part of the Amundi Asset Management Research, it was found that compared to the market portfolio, investing in highly rated ESG shares and divesting from poorly rated ones could yield an additional profit of 3.3% on the USA market from 2019 to 2023. Similarly, on the European capital markets, applying the same strategy could result in an extra profit of 6.6% during the same period. However, certain studies have not found a clear and long-term connection between yields and responsible corporate management (Gillian–Starks, 2017). Fain (2020) arrived at a mixed result regarding the relationship between financial performance and ESG scores of companies. While a higher environmental (E), social (S), and overall ESG rating did not significantly impact financial performance, a 10-point increase in the governance factor (G) led to a 0.3% improvement in after-tax return on sales.

ESG factors are utilized by banks, asset managers, pension funds, and other investors for both risk management (Hoepner et al., 2020) and identifying investment opportunities (van Duuren et al., 2015). Furthermore, ESG indicators at the country level can be applied to evaluate welfare systems or assess the...
The environmental aspect of ESG focuses on evaluating a company's waste management, emissions of harmful substances, and ecological footprint. The social factor encompasses the company's relationships with stakeholders such as suppliers, buyers, and employees, as well as its impact on society as a whole. This includes considerations of health and labor safety regulations and their adherence. The governance component aims to quantify corporate culture, covering aspects ranging from gender diversity to executive compensation and data governance policies of companies (MSCI ESG Ratings, 2020). Notably, there is a growing number of fintech and intelligence companies, such as MSCI, Sustainalytics, and Refinitiv, dedicated to collecting, processing, and publishing ESG metrics. The Refinitiv ESG figures used in this study are regularly updated, ensuring the accuracy and relevance of the sub-indicators and overall ESG rating (Refinitiv, 2020).

In the past decade, portfolio managers have increasingly adopted responsible and sustainable investment strategies to guide their financial decision-making. Previously, such strategies primarily involved excluding industries such as arms manufacturing, tobacco, or alcohol production from investment portfolios. However, the landscape has evolved, and funds, ETFs, and indexes that consider ESG factors have gained popularity. Investors now monitor and invest in these portfolios to pursue higher profits compared to the market average, manage risks effectively, and support long-term sustainable goals (USA SIF, 2016). ESG-based investments have significantly impacted the European and US stock exchanges since 2013, indicating the increasing importance of ESG factors in risk management and the emergence of responsible mission-driven investment opportunities. Interestingly, responsible investments have not yet become a widespread trend in countries like Japan or Australia. This divergence can be attributed, among other factors, to the conservative and traditional nature of Japanese corporate culture (Bennani et al., 2018).

III. Data Governance and Data Quality Assurance 3

In our research, we focused on the companies represented in Refinitiv's corporate bond yield curves. These yield curves were constructed using the cubic spline method, which offers superior forecasting accuracy, flexibility, stability, and smoothness compared to other interpolation methods (Waggoner, 2019; Anderson, Sleath, 2010; Moore, 2017).
After applying various filters, we obtained a dataset of 3,100 observations. The filtering criteria included the availability of yield time series and ESG time series dating back to at least 05.01.2015, a minimum of 11 existing maturities, at least 5 active bonds, and a maximum maturity of 3 years for the shortest bond, with bonds over 10 years maturity, a minimum total face value of USD 1 million, and at least 80% availability of the time series. We examined the yield curves for maturities ranging from 1 to 15 years, with longer maturities typically extrapolated. Therefore, we did not consider maturities exceeding 15 years. The specific points on the yield curves were 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, and 15 years. In cases where the last maturity was unavailable, we extrapolated the 12-year figure using flat filling. Any missing data were filled in using observations from the previous day, resulting in values for 1,504 different days. By applying the filtering criteria mentioned above, we obtained a total of 135 corporate bond yield curves for the USA market, 25 for the European market, and 29 for the Japanese market. We paired these yield curves with the issuers' credit rating and ESG variables, as well as individual E, S, and G factors. This allowed us to examine smaller non-financial indicators separately, such as environmental or social impact. We analyzed the curves and the relationships among the selected variables over a time span of 5.5 years, from January 2014 to December 2021, considering all available days. Each day, the yield curves were sorted by their ESG, E, S, and G scores, first within the respective markets and then within the corresponding credit rating categories for USA companies. Following this arrangement, we compared the top and bottom 10% of the issuers based on their yield curves, examining the difference in risk premiums between companies with the best and worst ESG scores. In cases where the partial universe was too small, we used 5 observations instead of 10%. Notably, since we were analyzing risk premia, we deducted the respective points of the risk-free yield curves of the relevant currencies from the different maturities of the yield curves. If a risk-free yield curve maturity was unavailable, we used linear interpolation for the calculation. To visualize the results, we plotted the yield curves of the top 10% and bottom 10% ESG-rated companies for each market, as well as within the respective credit rating categories for the USA market. We analyzed both cross-sectional and time series data, considering the ESG, E, S, and G-based arrangement of the companies within the population, which was updated daily alongside credit rating changes.

IV. Data Analysis

a) Variations in Yield Spread on a Daily basis

Through the implementation of the data management process outlined above, we have obtained significant findings. However, due to the multitude of yield curves analyzed across various categories, their visualization and subsequent interpretation posed challenges. To overcome this hurdle, we employed a weighted average approach, combining the yield curves for the top 10% highest and lowest ESG-rated companies based on maturity and face values of the bonds.

To facilitate analysis, we categorized the yield curves into three credit rating groups following Moody’s classification. The "Prime 1" category encompassed companies with formal ratings ranging from Aaa to A1. The "Prime 2" category included companies rated A2 and A3, while the "Prime 3" category consisted of companies rated Baa1, Baa 2, and Baa 3. Given the limited representation of credit ratings riskier than Baa 3 among the yield curves that met our filtering criteria (less than 10%), we were unable to include them in the analysis due to insufficient data for drawing confident conclusions. By applying these refined methodologies, we aimed to provide clearer insights into the relationships and patterns within the yield curves and their associations with ESG ratings. This approach allowed us to gain a deeper understanding of the risk premia across different credit rating categories, shedding light on the impact of ESG factors on bond pricing. Moving forward, we meticulously analyzed the yield curves within each credit rating category, examining the differences in yield spread between the top 10% and bottom 10% ESG-rated companies. This analysis enabled us to evaluate the significance of ESG factors in influencing risk premiums and ascertain whether higher ESG ratings were associated with lower yield spreads, indicating potentially reduced risk and improved financial performance.

By considering both cross-sectional and time series data, we observed how the risk premia varied over time and across different maturities. This comprehensive approach allowed us to uncover valuable insights regarding the impact of ESG factors on the pricing dynamics of corporate bonds. In summary, our refined analysis methodology, encompassing weighted averages, credit rating categorization, and thorough examination of yield spread differences, has empowered us to derive meaningful conclusions from the data. By identifying the relationships between ESG ratings and bond pricing, we can contribute to the growing body of knowledge on the intersection of sustainable investing and financial performance.
Throughout the analysis period, the credit rating of the examined companies exhibited daily fluctuations. However, a discernible pattern emerged in the distribution of the Prime 1-3 groups, which consistently accounted for approximately 30% each within the filtered universe. Concurrently, the speculative group demonstrated relative stability, consistently comprising around 10% of the total. This consistent distribution across the credit rating categories provides valuable insights into the composition of the studied universe.

Figure 1: From January 2014 to December 31, 2021, we examined the distribution of credit rating categories among companies that met our filtering criteria.
Figure 2: The Highest and Lowest 10% of the Yield Curves of Bonds Issued by the Companies of the USA Population Arranged by their ESG, E, S and G Scores within Moody’s Aaa-A1 Credit Rating Categories (TOP-tier 1) as of 2014.

Figure 2 reveals a noteworthy disparity in the anticipated rate of return between bonds issued by the best and worst performing companies based on their ESG scores within the highest credit rating category on the USA market. This discrepancy suggests that market perception deemed debtors with lower ESG scores as riskier, even within the same credit rating category. Similar trends were observed when considering the environmental (E), social (S), and governance (G) variables, although the magnitude of the spread varied. Additionally, we computed the average yield curves across different maturities daily, considering both the respective markets and credit rating categories. Table 1 provides the cross-sectional data for the final...
day of the examined time period. Due to stringent filtering criteria, the number of available yield curves was insufficient on the Japanese and European markets, limiting our ability to draw definitive conclusions regarding credit risk categorization. Therefore, our analysis primarily focuses on the dimension of credit risk within the USA market. These findings underscore the importance of ESG considerations in evaluating credit risk and bond performance. The observed differences in the expected rate of return highlight the market’s sensitivity to ESG factors and their impact on investor perceptions of risk. By incorporating ESG scores and examining their influence on bond pricing, investors can make more informed decisions aligned with their risk tolerance and sustainability objectives. It is worth noting that the limited number of yield curves from the Japanese and European markets highlights the need for further research in those regions. Conducting comprehensive studies across multiple markets could provide a more holistic understanding of the global credit risk landscape and shed light on the potential variations in the impact of ESG factors on bond markets. Overall, our analysis emphasizes the significance of considering ESG factors when assessing credit risk and highlights the need for continued investigation into the relationship between ESG scores and bond performance across different markets. By deepening our understanding of these dynamics, we can enhance risk management strategies, promote sustainable investing, and contribute to the advancement of responsible financial practices.

Table 1

In December 2021, we examined the average difference in yield spread among the bonds issued by companies within the filtered universe, categorized based on credit rating and their highest and lowest ESG, E, S, and G ratings. This analysis aimed to assess the variations in yield spread, which represents the difference between the yield on a bond and the risk-free rate, for different credit rating categories and ESG profiles. By comparing the average yield spread, we gained insights into the relative risk levels and market perceptions associated with different credit ratings and ESG ratings. This information is valuable for investors, as it provides an indication of the potential returns and risk exposure associated with bonds issued by companies across various credit rating categories and ESG profiles.

The results of this analysis contribute to a better understanding of the relationship between credit ratings, ESG factors, and yield spread. They highlight the importance of considering both creditworthiness and ESG performance when assessing bond investments. By incorporating these factors into investment decisions, investors can align their portfolios with their risk tolerance and sustainability objectives. It is worth noting that the analysis was conducted using data as of December 2021, and further research is needed to explore how these relationships evolve over time. Continued analysis of yield spread dynamics and the interplay between credit ratings and ESG ratings will provide valuable insights for investors and researchers in understanding market trends and risk profiles associated with bond investments.

Table 1 provides further valuable insights into the relationship between credit ratings, ESG factors, and yield spreads. As of December 2020, it becomes evident that investors place greater importance on the environmental responsibility, social responsibility, and treatment of partners and employees of companies with better credit ratings on the USA market. Notably, investors expect a yield spread close to 0.5% from the best-rated debtors. Conversely, investors who purchased bonds from debtors with excellent credit ratings but poor ESG performance anticipated an average return that was 35 basis points higher compared to bonds in the same credit rating category but with better ESG performance. Within the Top-tier 1 category, it is apparent that the E (environmental) factor has the most significant impact on the yield spread associated with the ESG rating. This daily observation further supports the notion that creditors are particularly sensitive to the environmental variable, deeming companies with a low E rating as the riskiest. The G
(governance) rating also holds importance for them, while the S (social) variable only triggers a yield spread of 16.2 basis points. However, as we move to the Top-tier 2 and Top-tier 3 credit rating categories, the influence of ESG-based risk assessment diminishes. In the Top-tier 3 category, creditors do not view ESG as an additional risk. In fact, they penalize riskier debtors for allocating investments to social and governance projects instead of prioritizing their role as responsible debtors. This indicates that ESG-driven practices are primarily observed among the most financially sound debtors. In other words, if a company falls within the most solvent category, investors have higher expectations for its approach to social and environmental issues, and consequently, they anticipate ESG-related risks. As a result, the credit rating category of a company declines, investors become less sensitive to responsible management. The importance of the E, S, and G variables decreases by approximately 50 basis points across different credit rating groups.

Given the lack of clear conclusions from the cross-sectional figures for Europe and Japan, a time series analysis was conducted to examine these markets more comprehensively. This approach allowed for a deeper understanding of the dynamics and trends specific to these regions, contributing to a more comprehensive assessment of the relationship between credit ratings, ESG factors, and yield spreads in these markets.

Table 1 provides significant insights that can be derived from the analysis. As of December 2020, it is evident that investors place increasing importance on the ESG performance of companies as their credit ratings improve in the USA market. Investors expect the highest-rated debtors to yield a spread of approximately 0.5%. Interestingly, investors who purchased bonds from debtors with excellent credit ratings but poor ESG performance anticipated an average return that was 35 basis points higher compared to bonds in the same credit rating category but with better ESG performance. This indicates that ESG factors play a crucial role in shaping investor expectations and risk assessments within the Top-tier 1 credit rating category. Within the Top-tier 1 category, the E (environmental) factor has the most significant impact on the yield spread influenced by the ESG rating. This daily observation further supports the notion that creditors exhibit heightened sensitivity to the environmental variable, considering companies with a poor E rating as the riskiest. Additionally, the G (governance) rating holds considerable importance for creditors, while the S (social) variable triggers a yield spread of 16.2 basis points. However, as we move to the Top-tier 2 and Top-tier 3 credit rating categories, the role of ESG-based risk assessment diminishes. In the Top-tier 3 category, creditors do not view ESG as an additional risk factor. On the contrary, they penalize riskier debtors for allocating investments to social and governance projects instead of prioritizing their commitment to being reliable debtors. This highlights that ESG-driven operations are primarily observed among the best debtors, implying that investors expect companies in the most solvent category to effectively address social and environmental issues, thereby introducing ESG-related risks. Consequently, as companies move to lower credit rating categories, investors become less sensitive to responsible management. The significance of the E, S, and G variables declines by approximately 50 basis points across various credit rating groups. Drawing clear conclusions from cross-sectional figures for Europe and Japan proved challenging, prompting us to conduct a time series analysis to gain a more comprehensive understanding of these markets. By employing this approach, we can delve into the dynamics and trends unique to these regions, providing a more nuanced assessment of the relationship between credit ratings, ESG factors, and yield spreads in these markets.

V. Variations in Yield Spreads over the Time Period Analyzed

The analysis conducted spans over a period of 7 years, covering data from January 2014 to December 2021, with a total of 1504 observations. To examine the differences in yield spreads, we aggregated the daily yield spreads across various maturities, consolidating the risk premia associated with each yield curve into a single data point. It is important to note the dynamic nature of the ESG and credit ratings in relation to the static portfolio of bonds. While the portfolio consists of the yield spreads of bonds issued by the same companies on a daily basis, the ESG and credit ratings of these curves can vary from day to day. As such, partial portfolios were created each day, considering the ESG rating and credit rating of each company on that specific day. This approach allows us to capture the evolving relationship between ESG ratings, credit ratings, and yield spreads over the examined time period. By analyzing these time series data, we gain deeper insights into the dynamics of risk premiums and the impact of ESG and credit ratings on yield spreads.
Unveiling the Power of ESG: A Cross-Market Exploration of Environmental, Social, and Governance Factors on Bond Pricing in European, Japanese, and US Corporate Bond Markets


Year 2023

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The findings in Top-tier 1 consistently align with the cross-sectional observations obtained on the final day of the analysis period. Notably, there exists a stable disparity in the yield spreads of corporate bonds categorized by their ESG, E, S, and G scores. The most significant divergence, as observed in the daily breakdown, stems from the overall ESG score and, particularly, the environmental (E) score. This distinction persists throughout the entire 7-year period under examination. It is crucial to acknowledge the impact of the COVID-19 pandemic, as it reveals an interesting trend in the yield spreads. During the outbreak, a noticeable convergence occurred between the yield spreads of companies with low and high ESG scores. In times of crisis, creditors appeared to disregard the level of responsible company operations, deeming bonds in the same credit risk category to carry equal levels of risk. However, as the panic subsided and the situation stabilized, the pre-pandemic trend reemerged, leading to a renewed divergence in yield spreads.

This observation underscores the dynamic nature of investor behavior during periods of uncertainty, where short-term risk perception may overshadow considerations of responsible company practices. Nevertheless, as market conditions stabilize, investors regain their focus on ESG factors, leading to a re-establishment of yield spread disparities. This dynamic interplay between market conditions and ESG considerations highlights the importance of ongoing monitoring and analysis in understanding the intricate relationship between credit risk, ESG factors, and yield spreads in the corporate bond market.
The trends observed in the European and Japanese bond markets exhibit distinct characteristics when compared to the US market and each other. In the Japanese market, bonds issued by companies with higher ESG scores consistently carry a higher yield spread than those with lower ESG scores. Conversely, on the European market, the trend is variable, with added risk associated with both higher and lower ESG ratings during different periods. This trend is apparent for the environmental (E), social (S), and governance (G) factors on both markets.
Based on these findings, it can be concluded that the Japanese and Asian markets have yet to fully embrace the rewarding of responsible companies. Instead, they perceive companies engaging in environmental, social, or governance initiatives as riskier, emphasizing the importance of financial performance and profitability alone. In contrast, the trends in the European market exhibit more variability. At times, higher ESG scores indicate added risk, while at other times, responsible corporate management is perceived as less risky. Further research is needed to identify the specific events triggering these turning points in the European markets. However, during economic downturns such as the COVID-19 pandemic in 2019, the trends align with the US market, where the importance of non-financial risk mitigation diminishes, and both good and bad ESG performers are deemed risky. The time series findings presented in our study align with previous research conducted on stock markets, such as the work by Bennani et al. (2018). The impact of responsible corporate management was initially observed in the US stock market, which later extended to the European markets. However, this impact has yet to reach the Asian markets or has only had minimal effects. Interestingly, in the bond markets, the presence of ESG-related risk mitigation is already evident in the US markets, undergoing a transition in the European markets, but has not yet materialized in the Japanese market, where it is perceived as risky by creditors. These findings underscore the dynamic nature of ESG considerations in different markets and the need for ongoing research to fully understand the factors influencing market reactions. The integration of ESG factors into investment strategies has the potential to enhance risk management and drive sustainable investment practices globally.

VI. Conclusion

Drawing upon the robust findings of this study, it becomes evident that risk assessment in the US market extends beyond purely financial considerations. This trend, previously observed in stock markets, has now permeated into bond markets, indicating that ESG-related risks are becoming an integral part of creditors' expectations. Notably, this shift impacts stakeholders, such as creditors, who bear a lesser degree of exposure to potential losses in the event of bankruptcy, as their claims hold higher priority than those of shareholders. Within the US market, the ESG rating serves as a differentiating factor among companies sharing the same credit rating and financial creditworthiness. Over the past five years, companies with lower ESG scores, indicating a lower level of responsible management in environmental, social, and governance aspects, have been deemed riskier by the market. This effect is observed not only in the overall ESG score but also in its individual factors. Moreover, the study reveals a positive correlation between a higher credit rating and the significance placed on responsible management by creditors. Conversely, in lower credit rating categories, a company focusing on responsible operations alongside solvency is perceived unfavorably. This trend exhibits variation in the European markets, while the Asian (Japanese) markets demonstrate a contrasting pattern, where corporate management incorporating non-financial aspects is negatively assessed.

The findings of this study give rise to further quantitative and qualitative inquiries. For example, what events act as catalysts for the shifting trends observed in European markets, and what factors underlie the trend observed in the Japanese market? Exploring these questions would enhance our understanding of the dynamics influencing market behavior and investor perceptions. To gain a comprehensive understanding of the evolving landscape, future research endeavors should delve deeper into the mechanisms driving these trends, their implications for risk assessment, and the long-term impact on financial markets. Such investigations would enable investors, policymakers, and market participants to make informed decisions and foster sustainable practices that align with responsible corporate behavior.

a) Limitations

The study focuses on three specific markets (European, Japanese, and US), limiting generalizability to other regions.

The research period spans from January 2014 to December 2021, and future developments beyond this timeframe may influence the observed trends.

The analysis relies on available data from Refinitiv's corporate bond yield curves, and the results may be subject to data limitations and potential biases.

b) Practical Implications

Investors and financial institutions should consider ESG factors in their decision-making processes, as they have a significant impact on bond pricing and risk assessment. Regulators and policymakers should encourage the integration of ESG considerations into financial market practices to promote sustainable investments and responsible corporate behavior. Companies should prioritize responsible management practices, as they are increasingly valued by creditors and investors, leading to potentially lower borrowing costs and improved financial performance.

References Références Referencias


Impact of Bad Banking Debts on Profitability (Jordanian Banking Sector)

By Prof. Ghazi Abdullmajeed Alrgaibat
Al- Bayt University

Abstract- The study aimed to demonstrate the effect of size for bad debts on the rate of return on assets for the Jordanian banking sector: a case study (2010-2022), the sample of the study is the Jordanian banking sector, this study relied on the descriptive and analytical approach. The study concluded that there is no effect of size for bad debts on the rate of return on the results. The study recommended the necessity of providing the necessary competencies and expertise to adopt new standards and decisions and move towards possessing the technical capabilities that enable the supervisory authorities to measure risks through the methods stipulated in the international Basel standards, in addition to Providing data and information that facilitate accurate evaluation of what banks are doing.

Keywords: size of bad debt, return on assets.

GJMBR-C Classification: LCC: HG

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I. THE GENERAL FRAME

The banking system is one of the most important pillars of the financial and economic system for each country through its ability to mobilize all savings and then redirect them to many areas of investment. However, despite its contribution to financing economic development at the level of all countries of the world, many challenges have emerged that have reduced the size of the gains and opportunities available, and the most important of these challenges was the failure of loans provided and the losses resulting from them for some small and medium projects, so banks resorted to reducing facilities and loans granted to some sectors and require them to provide large guarantees. Especially in the absence of financial data for these companies, and sufficient and accurate credit information about the credit history of these companies. When talking about non-performing loans, we must talk about the biggest non-performing loan crisis, which was in 2008, the global financial crisis, the mortgage crisis in the United States of America, which led to a rise in debt burdens as a result of excessive indebtedness.

In the opinion of many economists, one of the reasons for the exacerbation of the global financial crisis was the excessive granting of credit facilities by many financial institutions that are associated with a large amount of risks, which led to the inability of clients to pay their financial obligations and thus exacerbated the crisis. In this research, we cannot talk about the biggest challenges facing banks, which is the volume of non-performing debt and its impact on the rate of return on assets in the Jordanian banking sector. To show the relationship and the impact, the data from 2010-2020 from the Financial Stability Report of the Central Bank of Jordan will be analyzed.

II. RESEARCH PROBLEM

The research problem is to show the impact of the volume of non-performing debts on the rate of return on assets for the Jordanian banking sector during the period “2010-2020”, by answering the following questions:

1. What is meant by non-performing debt in the banking sector?
2. What is meant by the return on assets ratio in the Jordanian banking sector?
3. What is the impact of the volume of non-performing debts on the return on assets ratio in the period 2010-2022 in the Jordanian banking sector?

III. RESEARCH AIMS

1. Know what is meant by the term non-performing debts in the banking sector.
2. A statement of the concept of the rate of return on assets in the banking sector.
3. Studying the impact of the volume of non-performing debts on the rate of return on assets by analyzing the data related to the study for the period 2010-2020.

IV. RESEARCH IMPORTANCE

The importance of the research stems from the fact that it seeks to analyze the relationship between the volume of non-performing debt and the rate of return on assets in the Jordanian banking sector, where the volume of non-performing debt is of great importance to the banking sector; It reflects an impression in the minds of investors about the financial performance of the single bank in particular and the banking sector in general. The banking administrations in the Jordanian banking sector benefit from this study, as well as provide researchers interested in the subject of the study with an analysis that measures the impact of the size of these debts on the rate of return on assets, and...
existing and new investors in the Jordanian banking sector also benefit from it.

a) Study Hypotheses

The First Hypothesis: There is no statistically significant effect of the volume of non-performing debts on the rate of return on assets in the Jordanian banking sector for the period 2010-2022.

b) Study Variables

1. The Independent Variable: Amount of non-performing debts
2. Dependent Variable: Ratio of return on assets

![Study Model](Source: Prepared by the Researcher)

The results of the study showed that there is no significant effect of the size of the bank on the return on assets, and there is a statistically significant effect of non-performing loans on the return on equity in Jordanian commercial banks. Qassem’s study "2019" entitled: "Non-performing loans and their impact on the banking sector in the Arab countries." This study aimed to assess the impact of non-performing loans on the banking sector in the Arab countries by estimating a linear function using the least squares method to measure the impact of non-performing loans on some indicators of the banking sector in a number of Arab countries for which sufficient data are available, including Jordan. This study concluded with a set of results, most notably: Emphasis on the negative effects of non-performing loans on growth rates, and the high rate of non-performing loans in the industrial transformational sectors, the commercial sector and the small and medium enterprises sector. Awainat study "2017" entitled: "The impact of non-performing loans on the financial performance of commercial banks: a case study of banks." This study aimed to know the impact of non-performing loans on the financial performance of commercial banks in Algeria, as non-performing loans became the focus of all commercial banks due to their impact on their financial performance and their various activities. Its impact also includes various elements of financial performance represented in liquidity, profitability and capital adequacy indicators. The study was conducted on Al Baraka Bank (BARAKA), External Bank of Algeria (BEA) and Gulf Bank Algeria (AGB) during the period 2010-2015, where the regression analysis method was used. Simple to detect the impact of non-performing loans on financial performance, using statistical software Eviews9, The results of the study showed that non-performing loans affect the liquidity of the banks that represented the sample of the study, so...
that the larger the volume of non-performing loans, the more it affected the banks’ liquidity. Bank profitability by 9%.

A Study (Osman, 2009) Entitled: "Asset/Liability Management in Conventional and Islamic Banks". This study aimed to study the correlation between the management of assets as a group and the management of liabilities as another group in conventional banks and Islamic banks, and also aimed to find out whether conventional banks and Islamic banks diversify the investment of their surplus liquidity when managing assets according to short-term and long-term financing operations in order to Increase profitability and mitigate risk. The study population is represented by the number of Islamic banks in Jordan, and their number is two compared to two of the conventional banks. The sample of conventional banks was taken to be equal with Islamic banks according to the equity criterion, According to the classification of the Association of Banks in Jordan, and the study concluded with a general conclusion that there is great importance for managing the assets/liabilities of both conventional and Islamic banks. A study (Saadat, 2016) entitled 'Managing Non-performing Loans in Algerian Banks: A Case Study of the Algerian Public Credit Bank, CPA, Agency of Ouargla'. The study aimed at the phenomenon of non-performing loans and the reasons for their increase, with methods of prevention and methods of treatment, and on this basis, the Popular Loan Agency of Ouargla was chosen as a sample for the study in order to reach the most important steps used to manage non-performing loans, And ways to limit its increase using the descriptive approach for the theoretical side and the case study method for the practical side. The study concluded that the absence of field and continuous follow-up of the client’s activity and the results of his work and its development after the loan was granted led to the emergence of a troubled bank loan. A study (Al-Harahsheh, 2016) entitled: The impact of the financing structure in the Jordanian insurance companies on the return on assets for the period (1990-2014). The study aimed to measure the impact of the financing structure in Jordanian insurance companies on the return on assets during the period (1990-2014) and the number of these companies (25), and in order to estimate the impact of the financing structure in Jordanian insurance companies on the return on assets, The study used a method using the random effect model, to test the study hypotheses. The results of the study showed an impact of the financing structure (equity and borrowing rights) in the Jordanian insurance companies on the return on assets in the insurance companies. Ozili (2017): Non-performing loans and Financial Development: New Evidence. The study aimed to know the relationship between non-performing loans and financial development. The study sample consisted of data from (134) countries from data from (134) countries that were relied on by the information included in the World Bank during the period (2003-2014). The results of the study showed that there is a positive correlation between GDP and non-performing loans in all countries of the study sample, It was also found that there is a correlation between the percentage of foreign ownership and non-performing loans, and the study recommended that banks pay attention to setting more strict terms in terms of loans that are made by their clients. Kustina et al., (2018) MSMEs Credit Distribution and Non-performing Loan towards Banking Companies Profit in Indonesia. The study aimed to know the relationship between non-performing loans and the profitability of banks. The study sample consisted of (15) commercial banks operating in Indonesia, Many variables were used, such as non-performing loans, profitability of banks operating in Indonesia, The results of the study showed that non-performing loans have a significant impact on the profitability of commercial banks operating in Indonesia, as the high level of non-performing loans leads to a decrease in the level of profitability achieved by banks as a result of operations conducted through the private business of the bank. The study recommended establishing more tight foundations and rules by commercial banks with regard to non-performing loans. Vincruova. Z. Belás. J. Šnajdr. J. Doležal. J. (2015): "Model of the loan process in the context of unrealized income and loss prevention". This study aimed to prepare models for loan-granting institutions and banks, in addition to models dedicated to small and medium-sized companies in developing countries, in order to ensure that credit risks are avoided when granting and to ensure the success of the loan disbursement from the borrowing company in the correct form. The study concluded that there are a number of small and medium-sized companies worthy of granting credit, but they are not among the objectives of the banks in grants, due to the absence of strategic plans for them. The study recommended these companies to prepare strategic plans and submit them to banks to be among their objectives in lending. Amir et. al, (2016) "Determinants of Non-Performing Loans: An Empirical Investigation of Bank Specific Microeconomic Factors". The study aimed to explore the determinants of loan default in the small and medium enterprises sector in Pakistan. The researchers used the administrative records held by some commercial banks during the period (2014/2015). In addition, the researchers used in the study the results of questionnaires prepared by credit analysts/bankers for 9 commercial banks, including 42 branches. The researchers used descriptive analysis and Pearson coefficient to evaluate the variables that affect non-performing loans, as it was found that the date, age of the branch, and the duration of the loan, As well as credit policy is one of the most
important determinants of loan defaults. The study also indicated that microeconomic variables of small and medium-sized enterprises have an impact on non-performing loans. Ruziqa (2013): The impact of credit and liquidity risk on bank financial performance. The study aimed to show the impact of credit risk and liquidity risk on the performance of banks. This study focuses in particular on the Indonesian Bank in the period 2007-2011. The financial performance of the bank is measured by the return on assets, the return on equity and the net interest margin, and the credit risk is measured by the non-performing loans rate. Liquidity risk was also measured by the liquidity ratio. Moreover, this study also assessed the impact of bank capital and bank size on the bank's financial performance. The study showed that credit risk has a significant negative impact on the return on assets and the return on shareholders’ equity, while it was found that Liquidity ratio has a positive effect on return on assets, return on equity, The effect of banking capital has a positive effect on the return on equity, return on equity, and net income, while it was found that the size of the bank had a significant negative impact on net profit, and it was found that both credit and liquidity risks have an insignificant effect on net profit.

1. What distinguishes this study from previous studies:
   The most important thing that distinguishes this study from previous studies is that it measures the impact of the volume of non-performing debts on the rate of return on assets in the Jordanian banking sector, as this effect has not been studied before within the limits of the researcher’s knowledge.

2. Research Methodology: The researcher will rely on the descriptive analytical approach, to measure the impact of the volume of non-performing debts on the rate of return on assets for the Jordanian banking sector, where the study sample will consist of the Jordanian banking sector (banks) through the data included in the financial stability report of the Central Bank of Jordan for the period “2008-2018”.

3. Data Collection Sources: In addressing the theoretical framework of the study, the researcher directed to secondary data sources, which are related to Arab and foreign books and references, periodicals, articles and reports, previous research and studies that dealt with the subject of the study, and research and reading on various Internet sites.

4. Primary Sources: The researcher referred to the financial stability report from 2010-2020 available on the website of the Central Bank of Jordan.

5. Study Population and Sample: The study population and sample are represented in the Jordanian banking sector during the time period 2010-2020. Statistical methods use. The following statistical methods were used: Extracting the arithmetic means and standard deviations of the study variables. Also Applying the single regression equation to verify the validity of the study hypothesis.

6. Descriptive Analysis of the Study Variables: The amount of non-performing debts.

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Less Value</th>
<th>Highest Value</th>
<th>Arithmetic Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-2015</td>
<td>550</td>
<td>1335.66</td>
<td>1074.59</td>
<td>231.68</td>
</tr>
<tr>
<td>2015-2022</td>
<td>0.0110</td>
<td>0.0140</td>
<td>0.0120</td>
<td>0.0012</td>
</tr>
</tbody>
</table>

* One Million Jordanian Dinars

It Appears from Table No. (1) that: 1- The arithmetic average of the variable volume of non-performing debts during the period (2008-2018) amounted to (1074.59) and the value of the standard deviation for this variable was (231.68), as the values of the volume of non-performing debts during this period ranged between (550-1335.66). The arithmetic average of the return on assets variable during the period (2008-2018) amounted to (0.0120), and the standard deviation value of this variable was (0.0012), as the liquidity values during this period ranged between (0.0140-0.0110). Study Hypothesis Test. Results Related to the First Hypothesis: There is no statistically significant effect of the volume of non-performing debts on the rate of return on assets in the Jordanian banking sector for the period 2008-2018.

To verify the validity of this hypothesis, a single regression equation was applied to study the effect of the volume of non-performing debts on the return on assets. The results are presented below:
Table (2): Results of Applying the Single Regression Equation to Study the Effect of the Volume of Non-Performing Debts on the Return on Assets in the Jordanian Banking Sector for the Period 2008-2018

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Statistical Indication</th>
<th>F</th>
<th>Adjusted R-Squared</th>
<th>R-Squared</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept the hypothesis</td>
<td>0.10</td>
<td>3.28</td>
<td>0.186</td>
<td>0.267</td>
<td>0.517</td>
</tr>
</tbody>
</table>

It appears from the previous results that there is an effect of the size of non-performing debts on the ratio of return on assets, as the value of (F) reached (3.28), which is a positive value and is not statistically significant. This indicates that the volume of non-performing debts has a positive and not statistically significant impact on the return on assets in the Jordanian banking sector for the period 2008-2018. As the increase in the volume of non-performing debts by (0.517) results in a decrease in the return on assets by (0.517). The value of the coefficient of determination, which modifies the strength of the relationship between the independent and dependent variable (R-squared), was (0.186), and the value of (F) was (3.28) with statistical significance (0.10), which is a non-statistically significant value, which indicates the relationship between the independent variable and the dependent variable was not statistically significant at the significance level (α≤0.05), therefore, the first hypothesis is accepted in the null formula, which states that "there is no statistically significant effect of the volume of non-performing debts on the rate of return on assets in the Jordanian banking sector for the period 2008-2018.

VI. Study Recommendations

Providing the necessary competencies and expertise in order to adopt the new standards and decisions and move towards possessing the technical capabilities that enable the supervisory authorities to measure risks through the methods stipulated by Basel international standards, in addition to providing data and information that facilitate the accurate assessment of what banks are doing.

References

Arabic References

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Associates are authorized to organize symposium/seminar/conference on behalf of Global Journal Incorporation (USA). They can also participate in the same organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent. Additionally, they get free research conferences (and others) alerts.

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Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe InDesign, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

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Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

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2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author’s email address and postal address are accurate and reachable.
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- Findings
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Unless specified in the notification, the Editorial Board’s decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.
Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27” x 11”, left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word “Abstract” in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.

b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.

c) Up to 10 keywords that precisely identify the paper’s subject, purpose, and focus.

d) An introduction, giving fundamental background objectives.

e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.

f) Results which should be presented concisely by well-designed tables and figures.

g) Suitable statistical data should also be given.

h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.

j) There should be brief acknowledgments.

k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.
Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title
The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details
The full postal address of any related author(s) must be specified.

Abstract
The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords
A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods
Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations
Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations
Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends
Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

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XIII
Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Electronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for Writing a Good Quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.
6. **Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. **Revise what you wrote:** When you write anything, always read it, summarize it, and then finalize it.

8. **Make every effort:** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. **Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. **Use proper verb tense:** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. **Pick a good study spot:** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. **Know what you know:** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. **Use good grammar:** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. **Arrangement of information:** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. **Never start at the last minute:** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. **Multitasking in research is not good:** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. **Never copy others’ work:** Never copy others’ work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. **Go to seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. **Refresh your mind after intervals:** Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. **Think technically:** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.
21. **Adding unnecessary information:** Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn’t be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. **Report concluded results:** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. **Upon conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be printed for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

**Informal Guidelines of Research Paper Writing**

**Key points to remember:**
- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

**Final points:**

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

**The introduction:** This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

**The discussion section:**

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

**General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

**To make a paper clear:** Adhere to recommended page limits.

**Mistakes to avoid:**
- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
• Use paragraphs to split each significant point (excluding the abstract).
• Align the primary line of each section.
• Present your points in sound order.
• Use present tense to report well-accepted matters.
• Use past tense to describe specific results.
• Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
• Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

• Fundamental goal.
• To-the-point depiction of the research.
• Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.
Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

*Materials may be reported in part of a section or else they may be recognized along with your measures.*

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer’s interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.
Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.
Approach:
When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.
Describe generally acknowledged facts and main beliefs in present tense.

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<table>
<thead>
<tr>
<th>Topics</th>
<th>Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A-B</td>
</tr>
<tr>
<td>Abstract</td>
<td>Clear and concise with appropriate content, Correct format, 200 words or below</td>
</tr>
<tr>
<td>Introduction</td>
<td>Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited</td>
</tr>
<tr>
<td>Methods and Procedures</td>
<td>Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads</td>
</tr>
<tr>
<td>Result</td>
<td>Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake</td>
</tr>
<tr>
<td>Discussion</td>
<td>Well organized, meaningful specification, Sound conclusion, logical and concise explanation, highly structured paragraph, reference cited</td>
</tr>
<tr>
<td>References</td>
<td>Complete and correct format, well organized</td>
</tr>
</tbody>
</table>

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INDEX

A

Adherence · 24
Asymmetry · 2, 3

B

Bankruptcy · 11, 24, 33

C

Cumulative · 4

D

Deeming · 29, 32

H

Havoc · 11

L

Lucrative · 5

M

Mitigate · 8, 12, 14, 38

N

Nuanced · 29

P

Perquisites · 2, 3
Postulates · 3

R

Reluctant · 4
Residual · 2, 4, 7, 8, 10, 11
Reveals · 23, 27, 32, 33

S

Stimulus · 9, 12