Role of Firm Size in determination of Capital Structure of the Firm

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Abstract

This study aims to examine how factors affect the capital structures of both small and large non-financial enterprises. This study uses Random, OLS and GMM model to explain the relationship. For this a sample of 200 non-financial firms for 10 years from 2010 to 2019 were taken. The results would be suggesting that various firm characteristics play a vital role in determining capital structure of a firm. Firm profitability, Liquidity and Tangibility have a negative relationship significantly, while Inflation and Firm Size showed positive relationship with leverage ratio.

Keywords: Generalized method of moments, Capital Structure, Liquidity, Inflation, Random Effect, Leverage

Introduction

People's Capital structure decisions are critical for every business entity. It is the responsibility of directors who act as agents of shareholders to work and take capital decisions that are best interest of the company to ensure maximization the firm value. Investment and capital allotment vary in Institutional differences in the types of financial entities, their dominance and the business sectors they operate as criteria for evaluating financing decision may vary amount different investors.

Equity Financing is often described as owner's capital/investment into the business. In firms' owners are the one who hold preferred and common stocks. A firm has the option to finance its capital structure either through equity or debt financing. Equity finance can be raised by (Internal and External financing) issuing new stock after Initial Public Offering (IPO) & Retaining Earnings. Debt financing can be done in terms of loan, bond issuance, leasing financing & factoring. (Deeds et al, 1997).

Usually, firms in emerging economies heavily rely on debt financing as debt is considered an easy and cheap source of finance. One of the primary and conventional tools of borrowing by firms in emerging economies is bank loan. But recently, it has been observed that factor financing has become a different source of outside funding. Factoring is the process through which a business raises quick cash, either by pledging its receivables as collateral or by selling their trade receivables to outside third party.

Debt acquired by the firm is an obligation and is to be paid irrespective of the financial performance. While investors are being paid net profit after tax. Investors are associated with the activities of the business and it is very palatable for the Speculators.

Utilization of the resources by firm to fund its investments operations come to comprise the capital with the goal that the expense of capital is the least. Return rate which is requested by the creditors and investors and legitimate assurance of this expense is useful in dynamic. Capital markets play significant part in

directing, mobilizing and financing of the ventures and are significant source of investment in an economy. (Martínez & García,2017). Researchers making a response to the call; for instance, the Industrial Firstly, a distinction should be made whether a firm should issue debt or equity or to go with the mix of both sources that maximize the firm's worth and establishes the company's optimal capital structure. In capital structure research there is a usual practice to use liner regression model with fractional dependent variable. Nonlinearity functionality of explanatory variables based on expectation of fractional dependent variable leads to miss-specified model.

Most hypothetical equity funding urgency models presuppose that equity financing through new share issuance is challenging or prohibitively expensive. Notwithstanding, The rapidly growing number of publicly traded companies in industrialized economies and the development of equity markets in many emerging economies suggest that models of imperfect capital business sector should give new equity financing more consideration. A recent study by (Bolton, 2000), which gave first capital structure analysis decision hypotheses and equilibrium of financial market based upon incentive consideration and information. In capital market balance, Risky businesses can sometimes obtain equity financing but they do not easily obtain debt financing. Equity has a number of benefits over debt for businesses in the financial sector.

In what causes a firm to choose to issue equity is somewhat obsolete yet at the same time a fundamental point in finance. Equity issue doesn't just affect the association's possession and capital structure, however it likewise impacts assets structural (Masulis & Korwar,1986). In an examination by (Kim & Weisbach 2008), "there are in any event three possibilities, however not really fundamentally unrelated, thought processes in equity offering: to back speculations, to move abundance from new investors to existing investors, and to expand liquidity for both insiders and the firm."

This research also enables to investigate the determinants of capital structure and the mode of financing by small and large enterprises. Several financial theories based on empirical evidence have been developed to prove the importance and applicability of the capital structure for large firms. However, small scale and other firms which have received limited attention are not been explored much by researchers yet. It is fairly a common practice to issue equity in return for existing debt in Europe and countries outside United States including United Kingdom (Franks & Sanzhar, 2006) and Germany (Jostarndt, 2009).

Entities in emerging economies like Pakistan and India are commonly constrained by influencing families (La Porta et al,1999), who are especially disinclined to proprietorship weakening (Cronqvist & Nilsson, 2005). As a result, they choose to regularly finance their assets through debt. whereas equities are issued only as a last option (Högfeldt & Oborenko, 2005). Profitability, business size, inflation, liquidity, and the tangibility of assets are the firm's unique variables in this study.

This specific study aims at fulfilling and helping in the comprehension of the importance of capital structure financial theories on the scale of firms. This study will also emphasize how crucial it is to make the distinction between long-term and short-term goals sourcing of finance for various firm sizes as optimal capital structure is the key that maintains equilibrium between risk and return, thus maximizing security prices and minimizing cost of capital.

Both equity and debt financing has several advantages and implications. For example, debt allows owners to retain control while providing small enterprises with less administration cost and cheap financing in longer prospective but debt being the obligation can sometime severely affect firm performance and profitability if not paid.

Thus, this research will help future researchers and corporate sector to understand various characteristics like firm profitability, firm size, inflation, liquidity and tangibility of assets which can positively or negatively impact capital financing decisions and the benefits of replacing conventional sources for funds with alternative sources such as bootstrap financing or private equity.

Literature Review

M&M theory of Cost of Capital and Investment

The fundamentals of (Modigliani & Miller, 1958) advocates irrelevancy theory of capitals structure which suggests by keeping taxes, transaction cost of buying and selling of securities and having a symmetric information available in market the firm's worth is unimportant and unrelated to its capital structure. Later in his study (Miller,1977), introduced personal taxes in M&M model which explained that firms may capitalize the debt for its requirements till the point where value of tax benefits decreases than the distress cost. This phenomenon is until a threshold is given will be adding value to a firm. This approach suggests that change in leverage would have an impact on WACC which in turn means the lower the debt the high the WACC. Modigliani & Miller explored and extended by (Myers & Majluf,1984), who explained that firms which are newly incorporated prefer and rely on internal finance also firms having less availability and access to market information would rather go for equity financing option than debt. In a proceeding, (Stiglitz ,2005) challenged whether the M&M left out anything important or whether the theorem was flawed. He criticises taxation, bankruptcy, and knowledge assumptions in particular. He believes that debt's tax impact, investors' and corporate managers' differing levels of knowledge about the business, and the debt to equity ratio's effect on lessen the likelihood none of the variables that increase a person's chance of bankruptcy are consistent with the M&M theorem. It also claims that since capital markets are imperfect, the firm's financial structure makes a difference. For example, the signaling effect of equity issuance can lead investors to believe that the issuing company is equity constrained. He contends that the theorem is unworkable due to some presumptions, including taxation, insolvency, asymmetries in information, and perfect capital markets.

Due to its presumptions of perfect capital markets and the no-limits-to-arbitrage criterion, which includes perfect positive asset returns correlation, there are no fees associated with the use of leverage, and so on, (Charness & Neugebauer, 2019), believe that On real-world market results, the MM theorem has not been adequately proven. As a result, its empirical meaning has remained unclear. They criticize the M&M theory's methodological side. They believe that the analytical side of the theory is insufficient to ensure that the theory is right.

Pecking Order Theory

According to (Donaldson's,1961) and (Myers & Majluf, 1984), initial modification of the pecking order hypothesis, businesses arrange their financial sources according to the cost of financing, moving from

internal financing to equity financing. They usually prefer equity financing sourcing as a last resort. Therefore, they adopt utilization of internal funds at first stage, debt financing comes after.

Pecking order theory assume perfect financial market with asymmetric information as this theory assumes that managers are well aware of company internal affairs, risks and value of existing assets than the investors. Hence investors cannot accurately evaluate the issued securities to finance the projects.

According to (Myers & Majluf,1984),managers should always work in the best interests of current shareholders and the prediction of stock issue announcement will create and down stock price impact in market (Asquith & Mullins,1986). Hence, a pecking order exists because asymmetric information deeply effects the choice between equity or debt financing by a firm

Agency Theory

(Fama & Miller, 1972), investigated the practical connection between firm manager and stakeholders of the firm. The primary focal point around which this whole theory rotates is agency cost and the circumstances due to which this cost is affected. Agency cost increases when there is conflict of interest between principal and agent it is also referred as agency cost. Firm management are keen to invest funds in a business which has more associated risk as higher the risk higher the return would be, therefore this creates a conflict of interest since shareholders are not the only beneficiary that are concern about the firm's financial performance (Harris & Raviv ,1991).

In case there is a loss and investment fail then the creditors of a firm bear whole cost. A firm with limited liability is also liable for the debt of the business. Debt plays a vital role in monitoring conflict of interest and reducing it between the shareholders and firm mangers (Agents) (Principal) (Jensen, 1986).
Issuance of debt may reduce free cash flows to the owner's and mangers as firm priority would be to serve the rendered debt first. Agency problem could also arise if funds acquired through debt trigger shareholders of the firm to invest sub-optimally. Shareholders anticipate to get maximum gain in their investments with maximum returns while on the other hand debt holders get payments that are fixed on the principal amount (Fama & Miller,1972), (Jensen & Meckling,1976). Several studies show there is a negative correlation between Firm growth and debt usage (Rajan & Zingales,1996); (Baker & Wurgler,2002), (Kieschnick et al, 2006), hence a positive relationship between equity usage and firm growth.

The agency theory is a term that isn't always appropriate for social situations. The idea is that social ties have no impact on the market and that actors are self-interested and indivisible. Additionally, it is assumed that actions are solely driven by personal financial interests and that cooperation implies consent between the parties. The manager's decision, like all social behavior, is embedded in the evolving social systems and is not completely dictated by economic incentives and knowledge gaps. The agency theory's adoption of a worldview in which people and organizations are only motivated by financial gain thus seems unreasonable (Hirsch et al, 1990).

According to behavioral science, people are motivated by their status, culture, need for self-fulfillment, among other things. Even if we assume that individuals are logical, materialistic, and opportunistic, this does not diminish the significance of non-financial incentives, such as prominent prizes, as effective tools for minimizing agency issues. The agency theory makes the false assumption that conduct and its effects

are uniform and simple to control in the real world. In a dynamic network of dyadic relationships. For instance, the dichotomous option of either monitoring behavior or giving incentives to influence outcome is unproductive. Furthermore, being on the lookout for opportunistic conduct might hinder business ambitions, creativity, entrepreneurship, and innovation, a cost that organization theorists frequently ignore (Davis et al,1997).

The suggestion that owners will influence or provide incentives to orient the behavior of the agent is likely to be favored by theories of power and conflict. Staff may be co-opted and unwittingly operate to serve the organization's needs, according to conflict theories (Burawoy, 1979). A similar logic can be applied to the relationship between managers and shareholders. Similarly, the goals of managers and owners may be matched, perhaps as a result of the manager's shared caste with the business's owner or as a result of the socialization of managers into their current positions. as a result of their schooling and professional experience, or because they are from the same social background as the owner.

Methodology

The study focus to determine determinants of capital structure (Incorporating the role of firm size). Moreover, balanced panel data is taken for research purpose, consequently, entities with missing values and observations of negative book value of equity are excluded, (Camara, 2012). The sample of selected non-financial firms is based on data availability. This study uses OLS, Random and GMM model to uncover the relationship for this study a sample of 200 non-financial firms from 2010 to 2019 is taken. *Regression Variables are:* Leverage, Profitability, Firm size, Tangibility of assets, Inflation, and Liquidity

Table 1: Variable Description and their formulas

Variable	Definition of Variable	Empirical Evidence
Leverage	Debt/ Equity	(Drobtetz & Wanzenried ,2006), (Leary & Roberts,2005), (Titman & Wessel 1988),(Chen 2017)
Profitability	Operating Income/ Total Assets	(Titman & Wessel 1988) (Atli, 2006)
Firm Size	Natural Logarithm of sales	(Hovakimian et al, 1988), (Chen 2017)
Tangibility of Assets	Net PPE/Total Assets	(Camara, 2012)
Inflation	Percentage of annual inflation rate for every country	(Booth et al, 2001)
Liquidity Ratio	Current Assets/ Current Liabilities	(Vodová, 2011).

Notes: list of variables used in the study and their composition

$$LEV_{i,t} = \beta 0 + \beta 1 PROF_{i,t} + \beta 2 SIZE_{i,t} + \beta 3 INF_{i,t} + \beta 4 LIQ_{i,t} + \beta 5 TANG_{i,t} + \varepsilon_{i,t}$$

$LEV_{i,t}$ = total debt ratio for the ith firm at t time, $\beta 0$ is constant, + $\beta 1$-$\beta 5$ are coefficient of independent variables, $PROF_{i,t}$ is the profitability of ith firm at t time, $SIZE_{i,t}$ is the size of ith firm a t time, $INF_{i,t}$ is inflation if ith firm at t time, $LIQ_{i,t}$ is the liquidity of ith firm at t time, $TANG_{i,t}$ is the Tangibility of assets of ith firm at t time, εi is error term.

Results

Measurement Descriptive Statistics

The Descriptive statistics of Leverage, for small and large firms are reported in Table 2. The tables have been setup to show the complete descriptive statistics based on small and large firms.

Table 2-A reports number of observations, mean, Standard deviation, Minimum, Maximum of Leverage, Profitability, Firm Size, Liquidity, Tangibility of Assets and Inflation of sample firms.
Table 2-B reports correlation matrix of Leverage, Profitability, Firm Size, Liquidity, Tangibility of Assets and Inflation. Firm Size h has the highest mean value of 14.932 which deviates within the range of 2.169 and with highest value of 21%. This gives insight about the impact of firm size over firms. Followed by tangibility of assets ratio with an average of 14.565 varying over the range of 1.966 and maximum tangibility of 20.214. Profitability is another monitoring mechanism as the average profitability is 12.709 and the maximum profitability of 18.825%. The mean value for liquidity ratio is 2.407 and the maximum value of 875. On average Inflation is 7.506 with maximum value of 13.3. Finally, leverage the performance measure shows mean of 1.848 with standard deviation in range of 7.792 and maximum value of 337.808.

Table 2A: Descriptive statistics

Variable	Observations	Mean	Std.Dev.	Min	Max
Leverage	3443	1.848	7.792	-39.457	337.808
Profitability	2067	12.709	2.031	4.836	18.825
Firm Size	3361	14.932	2.169	4	21
Liquidity	3706	2.407	20.607	0	875
Tangibility of Assets	3658	14.565	1.966	3.738	20.214
Inflation	3719	7.506	3.549	3.2	13.3

Table 2B: Correlation Matrix

	Leverage	Profitability	FirmSize	Liquidity	Tangibility	Inflation
Leverage	1.00					
Profitability	-0.03	1.00				
Firm Size	0.03	0.83***	1.00			
Liquidity	-0.11***	0.01	-0.10***	1.00		
Tangibility of Assets	0.00	0.73***	0.81***	-0.13***	1.00	
Inflation	0.04	-0.09***	-0.13***	-0.05*	-0.16***	1.00

Note: Coefficients of correlation that are significantly different from zero at 1,5 and 10% level are market with ***, ** and *

Steps for Demonstration

In the following section, we show how GMM provides more accurate estimates than OLS and random effects estimates using a step-by-step method. We start with OLS investigation and utilize the Durbin–Wu–Hausman test to distinguish endogeneity issues, trailed by a random effect model. This method then shows that random effects are incapable of capturing complex endogeneity. At long last, the GMM model lagged-values of dependent variable incorporates. By utilizing a rigorous GMM technique, concerns related to endogeneity are settled, and accurate appraisals are made.

Basic Analysis through OLS

Table 03 : Regression results for Full Sample

VARIABLES	OLS	Random Effect	GMM
LEV			0.174***
			(0.0022)
PROF	-0.219***	-0.130**	-0.0844***
	(0.0642)	(0.0535)	(0.017)
SIZE	0.386***	0.296***	0.0758**
	(0.0961)	(0.112)	(0.0329)
LIQ	-0.148***	-0.108	-0.0759*
	(0.0341)	(0.067)	(0.0399)
TANG	-0.108	-0.097	-0.0306
	(0.0757)	(0.0818)	(0.0331)
INF	0.0356*	0.0283*	0.0273***
	(0.02)	(0.0153)	(0.0033)
Constant	-0.122	0.0634	1.275**
	(0.843)	(1.172)	(0.625)
F Statistics	9.37		
F Statistics(P Value)	0.0000		
Wald Test		14.74	13092.33
Wald Test (P Value)		0.0115	0.0000
AR2(P value)			0.2215
Sargan Test(P Value)			0.0617
R-squared	0.023	0.022	
Number of id	316	316	316

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Discovering Endogeneity

Individual regressor endogeneity is usually detected using the Durbin–Wu–Hausman test. In theory, there shall be non-correlation of right-hand illustrative variable with error term. While, this test decides if there is any correlation between residuals (error term) and illustrative variable. To distinguish endogeneity in regression of OLS, a Durbin–Wu–Hausman test is executed. We comprehensively explain the procedures

recommended by (Beiner et al, 2006), to evaluate endogeneity and represent it by utilizing an outline of an illustrative variable (PROF). The Durbin–Wu–Hausman test was carried out using the steps described below.

A. To determine if an independent variable, such as PROF, is exogenous or endogenous, a regression with all control and independent variables was calculated to anticipate the suitable residuals.

$$PROF_{i,t} = \beta 0 + + \beta 1 SIZE_{i,t} + \beta 2 INF_{i,t} + \beta 3 LIQ_{i,t} + \beta 4 TANG_{i,t} + \varepsilon_{i,t}$$

The dependent variable in our standard model is LEV, (PROF) variable is currently added as dependent variable instead of an exploratory variable to monitor for endogeneity/exogeneity. The Durbin–Wu—Hausman test begins with this move.

B. The coefficients for the residuals are calculated in the second step to see if the residuals (error terms, $\varepsilon_{i,t}$) were relevant. The PROF residuals were added in our elementary OLS model, that reflects as below:

$$LEV_{i,t} = \beta 0 + \beta 1 PROF_{i,t} + \beta 2 SIZE_{i,t} + \beta 3 INF_{i,t} + \beta 4 LIQ_{i,t} + \beta 5 TANG_{i,t} + \varepsilon_{i,t}$$

C. For an illustrative variable, a large Durbin–Wu–Hausman test statistic means that the variable is endogenous – the illustrative variable is associated with the residuals (error term).

If an individual variable in an econometric criterion is endogenous, analysts should utilize a preferable estimation method over OLS to achieve accurate results. We then define a collection of endogenous variables, address the consequences of endogeneity problems, and recommend using random-effects estimation.

Table 04: Diagnostic test Result

Test	Test statistic	P value	P Value
Heteroscedasticity Modified Wald (χ 2) H		2.4e+37***	0
Serial Correlation Wooldridge Test (F-test)		0.093	0.761

Understanding the Endogenous Variable Nature

The majority of variables in Model (e.g., PROF, LIQ, and TANG) are endogenously determined, according to the Durbin–Wu–Hausman test statistics. From an econometrics and theoretical standpoint, it makes sense that certain determinants of capital structure and Profitability may be determined endogenously.

For example, a company that has had been facing liquidity issues could decide to change its strategy by increasing its measure for profitability Furthermore, companies with higher profitability are more exposed to Inflation. Overall, the Durbin–Wu–Hausman test statistics indicate a significant issue i.e endogeneity in our model of OLS.

When only one variable in a regression model is endogenous, the OLS findings are inconsistent (Beiner et al, 2006). Because of the endogeneity problems, this means that the OLS findings are inconclusive.

Table 05: VIF Test for Multicolinarity

Variable	VIF	1/VIF
Opprofit	2.78	0.359299
firm_size	3.06	0.326949
Liquidity	1.16	0.861701
Tangf	2.46	0.405931
Inflation	1.06	0.94023

Comparisons and a two-step system

To address the endogeneity issues caused by reverse causality, dynamic panel data estimation is used in two step GMM model.

$$LEVi,t = LEVi,t,-1 + LEVi,t,- 2 + \beta\ 0 + \beta 1PROF\ i,t + \beta 2SIZE\ i,t + \beta 3INF\ i,t + \beta 4LIQ\ i,t + \beta 5TANG\ i,t + \varepsilon\ i,t$$

By providing lagged values and transforming the data internally of the dependent variable, the GMM model controls for endogeneity. Hence, the GMM model outperforms the OLS model when it comes to estimation. We then present an overhauled review of the firm-execution relationship utilizing a GMM technique in following step. Since endogeneity is accounted by the GMM model, involves lagged values, and employs an internal transformation mechanism, GMM findings which vary significantly from those recorded in the OLS column (Table 3). Using OLS, we find that the relationships between PROF, LIQ, and TANG and firm operating results are consistent, random-effects and framework GMM (no variation in significance levels for all three models).

When we used a dynamic panel data model (GMM), the influence of the excess illustrative variables changed significantly (or generous levels changed, even some of them ended up being significant or insignificant) financial results over the previous two years. In all 3 models, firm size (SIZE), for example, has positive relationship with LEV, which is reliable with the statement that large companies have high leverage ratio (Beiner et al, 2006). Nonetheless, differences were reported in significance levels (the random effect model indicates significance at p = 0.1, while the other two models indicate significance at p = 0.01). Likewise, the INF variable was found to have an insignificant relationship in the OLS model due to endogeneity, but it is associated significantly in the GMM model (with p = 0.0273***). In OLS model, LIQ has a significant negative relationship, but in random effect it has positive relationship while in GMM it has p=-0.0759.

In short, the GMM used earlier financial performance (lagged values of the dependent variable LEV) as an illustrative variable to control for various types of endogeneity in model. GMM model took into account three types of endogeneity: dynamic endogeneity, unobserved heterogeneity and simultaneity endogeneity. In comparison to other estimation methods, the results of the governance efficiency relationship indicate that a GM model provides more logical and accurate estimates for the coefficients. Researchers must use two post-estimation checks when using the GMM model to ensure that an accurate econometric model is used. For first-order and second-order correlation, these measures are: (i) the Arellano-Bond test; and (ii) the Sargan test. Instruments must be exogenous, which is a key presumption for the legitimacy of GMM estimates. In other words, GMM results would be invalid if tools are endogenously determined. The Sargan test assess the validity of an econometric model, and whether the instruments are properly specified or not. Particularly, if the null hypothesis is dismissed, the researcher must rethink the model or the estimation

instruments. STATA's estat sargan command can be used to perform a post-estimation (Sargan test). As a consequence, if the Sargan test is found to be negligible, the instruments used in the econometric requirements must be exogenous. Error terms of two separate intervals of time are uncorrelated under the null hypothesis, the Arellano-Bond test for no auto-connection (or no sequential relationship) is utilized to test the validity of a solid exogeneity statement. In other terms, the lagged variables in determinants of capital structure are not associated with the error term. The user must use the estatabond command in STATA to run this post-estimation test. Table 3 displays the results of these two post-estimation studies, confirming the rationality of model used in our evaluation process.

Implementation of GMM in STATA

To deal with endogeneity, this research employs STATA software to run a generalized method of moments (GMM), illustrating how this robust methodology may account for various forms of endogeneity and provide unbiased estimates. Another explanation why our step-by-step approach will assist researchers in appropriate understanding sources of endogeneity and addressing them reasonably is because of this.

Researchers can use a range of built-in commands in STATA to execute GMM operations, such as xtabond, xtdpd, and xtdpdsys. The Arellano–Bover/ Blundell–Bond dynamic panel data estimator can be applied using STATA syntax (Roodman, 2009) established the following model for a sample dataset with dependent variable y and explanatory variables x1, x2, x3, and x4.

Generic STATA commands to implement GMM in STATA have been used by me to perform post-estimation tests.

Tests/Methods	Codes
Fixed-effect	xtreg depvar indepvars, fe
Installation of xtabond2 in STATA	ssc install xtabond2
Random effects	xtreg depvar indepvars, re
Applying two-step GMM using xtabond2 command	xtabond2 y l.y x1 x2, x3, x4 gmm(y x1 x2, x3, x4 lag(a b)) noconstant twostep
Sargan Test	estat sargan
The Arellano-Bond test for first-order and second-order correlation	estat abond

Conculsion

In marketing and management research, endogeneity bias is a hot topic. In panel results, various sources of endogeneity may lead to bias and inconsistency in estimates. To empirically demonstrate how the generalized method of moments (GMM) may be used to resolve endogeneity in panel data estimation we used panel data for capital structure determinants of 200 PSX listed companies over a ten-year span from 2010 to 2019. I've gone through step-by-step procedures for addressing endogeneity bias in panel results. In summary, OLS regression produces haphazard results in the existence of any endogeneity bias source. The Durbin–Wu–Hausman test confirms this. The GMM model extends the capabilities of the random-

effects model as tools for complicated endogeneity control by employing the lagged values of the dependent variable. By switching from basic OLS estimation to more sophisticated econometric methods, I can monitor various endogeneity bias sources. I've included some user convenient STATA commands for marketing researchers who may use it while working with marketing-related panel datasets.

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