

Business Cycle, Stock Return and Investors' Sentiment: A Summary

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Abstract: This paper provides a concise summary of the determinants effects of investors' sentiment, stock returns and the business cycle in the stock market. In this summary paper, an overview based on the work of DeStefano (2004) and Wurgler (2007) papers is given, and the salient determinants are highlighted.

Keywords: Business Cycle, Stock Return and Investors' Sentiment.

1. INTRODUCTION

Stock returns and investment sentiments are separate concepts that may only share in limited areas, such as sentiments on stock profitability based on expected and actual historical returns. Stock returns are essential to investors the primary motivation of their investment activities in the first place. Conversely, investor sentiments are essential guides to intelligent investors as the prevalent sentiment in the market can guide on which direction to bet on.

DeStefano (529) claimed that the expected stock returns are "key" issues in investment while a "fundamental issue in finance". He maintained that the expected returns relates inversely with economic conditions. The analysis of his study will be focused on the broader perspective of the subject in relation to actual investment decisions, which investors tend to employ before putting their money on the line. And their expected investment returns are one important consideration that they always take into account.

Conversely, Baker and Wurgler's (2007) paper will be reviewed based on the broader investment perspective from the investor's point of view, particularly in their sentiments towards a specific stock, the stock market, and specific fundamentals bearing on both.

Both studies will be carefully compared on areas where their comparison is relevant and leave out those that are not. However, understanding each study individually is as important and interesting as learning their differences or similarities.

2. DESTEFANO'S "STOCK RETURNS AND THE BUSINESS CYCLE: AN ANALYSIS"

The major proposition of DeStefano in this paper revolves around the role, or more specifically the interaction, of expected earnings and the risk premium or discount rate as drivers of cyclical variations in stock returns over the entire business cycle (DeStefano 529). He based his contention on the dividend discount model (DDM), which identify these two factors as determinants of a stock's intrinsic value. Moreover, he contends that, macroeconomically, stock returns systematically vary with these two factors along with the business cycle. Thus, consistent with an equilibrium asset pricing (EAP) model framework, this relationship between expected returns and the discount rate should be linear and especially so with the smoothing actions of investors (528).

However, DeStefano observed recent indications that stock prices' mean-reverting patterns and their responses to the two factors appeared asymmetrical (375), which tend to doubt the contention of a systemic variation response. These asymmetries had been found in the excess stock returns around the turning points of the business cycle, specifically involving the conditional mean and volatility of these returns (378).

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These asymmetries have been observed many occasions. First, the asymmetries were detected in the actual returns' response to changes in the price-dividend ratio (PDR), which is four times more than the returns when it is at low return state with high variance level (DeStefano 378). Thus, the returns curve appears more nonlinear than linear, particularly in relation to the market risk premium or discount rate. He agreed that this nonlinear response of the discount rate, particularly its mean and conditional volatility, is driven by the Markov variable, which consists of two states: the bull market and the bear market. It has been reported that this proxy nonlinear curve can forecast more superiorly than the linear methods.

Second, the asymmetry was also observed directly associated with the current economic state (DeStefano 378). Apparently financial variables, including the discount rate, have stronger impact on the actual returns during recessionary environments. Moreover, stock returns also responded asymmetrically to changes in certain macroeconomic data that depends upon the reigning economic state.

Overall, DeStefano made four assumptions in this paper, which a study of the S&P 500 Index seemed to support with clear exceptions.

Assumption 1: "Stock prices lead business cycles" (DeStefano 533).

Assumption 2: "Earnings movements coincide with the business cycle" (DeStefano 533). Here, DeStefano admits that this is only true in certain industries but not in all. However, he allows this assumption as an acceptable general observation.

Assumption 3: "Investors form expectations about future earnings based on the cyclical movements in earnings" (DeStefano 533). DeStefano assumes that the investors are rational; thus, will assume that the current business cycle stage will persist while, simultaneously, anticipate the next stage. For instance, while investors will expect Stage I (early expansion) to continue longer and doubts future recession (Stage III), they will start to entertain the possibility of the recession in Stage II (late expansion). The same logic is assumed to occur in reverse in Stage III (early decline). A 43-year study of the S&P 500 Index using Treasury bonds confirmed a negative investor expectation coefficient in Stage III and largely positive expectations in the other stages of the business cycle (535-536). These results seem to support the contention that investors are generally optimistic (i.e. earning expectations are positive) in regarding the business cycle, except at the middle of a confirmed recession (i.e. earning expectations are negative).

Thus, the overall assumption of earnings expectations-discount rate curve is nonlinear as the business cycle is cyclical: that is, expansion must be followed by recession and decline must be followed by recovery. An unasked question, however, is: Is the relationship between earnings expectations or the discount rate (or their curve) and the cyclical changes largely linear? If the earnings-discount rate curve and economic activities are directly related (DeStefano 378), then the curve and cyclical business changes are mostly also directly related because both economic activities and the business cycle are usually cyclical.

Assumption 4: Interest rate movements while "procyclical" lag slightly behind the business cycle (DeStefano 533). The procyclical assumption is based on an observation that interest rates reflect changes in capital demand, which vary accordingly with business conditions. However, peaks and troughs in interest rates are assumed to follow slightly the peaks and troughs of the business cycle (534). Views vary though over the reason for this lagging behavior of interest rates. DeStefano offered three common explanations: (a) persistent inflationary pressure, which dampens the recovery pressure; (b) unexpected inventory accumulation, which require extended financing activities; and (c) unknown turning point timing in the economic activities, which tend to postpone the removal of countercyclical monetary policies. There are also disagreements on which lagging indicator (e.g. average prime rate, long-term Treasury bond yields, industrial production, etc.) should be more predictive.

A comparative study using S&P 500 (SP500), Dow Jones transportation (DJT), and Dow Jones utility (DJU), however, contradicting result to the assumptions made for Stage IV. Whereas Stage IV performances in these three indices were expected to be negligible because, although recovery may be forthcoming, recession still continues; thus the average returns must be insignificant (DeStefano 536). However, in this study, the average returns in all indices were not just significant; they are the highest in the cycle, even higher than the assumed highly positive conditions in Stage I. In SP500, for instance, the average return for Stage IV was 31.8 nominal and 27.46 real compared to Stage I's 12.82 and 9.81, respectively (539). The same results can be observed in DJT and DJU. In all three indices, the returns in Stage IV were not negligible, but instead almost triple that in Stage I.

DeStefano (539) justified this unconvincingly as a consequence of expected “conflicting effects” between determinants. That the impact of stock returns can change from negative to positive is untenable and highly speculative. His contention that low and decreasing interest rates are positively influential throughout Stage IV is also untenable and highly speculative. Perhaps his “dominant” theory (537) is more reasonable than this “conflicting effects” theory because these effects between future expectations and interest rates had been recognized as conflicting even before the surprising average returns in Stage IV were observed. Perhaps positive future earnings expectations are strongly more dominant than the ongoing recessionary environment with or without help from the still higher interest rates. Perhaps contrarian and value investors have increased their future earnings expectations in Stage IV and subsequently increased their investment activities, pushing the average returns stronger than DeStefano had expected.

The unexpected results in Stage IV appear to indicate the inherent limitations of financial modeling because the business cycle is not purely an impersonal phenomenon but largely driven by human sentiments and actions, which can vary based on which sentiments or expectations predominates in each cycle. The long observation period in the three-index study reflects a clear role of human perception in veering away earnings performance based purely on mathematical modeling into a humanly contextualized picture. Thus, the human element can render mathematical models with a general norm and a significant exception, creating a model that comprises of a predictable norm and a predictable, not insignificant, exception, which the Stage IV results are. In effect, the DDM may be considered adequate to explain three of the four stages in the business cycle. However, it has to be accepting of the human element at work in Stage IV, for instance, and integrate that exception into its model even if mathematical divergent.

Moreover, DeStefano’s insistence that the initially low expectations continue to prevail throughout Stage IV and attribution of the strong earnings performance to “other” positive effects (DeStefano 539) failed to consider this human element in favor of a more speculative “other positive effects”. Although he may have rightly observed that stock prices “had long been known” as predictors of economic upturns, he failed to attribute this to investors who wisely knew the opportunities in low-priced stocks in anticipating a forthcoming economic upturns, based solely on their generally positive future expectations. Once again, contrarian and value investors are known to bet on the stock market from this framework.

The theory of persistent positive future expectations during recessions is supported instead in Tables 5, 6, and 7 (DeStefano 540-542). In all indices – that is SP500, DJT, and DJU, respectively, earning expectations during the recessionary stages remained consistently positive. This is so even when the bond indices (i.e. TB and LTB) showed negative future expectations. Even Stage III future earnings expectations are positive except in DJU.

Conversely, DeStefano (542) interpreted reasonably that the decreasing long-term interest rates observed as a contributing factor in the increasing stock prices. Rightly, this may also indicate changes in the monetary policy in response to the recession event. He also observed higher regressions during recessions than during expansions and declining regressions before business cycle turning points (543). This led him to conclude that actual returns movements were largely influenced by “unexpected returns”, which are residual effects of the previous stages’ conditions, before reaching the business-cycle turning points (544).

DeStefano’s findings did not reflect the theory that realized returns accurately reflect expected returns (DeStefano 544). Instead, expected returns had been found moving opposite business conditions. He explained this observation as a reflection of realized returns’ ongoing adjustment with the still changing expected returns. Thus, any increasing or decreasing stock prices and positive or negative returns observed during a stage in the business cycle merely reflects the ongoing adjustment towards the falling or increasing expected returns, respectively. As such the direction of expected returns move the current stock prices towards an opposite direction. The only exceptions observed occurred prior to the peaks and troughs in the cycle wherein expected returns moved directly with the economic direction. However, the stock prices correlate directly with the economic activity in stages I and III. In stages II and IV, DeStefano explained that stock price do not correspond directly with the economic activities wherein at a certain point the stock prices, having reached its maximum (and minimum, respectively), begins to decline (and increase, respectively) while economic activities, having far from its maximum (and minimum, respectively) yet, continue to increase (and decrease, respectively) until the end of the stage when it reaches its maximum (and minimum, respectively) and begin to decline (and surge, respectively). During this short period stock prices and expected returns vary directly with economic activities.

However, this will not completely explain the large surge of earnings expectations in Stage IV, which DeStefano (545) noted to occur only within a period of five months. In effect, the surge in expected returns must be so strong to register a 33 percent increase for SP500, which the consumption theory and the changing market risk premiums theory cannot explain. DeStefano (545) explained this in two theories: (a) prior to the turning points, the realized return cannot accurately estimate the expected returns; thus, its changes cannot be meaningful to expected returns; (b) unexpected returns dominate Stage IV and are correlated. These dominant unexpected returns, he presumed as outcomes of “consistent positive surprises” (e.g. monetary policy surprises) prior to recovery in Stage IV. Although largely reasonable, these theories still assume that investors think uniformly in response to the behaviors of stock prices and economic activities, failing to account for the possibility that investor mindsets may be a strong driver for unexpected returns. Thus, without the element of differences in investor mindsets and investment strategies, these observations will miss important contexts in the real life investment environment and investor decision making dynamics.

3. BAKER & WURGLER’S “INVESTOR SENTIMENT IN THE STOCK MARKET”: A REVIEW

Baker and Wurgler (129) opened their paper with a commentary on the tendency of “standard” finance models to force rational mathematics (e.g. present value of expected future cash flows) into the capital market pricing behavior and into the human investors, which is perceived as nothing but unemotional. This rings quite well with DeStefano’s attempt to fit the earnings expectations and stock market prices with the DDM and the four-stage business cycle with clear cut description of each stage. Proponents of behavioral finance, however, disagreed.

Instead of conforming to the standard model, behavioral finance proposed two assumptions (Baker and Wurgler 129).

Assumption 1: “Investors are subject to sentiment” (Baker and Wurgler 129). That means investors are anything but unemotional. Investors make investment judgments about future cash flows and investment risks not necessarily justified by available facts. Furthermore, they may look at facts and interpret it differently; thus, make investment decisions differently. In DeStefano’s Stage IV findings, for instance, wherein the recessionary stage experienced dominant “unexpected” positive expectations (i.e., sentiments), it is clear that a large number of investors viewed that recessionary stage, not as an investment threat, but a profitable opportunity instead. Thus, instead of running away to the sidelines watching stock market prices continue to plummet, they instead plunged in and purchased stocks at bottom prices, eventually pushing the prices up with vengeance.

Assumption 2: “Betting against sentimental investors is costly and risky” (Baker and Wurgler 129). Although some investors will disagree with this assumption (i.e., they will consider betting against emotional investors as highly profitably like betting against naïve players), this assumption nevertheless is correct in its observation that rational investors avoid the approach of “forcing prices to fundamentals”, which the standard model tend to assume, instead of making wise investment choices based on fundamentals and other useful parameters.

However, it may not be very accurate to say ‘to fundamentals’ because in reality this forcing of prices often occur in the context of the ‘perception’ of fundamentals; that is, as subjectively assessed by the investors in relation to their investment strategies. This is observation is consistent with the “bottom up” approach to measuring investor sentiment and the quantifying of its effects to the stock process (Baker and Wurgler 130). It has the sole advantage of providing “microfoundations” for investor sentiment variation (131).

Certainly, individual investors do have biases in their psychology, whether overconfidence, naïveté, conservatism, or representativeness, which caused them to underreact or overreact to fundamentals as well as overestimate or underestimate the value of an investment opportunity (Baker and Wurgler 130). Thus, the fundamental differences among investors can both misvalue or correctly value an investment opportunity, the differential actions of which will be the net transaction (i.e. between buyers and sellers) in the stock market. These investor differences are inherent in the human diversity and responsible for making stock markets to the point that even with the same information available to them their differences in opinion can be large and diverse (Baker and Wurgler 132). Otherwise, all investors will be on the same side of the transaction, whether that side is on the sell or the buy, and no one stands in the other end of the transaction except the market makers (although that stock illiquidity does occur in certain stocks in certain days, particularly the smaller issues and often does not happen in the stocks of blue chips perhaps even during recessionary periods).

However, Baker and Wurgler (130) approached their investor sentiment framework “top down” and macroeconomically. This approach involves the measurement of aggregate investor sentiment, tracing its effects to the larger stock market returns and to the individual stock returns. It builds on the “more irrefutable” assumptions of behavioral finance, which are sentiment and limits to “arbitrage”. At this point, it should be pointed out that the use of the term “arbitrage” may be a misuse because not all investments are arbitrage. Arbitrage investment essentially refers to profiting from price differences between two markets, one of which other investors are not aware of, such purchasing a dollar in the U.S. market, which is sold cheaper than the buying price in a European market. Thus, a more general term ‘investment’ will be consistently used in this review instead. Arbitrage or not, the issue being discussed will be about investments in the stock markets and the decisions associated with these investments.

Baker and Wurgler’s approach aims to determine *which* stocks will be mostly like be impacted by investor sentiment, instead of simply identifying the stock prices that will be affected by investor sentiment (Baker and Wurgler 130). For instance, they ruled that stocks that are most likely to be “disproportionately sensitive” to strong investor sentiment include those with low capitalization, younger, unprofitable, highly volatile, non-dividend paying, growth, and of companies in financial distress. Their bases are two: (a) these stocks are difficult to transact (e.g. due to higher transaction costs); and (b) they are difficult to value, exposing the investors to more insidious biases and more likelihood of misevaluation.

Moreover, Baker and Wurgler (130-131) claimed that their approach had the potential to take into account factors involved in bubbles, crashes, and other stock pricing patterns in a manner that is “simple, intuitive, and comprehensive.” In their views, the DeStefano study were only one of those past studies that left implicit (which is true) the role of investor sentiment in the stock pricing behavior; that cannot distinguish a “random walk” from a long ongoing stock bubble. In their view, attempting to understand the pattern of expected returns based on the business cycle will not add anything to the human factor (e.g. investor sentiment) in explaining the pricing behavior during the different stages in the business cycle. Somehow, though, it can be argued that the DeStefano study had no intention of studying the human factor in their study. However, it is correct to observed that there was a remarkable blindness in the study to the impact of investor sentiment particularly in influencing future earnings expectations based on the intuitive awareness that these expectations came from the investors themselves and no mention about investor sentiments in the study; not even once.

One of the investor behaviors they discussed is propensity to speculate (Baker and Wurgler 132). The lack of earnings history and highly uncertain future, which are characteristics of speculative stocks, combine supposedly to add risk premiums in any level both to protect against too low or too high valuations. Thus, the propensity to speculate tends to result to unreasonably high valuations and often involve speculative stocks. However, they suggested that non-speculative companies, which have long earnings history, tangible assets, and stable dividends, supposedly have less subjective value and thus less sensitive to sentiment. Intuitively, it is illogical to sanitize non-speculative stocks against investor speculations because even in stock market crashes speculations have infected non-speculative companies as well. Thus, such conclusion cannot be more inaccurate. Propensity for speculation does not depend upon the speculative characteristics of a stock; but on the specific temperament of investors that rejoice in the speculative exercise despite the high risk of unknown losses.

Certain characteristics of speculative stocks which Baker and Wurgler (132) mentioned (e.g. “not paying dividends”) are essentially erroneous and prone to purely academic ‘speculation’ and thus cannot be taken at face value. Many strong companies with long history of business successes (e.g. Berkshire Hathaway) had been paying dividends since its early years but cannot be considered ‘speculative’ by any experienced investor. Perhaps only academicians are prone to this erroneous characterization of speculative stocks and Baker and Wurgler were not the exception.

Moreover, the manner in which Baker and Wurgler (132) use the term ‘investor sentiment’ (e.g. speculative stocks as most sensitive to investor sentiment and bond-like stocks less driven by sentiment) as synonymous with speculative propensity as a “very robust and testable conclusion” unnecessarily constrained the concept of investor sentiment. Does investor sentiment refer to the dominant sentiment in the market disregarding sentiments that have no speculative propensity but nevertheless held by a large group of investors? Perhaps it is more accurate for Baker and Wurgler to distinguish investor sentiment between speculative sentiment and non-speculative sentiment or as they distinguish it as either “optimism” (i.e. optimistic sentiment) or “pessimism” (i.e. pessimistic sentiment). Using the term disparagingly can be confusing to readers and prone to interpretative errors.

Moreover, even the categorization of investor sentiment as “high” and “low” in Figure 1 (Baker and Wurgler 133) held the presumption of investor sentiment as synonymous with speculative sentiments; thus resulting to the simple categorization of stocks as “speculative” and “safe” (non-speculative). This definition did not appear in its two earlier assumptions (129) and never even clearly defined as speculative assumptions. It is simply outrightly assumed that investor sentiment is and always is speculative. It is here that the reading their report becomes intellectually distasteful. The reader is always put on the guard to remember that the investor sentiment that they are referring to unofficially or implicitly are speculative sentiments.

To their credit though, the observation that increased demand of “safe” stocks (thus, increasing prices) may result to declining demands (thus, reduced prices) in speculative stocks is logically valid (Baker and Wurgler 133). Thus, the prices of “safe” stocks is inversely associated with investor sentiment (i.e. speculative sentiment). However, the weakness in this erroneous use of term will leave out such as information as prices of “safe” stocks is directly related to non-speculative investor sentiment. This is exactly the reason this error has to be pointed out earlier. Important information will be lost simply from the wrong use of terms and worse without clearly defining that use of terms.

4. CONCLUSION

While stock returns and their determinants may show clear patterns in the business cycle from the DDM framework, the impact of these determinants varies largely in various stages. DeStefano’s study revealed that in Stage IV of the business cycle “large and persistent unexpected returns” (546) dominated, rendering realized returns useless in predicting expected returns. He explained this uncharacteristic behavior in the dominant nominal and actual returns in Stage IV as evidence on the strong influence of unexpected returns. Somehow, that attribution is logical; although, he failed to discuss further examples of these unexpected returns, except for the unexpected change in the monetary policy as a response to recessions.

Conversely, Baker and Wurgler rightly noted the opposing impact of speculation in the transactions of speculative and non-speculative stocks as its main point of discussion to support his argument for the value of behavioral finance in determining the right stocks to invest on and their vulnerability to speculative propensity. Overall, though, the Baker and Wurgler study have serious limitations in their use of financial terms. This error involve the use of the term ‘arbitrage’ and ‘investor sentiment’, which both have incongruent impact on the paper as far as the knowledgeable readers are concerned. The good principles being proposed in the paper have been seriously encumbered by the inaccurate uses of terms; thus, compromising significantly the integrity of their observations propositions.

Meanwhile, DeStefano’s study had followed strict logical flow, which is clear and precise. Its use of financial terms were correct and accurate all throughout. Their logic, too, in analyzing the materials were also good. Although this study failed to deal squarely with the issue of the human element in understanding the behavior of expected and actual returns, its robustness may be considered far better than that of Baker and Wurgler.

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