Price Inflation and Stock Returns

Jeffrey Oxman

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J. Oxman

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Abstract

This letter is intended to demonstrate that price inflation and stock returns display differing relationships depending on the measure of inflation used. Using data from 1966 – 2009, it appears that no correlation exists between any measure of price inflation and stock returns or dividend yield in the period 1983 – 2009. We do find a negative correlation between monetary inflation and dividend yield for the full sample. We also question the regularity that price inflation and stock returns are negatively related in post-World War II. This appears to depend on the specification of the model used.

Introduction

Price inflation – that is an increase in the general level of prices – is a well known concept. Much like the intrinsic value of a firm's shares it is not directly observable. It is typically measured by the Consumer Price Index (CPI) but that is not the only measure of inflation available. The purpose of this letter is to illustrate the differences between three potential measures of inflation – the CPI, the implicit Personal Consumption Expenditure (PCE) deflator, and the Producer Price Index (PPI) – and relate the importance of the difference in terms of the inflation and equity premium puzzle.

We study the period from 1966 to the beginning of 2009, normalizing the price level to 100 in August 1983 for all indices. Because of the normalization, the levels around that period tend to coincide, but it is clear that there are two regimes. Prior to approximately the early 1980s, the three price indices tended to move very close together, with the PPI being slightly below the CPI and PCE until about 1974, when the PPI advanced more quickly than the CPI and PCE, but still the three were clustered tightly together. From 1983, the PPI appears to have decoupled from the CPI and PCE. From about 1990, the PCE and CPI have somewhat decoupled and the PCE has consistently been below the CPI, but the two measures have had similar dynamics. The PPI is considerably more volatile than the CPI and PCE (see Figure 1).

From an investment point of view, inflation is quite important. There is a long history of research into the effects of inflation on stock prices, but it continues to be a controversial topic. The crux appears to be explaining the differing relationship between inflation and stock prices over time: pre-World War II there was a positive relationship, and post-World War II the relationship has been negative (see Lee (2010) for a summary).

The point of this article is to illustrate differences using alternative measures of inflation. The appropriate price deflator is not obvious, even though most studies appear to use the CPI. The price deflator should relate to the cash flows provided by the stock – dividends and capital gains. But note that the stock is a capital good. It provides a stream of cash flows that can then be used to procure either more capital goods or consumption goods. If the cash flow will be used for capital goods, then should not the appropriate price deflator be related to the price of capital goods (PPI)? If the cash flow will be used for consumption goods, then the price deflator should be related to the price of consumption goods (CPI or PCE).

Furthermore, it is not clear that each household should use the same deflator. Consider the CPI. It is an aggregate index created using average purchasing behavior of the households in the U.S. But what if households have differing baskets of goods that expose them to different rates of inflation in the household? What should the appropriate deflator be?

Compounding the problem is that price inflation is not necessarily a cause, but rather may be an effect. Absent supply shocks, an increase in the money supply such that supply exceeds money demand. This is a well-known result, based on the standard equation of exchange: $MV = PQ$. If one holds V (velocity) and Q (quantity of goods) constant, then an increase in M (money supply) is exactly matched by an increase in P (the aggregate price level).

The equation of exchange hides a critical fact of money: money is non-neutral in the short run, meaning that money inflation affects relative prices, not just the aggregate price level. Since money is non-neutral, the effects of money inflation could show up in asset prices first, thus increases in asset prices could lead increases in consumer prices.

The increase in asset prices may only be temporary. While new money is flowing in, so that demand pressures are rising, asset prices will get a boost. But the demand has nothing to do with the future performance of the firms – it is only because of an increase in the money supply. As market participants realize that asset prices have risen too high, relative to expected future performance, they will tend to sell off some of their positions and asset prices will return to a level consistent with the expected future performance of the firms. Essentially, we should see a negative, and then positive, impact of money inflation on equity returns.

To see the above effect more clearly, consider the process of monetary inflation. To issue new money, the Federal Reserve Bank of New York purchases Treasury securities (or other securities in the current, unusual period) from its primary dealers. The primary dealers' accounts with the FRBNY are credited with new money by the reserve bank, and their Treasury securities accounts are debited. Thus new money is created.

To get into circulation, that money must be put into the economy by the primary dealers, either by purchasing assets or making loans. As the primary dealers put the money into circulation, the new money works its way slowly through the economy, going bank-by-bank or dealer-by-dealer, until it gets lent to a business or a consumer. Then goods or services are purchased. This process potentially gives rise to what are called "Cantillon effects" after the early economist Richard Cantillon.

Cantillon effects describe the change in the demand for goods and services desired by those entities that get the new money first. As certain entities get more money, their purchasing power increases and so the demand for the goods and services they prefer increases. Due to the shift in demand, prices increase for those specific goods and services and this leads firms to supply more of those goods and services. If these changes tend to be large enough and persistent, a resource reallocation will tend to occur.

Presuming the new money created is substantial enough to have an impact, it continues to cause relative prices to change as it circulates through the economy, and resource reallocations continue to occur. Those who receive the money first are ultimately better off, but those who receive the money last are worse off because their purchasing power has gone down prior to getting any of the new money. Therefore, based on the above, it is imperative to treat monetary inflation separately from price inflation, at least in the short-run.

The primary concern, when new money is issued, regards bank loans, since it is the bank loans that will provide the money that causes relative prices to shift. Consumer loans affect the demand for housing and household goods, whereas business loans affect the demand for capital goods. There is likely a feedback effect from consumer loans to firms' demand for capital goods. For example, if people secure more mortgages at cheaper rates, then firms will find it profitable to build more houses to accommodate this new demand. The firms will demand more of the factors of production for housing, like lumber, cement, copper, and construction workers.

Continuing with the housing example, as consumer demand for housing increases, housing suppliers will find their business has improved. This will cause investors to revise their views regarding the housing suppliers' future income upwards, leading to a positive revision in the firms' current stock prices. This effect will move up the supply chain, since the housing suppliers' demand for capital goods affects their suppliers, like lumber mills and building material manufacturers. In general, as the price of capital goods is bid up, we see that asset prices will increase, including stock prices.

As the foregoing discussion indicates, monetary inflation leads price inflation, but it is not neutral, or equiproportional, as the equation of exchange MV=PQ might suggest. This causes differences in price inflation measures, and it is important to choose the most appropriate measure of inflation for one's purposes. There are many candidates to deflate nominal prices to get real prices: the three most common are the consumer price index (CPI), implicit personal consumption deflator (PCE), and the producer price index (PPI). If more specificity is desired, the CPI and PPI are broken down into greater detail.

It appears that choosing the most appropriate measure of price inflation was not important historically, since the three broad measures included in Figure 1 track each other quite closely until about 1981. Thus, no matter which of three measures of inflation were used, numerical results say of deflating nominal prices to get real prices would track fairly closely. After 1983 the PPI begins to diverge from the CPI and PCE, and then the PCE and CPI begin to diverge around 1995.

Two events match up with these apparent divergences. First, in 1978 the Federal Reserve was assigned the so-called "dual mandate" of not only pursuing stable inflation but also maximizing employment. Prima facie, it is not clear why this would cause a divergence between the CPI and PPI. The second event, coinciding with the divergence between the CPI and PCE, is the Boskin Commission which was appointed to investigate the construction of the CPI in 1995.

Literature Review and Relevant Hypotheses

The importance of the correct inflation measure is highlighted in the ongoing discussion regarding the costs of inflation (see Dowd (1996) for a broad overview) which can be substantial but where estimates of the cost have a wide range. Recently, Fitzgerald (Fed), has demonstrated the differences in real household income depending on which measure of inflation is used. For illustrative purposes, in this paper I apply different measures of inflation to the estimate the effects of inflation on equity risk premiums.

Research about the relationship between price inflation and the equity risk premium has been ongoing and remains an area of some controversy. There are numerous hypotheses positing a relationship between inflation and the risk premium, with each hypothesis generating a different expected sign or level of significance. I briefly outline these hypotheses below.

Researchers have found that, prior to World War II, the correlation between inflation and equity premiums was positive, but became negative after the war. Fisher's (1930) hypothesis suggested that the

correlation should be positive so many hypotheses were developed to explain the post-war negative correlation.

The "Inflation Illusion" hypothesis, attributed to Modigliani and Cohn (1979) posits that when inflation rises investors discount expected earnings and dividends more heavily by using higher discount rates. This leads to equities being undervalued when inflation is high and overvalued when inflation falls, thus generating a negative relationship between equity returns and price inflation.

Brandt and Wang (2003) advance the hypothesis that risk aversion is time-varying. They suggest that inflation makes investors more risk averse and the increased risk aversion is what drives up equity risk premiums.

The "Tax" hypothesis of Feldstein (1980) suggests that any observed relationship between price inflation and equity returns is generated by U.S. tax laws. Especially important are laws regarding historic cost depreciation and taxation of nominal capital gains. Similar to the "Inflation Illusion" hypothesis, the "Tax" hypothesis generates an inverse relationship between equity returns and price inflation. This hypothesis is sensitive to changes in the U.S. tax code, and differences across countries' tax codes.

Fama (1981, 1983) developed a hypothesis, using a money demand model, that any observed relationship between price inflation and equity returns is spurious. Since there is a positive relationship between equity returns and real productive activity, and a negative association between price inflation and real activity, this generates a correlation but not causation between equity returns and price inflation. In a similar type of indirectness, Geske and Roll (1983) derive the linkage between inflation and equity prices from the monetization of government deficits and fiscal and monetary policy.

Finally, there is the 2-regime hypothesis of Hess and Lee (1999). The 2-regime hypothesis states that aggregate demand and aggregate supply shocks drive different correlations between inflation and equity premiums. Aggregate demand shocks, like increases in the money supply, drive inflation and stock prices higher. Aggregate supply shocks, like increases in oil prices, drive inflation up but stock prices down.

Among the above hypotheses, the inflation illusion hypothesis and the 2-regime hypothesis have received the most attention recently. Ritter and Warr (2002) find support for the inflation illusion hypothesis, documenting that the bull market starting in 1982 was due in part to undervaluation of levered equities caused by mistakes in the use of nominal and real capitalization rates. Campbell and Vuolteenaho (2004) extend the inflation illusion hypothesis by transforming the classic Gordon growth model into a dynamic valuation model and using the model to identify the mispricing component of the log dividend yield. They use data from the period 1927 – 2002 and find evidence of inflation-induced mispricing. Cohen et al. (2005) find similar support in a simultaneous analysis of Treasury bills, safe stocks, and risky stocks.

Lee (2003) extends the model of Hess and Lee (1999) to address the relationship between stock and bond returns, and price inflation in response to supply, monetary, and fiscal shocks. Lee (2010) conducts a side-by-side test of the inflation illusion hypothesis and the 2-regime hypothesis using the

models developed by Campbell and Vuolteenaho (2004) and Hess and Lee (1999) across several countries. Lee (2010) finds that the inflation illusion hypothesis explains post-war data very well, but not pre-war data. This is consistent across all industrialized countries reviewed.

In the above-referenced work, inflation refers to price inflation and it appears to be measured using the CPI. In some papers, it is not clear what measure of inflation is used. Referencing Figure 1, it is likely that different measures of inflation would result in similar conclusions for the period ending around 1983. After that period it is not at all clear that all measures of inflation are equally sound. For example, as the Boskin commission made clear, the CPI during the 1980s and early 1990s appears to have overstated the level of price inflation by 1 – 1.5% per year. While substantial progress has been made in improving the CPI, it is likely that it still overstates the level of price inflation.

To explore the important of the choice of inflation measure, we use the model devised by Campbell and Vuolteenaho (2004) and further tested by Lee (2010). Their model is a log-linear transformation of the traditional Gordon growth model, so that the price of the stock is the present value of future dividends discounted by the required return less a constant growth rate. Reformulating the Gordon model as a dividend yield gives the following: $\frac{D_t}{P_t} = R - G$where D is the dividend, P is the current price, R is the required return and G is the assumed growth rate of the dividend.

Campbell and Vuolteenaho then decompose the dividend yield formula into three components: the negative of an objective excess (over the risk-free rate of return) dividend growth rate; a subjective risk premium; and the difference between the objective excess growth rate and the subjective one. This latter factor is referred to as a mispricing component since it is zero if investors are perfectly rational. For details about the operational formula used here, see Lee (2010).

Methodology

The goal in this article is to show the consequences of using different measures of inflation. To that end, we apply the basic vector autoregression (VAR) of Lee, where excess return, subjective risk premium, dividend yield, and inflation are the modeled factors. At this point, the S&P 500 is the portfolio modeled, and data on returns and dividend yield are obtained from Robert Shiller's website[1]. To calculate the subjective risk premium, we follow Lee (2010)[2]. Since the subjective risk premium is calculated using quarterly data, we convert all monthly data to quarterly data using a moving average of the previous three months.

Inflation measures are the seasonally adjusted consumer price index (CPI), personal consumption expenditure implicit deflator (PCE), and producer price index (PPI). In addition to measures of price inflation, we include one (crude) measure of monetary inflation: the growth in the supply of money less the growth in nominal GDP. For this latter measure, supply of money is calculated using M1 and MZM. All price inflation, money measure, and GDP data are obtained from the St. Louis Federal Reserve Bank's FRED database. Money supply and NGDP levels are shown in Figure 2. Money inflation measures are shown in Figure 3.

[1] http://www.econ.yale.edu/~shiller/data.htm
[2] Procedure described in Appendix.

Summary statistics for the various measures used in the analysis are displayed in Table 1. The sample period extends from Q4 1966 to Q4 2009, comprising 172 quarters. This is a relatively short sample because quarterly accounting data is needed to calculate the subjective risk premium. That data is obtained from Compustat, limiting the beginning date for the sample. Data is presented for the full time period, and then broken down into two 'regimes' reflecting the apparent change in behavior of our three measures. Specifically, we use 1983[3] as the separating year.

There are significant differences among the variables of interest between the two regimes. First, because of the 1970s, measured inflation is higher (about double) in the first regime compared to the second regime. Monetary inflation has increased in the second regime. Money growth appears to have lagged NGDP growth in the 1970s, but in the mid-1980s and beyond it has kept up or gotten a bit ahead. This change likely has something to do with the importance of electronic forms of money, now much more prevalent than during the 1970s and 1980s.

Excess return on the S&P 500 is much higher in the second regime, since that period captures several "booms." Nevertheless, the crash of 1987, the tech bubble burst in 2000, and the real estate bubble burst in late 2007 and market crash in 2008 serve to dampen the S&P 500 performance. Finally, dividend yield is substantially lower in the second regime.

To examine more carefully the effect of using different inflation measures, we apply the basic VAR model of Lee (2010), which includes excess return on the S&P 500, the dividend yield on the S&P 500, the subjective risk premium, and inflation. Before implementing the VAR, each data series is tested for stationarity. We find only the dividend yield is non-stationary, and so this series is first-differenced.[4]

In correlations (not reported), excess returns are apparently negatively correlated with all forms of inflation, but the only statistically significant correlation is with the CPI. Dividends are positively and significantly correlated with all measures of price inflation, but negatively correlated with monetary inflation, and only significantly so with MZM. These effects are dominated by the first regime. In the second regime, excess returns are not correlated with any measure of inflation. Dividend yield is positively and significantly correlated with PCE inflation, but negatively and significantly correlated with PPI inflation. Further, dividend yield is now positively and significantly correlated with M1 monetary inflation, but not MZM inflation. These results indicate that separation into (at least) two regimes is very important to the results.

Results and Discussion

For the full sample (Table 2), using a one-period VAR, there is no apparent relationship between excess returns and price inflation, or dividend yield and price inflation. The only significant effects are the

[3] The choice of breakpoint is somewhat arbitrary. Use of Chow tests identified an abundance of breakpoints in all three inflation series. For example, a choice of any five arbitrary breakpoints yielded an average of three significant breaks in the data. Lee (2010) identifies up to 15 breakpoints in a regression of real stock returns on inflation (CPI), but only four in our sample period: 1974Q1, 1975Q2, 1986Q4, and 1987Q4.

[4] Lee (2010) and Campbell and Vuolteenaho (2004) use log dividend yield. That series is also non-stationary for our sample. After first-differencing log dividend yield and comparing that series to first-differenced dividend yield, the two series behave quite similarly. Using either series does not materially affect our results.

lagged variables on themselves (save for excess returns) which indicates persistence in the variables, and excess return on dividend yield. This latter relationship is mechanical, however, since as returns pick up, dividend yield will decrease since dividend dollar values tend to be stable.

Using two lags (Table 2, Panel B) offers somewhat different results. Now, two-quarter-lagged price inflation measured using the PPI has a negative and significant (p-value = 0.07) effect on excess returns. The marginal effect of PPI, evaluated at the mean, is -0.7%. That is approximately 45% of the average quarterly excess return on the S&P 500 for the full sample, so the PPI effect is economically substantial. The estimate on PCE is twice the magnitude of the PPI, but not statistically significant. The estimate on CPI is smaller than PPI, and also not significant.

The pattern of results is similar for dividend yield. The PPI is the only measure that is statistically significant, and the point estimate is between the CPI and PCE point estimates. The marginal effect is approximately 0.03%. However, because change in dividend yield is such a small value (mean is -0.00018 for the full sample), this amounts to 179% of the average quarterly change in dividends. Economically this is highly significant.

Note that all measures of inflation now appear to have a significant effect on the subjective risk premium, in roughly the same magnitude for CPI and PCE. The PPI effect is about half the magnitude of the other two measures of price inflation. However, this effect does not appear to flow through to excess returns or dividend yield, since there is no demonstrated effect of the subjective risk premium on either of these measures.

Results for the VAR models using two separate inflation measures, one for each regime, are presented in Table 3. Price inflation is indeed much less significant in the second regime than in the first regime. First, we note that price inflation is not a significant factor in excess returns on the S&P 500 in these models. Second, one-quarter-lag price inflation is positively and significantly associated with dividend yield if one uses the CPI or the PPI, but only for the 1966 – 1983 period. After 1983, the only significant inflation measure is the two-period-lag PPI.

Finally, we introduce monetary inflation as a potential missing factor. In Table 4, Panel A, we show the results of including only money inflation (using M1) and no measure of price inflation. As there does not appear to be a structural break in money inflation, we use one measure for the whole period.

Money inflation[5] does not appear to be related to the excess return on the S&P 500, although the two-quarter-lag is almost significant at the ten percent level (p-value = 0.1177). The economic impact, based on the point estimate, is about 15% of the average quarterly excess return.

Money inflation does have a significant relationship to dividend yield, although the two-period-lag dominates the one-period-lag. Specifically, when money inflation increases, dividend yield tends to decrease, but it takes roughly two quarters for this effect to show up. This lag time is consistent with the

[5] For all results presented and discussed here, we are referring to M1-based money inflation. Using MZM (results available upon request) does not materially change our conclusions regarding price inflation, but it does cause the impact of money inflation to become marginal at best (p-values close to 0.1, but not significant).

non-neutrality of money. In other words, the effects of money inflation do not take place immediately, but must work their way through the monetary system.

We now include money inflation into the two-regime models of inflation, using both one-period and two-period lags. In the one-period lag models (Panel B of Table 4), using money inflation, we note that excess return is not correlated with price or money inflation. The dividend yield shows only a mild correlation (p-value = 0.1095) and negative correlation with monetary inflation when we use the PPI to measure price inflation. No measure of price inflation is significantly related to dividend yield.

Including two lagged quarters of data shows no better fit in terms of excess returns, but the picture for dividend yield does improve. Now, we find that one-period lagged inflation, measured using the CPI or PPI, is positively correlated with dividend yield for the 1966-1983 period, but not for the 1984-2009 period. Two-period lagged CPI-inflation is negatively correlated with dividend yield for the 1966-1983 period. No price inflation measure is correlated with dividend yield for the 1984-2009 period. Finally, two-period lagged monetary inflation is negatively correlated with dividend yield, no matter which measure of price inflation is used.

Concluding Remarks

Originally, this article was intended to illustrate differences in measures of inflation and the consequences of these differences for measuring the effect of inflation on stock prices. We separate the full sample (1966 – 2009) into two regimes: 1966 – 1983, and 1984 – 2009. The differences between the two regimes include a rapid price increase in the 1970s that moderated significantly after the early 1980s; and a significantly more volatile PPI. What we have ultimately shown is that price inflation does not appear to have any effect after 1983, and that the effect during the first regime depends on the inflation measure used.

Differences in this article from previous work include the first-differencing of the dividend yield; inclusion of two-period lags in the VAR models; and the use of a money inflation measure, in addition to three different measures of price inflation. In sum, it appears that in a world of moderate inflation, stock prices are not substantively affected by price inflation.

Future research would investigate more appropriate price inflation measures by separating stock market returns by stage of production (e.g. oil exploration v. gas retail) and using different measures of price inflation for each. Furthermore, the volatility of inflation should receive more attention.

Appendix

This article uses the method of Lee (2010) to calculate the subjective risk premium λ^{SRC}, denoted *Risk Premium* in the tables in the article. The construction is as follows. First, one calculates the firm-level dividend-to-price ratio, book-to-market ratio, earnings-to-price ratio, and cash flow-to-price ratio. Cash flow is defined as quarterly net income plus quarterly dividends on common shares. We use quarterly accounting data to calculate each of these variables, and the market valuation is the average end-of-month market value for the three months in the quarter. The data are obtained from Compustat and CRSP. Next, the percentile ranking of each ratio for each firm is calculated across all firms for every quarter, and then the average of all available ratios for each firm is calculated. After taking the average, firms are re-ranked for each quarter, and this new ranking is labeled $VALRANK_{i,t}$.

The second step is to estimate each firm's quarterly beta using twelve to thirty-six months worth of data. The market is the CRSP value-weighted return. The third step is to calculate the Spearman rank correlation of $VALRANK_{i,t}$ and the firm's beta. This results in λ^{SRC}.

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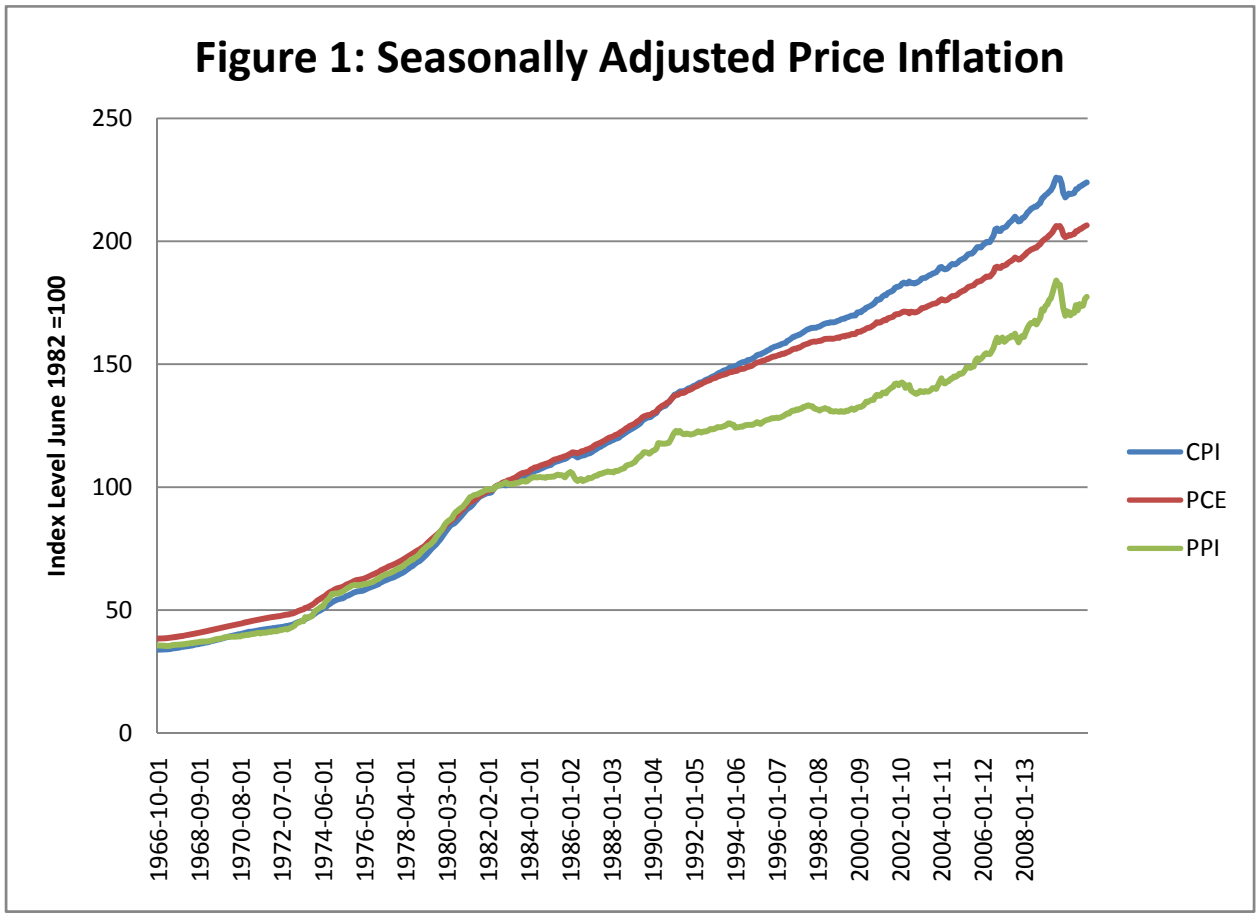
Figure 1: Seasonally Adjusted Price Inflation
Index Level June 1982 =100
250
200
150
100
50
0
1966-10-01
1968-09-01
1970-08-01
1972-07-01
1974-06-01
1976-05-01
1978-04-01
1980-03-01
1982-02-01
1984-01-01
1986-01-02
1988-01-03
1990-01-04
1992-01-05
1994-01-06
1996-01-07
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2006-01-12
2008-01-13
CPI
PCE
PPI

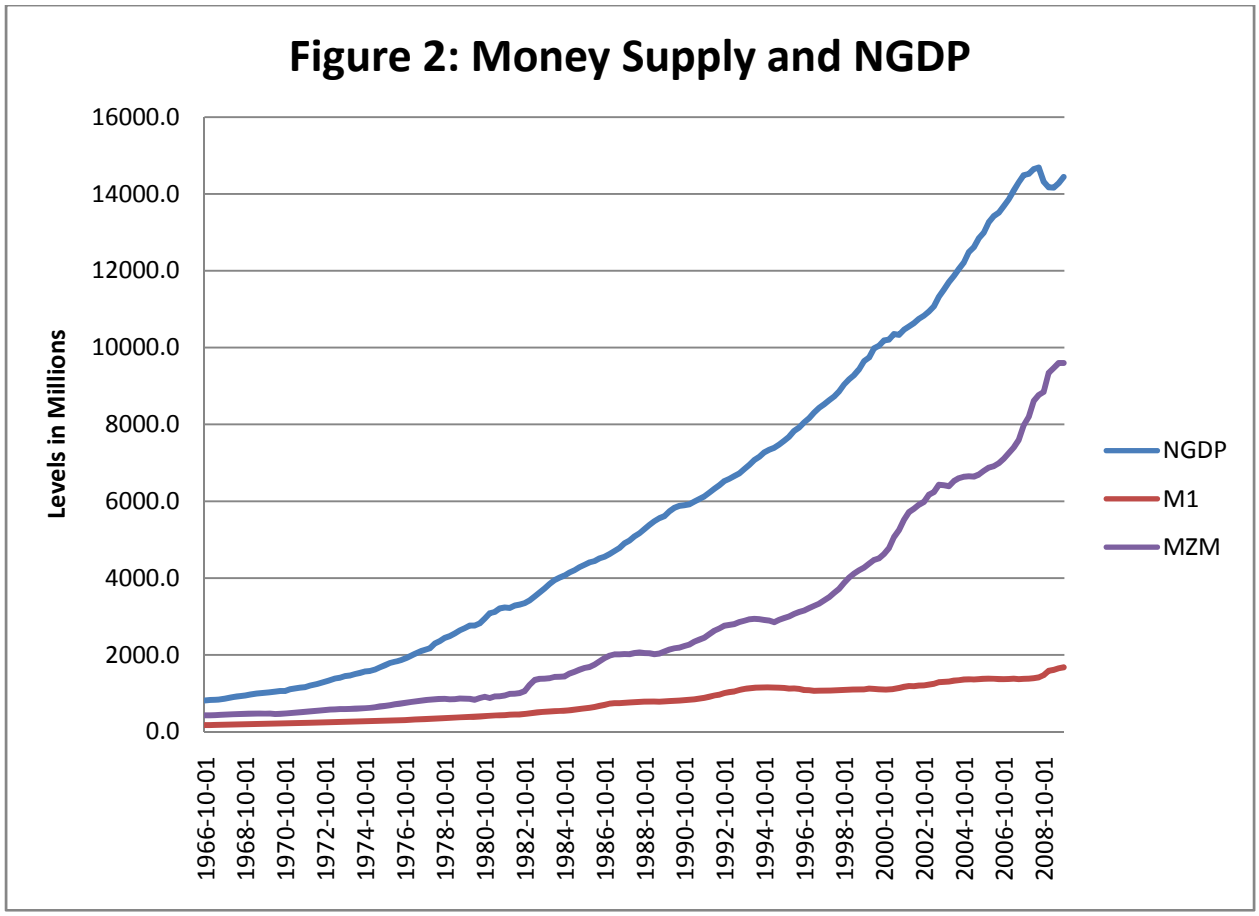
Figure 2: Money Supply and NGDP
Levels in Millions
16000.0
14000.0
12000.0
10000.0
8000.0
6000.0
4000.0
2000.0
0.0
1966-10-01
1968-10-01
1970-10-01
1972-10-01
1974-10-01
1976-10-01
1978-10-01
1980-10-01
1982-10-01
1984-10-01
1986-10-01
1988-10-01
1990-10-01
1992-10-01
1994-10-01
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2006-10-01
2008-10-01
NGDP
M1
MZM

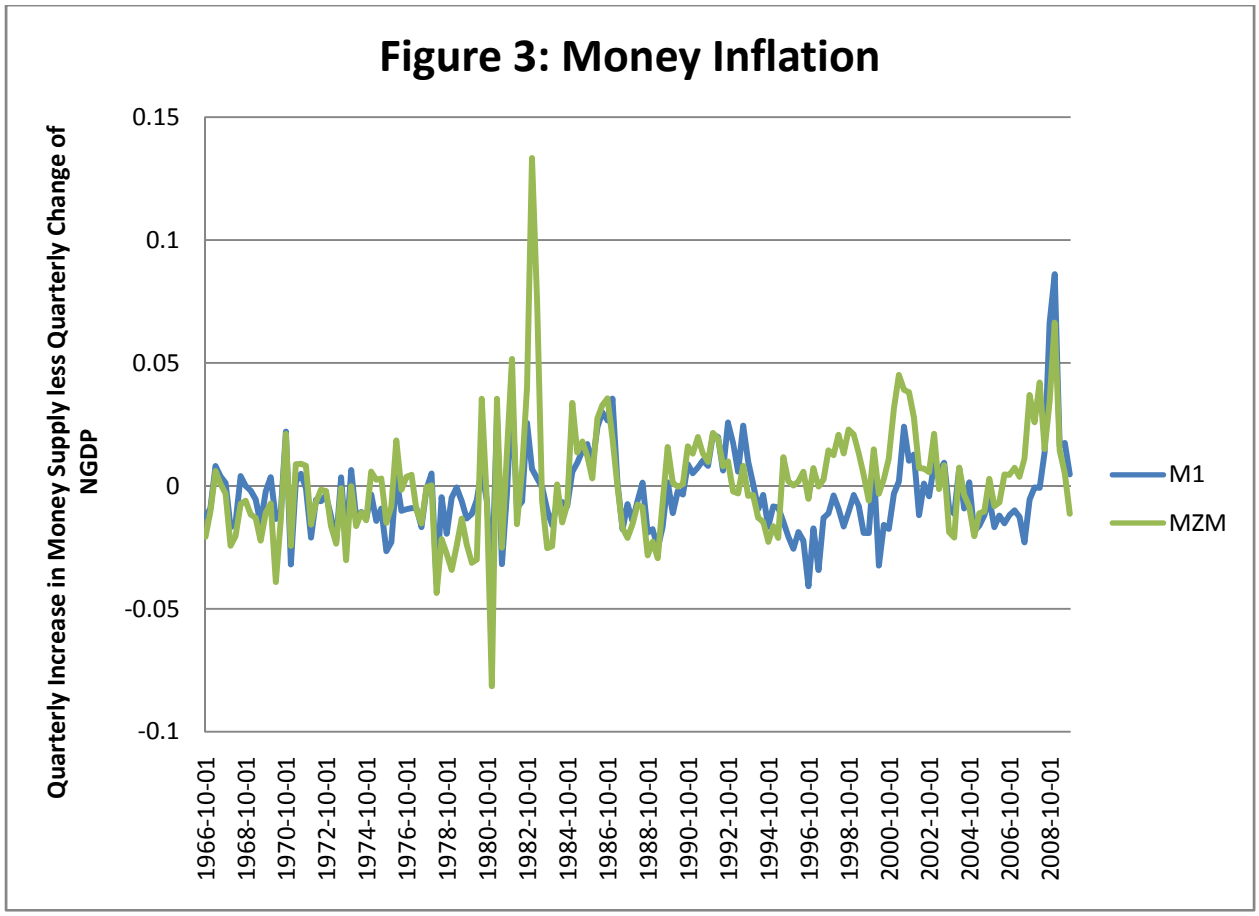
Figure 3: Money Inflation
Quarterly Increase in Money Supply less Quarterly Change of NGDP
0.15
0.1
0.05
0
-0.05
-0.1
1966-10-01
1968-10-01
1970-10-01
1972-10-01
1974-10-01
1976-10-01
1978-10-01
1980-10-01
1982-10-01
1984-10-01
1986-10-01
1988-10-01
1990-10-01
1992-10-01
1994-10-01
1996-10-01
1998-10-01
2000-10-01
2002-10-01
2004-10-01
2006-10-01
2008-10-01
M1
MZM

Table 1

This table presents summary statistics for the entire sample (1966Q4 - 2009Q4), and broken into two regimes (1966Q4 - 1983Q4; 1984Q1 - 2009Q4). Excess Return is the nominal quarterly return on the S&P 500 less the nominal quarterly return on the 90-day T-bll. Dividend Yield is the nominal quarterly dividend paid during the quarter divided by the average level of the S&P 500 during the quarter. CPI Change is the 3-month moving average of the monthly change in the CPI. PCE and PPI Change is the same. M1 and MZM Inflation are calculated as the quarterly change in the relevant money supply measure less the quarterly change in nominal GDP.

Variable	Mean	Std Dev	Median	p25	p75
Full Sample (N = 172)					
Excess Return	0.0154	0.0831	0.0201	-0.0304	0.0663
Dividend Yield	0.0932	0.0365	0.0932	0.0571	0.1163
CPI Change	0.0038	0.0033	0.0032	0.0019	0.0052
PCE Change	0.0032	0.0026	0.0030	0.0015	0.0044
PPI Change	0.0030	0.0051	0.0028	0.0000	0.0053
M1 Inflation	-0.0035	0.0169	-0.0057	-0.0134	0.0050
MZM Inflation	0.0015	0.0230	0.0002	-0.0132	0.0128
Regime 1 (N=68)					
Excess Return	0.0102	0.0824	0.0092	-0.0379	0.0666
Dividend Yield	0.1224	0.0275	0.1189	0.0953	0.1498
CPI Change	0.0057	0.0034	0.0053	0.0030	0.0083
PCE Change	0.0049	0.0025	0.0045	0.0032	0.0064
PPI Change	0.0050	0.0044	0.0044	0.0022	0.0081
M1 Inflation	-0.0063	0.0139	-0.0061	-0.0132	0.0014
MZM Inflation	-0.0050	0.0283	-0.0079	-0.0212	0.0033
Regime 2 (N=104)					
Excess Return	0.0188	0.0838	0.0253	-0.0216	0.0640
Dividend Yield	0.0742	0.0280	0.0703	0.0504	0.0957
CPI Change	0.0025	0.0025	0.0025	0.0015	0.0036
PCE Change	0.0021	0.0020	0.0020	0.0011	0.0033
PPI Change	0.0018	0.0052	0.0017	-0.0007	0.0040
M1 Inflation	-0.0016	0.0185	-0.0048	-0.0145	0.0083
MZM Inflation	0.0058	0.0177	0.0049	-0.0063	0.0149

Table 2: Full Sample VAR

This table presents the results of one period lagged VAR (Panel A) and two period lagged VAR (Panel B) of the correlations among excess returns, subjective risk premia, dividend yields, and inflation. We run three models for each VAR, across the full sample of the data, one for each of the inflation measures used in this article. Excess Return is the quarterly return (3-month compounded) on the S&P 500, excluding dividends, and adjusted by the 90-day T-bill return. Risk Premium is the subjective risk premium, calculated as per Lee (2010). Dividend Yield is the quarterly change in the dividend yield on the S&P 500. Inflation is the quarterly change in the relevant inflation measure, indicated by the heading above each set of results. Akaike IC is the Akaike Information Criterion, and Schwartz IC is the Schawtz-Bayesian Information Criterion.

Panel A: One period lag

		CPI		PCE		PPI	
Dep. Var.	Factor	Estimate	Pr > |t|	Estimate	Pr > |t|	Estimate	Pr > |t|
Excess Return	Intercept	0.0211	0.1047	0.0237	0.0749	0.0190	0.1015
	Ex. Ret.	0.1300	0.1396	0.1329	0.1302	0.1307	0.1374
	Risk Prem.	-0.0195	0.6265	-0.0182	0.6483	-0.0206	0.6088
	Div. Yield	1.2199	0.4016	1.3261	0.3634	1.1343	0.4299
	Inflation	-0.8558	0.6722	-1.9329	0.4452	-0.3164	0.8030
Risk Premium	Intercept	0.0460	0.0037	0.0480	0.0031	0.0506	0.0004
	Ex. Ret.	0.0631	0.5511	0.0587	0.5794	0.0614	0.5625
	Risk Prem.	**0.7701**	**0.0001**	**0.7732**	**0.0001**	**0.7726**	**0.0001**
	Div. Yield	-0.6261	0.7212	-0.5550	0.7530	-0.4328	0.8030
	Inflation	1.9257	0.4306	1.4275	0.6411	0.6931	0.6512
Dividend Yield	Intercept	-0.0003	0.5095	-0.0003	0.5536	0.0000	0.9930
	Ex. Ret.	**-0.0245**	**0.0001**	**-0.0248**	**0.0001**	**-0.0246**	**0.0001**
	Risk Prem.	0.0003	0.8340	0.0005	0.7780	0.0006	0.7198
	Div. Yield	**0.4840**	**0.0001**	**0.4843**	**0.0001**	**0.4974**	**0.0001**
	Inflation	0.1268	0.1206	0.1347	0.1886	0.0288	0.5747
Inflation	Intercept	0.0018	0.0001	0.0014	0.0001	0.0018	0.0121
	Ex. Ret.	0.0002	0.9515	-0.0001	0.9658	0.0057	0.2868
	Risk Prem.	0.0014	0.3190	0.0008	0.4575	0.0041	0.0970
	Div. Yield	0.0488	0.3404	0.0349	0.3675	0.1100	0.2092
	Inflation	**0.4290**	**0.0001**	**0.5180**	**0.0001**	0.0950	0.2196
Akaike IC		-33.0954		-33.6422		-31.3542	
Schwartz IC		-32.7350		-33.2818		-30.9938	

Panel B: Two period lag							
		CPI		PCE		PPI	
Dep. Var.	Factor	Estimate	Pr > |t|	Estimate	Pr > |t|	Estimate	Pr > |t|
Excess Return	Intercept	0.02592	0.0705	0.03108	0.033	-0.0066	0.7468
	Ex. Ret. (t-1)	0.1008	0.3461	0.09827	0.3528	0.10482	0.2551
	Risk Prem. (t-1)	-0.01404	0.8304	-0.01452	0.8235	-0.01157	0.8575
	Div. Yield (t-1)	0.06392	0.9808	0.10631	0.9678	0.85567	0.653
	Inflation (t-1)	-0.29026	0.8978	0.06451	0.9827	-0.46097	0.7208
	Ex. Ret. (t-2)	-0.03034	0.7728	-0.02299	0.8263	-0.04296	0.6786
	Risk Prem. (t-2)	-0.00598	0.9262	-0.00318	0.9605	0.0016	0.98
	Div. Yield (t-2)	1.23891	0.5371	1.43237	0.4739	-0.51313	0.7888
	Inflation (t-2)	-1.56416	0.4924	-4.04643	0.175	-2.35147	**0.0699**
Risk Premium	Intercept	0.04553	0.005	0.04869	0.0035	0.06877	0.004
	Ex. Ret. (t-1)	0.15172	0.2069	0.17771	0.1405	0.10264	0.3344
	Risk Prem. (t-1)	0.80431	0.0001	0.81311	0.0001	0.80828	0.0001
	Div. Yield (t-1)	2.45412	0.4112	3.19771	0.2872	0.5091	0.8168
	Inflation (t-1)	-1.24057	0.6249	-2.72543	0.4204	0.15032	0.9196
	Ex. Ret. (t-2)	0.02492	0.8327	0.02203	0.8533	0.03483	0.7711
	Risk Prem. (t-2)	-0.09656	0.1843	-0.09569	0.1919	-0.09909	0.1798
	Div. Yield (t-2)	-3.47296	0.1244	-3.75277	0.1003	-0.63967	0.7725
	Inflation (t-2)	7.2313	**0.0052**	8.03788	0.0186	3.69191	0.0142
Dividend Yield	Intercept	-0.00012	0.8115	-0.00024	0.6472	0.00126	0.1055
	Ex. Ret. (t-1)	-0.02222	0.0001	-0.02251	0.0001	-0.0278	0.0001
	Risk Prem. (t-1)	-0.00113	0.638	-0.00101	0.6724	-0.00112	0.648
	Div. Yield (t-1)	0.49819	0.0001	0.49512	0.0001	1.30108	0.0001
	Inflation (t-1)	0.12595	0.1291	0.09818	0.3681	0.04039	0.4101
	Ex. Ret. (t-2)	-0.01602	0.0001	-0.01636	0.0001	-0.01624	0.0001
	Risk Prem. (t-2)	0.00069	0.7714	0.00061	0.7965	0.00048	0.844
	Div. Yield (t-2)	-0.24464	0.0011	-0.24895	0.0008	-0.31226	0.0001
	Inflation (t-2)	0.05068	0.5433	0.14761	0.1775	0.10487	**0.0337**
Inflation	Intercept	0.00144	0.0036	0.00097	0.0096	-0.00001	0.9916
	Ex. Ret. (t-1)	0.00097	0.7919	0.0002	0.9421	0.00591	0.2933
	Risk Prem. (t-1)	0.00329	0.1437	0.0013	0.4341	0.00418	0.289
	Div. Yield (t-1)	0.09751	0.2847	0.05182	0.4432	0.17791	0.1268
	Inflation (t-1)	0.35629	0.0001	0.37558	0.0001	0.07632	0.3329
	Ex. Ret. (t-2)	0.00512	0.1563	0.00297	0.2698	0.00652	0.3031
	Risk Prem. (t-2)	-0.00237	0.2842	-0.0008	0.6283	0.00079	0.8385
	Div. Yield (t-2)	-0.01361	0.8429	0.00612	0.9049	-0.16204	0.167
	Inflation (t-2)	0.18116	0.0211	0.2694	0.0005	0.0109	0.8899
Akaike IC		-33.5021		-34.0692		-32.2432	
Schwartz IC		-32.8617		-33.4288		-31.6028	

Table 3: Full Sample with Regime Breakpoint

This table presents the results of one period lagged VAR (Panel A) and two period lagged VAR (Panel B) of the correlations among excess returns, subjective risk premia, dividend yields, and inflation. We run three models for each VAR one for each of the inflation measures used in this article. Excess Return is the quarterly return (3-month compounded) on the S&P 500, excluding dividends, and adjusted by the 90-day T-bill return. Risk Premium is the subjective risk premium, calculated as per Lee (2010). Dividend Yield is the quarterly change in the dividend yield on the S&P 500. Inflation is the quarterly change in the relevant inflation measure, indicated by the heading above each set of results. We use separate variables for inflation from 1966 - 1983 and 1984 - 2009. Akaike IC is the Akaike Information Criterion, and Schwartz IC is the Schawtz-Bayesian Information Criterion.

Panel A: One period lag

		CPI		PCE		PPI	
Dep. Var.	Factor	Estimate	Pr > |t|	Estimate	Pr > |t|	Estimate	Pr > |t|
Excess Return	Intercept	0.0190	0.1620	0.0240	0.0898	0.0194	0.0964
	Ex. Ret.	0.1277	0.1482	0.1331	0.1311	0.1254	0.1564
	Risk Prem.	-0.0153	0.7092	-0.0188	0.6479	-0.0172	0.6724
	Div. Yield	1.2672	0.3857	1.3200	0.3681	1.1265	0.4338
	Inflation 66-83	-1.1640	0.5827	-1.8917	0.4709	-1.1716	0.5175
	Inflation 84-09	0.3213	0.9175	-2.1206	0.5900	0.3048	0.8468
Risk Premium	Intercept	0.0527	0.0015	0.0591	0.0006	0.0502	0.0004
	Ex. Ret.	0.0708	0.5030	0.0680	0.5177	0.0676	0.5260
	Risk Prem.	0.7561	**0.0001**	0.7502	**0.0001**	0.7686	**0.0001**
	Div. Yield	-0.7845	0.6546	-0.7848	0.6543	-0.4236	0.8074
	Inflation 66-83	2.9568	0.2460	2.9866	0.3416	1.6919	0.4394
	Inflation 84-09	-2.0129	0.5893	-5.6693	0.2293	-0.0324	0.9864
Dividend Yield	Intercept	-0.0001	0.7982	-0.0002	0.7097	0.0000	0.9230
	Ex. Ret.	-0.0242	**0.0001**	-0.0247	**0.0001**	-0.0240	**0.0001**
	Risk Prem.	-0.0001	0.9581	0.0002	0.8877	0.0002	0.9120
	Div. Yield	0.4792	**0.0001**	0.4821	**0.0001**	0.4984	**0.0001**
	Inflation 66-83	0.1579	**0.0643**	0.1496	0.1586	0.1301	**0.0741**
	Inflation 84-09	0.0080	0.9489	0.0669	0.6738	-0.0447	0.4797
Inflation (1966 - 1983)	Intercept	0.0006	0.0834	0.0004	0.1052	0.0006	0.1633
	Ex. Ret.	0.0012	0.5623	0.0000	0.9775	0.0038	0.2412
	Risk Prem.	0.0005	0.5933	0.0002	0.7819	0.0018	0.2464
	Div. Yield	0.0080	0.8222	0.0049	0.8416	0.0787	0.1416
	Inflation 66-83	0.7757	**0.0001**	0.8421	**0.0001**	0.5130	**0.0001**
	Inflation 84-09	-0.1410	**0.0631**	-0.1042	0.1138	-0.0661	0.2595
Inflation (1984-2009)	Intercept	0.0020	0.0001	0.0016	0.0001	0.0011	0.0618
	Ex. Ret.	-0.0002	0.9181	0.0004	0.8099	0.0035	0.4298
	Risk Prem.	-0.0006	0.5329	-0.0008	0.3402	0.0013	0.5166
	Div. Yield	0.0239	0.5109	0.0164	0.5637	0.0336	0.6366
	Inflation 66-83	-0.2360	**0.0001**	-0.2318	**0.0001**	-0.1617	**0.0723**
	Inflation 84-09	0.1472	**0.0576**	0.2022	**0.0087**	-0.0251	0.7482
Akaike IC		-46.2054		-47.4205		-43.9397	
Schwartz IC		-45.6670		-46.8821		-43.4013	

Panel B: Two period lag							
		CPI		PCE		PPI	
Dep. Var.	Factor	Estimate	Pr > |t|	Estimate	Pr > |t|	Estimate	Pr > |t|
Excess Return	Intercept	0.0273	0.0900	0.0355	0.0336	0.0250	0.0493
	Ex. Ret. (t-1)	0.0744	0.5041	0.1081	0.3233	0.0774	0.4792
	Risk Prem. (t-1)	-0.0151	0.8194	-0.0197	0.7663	-0.0130	0.8430
	Div. Yield (t-1)	-0.4763	0.8616	0.2637	0.9217	-0.6885	0.8015
	Inflation 66-83 (t-1)	-2.5874	0.4468	1.2905	0.7896	-1.4498	0.5087
	Inflation 84-09 (t-1)	0.8683	0.7880	-1.7668	0.6687	0.2685	0.8673
	Ex. Ret. (t-2)	-0.0346	0.7430	-0.0179	0.8658	-0.0390	0.7115
	Risk Prem. (t-2)	-0.0075	0.9080	-0.0046	0.9437	-0.0024	0.9705
	Div. Yield (t-2)	1.4714	0.4690	1.3262	0.5115	1.5851	0.4439
	Inflation 66-83 (t-2)	0.8216	0.8127	-5.2371	0.2854	-0.7371	0.7365
	Inflation 84-09 (t-2)	-3.0939	0.3356	-4.7312	0.2502	-2.4448	0.1316
Risk Premium	Intercept	0.0610	0.0007	0.0715	0.0002	0.0572	0.0001
	Ex. Ret. (t-1)	0.0946	0.4403	0.1488	0.2219	0.1392	0.2585
	Risk Prem. (t-1)	0.7901	**0.0001**	0.7840	**0.0001**	0.8063	0.0001
	Div. Yield (t-1)	1.1085	0.7125	2.7101	0.3644	1.9189	0.5338
	Inflation 66-83 (t-1)	-6.5168	**0.0830**	-8.0543	0.1357	-1.9428	0.4315
	Inflation 84-09 (t-1)	-1.5269	0.6676	-5.9445	0.1966	0.2231	0.9019
	Ex. Ret. (t-2)	0.0192	0.8691	0.0288	0.8063	0.0332	0.7796
	Risk Prem. (t-2)	-0.1054	0.1416	-0.1033	0.1524	-0.1049	0.1510
	Div. Yield (t-2)	-2.9784	0.1840	-3.7121	**0.0997**	-2.4438	0.2947
	Inflation 66-83 (t-2)	12.9770	**0.0008**	13.7360	**0.0125**	7.3584	**0.0032**
	Inflation 84-09 (t-2)	0.6646	0.8508	-0.5102	0.9111	1.4390	0.4292
Dividend Yield	Intercept	0.0000	0.9911	-0.0002	0.7386	0.0001	0.7757
	Ex. Ret. (t-1)	-0.0198	**0.0001**	-0.0220	**0.0001**	-0.0205	**0.0001**
	Risk Prem. (t-1)	-0.0013	0.5980	-0.0010	0.6676	-0.0012	0.6097
	Div. Yield (t-1)	0.5444	**0.0001**	0.5031	**0.0001**	0.5584	**0.0001**
	Inflation 66-83 (t-1)	0.3308	**0.0077**	0.1683	0.3439	0.1697	**0.0343**
	Inflation 84-09 (t-1)	-0.0336	0.7730	0.0503	0.7401	-0.0233	0.6896
	Ex. Ret. (t-2)	-0.0156	**0.0001**	-0.0162	**0.0001**	-0.0153	**0.0001**
	Risk Prem. (t-2)	0.0007	0.7588	0.0006	0.8011	0.0005	0.8301
	Div. Yield (t-2)	-0.2661	**0.0004**	-0.2529	**0.0008**	-0.2729	**0.0004**
	Inflation 66-83 (t-2)	-0.1570	0.2108	0.0769	0.6686	0.0088	0.9122
	Inflation 84-09 (t-2)	0.1288	0.2669	0.1670	0.2689	0.1047	**0.0757**
Inflation (1966 - 1983)	Intercept	0.0005	0.1736	0.0003	0.2075	0.0001	0.9057
	Ex. Ret. (t-1)	0.0000	0.9919	-0.0011	0.5218	0.0050	0.1827
	Risk Prem. (t-1)	0.0023	0.1231	0.0004	0.7140	0.0012	0.5821
	Div. Yield (t-1)	0.0237	0.6964	0.0150	0.7109	0.1571	**0.0932**
	Inflation 66-83 (t-1)	0.5400	**0.0001**	0.5050	**0.0001**	0.3829	**0.0001**
	Inflation 84-09 (t-1)	-0.0837	0.2441	-0.0526	0.3993	-0.0609	0.2663
	Ex. Ret. (t-2)	0.0064	**0.0068**	0.0040	**0.0141**	0.0105	**0.0038**
	Risk Prem. (t-2)	-0.0022	0.1329	-0.0005	0.6208	0.0010	0.6588
	Div. Yield (t-2)	0.0257	0.5691	0.0197	0.5175	-0.0048	0.9451
	Inflation 66-83 (t-2)	0.2893	**0.0002**	0.3857	**0.0001**	0.2673	**0.0004**
	Inflation 84-09 (t-2)	-0.0800	0.2621	-0.0588	0.3440	-0.0398	0.4691

Inflation (1984-2009)	Intercept	0.0021	0.0001	0.0016	0.0001	0.0014	0.0315
	Ex. Ret. (t-1)	0.0021	0.4446	0.0016	0.4553	0.0043	0.4267
	Risk Prem. (t-1)	-0.0001	0.9506	-0.0003	0.8448	0.0020	0.5285
	Div. Yield (t-1)	0.0799	0.2349	0.0415	0.4255	0.0505	0.7093
	Inflation 66-83 (t-1)	-0.1144	0.1716	-0.1284	0.1717	-0.1051	0.3336
	Inflation 84-09 (t-1)	0.1169	0.1418	0.1693	**0.0355**	-0.0325	0.6828
	Ex. Ret. (t-2)	-0.0008	0.7640	-0.0003	0.8790	-0.0021	0.6872
	Risk Prem. (t-2)	-0.0007	0.6701	-0.0006	0.6161	-0.0007	0.8334
	Div. Yield (t-2)	-0.0501	0.3155	-0.0234	0.5497	-0.0308	0.7638
	Inflation 66-83 (t-2)	-0.1541	**0.0718**	-0.1053	0.2675	-0.1366	0.2086
	Inflation 84-09 (t-2)	0.0089	0.9102	0.0623	0.4338	-0.0891	0.2660
Akaike IC		-46.6765		-47.8826		-44.3549	
Schwartz IC		-45.7067		-46.9129		-43.3851	

Table 4: Monetary Inflation

This table presents the results of one and two period lagged VAR of the correlations among excess returns, subjective risk premia, dividend yields, and money inflation (Panel A). Money inflation is measured as the change in M1 less the change in nominal GDP. Panels B and C add in the measures of price inflation with one-period and two-period lagged models, respectively. Excess Return is the quarterly return (3-month compounded) on the S&P 500, excluding dividends, and adjusted by the 90-day T-bill return. Risk Premium is the subjective risk premium, calculated as per Lee (2010). Dividend Yield is the quarterly change in the dividend yield on the S&P 500. Akaike IC is the Akaike Information Criterion, and Schwartz IC is the Schawtz-Bayesian Information Criterion.

Panel A: Full Sample, No Price Inflation Measure

Dep. Var.	Factor	Estimate	Pr > |t|	Estimate	Pr > |t|
Excess Return	Intercept	0.0185	0.1044	0.0197	0.1088
	Ex. Ret. (t-1)	0.1306	0.1395	0.1026	0.3389
	Risk Prem. (t-1)	-0.0231	0.5711	-0.0263	0.6902
	Div. Yield (t-1)	1.1202	0.4354	0.2428	0.9273
	ΔM1-ΔNGDP (t-1)	-0.0379	0.9227	-0.3600	0.4075
	Ex. Ret. (t-2)	-	-	-0.0101	0.9243
	Risk Prem. (t-2)	-	-	0.0070	0.9145
	Div. Yield (t-2)	-	-	0.9923	0.6222
	ΔM1-ΔNGDP (t-2)	-	-	0.6855	0.1177
Risk Premium	Intercept	0.0520	0.0002	0.0633	0.0001
	Ex. Ret. (t-1)	0.0594	0.5772	0.1762	0.1568
	Risk Prem. (t-1)	0.7757	**0.0001**	0.8148	**0.0001**
	Div. Yield (t-1)	-0.4039	0.8159	3.4406	0.2651
	ΔM1-ΔNGDP (t-1)	-0.0190	0.9679	-0.0228	0.9638
	Ex. Ret. (t-2)	-	-	0.0307	0.8027
	Risk Prem. (t-2)	-	-	-0.0888	0.2386
	Div. Yield (t-2)	-	-	-3.2598	0.1634
	ΔM1-ΔNGDP (t-2)	-	-	-0.1106	0.8269
Dividend Yield	Intercept	0.0001	0.8063	0.0006	0.1805
	Ex. Ret. (t-1)	-0.0253	**0.0001**	-0.0243	**0.0001**
	Risk Prem. (t-1)	0.0001	0.9504	-0.0010	0.6799
	Div. Yield (t-1)	0.4981	**0.0001**	0.4561	**0.0001**
	ΔM1-ΔNGDP (t-1)	-0.0260	**0.0987**	-0.0076	0.6228
	Ex. Ret. (t-2)	-	-	-0.0182	**0.0001**
	Risk Prem. (t-2)	-	-	-0.0003	0.8917
	Div. Yield (t-2)	-	-	-0.2008	**0.0058**
	ΔM1-ΔNGDP (t-2)	-	-	-0.0512	**0.0012**
ΔM1-ΔNGDP	Intercept	0.0003	0.8902	0.0007	0.7277
	Ex. Ret. (t-1)	0.0001	0.9952	-0.0233	0.2142
	Risk Prem. (t-1)	-0.0098	0.1902	-0.0192	**0.0949**
	Div. Yield (t-1)	0.1917	0.4673	-0.7513	0.1065
	ΔM1-ΔNGDP (t-1)	0.4112	**0.0001**	0.3131	**0.0001**
	Ex. Ret. (t-2)	-	-	-0.0577	**0.0021**
	Risk Prem. (t-2)	-	-	0.0135	0.2351
	Div. Yield (t-2)	-	-	0.2616	0.4562
	ΔM1-ΔNGDP (t-2)	-	-	0.1927	**0.0121**
Akaike IC		-29.8176		-30.3359	
Schwartz IC		-29.4572		-29.6955	

Panel B: Regime Separation and Price Inflation Measures

		CPI		PCE		PPI	
Dep. Var.	Factor	Estimate	Pr > |t|	Estimate	Pr > |t|	Estimate	Pr > |t|
Excess Return	Intercept	0.0195	0.1610	0.0248	0.0864	0.0196	0.0961
	Ex. Ret.	0.1259	0.1573	0.1307	0.1409	0.1237	0.1658
	Risk Prem.	-0.0169	0.6890	-0.0215	0.6121	-0.0185	0.6558
	Div. Yield	1.2752	0.3844	1.3348	0.3644	1.1280	0.4346
	Inflation 66-83	-1.2469	0.5667	-2.0572	0.4450	-1.2339	0.5057
	Inflation 84-09	0.2100	0.9473	-2.3598	0.5584	0.2356	0.8855
	ΔM1-ΔNGDP	-0.0715	0.8597	-0.1168	0.7728	-0.0684	0.8678
Risk Premium	Intercept	0.0525	0.0019	0.0593	0.0007	0.0500	0.0005
	Ex. Ret.	0.0718	0.5014	0.0674	0.5247	0.0687	0.5235
	Risk Prem.	0.7569	**0.0001**	0.7495	**0.0001**	0.7694	**0.0001**
	Div. Yield	-0.7888	0.6539	-0.7809	0.6571	-0.4246	0.8076
	Inflation 66-83	3.0010	0.2517	2.9425	0.3613	1.7311	0.4398
	Inflation 84-09	-1.9536	0.6087	-5.7329	0.2355	0.0112	0.9955
	ΔM1-ΔNGDP	0.0381	0.9376	-0.0311	0.9488	0.0431	0.9309
Dividend Yield	Intercept	0.0000	0.9812	0.0000	0.9421	0.0001	0.8903
	Ex. Ret.	-0.0248	**0.0001**	-0.0252	**0.0001**	-0.0246	**0.0001**
	Risk Prem.	-0.0006	0.7340	-0.0003	0.8644	-0.0003	0.8407
	Div. Yield	0.4817	**0.0001**	0.4851	**0.0001**	0.4989	**0.0001**
	Inflation 66-83	0.1318	0.1300	0.1168	0.2800	0.1062	0.1507
	Inflation 84-09	-0.0271	0.8303	0.0195	0.9040	-0.0713	0.2740
	ΔM1-ΔNGDP	-0.0226	0.1634	-0.0231	0.1555	-0.0263	**0.1095**
Inflation (1966 - 1983)	Intercept	0.0006	0.1063	0.0004	0.1424	0.0006	0.1497
	Ex. Ret.	0.0013	0.5363	0.0001	0.9352	0.0037	0.2660
	Risk Prem.	0.0006	0.5456	0.0003	0.6943	0.0016	0.2942
	Div. Yield	0.0075	0.8324	0.0044	0.8576	0.0788	0.1418
	Inflation 66-83	0.7803	**0.0001**	0.8475	**0.0001**	0.5068	**0.0001**
	Inflation 84-09	-0.1348	**0.0821**	-0.0963	0.1530	-0.0730	0.2298
	ΔM1-ΔNGDP	0.0040	0.6867	0.0038	0.5698	-0.0068	0.6551
Inflation (1984-2009)	Intercept	0.0020	0.0001	0.0017	0.0001	0.0011	0.0588
	Ex. Ret.	-0.0004	0.8738	0.0003	0.8463	0.0033	0.4555
	Risk Prem.	-0.0008	0.4738	-0.0009	0.3017	0.0012	0.5672
	Div. Yield	0.0244	0.5017	0.0169	0.5536	0.0338	0.6361
	Inflation 66-83	-0.2421	**0.0001**	-0.2372	**0.0001**	-0.1677	**0.0687**
	Inflation 84-09	0.1390	**0.0792**	0.1945	**0.0137**	-0.0318	0.6949
	ΔM1-ΔNGDP	-0.0052	0.6018	-0.0038	0.6305	-0.0066	0.7452
ΔM1-ΔNGDP	Intercept	0.0037	0.1376	0.0031	0.2450	0.0010	0.6553
	Ex. Ret.	-0.0023	0.8876	0.0002	0.9887	-0.0002	0.9890
	Risk Prem.	-0.0086	0.2586	-0.0093	0.2265	-0.0096	0.2042
	Div. Yield	0.2960	0.2630	0.2807	0.2950	0.2078	0.4301
	Inflation 66-83	-0.9253	**0.0192**	-0.8582	**0.0812**	-0.1555	0.6455
	Inflation 84-09	-1.1516	**0.0455**	-1.0557	0.1515	-0.4961	**0.0979**
	ΔM1-ΔNGDP	0.3647	**0.0001**	0.3773	**0.0001**	0.3778	**0.0001**
Akaike IC		-54.5946		-55.7992		-52.3930	
Schwartz IC		-53.8439		-55.0486		-51.6423	

Panel C: As Panel B but with 2 period lag							
		CPI		PCE		PPI	
Dep. Var.	Factor	Estimate	Pr > |t|	Estimate	Pr > |t|	Estimate	Pr > |t|
Excess Return	Intercept	0.0279	0.0979	0.0367	0.0357	0.0257	0.0494
	Ex. Ret. (t-1)	0.0731	0.5166	0.1045	0.3468	0.0695	0.5344
	Risk Prem. (t-1)	-0.0262	0.6954	-0.0319	0.6350	-0.0252	0.7037
	Div. Yield (t-1)	-0.1391	0.9598	0.5364	0.8434	-0.5606	0.8411
	Inflation 66-83 (t-1)	-3.0731	0.3701	0.3313	0.9460	-1.9163	0.3974
	Inflation 84-09 (t-1)	0.2992	0.9275	-2.5485	0.5436	-0.2308	0.8902
	ΔM1-ΔNGDP (t-1)	-0.4651	0.3106	-0.5019	0.2689	-0.5348	0.2543
	Ex. Ret. (t-2)	-0.0142	0.8948	-0.0008	0.9941	-0.0220	0.8374
	Risk Prem. (t-2)	0.0070	0.9153	0.0083	0.8993	0.0100	0.8790
	Div. Yield (t-2)	1.3867	0.5004	1.2840	0.5309	1.6736	0.4284
	Inflation 66-83 (t-2)	1.1723	0.7376	-4.4883	0.3639	-0.3485	0.8746
	Inflation 84-09 (t-2)	-2.8901	0.3825	-4.4860	0.2881	-2.3973	0.1606
	ΔM1-ΔNGDP (t-2)	0.6535	0.1439	0.5893	0.1882	0.5546	0.2210
Risk Premium	Intercept	0.0594	0.0017	0.0722	0.0003	0.0565	0.0002
	Ex. Ret. (t-1)	0.1004	0.4220	0.1465	0.2392	0.1441	0.2559
	Risk Prem. (t-1)	0.7919	**0.0001**	0.7809	**0.0001**	0.8056	**0.0001**
	Div. Yield (t-1)	1.2401	0.6853	2.7302	0.3698	2.0966	0.5082
	Inflation 66-83 (t-1)	-6.4434	**0.0913**	-8.2773	0.1323	-1.9046	0.4575
	Inflation 84-09 (t-1)	-1.3982	0.7015	-6.1444	0.1919	0.2132	0.9103
	ΔM1-ΔNGDP (t-1)	0.0777	0.8785	-0.1247	0.8058	-0.0213	0.9680
	Ex. Ret. (t-2)	0.0246	0.8360	0.0310	0.7954	0.0407	0.7375
	Risk Prem. (t-2)	-0.1035	0.1563	-0.1011	0.1683	-0.1016	0.1715
	Div. Yield (t-2)	-3.0914	0.1765	-3.6901	0.1090	-2.5430	0.2884
	Inflation 66-83 (t-2)	13.1433	**0.0009**	13.8445	**0.0131**	7.4623	**0.0033**
	Inflation 84-09 (t-2)	0.9340	0.7989	-0.5449	0.9081	1.5959	0.4085
	ΔM1-ΔNGDP (t-2)	0.0930	0.8508	0.0982	0.8442	0.1679	0.7429
Dividend Yield	Intercept	0.0004	0.4878	0.0002	0.7284	0.0004	0.4134
	Ex. Ret. (t-1)	-0.0214	**0.0001**	-0.0236	**0.0001**	-0.0223	**0.0001**
	Risk Prem. (t-1)	-0.0013	0.5710	-0.0012	0.6179	-0.0012	0.6073
	Div. Yield (t-1)	0.4941	**0.0001**	0.4521	**0.0001**	0.5007	**0.0001**
	Inflation 66-83 (t-1)	0.3299	**0.0064**	0.1808	0.3006	0.1488	**0.0646**
	Inflation 84-09 (t-1)	-0.0466	0.6850	0.0406	0.7860	-0.0286	0.6293
	ΔM1-ΔNGDP (t-1)	-0.0029	0.8558	-0.0023	0.8886	-0.0020	0.9029
	Ex. Ret. (t-2)	-0.0179	**0.0001**	-0.0183	**0.0001**	-0.0175	**0.0001**
	Risk Prem. (t-2)	-0.0004	0.8566	-0.0005	0.8384	-0.0004	0.8558
	Div. Yield (t-2)	-0.2312	**0.0015**	-0.2175	**0.0033**	-0.2379	**0.0017**
	Inflation 66-83 (t-2)	-0.2175	**0.0763**	-0.0047	0.9787	-0.0196	0.8022
	Inflation 84-09 (t-2)	0.0455	0.6931	0.0634	0.6729	0.0526	0.3837
	ΔM1-ΔNGDP (t-2)	-0.0522	**0.0010**	-0.0501	**0.0019**	-0.0471	**0.0037**
Inflation (1966 - 1983)	Intercept	0.0004	0.2704	0.0003	0.3024	0.0000	0.9898
	Ex. Ret. (t-1)	0.0003	0.9137	-0.0009	0.5945	0.0052	0.1696
	Risk Prem. (t-1)	0.0026	**0.0857**	0.0005	0.6120	0.0009	0.6794
	Div. Yield (t-1)	0.0217	0.7231	0.0157	0.7033	0.1746	**0.0672**
	Inflation 66-83 (t-1)	0.5528	**0.0001**	0.5150	**0.0001**	0.3770	**0.0001**
	Inflation 84-09 (t-1)	-0.0671	0.3595	-0.0430	0.4998	-0.0716	0.2083
	ΔM1-ΔNGDP (t-1)	0.0125	0.2209	0.0059	0.3916	-0.0123	0.4378

	Ex. Ret. (t-2)	0.0062	0.0098	0.0039	**0.0168**	0.0115	**0.0019**
	Risk Prem. (t-2)	-0.0024	0.1018	-0.0006	0.5790	0.0015	0.4990
	Div. Yield (t-2)	0.0231	0.6132	0.0176	0.5712	-0.0115	0.8724
	Inflation 66-83 (t-2)	0.2884	**0.0003**	0.3832	**0.0001**	0.2838	**0.0002**
	Inflation 84-09 (t-2)	-0.0740	0.3149	-0.0539	0.4000	-0.0256	0.6584
	ΔM1-ΔNGDP (t-2)	-0.0099	0.3190	-0.0030	0.6570	0.0252	0.1024
Inflation (1984-2009)	Intercept	0.0022	0.0001	0.0016	0.0001	0.0015	0.0247
	Ex. Ret. (t-1)	0.0018	0.5141	0.0015	0.4791	0.0035	0.5345
	Risk Prem. (t-1)	-0.0003	0.8678	-0.0004	0.7688	0.0018	0.5827
	Div. Yield (t-1)	0.0767	0.2615	0.0440	0.4058	0.0307	0.8255
	Inflation 66-83 (t-1)	-0.1218	0.1516	-0.1387	0.1467	-0.1221	0.2788
	Inflation 84-09 (t-1)	0.1064	0.1917	0.1608	**0.0502**	-0.0441	0.5958
	ΔM1-ΔNGDP (t-1)	-0.0074	0.5164	-0.0055	0.5370	-0.0110	0.6359
	Ex. Ret. (t-2)	-0.0009	0.7464	-0.0001	0.9446	-0.0026	0.6204
	Risk Prem. (t-2)	-0.0007	0.6886	-0.0005	0.6953	-0.0008	0.8069
	Div. Yield (t-2)	-0.0457	0.3690	-0.0236	0.5545	-0.0155	0.8823
	Inflation 66-83 (t-2)	-0.1588	**0.0678**	-0.0979	0.3092	-0.1401	0.2033
	Inflation 84-09 (t-2)	-0.0016	0.9840	0.0641	0.4351	-0.1084	0.2020
	ΔM1-ΔNGDP (t-2)	0.0012	0.9157	0.0060	0.4933	-0.0076	0.7355
ΔM1-ΔNGDP	Intercept	0.0019	0.5115	0.0007	0.8060	0.0013	0.5745
	Ex. Ret. (t-1)	-0.0348	**0.0666**	-0.0211	0.2690	-0.0169	0.3815
	Risk Prem. (t-1)	-0.0183	0.1050	-0.0169	0.1451	-0.0188	0.1012
	Div. Yield (t-1)	-0.8590	**0.0646**	-0.6398	0.1722	-0.4986	0.3017
	Inflation 66-83 (t-1)	-1.7234	**0.0031**	-0.8847	0.2944	0.1785	0.6472
	Inflation 84-09 (t-1)	-1.0234	**0.0648**	-1.0799	0.1360	-0.5164	**0.0745**
	ΔM1-ΔNGDP (t-1)	0.2832	**0.0003**	0.2944	**0.0002**	0.2922	**0.0004**
	Ex. Ret. (t-2)	-0.0569	**0.0018**	-0.0559	**0.0028**	-0.0538	**0.0041**
	Risk Prem. (t-2)	0.0138	0.2115	0.0140	0.2140	0.0151	0.1824
	Div. Yield (t-2)	0.3498	0.3109	0.2475	0.4828	0.1439	0.6926
	Inflation 66-83 (t-2)	1.3180	**0.0258**	0.4277	0.6149	-0.5938	0.1203
	Inflation 84-09 (t-2)	0.8150	0.1426	1.2433	**0.0881**	0.2025	0.4906
	ΔM1-ΔNGDP (t-2)	0.2253	**0.0029**	0.2163	**0.0054**	0.2008	**0.0108**
Akaike IC		-54.5946		-56.3721		-52.9129	
Schwartz IC		-53.8439		-55.0093		-51.5501	