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Can Financial Variables Predict Recessions? A Study of U.S.A. and India

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ABSTRACT

The institution of private enterprise does not produce growth at an even pace; rather economies observe alternating periods of expansion and contraction giving rise to recurrent business and trade cycles where the growth of production, real incomes and spending fluctuates. Policymakers, investors and economic agents have avid interest in predicting the future course of economic activity and growth rates. Monetary aggregates, exchange rates and structural macroeconomic models have been traditionally used to forecast the direction of economic activity, however, all these have been shown to be problematic and unstable. The present study uses an indicator approach to portend future changes in the level of economic activity. The study has identified from a set of financial indicators, those indicators which register some significant aspect of the performance of the economy and thus have the ability to forecast changes in economic climate. Most of the research is done for the developed countries which are characteristic of free market economy where fluctuations in business activity are driven by endogenous factors. Similar studies for emerging market economies are lacking. The present study identifies from a wide array of financial variables those variables which can predict cyclical fluctuations in U.S.A., which is a free market economy and in India which is steadfastly proceeding towards a free market economy post liberalization that is, after 1991. The study then determines the lead of various variables in predicting recessions and provides the best model with highest predictive content for the world's largest economy, U.S.A. and the world's second fastest growing economy, India.

Keywords: Financial variables, forecasting, business cycles, indicator approach, term structure

JEL Classification: C53, E32, E37, E44

The classical business cycles are identified as recurrent alternating phases of expansion and contraction in a large number of economic activities such as output, consumption, prices, investment, and employment. Burns and Mitchell (1946) provided a workable definition of Business cycles. A business cycle is defined as fluctuations in aggregate economic activity of a country which consists of expansion followed by a recession that again merge into the expansion phase of next cycle. These expansions and contractions take place in a large number of economic activities at the same time. These cycles are recurrent but not periodic and can extend from one year up to twelve months.

The macroeconomic policy aims at avoiding both recessions and expansions as recessions are wasteful causing underutilization of resources, while expansions put huge pressure on available resources causing prices to fluctuate vigorously. Besides, saving decisions, investment plans and portfolio allocations by market agents also requires an estimate of the future course of economic activities. Thus both the central banks and economic agents are interested in predicting the future economic activity. Forecasts which approximate the future closely will enable policy makers to formulate policy decisions to better target an impending slowdown and avert its ill effects to a greater extent, the economic agents on the other hand will benefit as they are able to guess the stance of the monetary and fiscal policy

and thus plan their economic decisions accordingly. Traditionally monetary aggregates, exchange rates and structural macroeconomic models have been used to forecast the future course of economic activities, however, all of these have had some issues and have been shown to be unstable. The indicator approach to macroeconomic measurement, on the other hand has a successful and long history. These indicators capture an important characteristic of the economy and thus have the ability to forecast future changes. Dua and Banerji (2004) supported the indicator approach by showing through their work that economic variables reach turning points in a known sequence, cycle after cycle, in a market oriented economy.

A number of empirical studies like (Bernanke, 1990), (Esrella and Hardouvelis, 1991), (Plosser and Rouwenhort, 1994), (Estrella and Mishkin 1995, 1998), (Bernard and Gerlach, 1996), (Ahrens 2002), (Galar and Biscarri, 2003) analyzed the predictive ability of financial variables for future activity. Theoretical models to assert the empirical findings were developed by (Harvey, 1998), (Kydland and Prescott, 1988), (Peel and Taylor, 1998) among others.

Most of the research has been carried out for the cases of big economies mainly U.S.A., Germany and U.K. A key characteristic of these economies is that they have had fairly independent monetary policies in the last few years especially since the breakup of managed floating of the European monetary system. Replicating a similar study for India which started progressing towards a free market economy only recently will therefore be quiet insightful.

Economic indicators can have the ability to forecast future changes only if economic cycles are driven by endogenous factors. Hence, a precondition for indicators to have any predictive ability is the existence of a free market economy like U.S.A. However in India until 1991, the economic cycles were driven by exogenous factors. Dua and Banerji (2001) have shown through their work that the cycles in India are driven by endogenous factors rather than exogenous factors post liberalization that is after 1991.

The present study is an attempt to unravel the ability of economic variables to predict cyclical fluctuations in a free market economy, U.S.A., wherein business cycles are driven by endogenous factors on the one hand and India, on the other, which is steadfastly proceeding towards a free market mechanism post 1991, after the greater liberalization of the domestic economy as well as greater integration with the world economy. The objective of the study is to identify economic variables form a set of large number of financial and non financial variables, which can anticipate cyclical fluctuations in business cycle and provide advance warning of changes in economic activity. The study thus tries to explore the ability of a number of variables to predict the recurrent, alternating phases of expansion and contraction in a large number of economic activities that is, recession and expansion in classical business cycles. The paper determines the lead of various variables in predicting recessions and explores the best model with the highest predictive content for the world's largest economy U.S.A. and the world's second fastest growing economy, India. The informational content of a large number of financial and non financial variables like interest rate, interest rate spreads, credit quality spreads, foreign yield spreads, stock indices, monetary variables, exchange rates and growth rates of nominal monetary aggregates, exchange rates and stock indices for U.S.A. and India has been estimated. The choice of countries is based on two considerations. Firstly, to select a country for which data is available of reasonable quality thereby addressing the criticism that such exercises has limited validity because of data inaccuracies. The second is to include two distinct geographic areas with a wide range of economic experiences. Monthly data is used for the present study. For U.S.A., the sample ranges from the first month of 1973 to the second month of 2006. For India, the sample is limited to post liberalized phase and ranges from the fourth month of the 1994 to the second month of 2006. Probit statistical model is used for the purpose of empirical test.

The paper is organized as follows. Section 2 contains the review of literature. Section 3 contains the econometric methodology. Section 4 lists the results obtained for the two set of countries. Section 5 consists of the discussion, policy implications and conclusions. Bibliography is provided at the end of the study. Tables are provided in the Appendix.

LITERATURE REVIEW

The ability of term spread (spread between long and short term rate of interest) to forecast output

is shown by developing theoretical models. Harvey (1988) uses the consumption CAPM model to attribute the correlation between the term spread and future economic growth to inter-temporal consumption smoothing. Noh-Sun Kwark (2002) relates fluctuations of interest rate spread to movements in default risk over business cycle and build a general equilibrium model to show how this relationship generates leading behaviour of interest rate spread over business cycle. Blanchard and Fisher (1989) uses the IS-LM framework to show that the spread between long and short term interest rate widens prior to output expansion, and hence leads the changes in the output. The correlation between money and output is shown in a model of reverse causality developed by Tobin (1970), and further elaborated by King and Plosser (1984). They emphasized that in a model in which money did not affect output, endogenous monetary policy could cause movement in money to lead movement in output. Blanchard (1981) developed a model to emphasize that stock prices reflect market expectations of future profitability which is closely linked to the explanation of future output growth.

A number of empirical studies have also been done to estimate the predictive ability of economic variables. Bernankae (1990), using a multivariate model shows Short variable to be the best interest rate variable for predicting real activity. Fund variable was the best for forecasting inflation, IIP and unemployment rate. Estrella and Hardouvelis (1991), provided evidence to show that the yield curve could predict cumulative changes in real output, four years into future. Friedman and Kutter (1991), used a quarterly data on U.S.A. from 1960-1990 and found statistically significant relationship between movements of the paper-bill spread and subsequent fluctuation in real economic activity even in the presence of other financial variables. Bernard and Gerlach (1986), also supported the earlier research and found that the term spreads in some countries contained information for predicting recession as much as six to eight quarters ahead. Boulier and Stekler (2001), evaluated the ability of the spread between the long run and short run interest rate to forecast turning points in U.S.A's economic activity without making too many false predictions using quarterly data from 1953-1997. They concluded that spread is not a very good cyclical indicator as the spread predicted all peaks with a lead but made 28 false predictions. It also predicted all troughs but made 20 false signals. Ahrens (2002), fit a univariate two state markov-switching model to the term spread of the eight OECD countries and found that term spread indicator matched the business cycle well. The lead time was also long though it varied across countries. Galar and Biscarri (2003) estimated the probit model using quarterly data from 1970 to 2002 for Spain and concluded some striking results. The predictive content of the domestic spread was found to be non-existent. However, the German spread presented a significant ability to predict Spanish recession.

METHODOLOGY

A probit model is estimated that relates the indicator variable R_t to the various independent variables. The model is nonlinear and relates the probability of a recession for Business cycles, during the period t to the independent variables in period t-k, where k ranges from 1-month, 1-quarter, 2-quarter upto 8-quarter. The dependent variable is a dummy variable, which take values 0 and 1. The recession variable dummy for the business cycle chronology is constructed using the standard Economic Cycle Research Institute (ECRI) dates.

$$\Pr\left[R_t = 1 \middle| X_{1t-k}\right] = F(\alpha_0 + \beta_1 X_{1t-k}) \qquad \ldots(1)$$

Where Pr denotes probability, F is the cumulative normal distribution, and R_t equals unity during the months considered as official recessions by ECRI. The model above is a usual probit model, and its log likelihood function is as follows;

$$\text{Log L} = \sum_{R_t=1} \log F(\alpha_0 + \beta_1 X_{1t-k}) + \sum_{R_t=0} \log F(1 - \alpha_0 - \beta_1 X_{1t-k}) \qquad \ldots(2)$$

X_{1t-k} denotes the Stock Indexes which are Dow Jones and S&P 500 for U.S.A and BSE Sensex for India; the growth rate of stock index; monetary aggregates which are M1, M2 and M3 for US and M1 and M3 for India, the growth rate of monetary aggregates; Exchange Rate which is the trade weighted exchange rate index for US and real effective exchange rate index (REER) for India; short-term rate of interest which are federal fund rate, 3-month treasury bill rate, 6- month treasury bill rate and 1-year G-sec rate for US and call-money

rate, 3-month CP rate, 3-month treasury bill rate for India; long-term rate of interest is 10-year G-sec rate for both US and India; the spread variables which for US are (a) the difference between 10-year G-sec rate and 1-year G-sec rate (Long), (b) the difference between 6-month CD rate and 6-month Treasury-Bill rate (Short), (c) the difference between 10-year G-sec rate and Federal Fund rate (Tenf), and (d) the difference between 10-year G-sec rate and 3-month Treasury-Bill rate (Tenbill). The spread variables used for India are (a) the difference between 10-year G-sec rate and 1-year G-sec rate (Long), (b) the difference between 3-month CP rate and 3-month treasury bill rate (Short), (c) the difference between 10-year G-sec rate and CP rate (Tenf), and (d) the difference between 10-year G-sec rate and 3-month Treasury-Bill rate (Tenbill) (e) the difference between US 10-year G-sec rate and US 1-year G-sec rate

Since the Spread variable produces consistently strong results across all horizons, equations are also run containing the Spread variable and each of the other variables in turn.

$$\Pr[R_t = 1 \mid Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k}) \quad \ldots(3)$$

The log likelihood function is:

$$\text{Log L} = \sum_{R_t=1} \log F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k}) + \sum_{R_{t=0}} \log F(1 - \alpha_0 - \beta_0 Spread_{t-k} - \beta_1 X_{1t-k}) \quad \ldots(4)$$

In-sample results are based on equations estimated over the entire sample period. Their predictions or fitted values are then compared with the actual recession dates. Three types of results are provided: a pseudo R^2, that gives an estimate of the goodness of fit achieved by the variables in the model, a t- statistic, and the slope coefficient of the relevant variable. For US and India the above probit equations have been estimated which relate the probability of a recession during the period t to the independent variables in period t-k, for k= 1, 3, 6, 9, 12, 18, 21 and 24 months.

RESULTS

U.S.A.

Table 1 contains several of the variables that performed best in-sample and for which representative patterns of significance may be identified for U.S.A. Equation 1 is estimated for each of the financial variables. Both the stock indices namely Dow Jones and S&P 500, performed poorly. Psuedo R^2 for both the indexes remained low till first-quarter and henceforth turned negative. The nominal monetary aggregates namely M1, M2, and M3, exhibited some predictive power in the very short run i.e. one month with a Psuedo R^2 of 7%, 4.7% and 3.8% respectively. The predictive content consistently declined for quarters one and beyond for all the three nominal monetary aggregates. The growth rate of M1, M2, and M3, performed very poorly in all the quarters. The Psuedo R^2 remained negative for all the horizons, indicating a very poor fit, which is not very informative. The trade weighted exchange rate index exhibited some predictive power in the very short-run i.e. one-month with a Psuedo-R^2 of 4.5%. The results on the growth rate of trade weighted exchange rate index (equation 1), has been very disappointing in all the quarters. The Psuedo R^2 remained negative for all the horizons, indicating a very poor goodness of fit. We estimated equation 1 for four different short-term interest rates namely, the Federal rate, the three-month treasury bill rate and the six month treasury bill rate and one-year G-sec.

Federal fund rate, (an overnight rate), presents a significant ability to predict US recession. The Fed performed very well between first and second-quarter with a Psuedo R^2 ranging between 19.5% to 20%. Its predictive power peaked at second-quarter, for which the Psuedo R^2 is an impressive 20.5%. Beyond the second-quarter the predictive content gradually declined though the fit remained remarkably consistent across all horizons. The coefficient attached to the Fed rate remained high, stable and significant across all horizons.

The 3-month Treasury bill and 6-month Treasury bill performed very well between first and third-quarter with a Psuedo R^2 ranging between 14% to 16.5%. Beyond the third- quarter the predictive content gradually declined. The predictive power of one-year G-sec remained good till second-quarter, after which it consistently declined, though the projections remained significant at the 5% level till eight-quarters. The long-term interest rates that is, the 10-year G-sec, exhibited some predictive power in the very short-run i.e. till one-quarter with a

Psuedo R^2 of 6.4%, however the Psuedo R^2 turned negative beyond third-quarter.

Some of the most important results are associated with the spread variables. We use four spread variables. The predictive power of the difference between 10-year G-sec and 3-month Treasury bill (tenbill) significantly improves in the medium run (one to three-quarters). This ability is highest at the third-quarter horizon, but it remains fairly high up to six-quarters into the future. The difference between 10-year G-sec and 1-year G-sec (Long), performed remarkably well between the first and sixth-quarter horizon with a Psuedo R^2 ranging between 15% to 28%. Its predictive power peaked at third-quarter. The difference between 10-year G-sec and federal fund rate (Tenf), presents a significant ability to predict US real activity between the one-month and six-quarter horizon. The Psuedo R^2 ranged between 12% and 28%. The difference between 6-month CD and 6-month treasury bill (Short) performed remarkably well in the very short (one-month), and medium (one to second-quarter), horizon. Its predictive power peaks at first-quarter for which the Psuedo R^2 is an impressive 21.4%.

Equation 3 is also run containing a Spread variable and each of the other variables in turn. Table 2 present the results with spread variable tenbill in equation 3 along with other variables. Combining monetary aggregates, exchange rates, stock indices and their respective growth rates with the spread variable did not improve the predictive ability of the model over and above the model with only spread variable. Best results are achieved when the spread variable is combined the short term interest rates and the Long variable. The coefficients attached to the spread variable and the interest rate variable remained high, significant and stable across all horizons. The goodness of fit also improved considerably in the short and medium horizon (one month to fourth quarter). Table 3 presents the results with Long as the spread variable along with each of the other variables one by one. The inclusion of stock indices, nominal monetary aggregates, exchange rate and their respective growth rates in the probit equation 3 did not improve the goodness of fit. Combining Long with short-term interest rates, improved the predictive content in the short run (one month). Inclusion of another spread variable, Short, that is, the spread between 6-month CD and 6-month Treasury bill along with Long, significantly improved the predictive content with a better fit than the single variable equation containing only spread variable. Table 4 presents the results with Tenf spread variable, that is, the spread between 10-year G-sec and federal fund rate. The results are similar to the earlier results. Stock indices, monetary aggregates, exchange rates and their growth rates did not improve the predictive content. Combining Tenf with interest rate variables improve the predictive content in the short to medium run. Table 5 gives the results of equation 3 with Short variable as the Spread variable. As before, monetary aggregates, exchange rates and stock indices performed poorly. Combining Short variable with interest rate variables also contributed mildly to the goodness of fit.

India

The results for the Indian economy are displayed from Tables 6-10. Table 6 produce the results of equation 1 with all the financial variables included one at a time. The BSE Sensex exhibited significant predictive content in the short-run i.e. one-quarter with a Psuedo R^2 of 16%. Nominal monetary aggregates (M1, and M3), exchange rate and their respective growth rates performed very poorly in all the quarters. The Psuedo R^2 remained negative for all the horizons. Among the short-term interest rates, the call money rate performed very well between first-month and third-quarter with a Psuedo R^2 ranging between 35% to 17%. Its predictive power peaked at first-quarter, for which the Psuedo R^2 is an impressive 35%. The 3-month Treasury bill performed very well till third-quarter with a Psuedo R^2 ranging between 11% to 22%. The long-term interest rate, the 10-year G-sec, exhibited some predictive power in the very short-run i.e. till one-quarter with a Psuedo R^2 of 5%, however the Psuedo R^2 turned negative beyond first quarter, reflecting a poor predictive performance. As in the case of USA, the spread variables showed significant predictive power. The Tenbill has little predictive power in the very short run (one- month), but the power significantly improves in the medium run (one to two-quarters). This ability is highest at the second-quarter horizon. The Tenf variable presents a significant ability to predict Indian real activity between the one-month and third-quarter horizon.

The Psuedo R^2 ranged between 14% and 42%. The Short variable performed remarkably well in the very short (one-month), and medium (one to second-quarter), horizon. Its predictive power peaks at first-quarter for which the Psuedo R^2 is an impressive 46%, and then it declines. In the new economic order, the growing international interdependence has led to synchronization of business cycles across countries. The study thus looks at the ability of the Spread between US 10-year G-sec yield and US 1-year G-sec yield to predict Indian recessions. The results of the probit model containing US spread as the only explanatory variable are very poor. The Psuedo R^2 remained negative.

Equation 3 is also run containing a spread variable with each of the other variables in turn. Table 7 shows the results of equation 3 with Tenbill as the spread variable. Combining stock index with spread variable improved the predictive content in the very short-run that is one-month horizon. The best results are obtained when the spread is combined with interest rates namely- call money rate, 3-month treasury bill, 1-year G-sec and 10-year G-sec. The goodness of fit improved considerably in the short-run (one month to one quarter). Table 8 exhibit results of equation 3 when Long is combined with each of the other variables. The predictive content improved when Long was combined with stock index or interest rates in the short run (one month to one quarter). The results obtained with Tenf as the spread variable (Table 9) are similar to the earlier results. Predictive content improved in the short-run when Tenf is combined with either stock index or interest rates. Table 10 displays the results with Short as the spread variable. The forecasts ability improved in the one-month to one-quarter when short was combined with BSE sensex.

DISCUSSION, CONCLUSION AND POLICY IMPLICATION

Analysis of Buisness cycles have always revived interest in the questions of whether economic turns can be forecasted. The present study has sought to provide answers to this very basic question by studying the financial ability of an array of financial variables for the U.S.A. and India. The study uses probit modelling technique to explore the ability of a number of financial variables for example interest rates, interest rate spreads, nominal stock indices, monetary aggregates, and exchange rates to predict the recurrent, alternating phases of expansion and contraction in a large number of economic activities that is recession and expansion in classical business cycles.

Free market mechanism is a precondition to provide predictive power to the economic variables as the fluctuations in the economy are then caused by endogenous factors and not the exogenous factors. U.S.A. is a free market economy. In India, it is only after liberalization of the economy that markets started to play a greater role. Post liberalization, many of the distortions in the free play of market forces is substantially mitigated. According to Dua and Banerji (2001), under such circumstances, it is more likely that endogenous market processes rather than exogenous shocks drive the business cycle.

The results obtained are quiet in-line with the proposed theoretical model. The results for US show that the Spread variables namely the Spread between 10-year G-sec and 1-year G-sec (Long), the Spread between 10-year G-sec and federal fund rate (Tenf), The Spread between 10-year G-sec and 3-month Treasury bill (Tenbill), have significant ability to predict US recession i.e. a fall in absolute level of real economic activity upto six-quarters in advance. While the Spread between two short interest rates i.e. 6-month CD and 6-month treasury bills (Short), can predict a fall in absolute level economic activity upto one- quarter in advance. A model, which combines the Long and the Short variable, gives the best in-sample and out-of-sample results as far as predicting the fluctuations in the aggregate economic activity is concerned upto six-quarters in advance.

In the Indian case, the individual interest rate variables particularly the call rate, 3-month Treasury bill rate and the 1-year G-sec rate performed significantly well in predicting the Indian recession upto three-quarter ahead. The spread variables predominantly the spread between 10-year G-sec and call money rate and the spread between 10-year G-sec and 3-month treasury bill have significant ability to predict Indian recession i.e. a fall in absolute level of real economic activity in the medium-run horizon i.e. between one to four-quarters in advance. The predictive content is highest at second-quarter horizon. While the

Spread between two short interest rates i.e. 3-month CP and 3-month Treasury Bills (Short), performed remarkably well in the very short (one-month) horizon. A model, which combines the spread between 10-year G-sec and call money rate along with the 1-year G-sec yield, gives the best in-sample results as far as predicting the fluctuations in the aggregate economic activity is concerned upto four quarters in advance.

The results are not surprising, since post reforms, many of the distortions in the free play of market forces were substantially mitigated in India. To a larger extent thus, endogenous free market processes rather than exogenous shocks drove the business and growth rate cycles. Hence, the financial variables i.e. interest rates and interest rate spreads, began to show consistent leads as in other free market economies. Moreover, the growing international interdependence has led to synchronization of business cycles across countries. This explains the ability of US spread to predict slowdown in Indian economy. This variable is informative about the general economic condition in the rest of the world and therefore should have informational content about economic conditions in India.

The results obtained have deep implications from the policy angle. The policy makers are essentially concerned with the timing, duration and amplitude of business cycles. An important part of the job of the central bank is to gather information of the current and if possible, future economic conditions, so that policy decisions can be taken at the right time or better, enough in advance so that lags in policy effectiveness can be taken into account and the worse real consequences can be avoided. Agents also want to predict the direction of real activity since that would give clues about the immediate stance of monetary policy for example, an upcoming movements of interest rates. However, traditional indicators of monetary stance, by which one could gather information about the actions of the Central Bank, were monetary aggregates and exchange rates in addition to the outcome of structural macroeconomic models built for forecasting purposes. All these indicators have been shown to be problematic and unstable and hence the usefulness of the present study, which tried to explore economic variables that have predictive content about future development of economic activity, is beyond doubt.

The study uses Probit regression to analyze the performance of financial and non-financial variables. One drawback of the Probit model is the lack of a dynamic structure. The model fails to tell how the probabilities of recession may be influenced by the current state of the business cycle. The direction for future research in the area would be to conduct a richer analysis using the Probit model within a framework of regime-switching.

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Appendix

Table 1: In-Sample Results for Probit Model for U.S.A.

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated:	$\Pr[R_t = 1 \mid X_{1t-k}] = F(\alpha_0 + \beta_1 X_{1t-k})$					where k= 1,3,6,9,12,15,18,21,24 months			
DJ									
Psuedo R^2	0.029939	0.016629	-0.00024	-0.01655	-0.02363	-0.01434	-0.00327	0.010414	0.025656
coeff	-8.8E-05	-8.1E-05	-7.5E-05	-7.1E-05	-6.8E-05	-5.8E-05	-4.9E-05	-4.1E-05	-3.2E-05
t-stats	-3.47207	-3.25632	-3.0629	-2.89991	-2.72679	-2.33649	-1.94004	-1.61287	-1.25309
p-value	0.000516	0.001129	0.002192	0.003733	0.006395	0.019466	0.052374	0.106774	0.210174
S&P									
Psuedo R^2	0.03232	0.018072	-0.00141	-0.02162	-0.0308	-0.0208	-0.00754	0.008132	0.024469
coeff	-0.00078	-0.0007	-0.00062	-0.00052	-0.00044	-0.00036	-0.0003	-0.00028	-0.00023
t-stats	-3.56501	-3.31984	-2.99858	-2.59042	-2.23281	-1.78971	-1.50123	-1.33958	-1.07218
p-value	0.000364	0.000901	0.002712	0.009586	0.025562	0.0735	0.133296	0.180382	0.283641
M1									
Psuedo R^2	0.069225	0.063859	0.05372	0.042395	0.034094	0.035234	0.037663	0.042507	0.049588
coeff	-0.00126	-0.0013	-0.00134	-0.00137	-0.00135	-0.00123	-0.00111	-0.00099	-0.00085
t-stats	-5.09123	-5.17726	-5.25235	-5.30367	-5.17745	-4.72456	-4.22572	-3.70696	-3.1503
p-value	3.6E-07	2.3E-07	1.5E-07	1.1E-07	2.2E-07	2.31E-06	2.38E-05	0.00021	0.001631
M2									
Psuedo R^2	0.047483	0.041451	0.031892	0.022353	0.016869	0.021598	0.027494	0.034842	0.043762
coeff	-0.00024	-0.00025	-0.00026	-0.00028	-0.00028	-0.00026	-0.00024	-0.00021	-0.00018
t-stats	-4.25552	-4.34529	-4.4649	-4.58852	-4.53955	-4.16085	-3.74764	-3.29515	-2.78516
p-value	2.09E-05	1.39E-05	8.01E-06	4.46E-06	5.64E-06	3.17E-05	0.000179	0.000984	0.00535
M3									
Psuedo R^2	0.03828	0.031932	0.022469	0.012911	0.008144	0.01421	0.021771	0.030948	0.041474
coeff	-0.00014	-0.00015	-0.00016	-0.00017	-0.00018	-0.00016	-0.00015	-0.00014	-0.00012
t-stats	-3.8434	-3.93039	-4.06412	-4.1964	-4.16893	-3.81713	-3.44804	-3.05804	-2.61573
p-value	0.000121	8.48E-05	4.82E-05	2.71E-05	3.06E-05	0.000135	0.000565	0.002228	0.008904
Grm1									
Psuedo R^2	-0.00807	-0.01596	-0.03013	-0.04222	-0.03902	-0.02283	-0.00412	0.013562	0.030533
t-stats	0.47644	-0.74909	-0.47807	-0.89677	-0.34014	-0.73339	-1.2273	-1.28319	-1.03221
coeff	5.62771	-10.0659	-6.38936	-11.9783	-4.51008	-9.78323	-16.5055	-17.7608	-14.8131
p-value	0.633762	0.453801	0.632601	0.369842	0.733749	0.463321	0.219709	0.199425	0.301972
Grm2									
Psuedo R^2	-0.0028	-0.01722	-0.02877	-0.04246	-0.0349	-0.01969	-0.00762	0.009258	0.028846
t-stats	1.53009	0.25837	0.88075	0.8513	1.3232	1.33458	0.442	-0.24086	-0.66834
coeff	32.79934	5.752524	19.17002	18.68191	29.1646	29.73298	10.09686	-5.86559	-16.9361
p-value	0.125994	0.796118	0.378452	0.394605	0.185768	0.182013	0.658488	0.809661	0.503917
Grm3									
Psuedo R^2	0.00243	-0.01166	-0.00788	-0.0016	-0.01309	0.008833	0.025872	0.02252	0.033656
t-stats	2.06613	1.49548	2.93524	3.95319	3.12742	3.45713	3.20024	2.20882	1.48142
coeff	45.27293	32.1639	65.04903	90.93786	71.70542	82.76609	83.45768	52.51025	35.69947
p-value	0.038816	0.13479	0.003333	7.71E-05	0.001763	0.000546	0.000503	0.027187	0.138494
(Ex rate- Trade weighted broad)									
Psuedo R^2	0.045278	0.038266	0.028298	0.019863	0.01593	0.02502	0.033838	0.042152	0.050034
coeff	-0.01133	-0.01156	-0.012	-0.01268	-0.01287	-0.01244	-0.01177	-0.01077	-0.00932
t-stats	-4.25517	-4.31166	-4.42108	-4.5832	-4.57302	-4.3259	-4.02602	-3.49904	-3.13553
p-value	2.09E-05	1.62E-05	9.82E-06	4.58E-06	4.81E-06	1.52E-05	5.67E-05	0.00027	0.001715
Grexrate									
Psuedo R^2	-0.00717	-0.0106	-0.02419	-0.03941	-0.03681	-0.02192	-0.00811	0.016732	0.040273
coeff	4.557288	9.937875	9.80053	8.445099	5.974824	5.756546	0.568635	-10.8321	-14.4946
t-stats	0.76295	1.62694	1.5946	1.37851	0.98935	0.94397	0.09144	-1.67608	-2.12715
p-value	0.445496	0.103751	0.110802	0.168047	0.32249	0.345184	0.92714	0.093723	0.033408

Fed									
Psuedo R^2	0.137701	0.199402	0.205592	0.178175	0.129515	0.113425	0.100509	0.080589	0.066529
coeff	0.161804	0.207208	0.22042	0.218993	0.191602	0.172229	0.151922	0.124716	0.096641
t-stats	7.0449	8.08989	8.32672	7.89896	7.28361	6.73943	6.17427	5.19531	4.05572
p-value	0	0	0	0	0	0	0	2E-07	5E-05
3mth-T-Bill									
Psuedo R^2	0.097767	0.151943	0.166561	0.154355	0.119576	0.099181	0.096499	0.079309	0.067251
coeff	0.164512	0.216804	0.240986	0.247611	0.22421	0.196572	0.181292	0.149921	0.118009
t-stats	6.067	7.32094	7.7152	7.57036	7.11204	6.45724	6.04625	5.13986	4.06952
p-value	0	0	0	0	0	0	0	2.7E-07	4.71E-05
6mth-T-Bill									
Psuedo R^2	0.100746	0.148514	0.156658	0.139668	0.10776	0.091229	0.092094	0.078717	0.069402
coeff	0.170471	0.218931	0.239063	0.240996	0.219654	0.194426	0.182045	0.153507	0.12392
t-stats	6.1101	7.23141	7.54381	7.37588	6.9169	6.2939	5.9395	5.10779	4.13966
p-value	0	0	0	0	0	0	0	3.3E-07	3.48E-05
1-Gsec									
Psuedo R^2	0.09233	0.128222	0.128312	0.10611	0.078773	0.071882	0.080558	0.071934	0.066977
coeff	0.151858	0.188649	0.201498	0.197741	0.180875	0.164545	0.159791	0.137013	0.113176
t-stats	5.88059	6.84943	7.07344	6.85054	6.38141	5.87302	5.67516	4.91184	4.04506
p-value	0	0	0	0	0	0	1E-08	9E-07	5.23E-05
10-Gsec									
Psuedo R^2	0.064483	0.064304	0.037695	0.00843	-0.00704	-0.00034	0.016486	0.027733	0.037258
coeff	0.153684	0.163337	0.14923	0.130116	0.115718	0.105009	0.109196	0.100766	0.083366
t-stats	5.06557	5.32879	4.87563	4.26196	3.75892	3.33135	3.37822	3.04113	2.44737
p-value	4.1E-07	1E-07	1.08E-06	2.03E-05	0.000171	0.000864	0.00073	0.002357	0.01439
Tenbill									
Psuedo R^2	0.037815	0.122028	0.22008	0.288615	0.263566	0.212348	0.166886	0.111531	0.080308
coeff	-0.23565	-0.43932	-0.63825	-0.78937	-0.76513	-0.64968	-0.55056	-0.41218	-0.30068
t-stats	-4.03436	-6.77574	-8.37646	-8.84154	-8.55664	-7.99192	-7.1349	-5.86422	-4.50441
p-value	5.48E-05	0	0	0	0	0	0	0	6.66E-06
Long									
Psuedo R^2	0.064136	0.151167	0.23747	0.281781	0.248277	0.214574	0.193671	0.139048	0.110476
coeff	-0.35165	-7.13662	-8.39355	-0.91629	-8.52729	-0.7529	-0.69647	-0.54458	-0.43371
t-stats	-4.98959	-0.58046	-0.78693	-8.73225	-0.85189	-8.03683	-7.40663	-6.33499	-5.30527
p-value	6.1E-07	0	0	0	0	0	0	0	1.1E-07
Tenf									
Psuedo R^2	0.116841	0.213795	0.2735	0.283454	0.221842	0.196126	0.145938	0.10107	0.073887
coeff	-0.27577	-0.39416	-0.46351	-0.50121	-0.43991	-0.39932	-0.33045	-0.25629	-0.18887
t-stats	-6.60895	-8.3411	-9.22803	-9.13963	-8.69167	-8.15759	-7.1199	-5.78144	-4.37375
p-value	0	0	0	0	0	0	0	1E-08	1.22E-05
Short									
Psuedo R^2	0.17789	0.214551	0.174887	0.091888	0.038101	0.063772	0.092112	0.080243	0.075249
coeff	1.087396	1.247451	1.147418	0.87585	0.699623	0.7472	0.800401	0.696663	0.590519
t-stats	7.61826	8.19473	7.95578	6.97587	5.65591	5.961	6.25242	5.37127	4.50932
p-value	0	0	0	0	2E-08	0	0	8E-08	6.5E-06

Table 2: In-Sample Results for Probit Model for U.S.A.

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated: $\Pr[R_t = 1 \mid Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k})$ where k= 1,3,6,9,12,15,18,21,24 months & Spread is the Spread between 10 year G-sec and 3-month T-bill (Tenbill)									
Tenbill									
Psuedo R^2	0.037815	0.122028	0.22008	0.288615	0.263566	0.212348	0.166886	0.111531	0.080308
t-stats	-4.03436	-6.77574	-8.37646	-8.84154	-8.55664	-7.99192	-7.1349	-5.86422	-4.50441
coeff	-0.23565	-0.43932	-0.63825	-0.78937	-0.76513	-0.64968	-0.55056	-0.41218	-0.30068
sig	5.48E-05	0	0	0	0	0	0	0	6.66E-06
DJ									
Psuedo R^2	0.06606	0.141056	0.233218	0.299677	0.271566	0.217282	0.169896	0.114245	0.082639
coeff-spread	-0.21961	-0.42337	-0.61941	-0.77122	-0.74578	-0.63619	-0.54088	-0.40462	-0.2954
t-stats for spread	-3.73066	-6.52281	-8.19561	-8.72638	-8.43312	-7.8578	-7.0109	-5.74941	-4.42476
coeff	-7.9E-05	-6.6E-05	-5.8E-05	-5.6E-05	-4.7E-05	-3.6E-05	-2.7E-05	-2.6E-05	-2.4E-05
t-stats	-3.16649	-2.60449	-2.13677	-1.92785	-1.64629	-1.30464	-1.02588	-0.97981	-0.90943
S&P									
Psuedo R^2	0.068985	0.143786	0.234496	0.298249	0.268834	0.214931	0.168541	0.113529	0.08223
coeff-spread	-0.22135	-0.4253	-0.62164	-0.77453	-0.75093	-0.64112	-0.54447	-0.40692	-0.29705
t-stats for spread	-3.75834	-6.55497	-8.237	-8.76709	-8.47643	-7.9095	-7.05929	-5.79012	-4.45513
coeff	-0.0007	-0.00058	-0.00049	-0.00041	-0.0003	-0.0002	-0.00016	-0.00018	-0.00017
t-stats	-3.30052	-2.76872	-2.23218	-1.80574	-1.34447	-0.9493	-0.76345	-0.84238	-0.82651
M1									
Psuedo R^2	0.089101	0.157082	0.244434	0.309594	0.282484	0.228159	0.179733	0.124519	0.092315
coeff-spread	-0.16891	-0.37927	-0.57827	-0.72863	-0.70264	-0.59756	-0.50474	-0.37022	-0.26307
t-stats for spread	-2.76899	-5.69546	-7.51038	-8.16651	-7.8708	-7.27122	-6.42415	-5.14011	-3.83621
coeff	-0.00109	-0.00095	-0.00085	-0.00084	-0.0008	-0.0007	-0.00062	-0.00061	-0.00058
t-stats	-4.2999	-3.55071	-2.92513	-2.66804	-2.5384	-2.33536	-2.11711	-2.13823	-2.05915
M2									
Psuedo R^2	0.07131	0.142915	0.233727	0.300986	0.275455	0.222409	0.17532	0.120602	0.088922
coeff-spread	-0.18402	-0.39421	-0.59434	-0.74427	-0.71806	-0.61023	-0.51521	-0.37862	-0.27036
t-stats for spread	-3.03697	-5.93398	-7.69108	-8.29064	-7.98816	-7.39667	-6.54225	-5.25421	-3.9453
coeff	-0.0002	-0.00017	-0.00015	-0.00015	-0.00015	-0.00013	-0.00012	-0.00012	-0.00012
t-stats	-3.46566	-2.73987	-2.19173	-2.05404	-2.01561	-1.86324	-1.71303	-1.78172	-1.73732
M3									
Psuedo R^2	0.064973	0.138772	0.231178	0.299054	0.273809	0.220867	0.174113	0.119641	0.088345
coeff-spread	-0.19343	-0.40212	-0.6014	-0.75103	-0.72481	-0.61626	-0.52051	-0.38316	-0.27409
t-stats for spread	-3.21463	-6.0792	-7.80055	-8.37678	-8.07519	-7.48782	-6.63066	-5.33909	-4.01871
coeff	-0.00012	-9.9E-05	-8.9E-05	-9.5E-05	-9.5E-05	-8.4E-05	-7.6E-05	-7.9E-05	-7.8E-05
t-stats	-3.11094	-2.44575	-1.96978	-1.88087	-1.7962	-1.70953	-1.58049	-1.67722	-1.66883
Grm1									
Psuedo R^2	0.039387	0.121605	0.228059	0.296436	0.287345	0.226793	0.174952	0.117686	0.086352
coeff-spread	-0.2572	-0.4581	-0.67877	-0.83258	-0.82296	-0.68644	-0.56687	-0.41865	-0.30353
t-stats for spread	-4.27605	-6.85268	-8.51433	-8.92569	-8.68629	-8.05026	-7.11529	-5.7475	-4.37884
coeff	18.43814	17.70405	33.5268	34.8116	41.11264	27.11554	13.11343	5.184364	2.941686
t-stats	1.49219	1.18321	2.11929	2.07504	2.46468	1.69508	0.82395	0.33382	0.18903
Grm2									
Psuedo R^2	0.040992	0.118683	0.221594	0.291856	0.283588	0.231583	0.175277	0.117377	0.087495
coeff-spread	-0.24262	-0.44157	-0.65161	-0.8103	-0.80528	-0.68634	-0.56074	-0.41277	-0.29929
t-stats for spread	-4.09597	-6.77695	-8.35767	-8.81022	-8.4974	-7.91689	-7.09369	-5.82814	-4.47754
coeff	38.9618	13.78137	41.74099	52.2544	69.85249	65.42493	26.63549	-0.54525	-18.9996
t-stats	1.70345	0.52054	1.43935	1.62792	2.18682	2.15678	0.89507	-0.01867	-0.66156

Grm3									
Psuedo R^2	0.0382	0.117979	0.219403	0.299425	0.274314	0.227544	0.185716	0.120294	0.086948
coeff-spread	-0.22149	-0.43922	-0.62622	-0.785	-0.76356	-0.64087	-0.53482	-0.40065	-0.29295
t-stats for spread	-3.71947	-6.65061	-8.12466	-8.53248	-8.32567	-7.65025	-6.73863	-5.5811	-4.27232
coeff	30.40789	0.155738	29.5866	67.24803	34.40959	51.91427	60.25092	27.84759	13.30916
t-stats	1.3245	0.00638	1.09699	2.25745	1.14117	1.7374	2.0957	1.01979	0.49962
Ex rate- Trade weighted broad									
Psuedo R^2	0.070135	0.142403	0.234555	0.303456	0.278143	0.226811	0.180787	0.126515	0.094339
coeff-spread	-0.18738	-0.39805	-0.59745	-0.7465	-0.71819	-0.60769	-0.51056	-0.3739	-0.26641
t-stats for spread	-3.10176	-6.009	-7.76658	-8.35973	-8.04549	-7.42438	-6.53628	-5.21973	-3.90951
coeff	-0.00932	-0.00756	-0.00674	-0.00716	-0.00705	-0.00684	-0.00663	-0.00681	-0.00659
t-stats	-3.45388	-2.73486	-2.26924	-2.24875	-2.22471	-2.22009	-2.18122	-2.2697	-2.19853
Grexrate									
Psuedo R^2	0.034071	0.120296	0.216291	0.284735	0.272408	0.220268	0.177815	0.139067	0.109785
coeff-spread	-0.23369	-0.43365	-0.63426	-0.79186	-0.78728	-0.66669	-0.57466	-0.45871	-0.33991
t-stats for spread	-3.98727	-6.66873	-8.23937	-8.72852	-8.39917	-7.84807	-7.09714	-6.04479	-4.78445
coeff	2.451394	6.210393	2.069168	-1.66617	-6.23607	-5.23663	-9.44031	-20.0057	-20.9265
t-stats	0.39921	0.93553	0.28187	-0.21263	-0.79688	-0.7035	-1.28465	-2.71299	-2.82206
Fed									
Psuedo R^2	0.137708	0.218267	0.279501	0.322479	0.275979	0.222089	0.1764	0.12021	0.086477
coeff-spread	-0.00376	-0.19751	-0.41562	-0.62181	-0.64194	-0.53891	-0.44553	-0.31436	-0.21984
t-stats for spread	0.05301	-2.60092	-4.80582	-6.25423	-6.20117	-5.53714	-4.78231	-3.60447	-2.61198
coeff	0.162583	0.16844	0.13976	0.113953	0.071089	0.063301	0.060739	0.056448	0.046873
t-stats	5.96063	5.72779	4.50154	3.36431	2.07799	1.86476	1.85934	1.78944	1.50981
3mth-T-Bill									
Psuedo R^2	0.100512	0.188881	0.267188	0.322443	0.280348	0.222257	0.179259	0.122434	0.088436
coeff-spread	-0.06924	-0.26503	-0.46687	-0.64749	-0.64286	-0.55062	-0.44576	-0.31502	-0.21777
t-stats for spread	-1.02767	-3.62386	-5.5574	-6.69274	-6.48686	-5.87551	-4.99763	-3.76744	-2.69804
coeff	0.149041	0.162077	0.145754	0.133713	0.096822	0.075035	0.081413	0.073944	0.062816
t-stats	4.81775	4.85953	4.03086	3.35636	2.40966	1.88261	2.11775	2.00505	1.7329
6mth-T-Bill									
Psuedo R^2	0.104897	0.192302	0.269161	0.322767	0.280817	0.222925	0.180733	0.124664	0.091216
coeff-spread	-0.08308	-0.28163	-0.48103	-0.66102	-0.6507	-0.5546	-0.44846	-0.31489	-0.21353
t-stats for spread	-1.26279	-3.93162	-5.83949	-6.92206	-6.68135	-6.04808	-5.151	-3.88079	-2.73748
coeff	0.153393	0.166016	0.14908	0.133803	0.098338	0.077931	0.08659	0.081384	0.072666
t-stats	4.95874	4.96452	4.10906	3.3739	2.44395	1.947	2.24172	2.20001	2.00708
1-Gsec									
Psuedo R^2	0.100916	0.18778	0.266289	0.319884	0.278933	0.222861	0.182297	0.125876	0.092779
coeff-spread	-0.11534	-0.31735	-0.51395	-0.69112	-0.67462	-0.5699	-0.46103	-0.32691	-0.22234
t-stats for spread	-1.81505	-4.55964	-6.40903	-7.38275	-7.11406	-6.44602	-5.49948	-4.19832	-2.97896
coeff	0.133556	0.14411	0.12983	0.114514	0.083113	0.069716	0.081981	0.076429	0.069865
t-stats	4.81832	4.81209	3.99338	3.23587	2.30825	1.94149	2.36455	2.29916	2.14599
10-Gsec									
Psuedo R^2	0.100512	0.188881	0.267188	0.322443	0.280348	0.222257	0.179259	0.122434	0.088436
coeff-spread	-0.21829	-0.42711	-0.61262	-0.78121	-0.73968	-0.62565	-0.52717	-0.38896	-0.28058
t-stats for spread	-3.69658	-6.44021	-8.06247	-8.59056	-8.3145	-7.70964	-6.81314	-5.50154	-4.18871
coeff	0.149041	0.162077	0.145754	0.133713	0.096822	0.075035	0.081413	0.073944	0.062816
t-stats	4.81775	4.85953	4.03086	3.35634	2.40966	1.88261	2.11775	2.00505	1.7329

Table 3: In-Sample Results for Probit Model for U.S.A.

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated: $\Pr[R_t = 1 \mid Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k})$ where k= 1,3,6,9,12,15,18,21,24 months & Spread is the Spread between 10 year G-sec and 1year G-sec (Long)									
Long									
Psuedo R^2	0.064136	0.151167	0.23747	0.281781	0.248277	0.214574	0.193671	0.139048	0.110476
t-stats	-4.98959	-0.58046	-0.78693	-8.73225	-0.85189	-8.03683	-7.40663	-6.33499	-5.30527
coeff	-0.35165	-7.13662	-8.39355	-0.91629	-8.52729	-0.7529	-0.69647	-0.54458	-0.43371
sig	6.1E-07	0	0	0	0	0	0	0	1.1E-07
DJ									
Psuedo R^2	0.078316	0.154999	0.238022	0.281844	0.248389	0.214591	0.19378	0.139069	0.110478
coeff-spread	-0.30746	-0.55308	-0.77451	-0.91169	-0.84642	-0.75115	-0.70107	-0.5464	-0.43415
t-stats for spread	-4.23283	-6.62483	-7.98433	-8.36342	-8.19984	-7.79541	-7.21367	-6.16843	-5.17741
coeff	-5.8E-05	-3E-05	-1.2E-05	-4.4E-06	-5.8E-06	-2.2E-06	5.47E-06	2.35E-06	6.35E-07
t-stats	-2.27526	-1.18911	-0.44571	-0.14896	-0.19857	-0.0763	0.19612	0.0867	0.0236
S&P									
Psuedo R^2	0.080825	0.156641	0.238472	0.281792	0.248295	0.214755	0.194162	0.139138	0.110486
coeff-spread	-0.30707	-0.55047	-0.77161	-0.91446	-0.85398	-0.75827	-0.70541	-0.54797	-0.4347
t-stats for spread	-4.24143	-6.63947	-8.02432	-8.41517	-8.26228	-7.86502	-7.26765	-6.21233	-5.20907
coeff	-0.00052	-0.0003	-0.00013	-1.5E-05	1.82E-05	5.54E-05	9.02E-05	3.83E-05	1.28E-05
t-stats	-2.44737	-1.41395	-0.59958	-0.06336	0.08054	0.25252	0.41623	0.17877	0.05959
M1									
Psuedo R^2	0.095086	0.163563	0.241998	0.284602	0.252463	0.218333	0.19567	0.141845	0.113251
coeff-spread	-0.24083	-0.5008	-0.73134	-0.86819	-0.79941	-0.70958	-0.66402	-0.50864	-0.39958
t-stats for spread	-3.12219	-5.73611	-7.2654	-7.71575	-7.53819	-7.14416	-6.61457	-5.51681	-4.54092
coeff	-0.00091	-0.00061	-0.0004	-0.00033	-0.00039	-0.00036	-0.00026	-0.0003	-0.0003
t-stats	-3.37946	-2.14392	-1.28039	-0.9968	-1.21254	-1.14868	-0.83744	-0.99558	-0.99224
M2									
Psuedo R^2	0.081017	0.155488	0.238104	0.282102	0.2495	0.215765	0.194159	0.140117	0.111667
coeff-spread	-0.27229	-0.53425	-0.7665	-0.90064	-0.82484	-0.72963	-0.68115	-0.52308	-0.412
t-stats for spread	-3.54953	-6.08411	-7.51351	-7.90942	-7.73033	-7.33009	-6.7779	-5.67122	-4.68584
coeff	-0.00015	-8.1E-05	-3.4E-05	-2.6E-05	-5.1E-05	-4.9E-05	-3.2E-05	-4.6E-05	-4.8E-05
t-stats	-2.49489	-1.26677	-0.47879	-0.33578	-0.65571	-0.64703	-0.41399	-0.61545	-0.64955
M3									
Psuedo R^2	0.076688	0.15379	0.237667	0.281857	0.248982	0.21526	0.193915	0.139838	0.111532
coeff-spread	-0.28768	-0.54644	-0.77611	-0.90906	-0.83246	-0.73625	-0.68627	-0.52718	-0.41453
t-stats for spread	-3.79055	-6.25976	-7.63791	-8.01339	-7.83536	-7.43358	-6.86893	-5.75629	-4.75349
coeff	-8.6E-05	-4.2E-05	-1.3E-05	-8.6E-06	-2.6E-05	-2.5E-05	-1.5E-05	-2.7E-05	-3.1E-05
t-stats	-2.14923	-0.98651	-0.26678	-0.16326	-0.49745	-0.49053	-0.29265	-0.52852	-0.61066
Grm1									
Psuedo R^2	0.06707	0.15142	0.243805	0.285088	0.268902	0.228566	0.202898	0.146274	0.117531
coeff-spread	-0.3755	-0.60206	-0.82203	-0.94249	-0.9016	-0.78911	-0.71634	-0.55515	-0.4424
t-stats for spread	-5.23415	-7.26028	-8.5888	-8.88788	-8.71999	-8.13985	-7.43282	-6.27683	-5.24511
coeff	20.50176	20.32636	32.76869	29.05801	37.18527	25.63082	13.62226	6.394204	5.927047
t-stats	1.65344	1.29562	1.98301	1.65434	2.16686	1.54398	0.80726	0.39034	0.36247
Grm2									
Psuedo R^2	0.066391	0.147305	0.237442	0.28297	0.267148	0.234698	0.203456	0.145858	0.118784
coeff-spread	-0.35787	-0.58137	-0.79853	-0.93524	-0.8982	-0.80332	-0.71563	-0.54777	-0.43368
t-stats for spread	-4.99506	-7.13099	-8.40272	-8.73079	-8.49109	-7.97814	-7.35482	-6.29663	-5.30583
coeff	37.28466	8.352034	37.10961	46.37377	65.31059	66.90363	29.08557	-2.01223	-22.9704
t-stats	1.58872	0.29957	1.23354	1.40058	2.01799	2.15343	0.92418	-0.06476	-0.74962

Grm3									
Psuedo R^2	0.061624	0.148227	0.234581	0.286146	0.257374	0.227867	0.210264	0.146968	0.117162
coeff-spread	-0.3387	-0.59348	-0.77638	-0.8988	-0.8523	-0.74526	-0.68315	-0.53816	-0.43561
t-stats for spread	-4.67367	-7.06574	-8.18611	-8.46573	-8.324	-7.74206	-7.08114	-6.10326	-5.14836
coeff	18.90432	-17.0214	18.60294	52.56301	20.78482	44.42942	54.36773	18.35286	0.172149
t-stats	0.79582	-0.66047	0.66427	1.72755	0.66875	1.43222	1.78381	0.6297	0.00602
Ex rate- Trade weighted broad									
Psuedo R^2	0.079853	0.15486	0.238056	0.282289	0.250045	0.217381	0.196034	0.142851	0.114444
coeff-spread	-0.27542	-0.53814	-0.76774	-0.8972	-0.82004	-0.71869	-0.66445	-0.50629	-0.39683
t-stats for spread	-3.60035	-6.13623	-7.55276	-7.93662	-7.73414	-7.29399	-6.70078	-5.56009	-4.57113
coeff	-0.00694	-0.00346	-0.00146	-0.00141	-0.00261	-0.00321	-0.00293	-0.00366	-0.00372
t-stats	-2.42903	-1.17563	-0.46063	-0.42278	-0.78723	-0.98941	-0.90623	-1.15291	-1.17746
Grexrate									
Psuedo R^2	0.06	0.147361	0.233445	0.278407	0.258385	0.224506	0.208324	0.172916	0.148072
coeff-spread	-0.3525	-0.57587	-0.7894	-0.92577	-0.87959	-0.77948	-0.73483	-0.6127	-0.49905
t-stats for spread	-4.93535	-7.00711	-8.25401	-8.62865	-8.43805	-7.95623	-7.43274	-6.58025	-5.66966
coeff	-0.43261	2.244103	-1.31209	-4.14115	-6.73287	-6.89888	-11.76	-22.7068	-24.5235
t-stats	-0.06886	0.33127	-0.17824	-0.53395	-0.88965	-0.9347	-1.57196	-2.99276	-3.18328
Fed									
Psuedo R^2	0.138062	0.210443	0.263048	0.289123	0.249279	0.215186	0.193702	0.139093	0.110714
coeff-spread	-0.03782	-0.21844	-0.52279	-0.76338	-0.79362	-0.70979	-0.6868	-0.5333	-0.45957
t-stats for spread	0.37129	-1.99757	-4.28167	-5.57196	-5.74776	-5.43259	-5.20713	-4.29971	-3.79144
coeff	0.1705	0.159276	0.109162	0.062433	0.023287	0.017819	0.003956	0.00469	-0.01092
t-stats	5.18722	4.58954	3.01509	1.60494	0.59524	0.46541	0.10424	0.12579	-0.29024
3mth-T-Bill									
Psuedo R^2	0.100952	0.182967	0.25226	0.287724	0.25018	0.214938	0.194002	0.139406	0.110476
coeff-spread	-0.10504	-0.34353	-0.60451	-0.79293	-0.78078	-0.72253	-0.66785	-0.51541	-0.43403
t-stats for spread	-1.10443	-3.30992	-5.12856	-6.03831	-6.00389	-5.75855	-5.33179	-4.3669	-3.76191
coeff	0.1372	0.133047	0.096447	0.065287	0.037261	0.016126	0.0152	0.015567	0.00017
t-stats	3.7468	3.42698	2.30743	1.4457	0.82088	0.35896	0.34191	0.35782	-0.00388
6mth-T-Bill									
Psuedo R^2	0.104231	0.183176	0.251004	0.286116	0.24942	0.214729	0.193972	0.139663	0.110664
coeff-spread	-0.10745	-0.35528	-0.62057	-0.81524	-0.79861	-0.73368	-0.67009	-0.50784	-0.41362
t-stats for spread	-1.15474	-3.4931	-5.35927	-6.28408	-6.20766	-5.91422	-5.43121	-4.393	-3.67922
coeff	0.142857	0.133485	0.092638	0.055871	0.029208	0.010702	0.014754	0.020697	0.011384
t-stats	3.89664	3.43461	2.20992	1.23644	0.63648	0.23415	0.32646	0.47004	0.25917
1-Gsec									
Psuedo R^2	0.099759	0.177319	0.247139	0.283696	0.248444	0.214582	0.194053	0.139844	0.111013
coeff-spread	-0.14897	-0.40196	-0.66257	-0.85662	-0.83365	-0.74905	-0.67035	-0.50772	-0.40377
t-stats for spread	-1.68302	-4.12936	-5.94707	-6.82217	-6.70291	-6.31392	-5.71689	-4.63323	-3.80639
coeff	0.118951	0.106464	0.069183	0.032744	0.009907	0.002148	0.014745	0.020933	0.017099
t-stats	3.67778	3.11136	1.87083	0.82213	0.24285	0.05277	0.36753	0.53503	0.4394
10-Gsec									
Psuedo R^2	0.099759	0.177319	0.247139	0.283696	0.248444	0.214582	0.194053	0.139844	0.111013
coeff-spread	-0.26792	-0.50842	-0.73175	-0.88936	-0.84356	-0.7512	-0.68509	-0.52866	-0.42087
t-stats for spread	-3.62014	-6.07111	-7.63674	-8.19519	-8.01898	-7.58743	-6.95017	-5.83546	-4.86141
coeff	0.118951	0.106464	0.069183	0.032744	0.009907	0.002148	0.014745	0.020933	0.017099
t-stats	3.67778	3.11136	1.87083	0.82213	0.24285	0.05277	0.36753	0.53503	0.4394
Short									
Psuedo R^2	0.184949	0.220731	0.247146	0.291068	0.292043	0.226227	0.194312	0.139051	0.110656
coeff-spread	-0.17483	-0.16781	-0.61	-1.12373	-1.37643	-0.97339	-0.74372	-0.54158	-0.41112
t-stats for spread	-2.62401	-2.49709	-4.73629	-6.87156	-7.13424	-6.40513	-5.37349	-4.28272	-3.4087
coeff	1.342667	1.021244	0.384016	0.396557	0.9801	0.454047	0.101068	0.006781	0.052903
t-stats	6.19292	4.82875	3.85716	3.75413	3.50984	2.94026	2.47115	2.03228	2.25391

Table 4: In-Sample Results for Probit Model for U.S.A.

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated: $\Pr[R_t = 1 \mid Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k})$ where k= 1,3,6,9,12,15,18,21,24 months & Spread is the Spread between 10 year G-sec and Federal Fund rate(Tenf)									
Tenf									
Psuedo R^2	0.116841	0.213795	0.2735	0.283454	0.221842	0.196126	0.145938	0.10107	0.073887
t-stats	-6.60895	-8.3411	-9.22803	-9.13963	-8.69167	-8.15759	-7.1199	-5.78144	-4.37375
coeff	-0.27577	-0.39416	-0.46351	-0.50121	-0.43991	-0.39932	-0.33045	-0.25629	-0.18887
sig	0	0	0	0	0	0	0	1E-08	1.22E-05
DJ									
Psuedo R^2	0.12605	0.215692	0.273656	0.283457	0.221897	0.196195	0.146011	0.101091	0.074092
coeff-spread	-0.25345	-0.38266	-0.45988	-0.50066	-0.43775	-0.40177	-0.33283	-0.25515	-0.18583
t-stats for spread	-5.89427	-7.83279	-8.781	-8.75004	-8.29113	-7.80377	-6.82306	-5.52971	-4.17387
coeff	-4.7E-05	-2.2E-05	-6.7E-06	-9.8E-07	-4E-06	4.38E-06	4.41E-06	-2.4E-06	-7.2E-06
t-stats	-1.83618	-0.83115	-0.23624	-0.03359	-1.40E-01	0.15714	0.1624	-0.08811	-0.27173
S&P									
Psuedo R^2	0.128115	0.216799	0.273827	0.283495	0.221973	0.197019	0.146561	0.101089	0.073963
coeff-spread	-0.25238	-0.38065	-0.45861	-0.50309	-0.44307	-0.40765	-0.33698	-0.25729	-0.18716
t-stats for spread	-5.89023	-7.83903	-8.81437	-8.80843	-8.38356	-7.90758	-6.91818	-5.59643	-4.2202
coeff	-0.00044	-0.00023	-7.8E-05	2.78E-05	4.81E-05	0.000123	0.000101	1.78E-05	-3.6E-05
t-stats	-2.01741	-1.04164	-0.34093	0.12047	0.21599	0.56465	0.4741	0.08333	-0.1659
M1									
Psuedo R^2	0.13633	0.220562	0.276273	0.28586	0.226992	0.199747	0.150159	0.107231	0.081331
coeff-spread	-0.22326	-0.35887	-0.43882	-0.47603	-0.40643	-0.37172	-0.30216	-0.22504	-0.15722
t-stats for spread	-4.94154	-7.00178	-7.96403	-7.92305	-7.40028	-6.93895	-5.94579	-4.67132	-3.36538
coeff	-0.00074	-0.00047	-0.00032	-0.00031	-0.00044	-0.00036	-0.00038	-0.00045	-0.00048
t-stats	-2.70079	-1.57874	-0.9971	-0.9212	-1.35335	-1.13443	-1.22971	-1.48803	-1.63433
M2									
Psuedo R^2	0.126028	0.215283	0.273654	0.283636	0.223545	0.197252	0.147778	0.104649	0.078719
coeff-spread	-0.24078	-0.37784	-0.45777	-0.49435	-0.42098	-0.38422	-0.31218	-0.23316	-0.16436
t-stats for spread	-5.33366	-7.31806	-8.22819	-8.12471	-7.60728	-7.13385	-6.12981	-4.84505	-3.5323
coeff	-0.00011	-5E-05	-1.7E-05	-2E-05	-5.9E-05	-4.7E-05	-5.9E-05	-8.1E-05	-9.4E-05
t-stats	-1.84948	-0.73935	-0.23498	-0.25292	-0.77701	-0.63147	-0.81008	-1.13028	-1.31089
M3									
Psuedo R^2	0.123346	0.2145	0.273512	0.283489	0.222954	0.19679	0.147229	0.104054	0.078281
coeff-spread	-0.24816	-0.38357	-0.46197	-0.49837	-0.42549	-0.38837	-0.31603	-0.23649	-0.16712
t-stats for spread	-5.54311	-7.4799	-8.36837	-8.25584	-7.74579	-7.266	-6.25793	-4.95928	-3.62701
coeff	-6.3E-05	-2.2E-05	-3.3E-06	-5.8E-06	-3.2E-05	-2.4E-05	-3.3E-05	-5E-05	-6E-05
t-stats	-1.55378	-0.50858	-0.06695	-0.11089	-0.62688	-0.48444	-0.67746	-1.02886	-1.24448
Grm1									
Psuedo R^2	0.120115	0.212877	0.277213	0.283797	0.237031	0.206475	0.153186	0.107879	0.080641
coeff-spread	-0.28714	-0.40233	-0.48151	-0.51466	-0.46074	-0.4115	-0.33416	-0.25675	-0.18849
t-stats for spread	-6.79456	-8.40636	-9.24354	-9.11863	-8.73504	-8.16423	-7.07421	-5.67312	-4.26285
coeff	21.04569	17.11728	27.26253	21.30062	26.31662	15.43006	2.997783	-2.01	-2.33742
t-stats	1.67925	1.09288	1.6952	1.28083	1.64498	0.98588	0.19194	-0.13144	-0.15212
Grm2									
Psuedo R^2	0.12068	0.210223	0.27392	0.284035	0.239343	0.213964	0.154536	0.107868	0.082004
coeff-spread	-0.28101	-0.39479	-0.46949	-0.50868	-0.4576	-0.41681	-0.33542	-0.25753	-0.1894
t-stats for spread	-6.63869	-8.34093	-9.21284	-9.10306	-8.62903	-8.1171	-7.11846	-5.77695	-4.3824
coeff	42.79964	12.56842	38.10689	40.89754	56.00699	55.93755	20.67802	-3.30302	-20.1257
t-stats	1.76224	0.44261	1.29405	1.32273	1.89732	1.93152	0.72625	-0.11565	-0.70895

Grm3									
Psuedo R^2	0.113651	0.211296	0.270495	0.290788	0.233042	0.212852	0.166535	0.110924	0.081344
coeff-spread	-0.27021	-0.40318	-0.4575	-0.49524	-0.43769	-0.39456	-0.32016	-0.24949	-0.18459
t-stats for spread	-6.33999	-8.21767	-8.97766	-8.80544	-8.43499	-7.79817	-6.69475	-5.49796	-4.1501
coeff	14.71173	-20.076	17.41453	58.55571	32.12715	52.63398	61.48063	28.50219	13.94612
t-stats	0.6082	-0.76745	0.63094	1.99918	1.10565	1.77727	2.16441	1.05168	0.52537
Ex rate- Trade weighted broad									
Psuedo R^2	0.125263	0.215098	0.273695	0.283941	0.224283	0.198663	0.150209	0.108189	0.082539
coeff-spread	-0.24289	-0.37967	-0.45752	-0.49125	-0.41935	-0.37868	-0.3048	-0.22573	-0.15778
t-stats for spread	-5.38677	-7.40499	-8.33339	-8.26198	-7.70354	-7.16504	-6.085	-4.74201	-3.41478
coeff	-0.00516	-0.00212	-0.00086	-0.00139	-0.00302	-0.00305	-0.00392	-0.005	-0.00548
t-stats	-1.78231	-0.69308	-0.26424	-0.41351	-0.92876	-0.94493	-1.22747	-1.58235	-1.74079
Grexrate									
Psuedo R^2	0.112682	0.210727	0.269583	0.279234	0.229909	0.204114	0.155822	0.125868	0.101644
coeff-spread	-0.27556	-0.3912	-0.46135	-0.50062	-0.44617	-0.40525	-0.34086	-0.27938	-0.21007
t-stats for spread	-6.563	-8.24593	-9.12501	-9.05782	-8.62563	-8.09384	-7.12118	-5.97969	-4.65534
coeff	0.110886	4.235388	2.008655	0.10718	-2.49267	-2.51162	-6.92126	-17.7391	-19.4484
t-stats	0.01736	0.61445	0.2723	0.01419	-0.34284	-0.3502	-0.98281	-2.49287	-2.68365
Fed									
Psuedo R^2	0.149431	0.243275	0.287736	0.291244	0.225157	0.197299	0.148986	0.104885	0.077343
coeff-spread	-0.12363	-0.24713	-0.35032	-0.42044	-0.38475	-0.36499	-0.27586	-0.19547	-0.13082
t-stats for spread	-2.09361	-3.88575	-5.0787	-5.82939	-5.44544	-5.10319	-4.00354	-2.90241	-1.95808
coeff	0.113051	0.112924	0.083086	0.063607	0.042015	0.025638	0.039997	0.044161	0.041868
t-stats	3.48848	3.25054	2.24376	1.64896	1.08881	0.6488	1.05355	1.18506	1.12839
3mth-T-Bill									
Psuedo R^2	0.133034	0.233675	0.288171	0.298471	0.233029	0.200707	0.154257	0.108917	0.08036
coeff-spread	-0.19075	-0.29951	-0.37485	-0.42058	-0.36765	-0.35026	-0.26375	-0.19012	-0.12737
t-stats for spread	-3.59691	-5.20944	-6.08814	-6.54862	-5.9856	-5.69006	-4.41811	-3.23308	-2.17235
coeff	0.086045	0.100152	0.091195	0.095177	0.081977	0.053306	0.070068	0.067186	0.061042
t-stats	2.48038	2.68505	2.27469	2.27115	1.98745	1.28072	1.73596	1.69609	1.54212
6mth-T-Bill									
Psuedo R^2	0.137376	0.236564	0.288988	0.297105	0.231942	0.200516	0.154672	0.110266	0.082573
coeff-spread	-0.18824	-0.30188	-0.37968	-0.42898	-0.37489	-0.3538	-0.26624	-0.18956	-0.123
t-stats for spread	-3.66822	-5.40189	-6.33971	-6.79472	-6.21929	-5.86883	-4.57941	-3.3283	-2.17566
coeff	0.095837	0.106187	0.093135	0.0901	0.077888	0.052356	0.071933	0.072651	0.070254
t-stats	2.78253	2.86414	2.33502	2.16873	1.89118	1.25502	1.78047	1.83659	1.78666
1-Gsec									
Psuedo R^2	0.138123	0.235976	0.287676	0.294133	0.229077	0.199867	0.154855	0.110501	0.083371
coeff-spread	-0.19999	-0.31782	-0.3958	-0.4471	-0.39256	-0.36319	-0.2748	-0.19822	-0.12971
t-stats for spread	-4.09652	-5.94428	-6.9201	-7.33938	-6.77818	-6.31534	-4.97566	-3.67627	-2.43021
coeff	0.086265	0.092519	0.078574	0.070242	0.058354	0.042921	0.064446	0.065313	0.065151
t-stats	2.83006	2.82614	2.23522	1.92335	1.60368	1.15931	1.80049	1.86116	1.86801
10-Gsec									
Psuedo R^2	0.149431	0.243275	0.287736	0.291244	0.225157	0.197299	0.148986	0.104885	0.077343
coeff-spread	-0.23668	-0.36006	-0.4334	-0.48404	-0.42676	-0.39063	-0.31586	-0.23963	-0.17269
t-stats for spread	-5.53325	-7.48253	-8.49489	-8.68866	-8.22596	-7.71461	-6.5434	-5.16231	-3.8069
coeff	0.113051	0.112924	0.083086	0.063607	0.042015	0.025638	0.039997	0.044161	0.041868
t-stats	3.48848	3.25054	2.24376	1.64896	1.08881	0.6488	1.05355	1.18506	1.12839

Table 5: In-Sample Results for Probit Model for U.S.A.

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated: $\Pr[R_t = 1 \mid Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k})$ where k= 1,3,6,9,12,15,18,21,24 months & Spread is the Spread between six-month CD and six-month T-Bill (Short)									
Short									
Psuedo R^2	0.17789	0.214551	0.174887	0.091888	0.038101	0.063772	0.092112	0.080243	0.075249
t-stats	7.61826	8.19473	7.95578	6.97587	5.65591	5.961	6.25242	5.37127	4.50932
coeff	1.087396	1.247451	1.147418	0.87585	0.699623	0.7472	0.800401	0.696663	0.590519
sig	0	0	0	0	2E-08	0	0	8E-08	6.5E-06
DJ									
Psuedo R^2	0.179793	0.223532	0.180433	0.092223	0.038484	0.063975	0.094421	0.081488	0.076285
coeff-spread	1.163637	1.427699	1.270277	0.899572	0.676083	0.7648	0.860968	0.739001	0.628232
t-stats for spread	6.80401	7.59712	7.43213	6.3179	4.89523	5.43489	5.95764	5.11666	4.33542
coeff	2.49E-05	5.49E-05	4.22E-05	9.98E-06	-1.1E-05	7.82E-06	2.66E-05	1.95E-05	1.77E-05
t-stats	0.85171	1.83113	1.44287	0.35658	-0.3809	0.27672	0.92561	0.67747	0.61529
S&P									
Psuedo R^2	0.178757	0.221004	0.179843	0.092897	0.03813	0.065479	0.096743	0.082378	0.076724
coeff-spread	1.136131	1.390669	1.257355	0.915263	0.70582	0.795812	0.882416	0.749647	0.6335
t-stats for spread	6.77973	7.60189	7.47935	6.48182	5.15488	5.69942	6.15041	5.22947	4.4055
coeff	0.000139	0.00038	0.000324	0.00014	2.32E-05	0.000179	0.0003	0.000206	0.000171
t-stats	0.57495	1.55906	1.36675	0.61977	0.10573	0.80279	1.31145	0.8882	0.73514
M1									
Psuedo R^2	0.178422	0.214678	0.175683	0.103229	0.061675	0.076093	0.096453	0.084754	0.078838
coeff-spread	1.039477	1.272835	1.091417	0.704295	0.469664	0.57656	0.69689	0.594495	0.499895
t-stats for spread	5.87238	6.60078	6.20305	4.7287	3.24102	3.90892	4.61335	3.92717	3.2746
coeff	-0.00015	7.54E-05	-0.00018	-0.00064	-0.0009	-0.00067	-0.00041	-0.00041	-0.00036
t-stats	-0.44862	0.2167	-0.54405	-2.06067	-2.96138	-2.13851	-1.26234	-1.28345	-1.14103
M2									
Psuedo R^2	0.178471	0.218006	0.175123	0.096432	0.052416	0.070595	0.094022	0.082614	0.07711
coeff-spread	1.136126	1.376687	1.176854	0.771023	0.527782	0.625253	0.734448	0.625835	0.5282
t-stats for spread	6.37865	7.06611	6.68843	5.21268	3.68323	4.28202	4.90699	4.17762	3.49881
coeff	3.37E-05	8.68E-05	2.23E-05	-9.4E-05	-0.00016	-0.00012	-6.3E-05	-7E-05	-6.3E-05
t-stats	0.46813	1.1281	0.29578	-1.29942	-2.29311	-1.58238	-0.83396	-0.92635	-0.81829
M3									
Psuedo R^2	0.179474	0.219915	0.175734	0.094576	0.048855	0.068514	0.093233	0.081963	0.076788
coeff-spread	1.164738	1.402453	1.200787	0.799125	0.558124	0.650493	0.752325	0.639398	0.536954
t-stats for spread	6.59227	7.2521	6.89437	5.47012	3.94468	4.51029	5.08782	4.32062	3.60429
coeff	3.61E-05	7.02E-05	2.77E-05	-4.8E-05	-9.4E-05	-6.5E-05	-3.2E-05	-4E-05	-3.8E-05
t-stats	0.77509	1.41089	0.56171	-0.99805	-1.97946	-1.31535	-0.63788	-0.78699	-0.74196
Grm1									
Psuedo R^2	0.179504	0.211153	0.171463	0.087103	0.046669	0.072911	0.10288	0.090981	0.08531
coeff-spread	1.112288	1.259443	1.16174	0.873026	0.721276	0.764369	0.813771	0.706927	0.602111
t-stats for spread	7.71329	8.19737	7.92074	6.90274	5.74326	6.00885	6.26262	5.36122	4.52179
coeff	19.47611	10.88881	10.93334	-1.61948	5.184168	-0.36784	-6.95379	-8.52813	-6.18763
t-stats	1.51128	0.65348	0.68585	-0.10667	0.35489	-0.02487	-0.45112	-0.55236	-0.39272
Grm2									
Psuedo R^2	0.182654	0.210736	0.173523	0.089718	0.05175	0.079819	0.103795	0.09014	0.085855
coeff-spread	1.107026	1.249973	1.156688	0.88229	0.72669	0.783702	0.827609	0.716133	0.60677
t-stats for spread	7.63013	8.1838	7.94006	6.96757	5.76729	6.10111	6.36852	5.47194	4.61192
coeff	45.93822	14.16647	29.20956	25.37683	35.30353	40.49399	19.34895	-1.02515	-16.407
t-stats	1.88133	0.52189	1.12053	1.00809	1.4478	1.62053	0.73857	-0.03748	-0.5867

Grm3									
Psuedo R^2	0.174578	0.210229	0.175603	0.108019	0.057681	0.09046	0.123218	0.096777	0.086828
coeff-spread	1.069284	1.255863	1.113185	0.827832	0.671182	0.72294	0.78468	0.692566	0.593527
t-stats for spread	7.40224	8.03181	7.62462	6.39975	5.25488	5.57452	5.96239	5.24567	4.45409
coeff	16.61858	-7.37951	36.00094	70.22422	51.49565	66.63012	73.54758	40.94323	22.10009
t-stats	0.6692	-0.28649	1.40479	2.76581	2.05826	2.51462	2.70115	1.53849	0.83456
Ex rate- Trade weighted broad									
Psuedo R^2	0.179781	0.221521	0.176254	0.094891	0.050876	0.07125	0.095215	0.084735	0.079154
coeff-spread	1.181836	1.444802	1.223012	0.787471	0.530863	0.615298	0.713979	0.596708	0.49807
t-stats for spread	6.41667	7.1347	6.75935	5.25642	3.65857	4.1687	4.73069	3.95465	3.27578
coeff	0.002958	0.005906	0.002527	-0.00354	-0.00712	-0.00559	-0.00367	-0.00438	-0.00406
t-stats	0.84234	1.59169	0.71096	-1.06103	-2.17785	-1.65732	-1.06106	-1.27116	-1.18132
Grexrate									
Psuedo R^2	0.176951	0.210693	0.170362	0.087075	0.046376	0.073265	0.1071	0.113345	0.114007
coeff-spread	1.128026	1.264676	1.15416	0.87541	0.718424	0.775059	0.860576	0.810903	0.720925
t-stats for spread	7.58054	8.04317	7.78976	6.8172	5.65758	5.9917	6.45698	5.90597	5.17174
coeff	-7.72206	-3.48112	-1.65186	-0.18807	-0.77259	-2.37732	-8.9216	-20.0131	-23.1853
t-stats	-1.15806	-0.5033	-0.24355	-0.02857	-0.12111	-0.36328	-1.31089	-2.83105	-3.12892
Fed									
Psuedo R^2	0.178536	0.226055	0.212129	0.180055	0.142344	0.113636	0.107386	0.087905	0.076625
coeff-spread	0.973511	0.775746	0.362676	-0.19553	-0.55971	-0.06668	0.366082	0.383893	0.455437
t-stats for spread	3.62924	2.95162	1.51508	-0.82165	-2.05174	-0.27786	1.60702	1.66137	1.95234
coeff	0.021792	0.093714	0.164968	0.249777	0.275735	0.182274	0.097674	0.068935	0.029777
t-stats	0.49545	2.07754	3.70182	5.33431	5.65636	4.11583	2.33655	1.66227	0.70601
3mth-T-Bill									
Psuedo R^2	0.178894	0.21742	0.19729	0.157049	0.120763	0.101954	0.109846	0.090629	0.078791
coeff-spread	1.212014	1.046494	0.658219	0.197007	-0.1472	0.208505	0.443884	0.416827	0.42371
t-stats for spread	4.79693	4.36	3.18258	1.00955	-0.65006	1.0322	2.27404	2.09655	2.11504
coeff	0.029513	0.049972	0.133191	0.215176	0.247997	0.162664	0.109227	0.083331	0.049379
t-stats	-0.61018	1.03944	2.91069	4.70311	5.13059	3.63498	2.50502	1.92629	1.12821
6mth-T-Bill									
Psuedo R^2	0.178879	0.216005	0.190766	0.14399	0.108205	0.095098	0.106648	0.089923	0.079528
coeff-spread	1.215285	1.096702	0.713881	0.250663	-0.08923	0.247268	0.467909	0.418975	0.402127
t-stats for spread	4.70156	4.38573	3.32375	1.28254	-0.40245	1.22219	2.37216	2.08148	1.97482
coeff	0.030538	0.037412	0.117568	0.198235	0.234589	0.1527	0.103008	0.083911	0.056479
t-stats	-0.60584	0.73839	2.45424	4.25556	4.80191	3.31769	2.27528	1.8606	1.2382
1-Gsec									
Psuedo R^2	0.180048	0.214551	0.180471	0.120075	0.079937	0.082054	0.101439	0.086998	0.078811
coeff-spread	1.27209	1.246435	0.889122	0.43427	0.134371	0.384209	0.544227	0.47314	0.424687
t-stats for spread	4.9509	4.87388	4.01912	2.31898	0.66977	1.99628	2.84228	2.41532	2.1343
coeff	0.041308	0.000233	0.064139	0.13071	0.160451	0.105374	0.075379	0.064406	0.047398
t-stats	-0.89123	0.00494	1.45269	3.19897	3.85092	2.57639	1.83548	1.56153	1.13185
10-Gsec									
Psuedo R^2	0.177997	0.215548	0.175966	0.091957	0.038855	0.063881	0.092474	0.08029	0.075368
coeff-spread	1.112866	1.330506	1.227369	0.861701	0.652883	0.764723	0.832132	0.708338	0.609337
t-stats for spread	5.78862	6.39658	6.30434	5.6245	4.3006	5.02549	5.3813	4.50633	3.8305
coeff	-0.0086	-0.02725	-0.02764	0.00632	0.020937	-0.00814	-0.015	-0.00548	-0.00884
t-stats	-0.19973	-0.6035	-0.6289	0.16112	0.53677	-0.20245	-0.36417	-0.13111	-0.2073

Table 6: In-Sample Results for Probit Model for India

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated:	$\Pr[R_t = 1 \mid X_{1t-k}] = F(\alpha_0 + \beta_1 X_{1t-k})$					where k= 1,3,6,9,12,15,18,21,24 months			
BSE									
Psuedo R^2	0.243529	0.158681	-0.00694	-0.08918	-0.09839	-0.08642	-0.07252	-0.07608	-0.07189
coeff	-0.00717	-0.00562	-0.00254	-0.00057	0.000626	0.001288	0.001902	0.001355	-0.0004
t-stats	-4.57703	-4.22074	-2.53261	-0.6147	0.64289	1.18731	1.53194	0.93452	-0.26575
p-value	4.72E-06	2.44E-05	0.011322	0.538751	0.520296	0.235104	0.125538	0.350037	0.790433
M1									
Psuedo R^2	-0.00491	-0.02363	-0.05301	-0.08344	-0.09663	-0.09693	-0.09008	-0.07282	-0.03932
coeff	-0.00103	-0.00112	-0.00129	-0.00155	-0.00122	-0.00042	0.000732	0.002121	0.004056
t-stats	-0.79007	-0.83661	-0.92262	-1.06092	-0.79486	-0.25579	0.42284	1.13587	1.98169
p-value	0.429485	0.402813	0.356204	0.288728	0.426693	0.798111	0.672411	0.25601	0.047514
M3									
Psuedo R^2	-0.00801	-0.02645	-0.05487	-0.08357	-0.0957	-0.09639	-0.09112	-0.07679	-0.04817
coeff	-8.2E-05	-0.00011	-0.00016	-0.00022	-0.00019	-8.6E-05	5.51E-05	0.000238	0.00049
t-stats	-0.43737	-0.55933	-0.77742	-1.05394	-0.86644	-0.3652	0.22191	0.89738	1.70255
p-value	0.661846	0.575936	0.43691	0.291912	0.386248	0.714965	0.22191	0.369514	0.088653
Grm1									
Psuedo R^2	0.007534	0.027528	-0.05436	-0.09559	-0.10017	-0.09378	-0.0871	-0.08007	-0.06733
coeff	-46.4358	-73.897	-34.8337	-24.077	3.816812	-11.597	-11.7255	0.334804	7.836465
t-stats	-1.90185	-2.94211	-1.45141	-1.01617	0.15987	-0.48972	-0.49177	0.0135	0.30806
p-value	0.057191	0.00326	0.146664	0.309551	0.872982	0.624333	0.622884	0.989232	0.758037
Grm3									
Psuedo R^2	0.05033	0.0215	-0.07003	-0.03878	-0.05746	-0.07838	-0.06874	-0.0798	-0.06721
coeff	-159.709	-145.664	0.195332	160.9297	132.0146	80.54817	89.50867	-9.9536	-18.8694
t-stats	-3.07687	-2.83882	0.0039	2.80592	2.27509	1.45898	1.56187	-0.17982	-0.33034
p-value	0.002092	0.004528	0.996889	0.005017	0.0229	0.144571	0.118318	0.857293	0.741142
Ex rate - REER									
Psuedo R^2	0.003948	-0.00807	-0.0142	-0.01992	-0.02653	-0.0206	-0.01566	-0.03984	-0.05917
coeff	-0.02022	-0.02701	-0.04507	-0.06422	-0.07277	-0.08319	-0.09514	-0.07655	-0.04455
t-stats	-1.33914	-1.63827	-2.31826	-2.77822	-2.7682	-2.729	-2.63382	-2.07862	-1.20375
p-value	0.180525	0.101366	0.020435	0.005466	0.005637	0.006353	0.008443	0.037652	0.228686
Grexrate									
Psuedo R^2	-0.01382	0.016326	-0.06236	-0.10342	-0.09847	-0.09536	-0.06815	-0.02773	-0.00914
coeff	6.902737	24.07437	8.614001	0.463054	-4.18106	-1.7246	-14.2749	-23.5978	-25.9916
t-stats	0.84405	2.67331	1.0112	0.05585	-0.49297	-0.2022	-1.58251	-2.4253	-2.52288
p-value	0.398644	0.007511	0.311918	0.955459	0.62203	0.839759	0.113533	0.015296	0.01164
Call									
Psuedo R^2	0.221564	0.357466	0.317198	0.172754	0.061191	0.044786	-0.00068	-0.03698	-0.05847
coeff	0.191455	0.269608	0.259883	0.203289	0.149974	0.13856	0.107104	0.075365	0.041924
t-stats	5.38098	6.39573	6.27267	5.38953	4.3464	4.03752	3.28236	2.35368	1.29362
p-value	7E-08	0	0	7E-08	1.38E-05	5.4E-05	0.001029	0.018588	0.195797

3mth-T-Bill									
Psuedo R^2	0.11269	0.229713	0.201825	0.118238	0.047092	0.017758	-0.00087	-0.03552	-0.05373
coeff	0.163309	0.251541	0.249798	0.216136	0.174846	0.150996	0.131937	0.09451	0.06008
t-stats	4.05952	5.57737	5.52329	4.95295	4.21136	3.71313	3.29492	2.4012	1.49959
p-value	4.92E-05	2E-08	3E-08	7.3E-07	2.54E-05	0.000205	0.000985	0.016342	0.133722
1-Gsec									
Psuedo R^2	0.1109	0.197275	0.137958	0.053203	-0.00827	-0.02177	-0.02515	-0.04747	-0.05558
coeff	0.160718	0.230216	0.209626	0.173092	0.134624	0.120312	0.112379	0.082525	0.057543
t-stats	4.00945	5.24752	4.90937	4.22409	3.40445	3.06152	2.85248	2.09061	1.42342
p-value	6.09E-05	1.5E-07	9.1E-07	2.4E-05	0.000663	0.002202	0.004338	0.036563	0.154615
10-Gsec									
Psuedo R^2	0.047826	0.050802	-0.00984	-0.06444	-0.08466	-0.08555	-0.07674	-0.07416	-0.06792
coeff	0.125436	0.147961	0.116381	0.086409	0.067807	0.057892	0.065592	0.052802	0.03822
t-stats	2.82013	3.2806	2.57048	1.9052	1.47985	1.23308	1.36339	1.06578	0.74144
p-value	0.0048	0.001036	0.010156	0.056753	0.138914	0.217544	0.17276	0.286523	0.458425
Tenbill									
Psuedo R^2	0.056184	0.197799	0.306929	0.29446	0.207871	0.164957	0.084734	0.003328	-0.04286
coeff	-0.21329	-0.41925	-0.57689	-0.60223	-0.53061	-0.48887	-0.39339	-0.2668	-0.1555
t-stats	-3.0392	-5.39706	-6.45249	-6.46683	-5.80684	-5.32287	-4.38983	-3.1385	-1.85732
p-value	0.002372	7E-08	0	0	1E-08	1E-07	1.13E-05	0.001698	0.063266
Long									
Psuedo R^2	0.105932	0.288025	0.329517	0.275673	0.15153	0.130172	0.078286	0.002172	-0.03345
coeff	-0.37752	-0.68966	-0.77337	-0.74312	-0.58799	-0.55925	-0.48427	-0.33744	-0.22808
t-stats	-3.95236	-6.00384	-6.44008	-6.23586	-5.36336	-5.05058	-4.32377	-3.11485	-2.11641
p-value	7.74E-05	0	0	0	8E-08	4.4E-07	1.53E-05	0.00184	0.03431
TenF									
Psuedo R^2	0.203152	0.35298	0.417172	0.293061	0.147785	0.144028	0.040188	-0.01931	-0.05701
coeff	-0.26841	-0.38338	-0.45007	-0.38857	-0.29662	-0.29792	-0.21222	-0.1456	-0.07201
t-stats	-5.27086	-6.64825	-7.00912	-6.40992	-5.33245	-5.11478	-3.89011	-2.73725	-1.35524
p-value	1.4E-07	0	0	0	1E-07	3.1E-07	0.0001	0.006196	0.175342
Short									
Psuedo R^2	0.326077	0.460297	0.281642	0.04126	-0.06555	-0.0338	-0.03812	-0.06989	-0.07168
coeff	1.281908	1.727968	1.225709	0.653651	0.336204	0.450677	0.416304	0.212592	0.052943
t-stats	5.99003	6.56326	6.07345	4.1589	2.17131	2.8414	2.57848	1.28592	0.30939
p-value	0	0	0	3.2E-05	0.029908	0.004492	0.009924	0.19847	0.757028
US Long									
Psuedo R^2	-0.01297	-0.03927	-0.06006	-0.07504	-0.1149	-0.15784	-0.16947	-0.1377	-0.07156
coeff	0.031887	-0.03835	-0.27312	-0.45979	-0.41587	-0.20694	0.090787	0.421958	0.786198
t-stats	0.21093	-0.2515	-1.58264	-2.15685	-2.05169	-1.27144	0.61695	2.25807	2.5365
p-value	0.83294	0.801424	0.113504	0.031018	0.0402	0.203572	0.537265	0.023941	0.011197

Table 7: In-Sample Results for Probit Model for India

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated: $\Pr[R_t = 1 \mid Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k})$ where k= 1,3,6,9,12,15,18,21,24 months & Spread is the Spread between 10 year G-sec and 3-month T-bill (Tenbill)									
Tenbill									
Psuedo R^2	0.056184	0.197799	0.306929	0.29446	0.207871	0.164957	0.084734	0.003328	-0.04286
t-stats	-0.21329	-0.41925	-0.57689	-0.60223	-0.53061	-0.48887	-0.39339	-0.2668	-0.1555
coeff	-3.0392	-5.39706	-6.45249	-6.46683	-5.80684	-5.32287	-4.38983	-3.1385	-1.85732
sig	0.002372	7E-08	0	0	1E-08	1E-07	1.13E-05	0.001698	0.063266
BSE									
Psuedo R^2	0.25515	0.299566	0.309028	0.321828	0.270468	0.228344	0.140149	0.021671	-0.04285
coeff-spread	-0.10527	-0.3709	-0.56432	-0.67297	-0.63947	-0.57694	-0.45128	-0.28529	-0.15518
t-stats for spread	-1.31782	-4.35229	-6.10255	-6.53833	-6.08192	-5.6449	-4.75289	-3.33907	-1.84482
coeff	-0.00689	-0.00519	-0.00067	0.002326	0.003539	0.003726	0.0037	0.002286	-6.6E-05
t-stats	-4.27743	-3.26738	-0.54301	1.97904	2.8828	2.84173	2.59243	1.47266	-0.04271
M1									
Psuedo R^2	0.056286	0.201902	0.310233	0.294745	0.207881	0.165195	0.087754	0.013356	-0.01348
coeff-spread	-0.21594	-0.43674	-0.59076	-0.60566	-0.53023	-0.49012	-0.39615	-0.26685	-0.14557
t-stats for spread	-2.93691	-5.36525	-6.40589	-6.38211	-5.76671	-5.31577	-4.40115	-3.12814	-1.73685
coeff	0.000171	0.001217	0.001224	0.000368	-6.8E-05	0.000334	0.001182	0.002166	0.003865
t-stats	0.12101	0.77171	0.69179	0.19995	-0.0365	0.1759	0.61834	1.1112	1.86946
M3									
Psuedo R^2	0.058241	0.207189	0.313138	0.295099	0.207883	0.165113	0.086666	0.010526	-0.02041
coeff-spread	-0.22593	-0.44807	-0.59766	-0.60782	-0.53016	-0.49003	-0.39619	-0.26833	-0.15043
t-stats for spread	-3.05039	-5.43619	-6.42434	-6.37663	-5.75886	-5.31041	-4.4015	-3.14779	-1.7995
coeff	0.000112	0.000269	0.000244	7.98E-05	-1.1E-05	3.91E-05	0.000136	0.000262	0.000478
t-stats	0.54318	1.16447	0.94651	0.29934	-0.03955	0.14226	0.49444	0.94185	1.63923
Grm1									
Psuedo R^2	0.053118	0.202564	0.31062	0.30939	0.276991	0.201606	0.107357	0.024717	-0.0271
coeff-spread	-0.18912	-0.38826	-0.62521	-0.67238	-0.66163	-0.57536	-0.45091	-0.32014	-0.19628
t-stats for spread	-2.52933	-4.80108	-6.2862	-6.4361	-6.09029	-5.46676	-4.53937	-3.40206	-2.14569
coeff	-23.4163	-37.4426	36.69907	53.25421	86.80689	57.04864	39.96398	38.07649	30.30358
t-stats	-0.90959	-1.35388	1.28674	1.78308	2.76365	1.92039	1.40456	1.37944	1.10033
Grm3									
Psuedo R^2	0.100904	0.227838	0.309803	0.445013	0.31391	0.220394	0.141176	0.010714	-0.03729
coeff-spread	-0.19383	-0.41125	-0.59963	-0.80114	-0.64503	-0.55036	-0.45001	-0.2783	-0.15964
t-stats for spread	-2.68327	-5.16559	-6.44891	-6.51898	-5.97568	-5.48755	-4.67104	-3.18447	-1.86189
coeff	-143.888	-128.977	72.28114	325.6798	239.8062	157.0488	157.4901	26.54446	2.905584
t-stats	-2.72897	-2.306	1.24219	4.18138	3.33845	2.39316	2.39653	0.44773	0.04912

Ex rate - REER									
Psuedo R^2	0.056374	0.210748	0.312858	0.294513	0.213658	0.181614	0.112737	0.021913	-0.03731
coeff-spread	-0.22	-0.48481	-0.62028	-0.59856	-0.5015	-0.45187	-0.35305	-0.2359	-0.13918
t-stats for spread	-2.70902	-5.19835	-6.03947	-5.85466	-5.20211	-4.76239	-3.81692	-2.67853	-1.60478
coeff	0.002858	0.028014	0.02277	-0.00238	-0.02635	-0.04968	-0.06918	-0.0555	-0.03052
t-stats	0.16512	1.3854	0.93879	-0.086	-0.85086	-1.36419	-1.70029	-1.41271	-0.79183
Grexrate									
Psuedo R^2	0.051279	0.238572	0.299266	0.292065	0.23435	0.185508	0.149922	0.100046	0.042314
coeff-spread	-0.21144	-0.41944	-0.57198	-0.61639	-0.572	-0.52493	-0.46973	-0.35349	-0.22109
t-stats for spread	-3.01658	-5.33696	-6.35179	-6.44514	-5.83891	-5.35348	-4.69085	-3.67353	-2.39544
coeff	6.247566	24.70352	2.387297	-9.07092	-15.9752	-12.4751	-26.6806	-33.5964	-31.3338
t-stats	0.75693	2.55891	0.24681	-0.93868	-1.59175	-1.28844	-2.59134	-3.12222	-2.89434
Call									
Psuedo R^2	0.222445	0.376901	0.401618	0.323158	0.211293	0.167471	0.085324	0.003596	-0.04286
coeff-spread	-0.03153	-0.15823	-0.35695	-0.47855	-0.4816	-0.44394	-0.37155	-0.25208	-0.1579
t-stats for spread	-3.36071	-2.69326	-3.35938	-4.30693	-4.16837	-3.71042	-3.10483	-2.14968	-1.33525
coeff	0.199987	0.228676	0.17208	0.092469	0.031223	0.027358	0.012745	0.008348	0.001341
t-stats	4.67044	4.75108	3.54859	1.97828	0.67824	0.57371	0.27331	0.18139	-0.02878
3mth-T-Bill									
Psuedo R^2	0.121586	0.296893	0.358926	0.317172	0.214961	0.166542	0.087695	0.004883	-0.04179
coeff-spread	-0.09132	-0.26881	-0.44865	-0.51532	-0.47431	-0.45898	-0.35277	-0.23652	-0.12967
t-stats for spread	-3.13347	-3.07336	-4.46665	-4.90203	-4.42401	-4.0881	-3.18258	-2.16488	-1.17799
coeff	0.138305	0.184967	0.140775	0.092901	0.05104	0.024685	0.0326	0.023121	0.019266
t-stats	3.01934	3.6704	2.68546	1.7664	0.97601	0.45532	0.61362	0.43789	0.35902
1-Gsec									
Psuedo R^2	0.132955	0.313062	0.360423	0.315535	0.212181	0.166004	0.088001	0.005165	-0.04074
coeff-spread	-0.13308	-0.32853	-0.49273	-0.54648	-0.49869	-0.47072	-0.362	-0.24265	-0.12905
t-stats for spread	-3.7839	-3.97969	-5.19061	-5.5043	-4.98523	-4.53965	-3.56754	-2.46026	-1.31326
coeff	0.137582	0.185241	0.130665	0.081253	0.036331	0.018415	0.031398	0.02298	0.02454
t-stats	3.25329	3.91764	2.72233	1.70354	0.76155	0.37005	0.64516	0.4763	0.50584
10-Gsec									
Psuedo R^2	0.121586	0.296893	0.358926	0.317172	0.214961	0.166542	0.087695	0.004883	-0.04179
coeff-spread	-0.22963	-0.45377	-0.58942	-0.60822	-0.52535	-0.48366	-0.38537	-0.25964	-0.14894
t-stats for spread	-3.22914	-5.56818	-6.40134	-6.36786	-5.71426	-5.22637	-4.25387	-3.00268	-1.74265
coeff	0.138305	0.184967	0.140775	0.092901	0.05104	0.024685	0.0326	0.023121	0.019266
t-stats	3.01934	3.6704	2.68546	1.7664	0.97601	0.45532	0.61362	0.43789	0.35902

Table 8: In-Sample Results for Probit Model for India

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated: $\Pr[R_t = 1 \mid Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k})$ where k= 1,3,6,9,12,15,18,21,24 months & Spread is the Spread between 10 year G-sec and 1year G-sec (Long)									
Long									
Psuedo R^2	0.105932	0.288025	0.329517	0.275673	0.15153	0.130172	0.078286	0.002172	-0.03345
t-stats	-0.37752	-0.68966	-0.77337	-0.74312	-0.58799	-0.55925	-0.48427	-0.33744	-0.22808
coeff	-3.95236	-6.00384	-6.44008	-6.23586	-5.36336	-5.05058	-4.32377	-3.11485	-2.11641
sig	7.74E-05	0	0	0	8E-08	4.4E-07	1.53E-05	0.00184	0.03431
BSE									
Psuedo R^2	0.27448	0.363113	0.329518	0.318577	0.223627	0.209879	0.155516	0.028714	-0.03332
coeff-spread	-0.23112	-0.6347	-0.77381	-0.87762	-0.74651	-0.70074	-0.59995	-0.38202	-0.23012
t-stats for spread	-2.12566	-4.92381	-6.1626	-6.38151	-5.80977	-5.59115	-4.93217	-3.46059	-2.11459
coeff	-0.00659	-0.00489	1.55E-05	0.003079	0.00385	0.004312	0.004639	0.002864	0.000197
t-stats	-4.03139	-2.89648	0.01199	2.44296	3.0589	3.151	3.01072	1.75425	0.12483
M1									
Psuedo R^2	0.106024	0.288302	0.3299	0.280512	0.157011	0.132301	0.078293	0.005724	-0.01362
coeff-spread	-0.37563	-0.6934	-0.77184	-0.74316	-0.59032	-0.56224	-0.484	-0.32777	-0.19209
t-stats for spread	-3.87719	-5.95006	-6.40912	-6.19592	-5.36062	-5.06458	-4.30767	-2.99493	-1.72852
coeff	-0.00016	0.000334	-0.00043	-0.00153	-0.00154	-0.00098	5.69E-05	0.001294	0.003237
t-stats	-0.11491	0.20231	-0.2348	-0.81145	-0.84468	-0.52186	0.02973	0.66075	1.53675
M3									
Psuedo R^2	0.106461	0.290109	0.329525	0.280012	0.157621	0.132879	0.078397	0.004008	-0.01946
coeff-spread	-0.38239	-0.70119	-0.77308	-0.74217	-0.58983	-0.56208	-0.4852	-0.33131	-0.2013
t-stats for spread	-3.93163	-5.97217	-6.42114	-6.19814	-5.35884	-5.06539	-4.32064	-3.03474	-1.8242
coeff	5.68E-05	0.000132	-9E-06	-0.00021	-0.00023	-0.00016	-3.2E-05	0.000132	0.000382
t-stats	0.27687	0.5551	-0.03457	-0.77029	-0.89074	-0.58803	-0.1183	0.47478	1.29398
Grm1									
Psuedo R^2	0.09864	0.286039	0.332702	0.286321	0.215064	0.166637	0.104978	0.026286	-0.01318
coeff-spread	-0.35656	-0.65562	-0.83524	-0.82445	-0.74347	-0.66729	-0.5679	-0.41247	-0.29202
t-stats for spread	-3.5206	-5.53051	-6.29181	-6.18315	-5.67998	-5.21527	-4.48926	-3.4079	-2.45727
coeff	-14.3728	-28.8674	38.28899	49.56796	77.51554	51.61154	39.90416	37.69662	33.30619
t-stats	-0.55609	-1.00621	1.33367	1.68242	2.57028	1.79911	1.41812	1.37533	1.21225
Grm3									
Psuedo R^2	0.147346	0.320871	0.32915	0.399384	0.24412	0.183568	0.136565	0.012745	-0.02542
coeff-spread	-0.35845	-0.6993	-0.79204	-0.903	-0.68433	-0.62399	-0.55092	-0.35941	-0.24214
t-stats for spread	-3.64298	-5.80829	-6.44662	-6.35075	-5.65263	-5.29131	-4.67101	-3.22382	-2.18262
coeff	-143.13	-145.148	66.64732	280.9984	204.1373	141.0435	151.3483	29.12157	8.356853
t-stats	-2.6655	-2.41169	1.13437	3.92257	3.10567	2.2702	2.36161	0.49357	0.14048

Ex rate - REER									
Psuedo R^2	0.106641	0.301304	0.330587	0.281184	0.173003	0.164624	0.122056	0.030689	-0.0242
coeff-spread	-0.3918	-0.7782	-0.79299	-0.71053	-0.54348	-0.52217	-0.45289	-0.31368	-0.21798
t-stats for spread	-3.70325	-5.69306	-6.06083	-5.72705	-4.81896	-4.59447	-3.92327	-2.84099	-2.00652
coeff	0.005447	0.029753	0.010003	-0.0248	-0.04964	-0.07034	-0.08572	-0.06706	-0.03824
t-stats	0.32138	1.41387	0.39718	-0.8466	-1.56527	-1.88808	-2.07479	-1.71603	-1.01104
Grexrate									
Psuedo R^2	0.097693	0.31183	0.320243	0.276777	0.183026	0.157399	0.155057	0.111101	0.066659
coeff-spread	-0.37124	-0.67286	-0.77387	-0.77567	-0.64795	-0.61792	-0.60007	-0.46963	-0.34494
t-stats for spread	-3.87086	-5.83025	-6.29768	-6.17392	-5.48529	-5.15977	-4.73334	-3.80869	-2.86004
coeff	3.484009	20.78507	-1.53289	-11.9295	-15.8522	-13.5826	-28.4331	-35.4718	-34.2644
t-stats	0.41836	2.12842	-0.15951	-1.25551	-1.65945	-1.43018	-2.74426	-3.26267	-3.09325
Call									
Psuedo R^2	0.221614	0.392977	0.388113	0.288711	0.154215	0.131557	0.078367	0.002322	-0.03018
coeff-spread	-0.01141	-0.33128	-0.47586	-0.59976	-0.52248	-0.51103	-0.49618	-0.35413	-0.31069
t-stats for spread	-2.08633	-2.26432	-3.08432	-3.80169	-3.38953	-3.23051	-3.04355	-2.15335	-1.81165
coeff	0.18874	0.197465	0.150612	0.068613	0.029623	0.02138	-0.00505	-0.00683	-0.03315
t-stats	3.97657	3.77941	2.83541	1.33989	0.59799	0.42387	-0.10065	-0.13497	-0.61857
3mth-T-Bill									
Psuedo R^2	0.136772	0.331558	0.350539	0.282041	0.155295	0.130306	0.078498	0.00223	-0.03317
coeff-spread	-0.22232	-0.50148	-0.62276	-0.65782	-0.52213	-0.54604	-0.46731	-0.32812	-0.25
t-stats for spread	-2.85389	-3.69353	-4.28953	-4.43532	-3.65047	-3.66244	-3.06225	-2.11992	-1.5553
coeff	0.106517	0.138253	0.099233	0.053922	0.039831	0.007606	0.009416	0.004937	-0.01134
t-stats	2.10406	2.50354	1.73291	0.94024	0.70844	0.13213	0.16339	0.08429	-0.18363
1-Gsec									
Psuedo R^2	0.14587	0.339014	0.344498	0.277399	0.151555	0.130988	0.078327	0.002201	-0.03342
coeff-spread	-0.24578	-0.54611	-0.67446	-0.70772	-0.5836	-0.58649	-0.49053	-0.34281	-0.23422
t-stats for spread	-2.23084	-4.29234	-4.95852	-5.09873	-4.36669	-4.21061	-3.46421	-2.41634	-1.60918
coeff	0.11036	0.137264	0.076181	0.025467	0.00296	-0.01741	-0.00389	-0.0032	-0.00354
t-stats	2.38399	2.69324	1.46634	0.49047	0.05736	-0.32431	-0.07232	-0.05866	-0.06273
10-Gsec									
Psuedo R^2	0.14587	0.339014	0.344498	0.277399	0.151555	0.130988	0.078327	0.002201	-0.03342
coeff-spread	-0.35614	-0.68338	-0.75064	-0.73319	-0.58656	-0.56908	-0.48665	-0.33962	-0.23067
t-stats for spread	-3.66718	-5.74563	-6.20136	-6.06626	-5.21746	-4.95375	-4.16935	-2.96579	-1.99824
coeff	0.11036	0.137264	0.076181	0.025467	0.00296	-0.01741	-0.00389	-0.0032	-0.00354
t-stats	2.38399	2.69324	1.46634	0.49047	0.05736	-0.32431	-0.07232	-0.05866	-0.06273
Short									
Psuedo R^2	0.345883	0.466664	0.358883	0.294104	0.251436	0.158059	0.093272	0.02942	0.003727
coeff-spread	0.265987	-0.1564	-0.53257	-0.94358	-1.12534	-0.80369	-0.65623	-0.57241	-0.5103
t-stats for spread	1.70739	-0.98617	-3.22514	-5.32008	-5.53589	-4.56203	-3.82243	-3.29002	-2.83912
coeff	1.670733	1.531877	0.556871	-0.42144	-1.11236	-0.51977	-0.36845	-0.51044	-0.61433
t-stats	5.19403	4.65592	2.00488	-1.55925	-3.2375	-1.81209	-1.33074	-1.7347	-1.96916

Table 9: In-Sample Results for Probit Model for India

Table 26: Measures of fit and t-stats for probit Model variables with spread, In-Sample

Equation estimated: $\Pr[R_t = 1 | Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k})$
where k= 1,3,6,9,12,15,18,21,24 months & Spread is the Spread between 10 year G-sec and Call Money rate(Tenf)

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
TenF									
Psuedo R^2	0.203152	0.35298	0.417172	0.293061	0.147785	0.144028	0.040188	-0.01931	-0.05701
t-stats	-0.26841	-0.38338	-0.45007	-0.38857	-0.29662	-0.29792	-0.21222	-0.1456	-0.07201
coeff	-5.27086	-6.64825	-7.00912	-6.40992	-5.33245	-5.11478	-3.89011	-2.73725	-1.35524
sig	1.4E-07	0	0	0	1E-07	3.1E-07	0.0001	0.006196	0.175342
BSE									
Psuedo R^2	0.359217	0.438747	0.417176	0.328305	0.205497	0.214939	0.09264	-0.00104	-0.05698
coeff-spread	-0.23064	-0.37181	-0.44958	-0.45473	-0.36801	-0.37227	-0.24987	-0.16037	-0.07157
t-stats for spread	-3.99083	-5.69019	-6.7177	-6.31107	-5.55236	-5.35967	-4.28893	-2.95896	-1.33382
coeff	-0.00705	-0.00577	-3.4E-05	0.002678	0.003291	0.003961	0.003484	0.002245	-9.5E-05
t-stats	-3.82269	-2.97065	-0.02588	2.22933	2.76E+00	2.98501	2.52936	1.47146	-0.06182
M1									
Psuedo R^2	0.204493	0.357362	0.419146	0.293115	0.148644	0.144028	0.041186	-0.01268	-0.02991
coeff-spread	-0.27404	-0.39618	-0.45775	-0.3875	-0.29415	-0.2979	-0.21274	-0.14326	-0.0582
t-stats for spread	-5.19659	-6.52405	-6.89677	-6.27541	-5.27064	-5.08084	-3.88028	-2.65878	-1.05997
coeff	0.000667	0.001393	0.001034	-0.00016	-0.0006	-7.7E-06	0.00065	0.001717	0.003697
t-stats	0.445	0.80954	0.54061	-0.08669	-0.33737	-0.00415	0.3544	0.90243	1.7919
M3									
Psuedo R^2	0.208148	0.362216	0.42082	0.29309	0.149013	0.144097	0.040459	-0.01535	-0.03735
coeff-spread	-0.27998	-0.4035	-0.46108	-0.38778	-0.29367	-0.29727	-0.21255	-0.1442	-0.06187
t-stats for spread	-5.25738	-6.54016	-6.89898	-6.27299	-5.26676	-5.07822	-3.88501	-2.68574	-1.13574
coeff	0.000187	0.000293	0.000203	-1.7E-05	-0.0001	-2.5E-05	4.85E-05	0.000189	0.000443
t-stats	0.85768	1.17046	0.73373	-0.06319	-0.40327	-0.09456	0.1844	0.69793	1.53148
Grm1									
Psuedo R^2	0.194176	0.34774	0.44331	0.312241	0.214072	0.184885	0.060742	0.000511	-0.04379
coeff-spread	-0.26712	-0.3699	-0.53747	-0.44837	-0.38421	-0.36122	-0.24765	-0.17943	-0.09652
t-stats for spread	-4.93159	-6.15944	-6.49926	-6.26592	-5.60352	-5.25055	-4.03053	-3.01793	-1.65726
coeff	-0.41112	-20.0517	69.69673	59.09871	79.58252	57.83859	33.92305	33.84577	25.03693
t-stats	-0.01557	-0.68122	2.19263	1.98217	2.65618	1.93282	1.20566	1.22689	0.91057
Grm3									
Psuedo R^2	0.235995	0.377498	0.433013	0.473885	0.264123	0.214761	0.103122	-0.00994	-0.05078
coeff-spread	-0.26073	-0.38423	-0.48562	-0.56869	-0.38496	-0.35728	-0.2596	-0.15707	-0.07668
t-stats for spread	-4.96064	-6.41567	-6.93665	-6.40129	-5.60142	-5.32575	-4.29393	-2.83029	-1.39301
coeff	-135.122	-131.241	116.3949	374.2924	248.0099	181.1793	165.4667	28.68985	1.029546
t-stats	-2.44287	-2.16445	1.86276	4.52611	3.44306	2.62103	2.48002	0.48569	0.01741

Ex rate - REER									
Psuedo R^2	0.21022	0.371586	0.421007	0.296813	0.167557	0.172617	0.084915	0.009886	-0.04696
coeff-spread	-0.29422	-0.43751	-0.47243	-0.37164	-0.26973	-0.27041	-0.18892	-0.12987	-0.06459
t-stats for spread	-5.0836	-6.29479	-6.5507	-5.80939	-4.74011	-4.61947	-3.42533	-2.41945	-1.20454
coeff	0.018048	0.035521	0.01936	-0.01945	-0.04548	-0.06199	-0.08046	-0.0653	-0.03915
t-stats	1.03109	1.68598	0.76333	-0.70688	-1.51829	-1.75149	-2.1004	-1.73888	-1.05292
Grexrate									
Psuedo R^2	0.19642	0.38691	0.408604	0.28927	0.172783	0.165661	0.097844	0.069793	0.022608
coeff-spread	-0.26602	-0.38336	-0.44772	-0.39674	-0.31836	-0.31924	-0.25194	-0.19238	-0.10924
t-stats for spread	-5.2229	-6.53142	-6.90506	-6.37983	-5.44193	-5.19594	-4.23666	-3.28934	-1.91734
coeff	4.869931	24.30396	0.66965	-8.81806	-13.3783	-10.9121	-23.4129	-30.8914	-29.6451
t-stats	0.57078	2.40974	0.06812	-0.9391	-1.41298	-1.15691	-2.38556	-2.98348	-2.79349
Call									
Psuedo R^2	0.250933	0.423192	0.445957	0.302868	0.15019	0.144134	0.041258	-0.01868	-0.05603
coeff-spread	-0.14278	-0.22833	-0.33907	-0.32697	-0.2646	-0.29077	-0.18892	-0.12698	-0.04773
t-stats for spread	-2.06647	-3.06975	-4.10338	-4.08467	-3.34479	-3.45215	-2.25831	-1.48483	-0.5382
coeff	0.124948	0.167509	0.110948	0.060584	0.028771	0.006242	0.019036	0.014665	0.018628
t-stats	2.6202	3.14968	2.03629	1.16645	0.56649	0.11739	0.36722	0.27831	0.34263
3mth-T-Bill									
Psuedo R^2	0.215183	0.394639	0.438658	0.310254	0.159807	0.146323	0.047812	-0.01506	-0.05203
coeff-spread	-0.22515	-0.30463	-0.38696	-0.33829	-0.25117	-0.27669	-0.17056	-0.11218	-0.03317
t-stats for spread	-3.75391	-4.66916	-5.33123	-4.88296	-3.7776	-3.94496	-2.45489	-1.58284	-0.45017
coeff	0.06452	0.1322	0.098636	0.082453	0.065618	0.029128	0.051577	0.038636	0.042884
t-stats	1.3286	2.46285	1.76813	1.53873	1.26276	0.54645	0.98006	0.72251	0.77241
1-Gsec									
Psuedo R^2	0.232076	0.416682	0.442258	0.306196	0.152924	0.144842	0.045415	0.016295	0.05205
coeff-spread	-0.225	-0.32735	-0.40527	-0.35792	-0.27455	-0.28836	-0.18608	-0.12426	-0.04268
t-stats for spread	-4.08141	-5.29921	-5.91389	-5.47384	-4.43942	-4.41581	-2.92833	-1.94375	-0.64962
coeff	0.091266	0.150886	0.096649	0.065315	0.039125	0.01599	0.039136	0.029749	0.038662
t-stats	2.04628	3.00182	1.90485	1.34789	0.82762	0.32554	0.81296	0.60935	0.7722
10-Gsec									
Psuedo R^2	0.250933	0.423192	0.445957	0.302868	0.15019	0.144134	0.041258	-0.01868	-0.05603
coeff-spread	-0.26773	-0.39584	-0.45002	-0.38755	-0.29337	-0.29702	-0.20795	-0.14165	-0.06636
t-stats for spread	-5.15593	-6.49942	-6.85029	-6.27331	-5.21569	-5.04811	-3.719	-2.56789	-1.19061
coeff	0.124948	0.167509	0.110948	0.060584	0.028771	0.006242	0.019036	0.014665	0.018628
t-stats	2.6202	3.14968	2.03629	1.16645	0.56649	0.11739	0.36722	0.27831	0.34263

Table 10: In-Sample Results for Probit Model for India

	1month	1 Quarter	2 Quarter	3 Quarter	4 Quarter	5 Quarter	6 Quarter	7 Quarter	8 Quarter
Equation estimated: $\Pr[R_t = 1 \mid Spread_{t-k}, X_{1t-k}] = F(\alpha_0 + \beta_0 Spread_{t-k} + \beta_1 X_{1t-k})$ where k= 1,3,6,9,12,15,18,21,24 months & Spread is the Spread between 3-month CP and 3-month T-Bill (Short)									
Short									
Psuedo R^2	0.326077	0.460297	0.281642	0.04126	-0.06555	-0.0338	-0.03812	-0.06989	-0.07168
t-stats	1.281908	1.727968	1.225709	0.653651	0.336204	0.450677	0.416304	0.212592	0.052943
coeff	5.99003	6.56326	6.07345	4.1589	2.17131	2.8414	2.57848	1.28592	0.30939
sig	0	0	0	3.2E-05	0.029908	0.004492	0.009924	0.19847	0.757028
BSE									
Psuedo R^2	0.45257	0.527528	0.281725	0.051481	-0.04653	0.012612	0.020363	-0.05259	-0.0714
coeff-spread	1.222037	1.749313	1.218203	0.74029	0.442842	0.625856	0.610567	0.300597	0.043311
t-stats for spread	4.87406	5.80725	5.71395	4.21335	2.58235	3.48247	3.34912	1.69397	0.24163
coeff	-0.00683	-0.00535	-0.00013	0.001242	0.001695	0.00297	0.003757	0.002233	-0.00029
t-stats	-3.48053	-2.71668	-0.10863	1.18191	1.5812	2.42471	2.64935	1.43206	-0.18249
M1									
Psuedo R^2	0.342863	0.497381	0.306147	0.056776	-0.05643	-0.02967	-0.03804	-0.06472	-0.03727
coeff-spread	1.357343	1.989454	1.329509	0.674103	0.356379	0.467369	0.419287	0.174802	-0.09812
t-stats for spread	5.92427	6.1446	5.96868	4.25478	2.29552	2.92637	2.5548	1.00238	-0.48748
coeff	-0.0026	-0.00487	-0.00338	-0.00228	-0.00172	-0.00123	-0.00018	0.001543	0.004529
t-stats	-1.54086	-2.19651	-1.78617	-1.41952	-1.07755	-0.72141	-0.09938	0.79426	1.97606
M3									
Psuedo R^2	0.337176	0.491055	0.305007	0.058102	-0.05455	-0.02787	-0.03729	-0.06746	-0.04708
coeff-spread	1.343138	1.960398	1.331512	0.678724	0.361077	0.472209	0.426342	0.186692	-0.07019
t-stats for spread	5.924	6.1813	5.97765	4.27579	2.32257	2.95354	2.59735	1.07583	-0.3566
coeff	-0.0003	-0.00062	-0.00047	-0.00034	-0.00027	-0.00021	-8.2E-05	0.00015	0.000536
t-stats	-1.26742	-2.03924	-1.75784	-1.48083	-1.18277	-0.86309	-0.3208	0.54536	1.68552
Grm1									
Psuedo R^2	0.318582	0.450908	0.284522	0.029991	-0.04932	-0.0191	-0.02414	-0.05902	-0.06361
coeff-spread	1.327744	1.715544	1.36088	0.680313	0.433134	0.531489	0.490633	0.288324	0.123305
t-stats for spread	5.7868	6.28706	5.86998	4.01039	2.5614	3.05646	2.78211	1.60111	0.66591
coeff	18.2943	-4.09214	40.31567	13.5732	27.94157	18.32145	14.951	16.20541	14.40846
t-stats	0.65281	-0.13154	1.42641	0.52604	1.08435	0.70445	0.57142	0.60898	0.53006
Grm3									
Psuedo R^2	0.344241	0.477334	0.29045	0.151036	0.007607	0.018921	0.023882	-0.06122	-0.06573
coeff-spread	1.267958	1.791529	1.303687	0.862408	0.485991	0.592232	0.588963	0.266124	0.076918
t-stats for spread	5.66508	6.25327	6.17552	4.83853	2.89519	3.46853	3.35183	1.50346	0.41801
coeff	-121.105	-135.206	99.34592	239.4932	168.2065	133.2783	152.711	18.80334	-10.1624
t-stats	-2.04367	-1.95986	1.68623	3.81092	2.81247	2.24941	2.42644	0.31965	-0.16726

Ex rate - REER									
Psuedo R^2	0.330646	0.472909	0.313287	0.100571	0.006643	0.044998	0.042999	-0.02142	-0.05702
coeff-spread	1.27723	1.761898	1.251475	0.635444	0.326344	0.464059	0.44566	0.250362	0.087127
t-stats for spread	5.92782	6.42128	5.88166	3.95564	2.08557	2.88216	2.69885	1.50288	0.50751
coeff	-0.01435	-0.0292	-0.04929	-0.06552	-0.07492	-0.08991	-0.10168	-0.08077	-0.04695
t-stats	-0.8123	-1.31591	-1.92743	-2.50587	-2.69321	-2.73621	-2.73035	-2.19203	-1.26547
Grexrate									
Psuedo R^2	0.322968	0.453264	0.275298	0.036352	-0.0483	-0.01342	0.029823	0.02182	0.008864
coeff-spread	1.344721	1.684244	1.275123	0.695042	0.414916	0.538596	0.611564	0.445249	0.273348
t-stats for spread	5.89046	6.25215	5.94669	4.21831	2.54711	3.19577	3.43235	2.43984	1.4624
coeff	-9.47144	6.249839	-8.13357	-9.2628	-10.109	-9.92916	-25.5888	-32.1957	-31.1986
t-stats	-1.04194	0.60905	-0.87201	-1.05819	-1.1408	-1.09474	-2.55773	-3.01984	-2.81719
Call									
Psuedo R^2	0.327568	0.472954	0.342613	0.175119	0.106929	0.049564	-0.0006	-0.02711	-0.04359
coeff-spread	1.159645	1.334007	0.525007	-0.14509	-0.7191	-0.21314	-0.02656	-0.33465	-0.43317
t-stats for spread	3.51745	3.60541	1.83607	-0.56582	-2.25629	-0.7702	-0.09769	-1.053	-1.25578
coeff	0.027337	0.088731	0.175481	0.226994	0.262836	0.171377	0.111094	0.125252	0.107141
t-stats	0.47677	1.4002	2.92128	4.00873	4.3087	3.12913	2.12545	2.20122	1.77228
3mth-T-Bill									
Psuedo R^2	0.331705	0.46141	0.306655	0.126707	0.057987	0.018712	0.000237	-0.03172	-0.04138
coeff-spread	1.494357	1.625691	0.876218	0.226633	-0.29492	0.080339	0.087779	-0.18046	-0.34815
t-stats for spread	4.57525	4.57652	3.4547	1.08582	-1.14573	0.35258	0.37517	-0.66004	-1.13208
coeff	-0.05924	0.028759	0.11585	0.180195	0.223458	0.138047	0.117733	0.124369	0.119233
t-stats	-0.90977	0.41566	1.91819	3.2964	3.7432	2.52198	2.13902	2.06904	1.80612
1-Gsec									
Psuedo R^2	0.330266	0.460359	0.286385	0.078833	-0.00786	-0.01321	-0.01933	-0.04669	-0.04553
coeff-spread	1.454679	1.752822	1.06873	0.379345	-0.05191	0.229449	0.194375	-0.07763	-0.30453
t-stats for spread	4.62198	4.77264	3.97421	1.88011	-0.23035	1.064	0.86634	-0.30335	-1.03445
coeff	-0.04897	-0.00673	0.049585	0.114628	0.142895	0.08391	0.081115	0.09539	0.109316
t-stats	-0.78789	-0.09779	0.83065	2.22571	2.67499	1.60926	1.51837	1.64595	1.69639
10-Gsec									
Psuedo R^2	0.326131	0.461765	0.283065	0.041692	-0.06302	-0.03376	-0.03793	-0.06816	-0.06781
coeff-spread	1.291977	1.800506	1.277248	0.637978	0.29394	0.45615	0.403976	0.167964	-0.02363
t-stats for spread	5.34393	5.81087	5.43796	3.74993	1.70133	2.6027	2.23258	0.86671	-0.11257
coeff	-0.00502	-0.02942	-0.02575	0.012195	0.029375	-0.00387	0.008297	0.026581	0.042139
t-stats	-0.09057	-0.47317	-0.45028	0.24118	0.57335	-0.07308	0.15237	0.45965	0.6769