

Performance of fixed income funds in Brazil: market timing and style analysis

BALAS Track: Financial Markets, Investment and Risk Management

ABSTRACT

This study investigates whether managers of fixed-income Brazilian funds exhibit market timing abilities. We also conduct a style analysis in order to check the main drives of return of these funds. Data goes from January 2003 to April 2016. Our results indicate that managers of FI funds in Brazil do not exhibit market timing abilities and that funds are well classified.

Keywords: Market timing, style analysis, fixed income, fixed income funds, Brazil

1. INTRODUCTION

Despite lots of research regarding the Brazilian stock market, just a few studies provide real insights on the functioning of Brazilian fixed income markets. Understanding the theme in Brazil is not negligible: fixed income funds represent ninety percent (90%) of all the assets of Brazilian investment funds (Vilella and Leal, 2008). Despite that, constant inflationary pressures and the high interest rates level make Brazil a unique environment to study fund performance. According to a recent Financial Times' article on January 2016, Brazil was the fixed income trade of the year.

The purpose of this study is to investigate the performance of Brazilian fixed income (FI) Funds. Our objective is twofold: first, we evaluate these funds' performance based on Treynor and Masuy measure of market timing. Second, we conduct a style analysis, as proposed by Sharpe (1992), in order to assess the main components driving a fund's return. Our data set contains 338 Brazilian FI funds and goes from January 2003 to April 2016. To our knowledge, this is the study using the largest time span in Brazilian literature to assess FI funds' performance.

Just to give some figures, the total amount of fixed income investments in Brazil is R\$2,7 billion. Debentures are the most used capital-raising instrument by banks (see Table 1). Most part of fixed income funds' holdings consists on government bonds. For the period 2006-2016, average real interest rate in Brazil was five percent (5%) (see Graph 1). In emerging market it was around two percent (2%), while in some developed countries it can reach negative levels. In this sense, measuring timing ability of fixed income managers in Brazil has a lot to do with their ability to anticipate interest rate movements.

Our results demonstrate that Brazilian fixed income funds' managers exhibit negative market timing abilities, which is, they consistently underperform the market. Besides that, our style analysis indicates that funds are well classified: government and private debt indexes account for the greatest amount of returns.

The paper proceeds as follows: next section brings the theoretical framework regarding market timing and style analysis. Third session describes our data set and econometric framework. Fourth session covers the results as well as the theoretical explanations for the existence of negative market timing, followed by robustness checks. Concluding remarks are on the fifth session.

2. PRIOR LITERATURE

2.1 Performance Measure: Treynor and Mazuy (1966)

There are more than a hundred ways described in the literature to measure performance. (Cogneau and Hübner, 2009). According to Duarte (1996), there are two basic approaches for measuring the performance of a fund. The first consists on asset selection ability, which is the comparison of the returns of a certain fund and the benchmark. The second relates

to the timing ability of the manager, determining whether its performance is due to skill or luck. Measures of performance can be criticized for a variety of reasons: the problem of identifying an appropriate benchmark portfolio, the possibility of overestimating risk because of market timing ability and the failure of informed investors to earn positive risk-adjusted returns because of increasing risk aversion (Grinblatt and Titman, 1989).

Most part of the studies assessing performance In Brazil deal with mutual funds (Pizzinga et. al (2007), Brito e Leusin (2008)). Barros and Melo (2005) find no evidence of market timing ability for a sample of Brazilian pension funds from 1999 to 2001. Bases on the works of Fama (1978) and Jensen (1991), Malaquias and Eid Junior (2013) demonstrate funds do not aggregate extraordinary value. Despite the fact that fixed income funds represent ninety percent (90%) of all the assets of Brazilian investment funds (Vilella and Leal, 2008), there are only a few studies on the theme.

Measuring performance of fixed income funds in Brazil with traditional measures such as Sharpe's can be difficult for essentially two reasons: low volatility of FI funds and the fact that negative values can not be compared. (Securato, Chára and Senger (1998). For the purpose of this study, we focus on the methodology proposed by Treynor and Mazuy (1966).

The Treynor –Mazuy Measure, henceforth TM, is an absolute measure of performance. Is it used in order to describe a manager's ability to anticipate market factor evolutions, which is, their ability to *time* the market. It consists on the inclusion of a quadratic term on the conventional regression of Jensen (1968).

$$EX_x = \alpha + \beta EX_M + \delta EX_M^2 + E \quad , \quad (a)$$

where EX_x is the measure of excessive return of the fund and EX_M is the excessive return of the market portfolio.

If the manager expects certain fixed income assets to have a superior performance, he would change the investment portfolio in that direction, obtaining some differential return in relation to the market portfolio. (Brito, 2003) analyzes Brazilian derivative funds based on Merton's (1981) measure of market timing. The vast majority of the funds on his sample exhibit no market timing ability. His sample consists on the third quarter of 1999.

Figure 1 demonstrates the characteristic line of a fund that constantly outwits the market. In this sense, if the fund's returns are above market returns, its characteristic line will have a slope greater than one. Conversely, when a fund underperforms the market, this slop will be lower than one. This is essentially the idea behind Treynor & Mazuy regression applied here: the quadratic component of the regression must be greater than zero in order for the fund to outperform the market.

2.2 Style Analysis: Sharpe (1992)

The purpose of style analysis is to characterize a fund's return by parameters of linear return models (Yoshinaga et al, 2009). According to Lucas and Riepe (1996), "returns-based style analysis is a statistical technique that identifies what combination of long positions in passive indexes would have most closely replicated the actual performance of a fund over a specified time period. The passive indexes selected typically represent distinct investment styles within particular asset classes."

Sharpe (1992) proposed a model to identify what is the fund's exposition to selected asset classes. The benefit of this methodology is that it helps one better understand the main drivers of FI funds' returns. To put it simply, the equation is

$$R_i = \alpha_{i1} F_1 + \alpha_{i2} F_2 + \dots + \alpha_{in} F_n + \varepsilon_i \quad (b)$$

where R represents fund's return and F are the factors in which the fund's return can be decomposed.

Style analysis meets the major criteria for measuring manager performance: "it is identifiable in advance, it is a viable alternative, it is not easily beaten, and it is easily constructed" (Lucas and Riepe, 1996). It is a procedure of categorization of financial assets aimed to understand portfolio allocation decisions. From the point of view of the manager, style investing simplifies problems of choice allowing efficient information process. For the investor, applying style analysis in fixed income funds is useful because their managers often follow systematic rules of portfolio allocation (Barberis and Schleifer, 2003). Then, the shift of funds between asset classes will occur in response to private information (Admati et. al, 1986).

Schutt and Caldeira (2013) run a dynamic style analysis and demonstrate that the exposure to fixed income factors has been increasing in Brazil. They cover the period that goes from January 2006 to October 2011.

3. METHODOLOGY

The question under investigation is: do managers of fixed income funds in Brazil exhibit market timing abilities? Our secondary question is: what are the main drives of return of Brazilian fixed income funds?

Data Source

Our primary source is Economática. We collected information of 338 Brazilian FI funds, from January 2003 to April 2016, with the condition that their net worth was positive. We excluded funds-of-funds and gathered the following information: fund's quota, administration fee and type of fund. Fund Returns are adjusted for administration fee. To our knowledge, this is the largest time span ever used to assess performance of fixed income funds in Brazil.

As controls, we use monthly data for Anbima's IMA Indexes Group (IMA-B, IMA-C, IMA-S, IRF-M), Anbima's Debentures Index (IDA), SELIC rate and DI (interbank depositary rate), which is reduced by the average administration fee of funds. Our time span is from January-2003 to April-2016, although IDA is only available from October-2011. In this sense, our style analysis only covers the period from October-2011 to April-2016.

Before conducting performance analysis, fund returns were adjusted for average administration fee (0.6%). We use two indexes as our benchmarks: DI and IMA-S. DI is the main fixed income index in Brazil, while IMA-S is a benchmark for floating rate bonds which responds to the Selic rate.

Descriptive Statistics

For the whole period, funds' average monthly return was 0.6% and 66% of funds have had a superior performance than DI (adjusted for performance fee).

Top and bottom quintile are at the Appendix. It is worth mentioning that among top players, there are only two funds from large Brazilian banks. Among worst performers, on the other hand, this number jumps to eight.

Regressions

Under the null hypothesis that managers do not exhibit market timing abilities, we run the following regression:

$$R_{i,t} - (DI_t - AdmFee_t) = \alpha + \beta (IMA_t - (DI_t - AdmFee_t)) + \gamma (IMA_t - (DI_t - AdmFee_t))^2 + \varepsilon_{i,t} \quad (1)$$

To conduct style analysis, we proceeded with the following regressions, using both DI and IMA-S as benchmarks:

$$R_{i,t} = \alpha_1 IMAB_t + \alpha_2 IMAC_t + \alpha_3 IRFM_t + \alpha_4 IMAS_t + \alpha_5 IDA_t + \alpha_6 SELIC_t + \varepsilon_{i,t}$$

(2)

$$R_{i,t} = \alpha_1 IMAB_t + \alpha_2 IMAC_t + \alpha_3 IRFM_t + \alpha_4 DI_t + \alpha_5 IDA_t + \alpha_6 SELIC_t + \varepsilon_{i,t}$$

(3)

4. RESULTS

Treynor and Mazuy regression results in Figure 3 demonstrate there is no evidence of market timing ability, as quadratic coefficients are negative.¹ Similar evidence is verified by Chen et al (2009), for a sample of american FI funds². At first,

¹ For multicollinearity tests, see Appendix.

² Their results, however, are based on a larger sample: from January 1962 to March 2007.

negative market timing would indicate funds managers behave precisely in the opposite way of what is expected: their funds would yield returns lower than the benchmark. These results, however, can come due to some methodological issues, briefly explained in the next sub-section.

Style analysis results demonstrate that funds are well classified: DI and IDA (or IMA-S and IDA) account for the greatest amount of returns. As the first index relates to the bank market (or public debt market in the case of IMA-S) and the second refers to corporate debt market, evidence demonstrates that funds are adequately classified. It is worth mentioning that corporate bonds are not marked to market in Brazil, which poses challenges to accurately measuring corporate bonds' average return.

Banco Votorantim's FI funds dominate the group of best performers. Top five FI funds have an average monthly performance of 2.5%. The five worst performers had an average monthly performance of -0.7%. The vast majority of top and bottom quintile players are private credit funds.

4.1 Negative market timing puzzle

Some studies suggest that the existence of negative market timing can be explained by the existence of asymmetric correlation, establishing that asset correlations are less strong in bull markets than in bear markets. Matallín et al (2009) argue "it does not seem likely that informed managers time the market in precisely the opposite way". Some of the literature explanations they mention are summarized in Table 2. Some authors argue that unconditional models or higher frequency data would solve the problem. Others argue that negative market timing coefficients are verified in practice due to nonlinearity of payoff structure of options and option-like securities. Fixed income securities, however, do not seem to fall under these explanations.

4.2 Robustness Checks

In order to check whether economic conditions account for the lack of timing abilities, we also ran market-timing regressions for a sub-sample from 2012 to 2016. Results remain unchanged. It is interesting to note that when IMA-B rates jumped, funds did not seem to anticipate the movement, which reinforces our evidences of no market timing ability and can be seen on Graph 2. In order to check if style analysis is robust, equations (2) and (3) were ran for the sub-period January 2014 to April 2016, which goes from reelection of President Dilma Rousseff to right before the Senate's Impeachment Vote. Even during a period of significant economic and political turbulence, style analysis remains unchanged.

5. CONCLUDING REMARKS

Our results demonstrate that, as an industry, managers delivered inferior returns than the market. Findings remain unchanged when only sub-periods of the sample are used. Style Analysis, on the other hand, demonstrates that funds are adequately classified. Our suggestions for further analysis include the study of what are the determinant factors for market timing ability.

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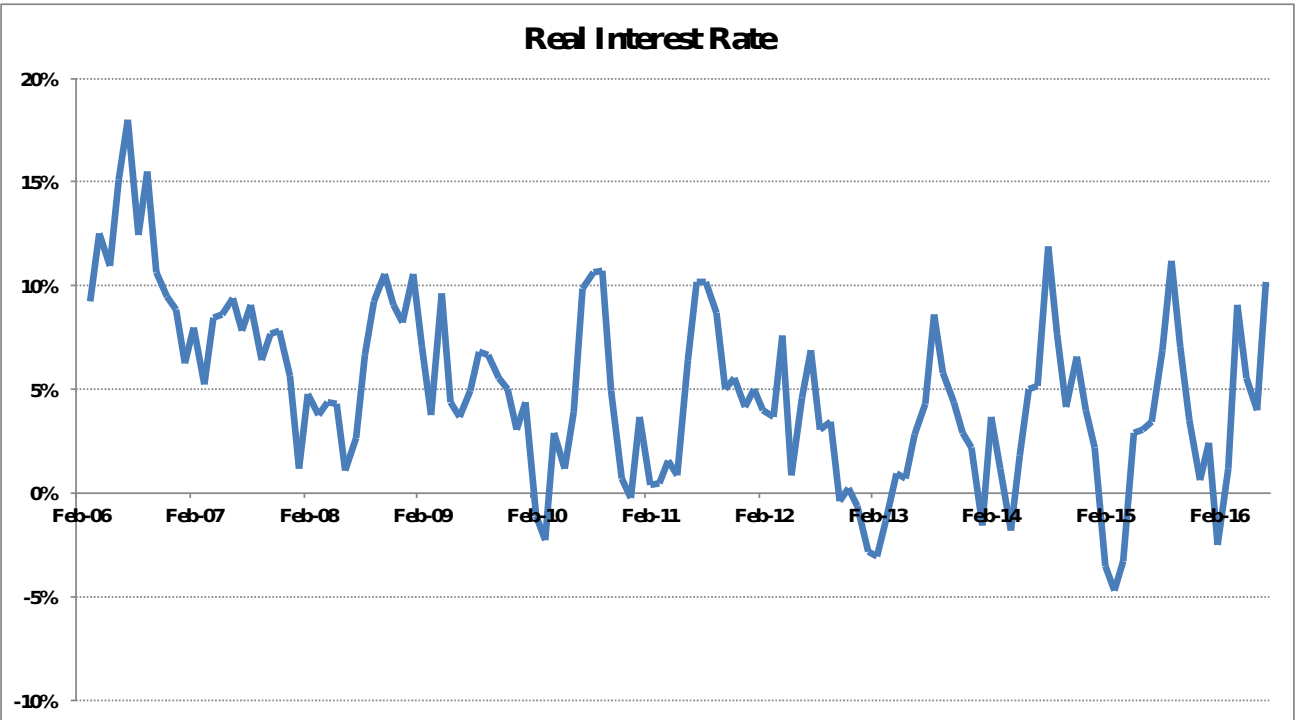
9. TABLES AND FIGURES

Table 1: Top five capital raising instruments in Brazil, as of May 2016

Capital raising instrument	Amount (in billion reais)
Debentures	778
DI – Inter financial Deposits	528
CDB – Bank deposit certificate	520
Letra Financeira	415
LCI	188

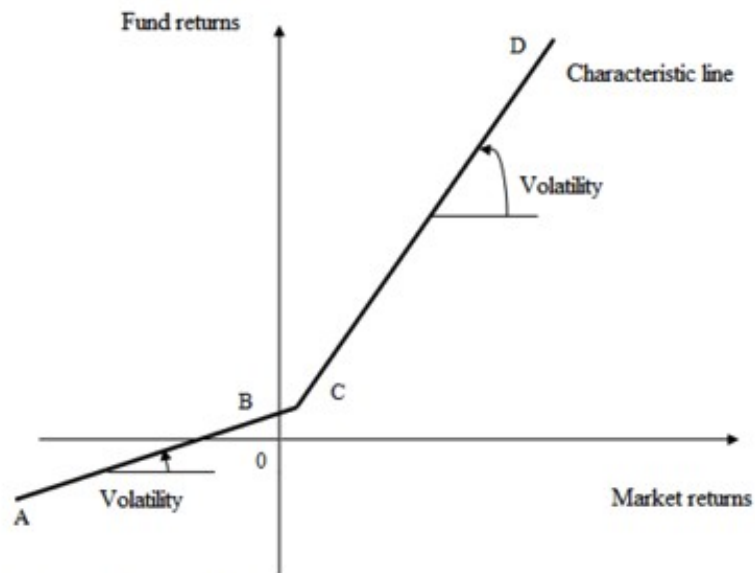
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Graph 1: Average real interest rates (yearly basis)



Source: BCB, IBGE

Figure 1: Market timing and the characteristic line



Source: Treynor and Mazuy (1966)

Figure 2: Market timing – TM results

VARIABLES	(1) RegTM	(2) RegTM-Cluster
IMAB		
IMAC		
IMAS		
IRFM		
IDA		
SELIC		
x	0.141*** (0.0258)	0.141*** (0.0290)
x2	-3.696** (1.743)	-3.696*** (1.198)
DI_Adj		
Constant	0.00812 (0.00647)	0.00812 (0.00647)
Observations	14,463	14,463
Number of fund_id	323	323
Standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Figures 3, 4, 5 and 6 – Style Analysis

Style Analysis			Style Analysis		
VARIABLES	(3) RegSA	(4) RegSA-DI	VARIABLES	(3) RegSA	(4) RegSA-DI
IMAB	0.0471*** (0.0162)	0.0460*** (0.0162)	IMAB	0.0471*** (0.0162)	0.0460*** (0.0162)
IMAC	0.00242 (0.0110)	0.00211 (0.0110)	IMAC	0.00242 (0.0110)	0.00211 (0.0110)
IMAS	0.727*** (0.198)		IMAS	0.727*** (0.198)	
IRFM	-0.0273 (0.0205)	-0.0297 (0.0205)	IRFM	-0.0273 (0.0205)	-0.0297 (0.0205)
IDA	0.240*** (0.0450)	0.248*** (0.0445)	IDA	0.240*** (0.0450)	0.248*** (0.0445)
SELIC	-0.0690 (0.180)	-0.116 (0.192)	SELIC	-0.0690 (0.180)	-0.116 (0.192)
x			x		
x2			x2		
DI_Adj		0.763*** (0.208)	DI_Adj		0.763*** (0.208)
Constant	0.00789 (0.00653)	0.00825 (0.00653)	Constant	0.00789 (0.00653)	0.00825 (0.00653)
Observations	10,649	10,649	Observations	10,649	10,649
Number of fund_id	323	323	Number of fund_id	323	323
Standard errors in parentheses			Standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1			*** p<0.01, ** p<0.05, * p<0.1		

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IMAB	.0439273	.0161018	2.73	0.006	.0123682	.0754863
IMAC	.0020727	.0109763	0.19	0.850	-.0194404	.0235858
DI_Adj	.837315	.1992878	4.20	0.000	.4467182	1.227912
IRFM	-.0288694	.0204446	-1.41	0.158	-.06894	.0112013
IDA	.2575493	.0438209	5.88	0.000	.1716619	.3434367
SELIC	-.111995	.1924173	-0.58	0.561	-.489126	.2651361
_cons	.0074607	.0065003	1.15	0.251	-.0052796	.020201

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IMAB	.0453745	.0161536	2.81	0.005	.013714	.077035
IMAC	.0023914	.0109705	0.22	0.827	-.0191103	.0238931
IMAS	.7966472	.1878477	4.24	0.000	.4284725	1.164822
IRFM	-.0263124	.0204511	-1.29	0.198	-.0663959	.0137711
IDA	.2476396	.0444917	5.57	0.000	.1604376	.3348416
SELIC	-.0657402	.1800241	-0.37	0.715	-.4185811	.2871006
_cons	.0071434	.006497	1.10	0.272	-.0055904	.0198773

Table 2: Explanations for the negative market timing puzzle and suggested improvements

Authors	Rationale
Ferson and Warther (1996) and Ferson and Schadt (1996)	Traditional measures of market timing are based on unconditional models. Conditional approach would avoid the puzzle.
Warther (1995), Ferson and Warther (1996), and Edelen (1999)	Investors' inflows anticipate upward markets, so if managers do not allocate these funds, cash holdings increase, which generates negative market timing.
Bollen and Busse (2001)	Higher frequency data (daily) would help in not finding negative coefficients.
Jagannathan and Korajczyk (1986)	Negative market timing exists due to the asymmetry of the fund's holding assets. Payoff structure of options and option-like securities is nonlinear.
Matallín-Sáez (2006)	A benchmark that proxies small caps should be included, in order to avoid the negative bias caused by omitting relevant benchmarks.

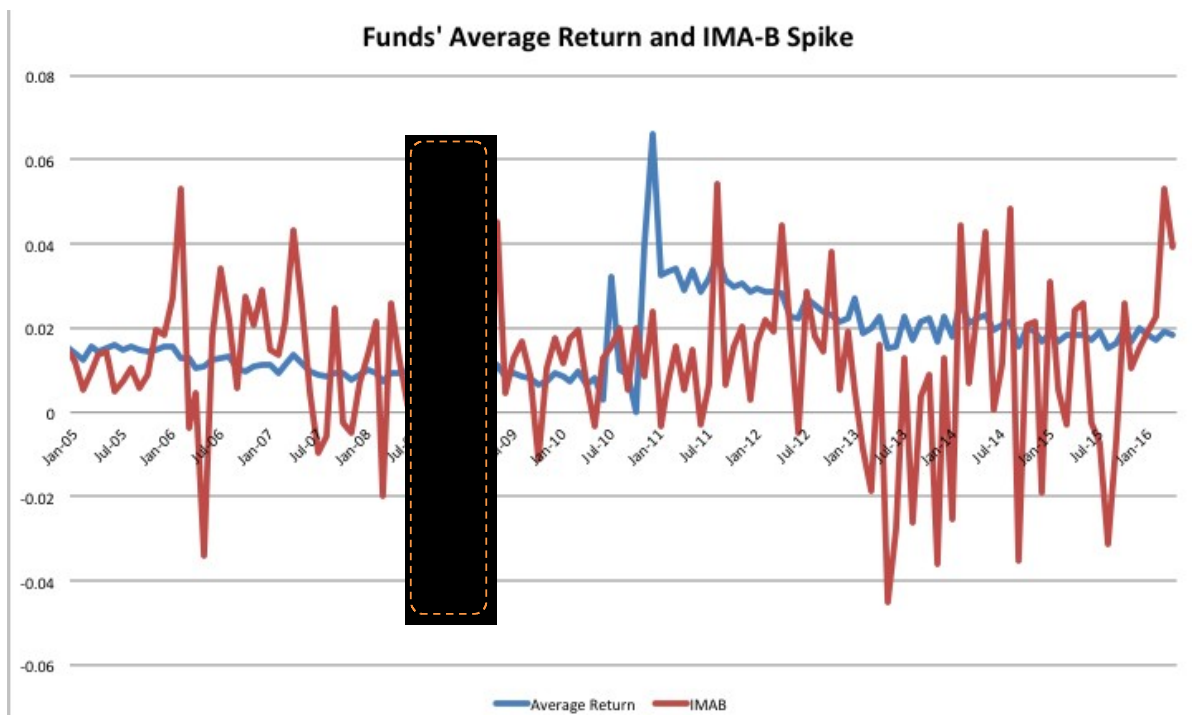
Source: Elaborated by authors

Figure 7: TM Robustness Check**Robustness Check: Market Timing**

	(1)	(2)
VARIABLES	RegTM-RC-StAn	RegTM-Cluster-RC-StAn
IMAB		
IMAC		
IMAS		
IRFM		
IDA		
SELIC		
x	0.120*** (0.00793)	0.120*** (0.0251)
x2	-2.331*** (0.571)	-2.331*** (0.692)
DI_Adj		
Constant	0.00778 (0.00647)	0.00778 (0.00645)
Observations	7,161	7,161
Number of fund i	323	323

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Graph 2: IMA-B spike and market timing ability



Figures 8, 9 and 10 – SA robustness check

Constrained coefficients						
	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IMAB	.0445985	.0183846	2.43	0.015	.0085653	.0806316
IMAC	-.0067246	.0138111	-0.49	0.626	-.0337938	.0203445
IMAS	.8204916	.1740068	4.72	0.000	.4794445	1.161539
IRFM	-.0089961	.0165794	-0.54	0.587	-.0414911	.023499
IDA	.215358	.0353159	6.10	0.000	.1461401	.284576
SELIC	-.0647274	.1704359	-0.38	0.704	-.3987755	.2693208
_cons	.0071689	.0065044	1.10	0.270	-.0055795	.0199174

Constrained coefficients

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
IMAB	.0435384	.0183852	2.37	0.018	.0075041	.0795726
IMAC	-.0078675	.0137922	-0.57	0.568	-.0348998	.0191647
DI_Adj	.757152	.1695423	4.47	0.000	.4248552	1.089449
IRFM	-.0136256	.0165732	-0.82	0.411	-.0461085	.0188574
IDA	.2295753	.0346895	6.62	0.000	.1615851	.2975655
SELIC	-.0087725	.1673107	-0.05	0.958	-.3366955	.3191504
_cons	.0073527	.0065058	1.13	0.258	-.0053984	.0201038

Robustness Check: Style Analysis

		(3)	(4)
VARIABLES		RegSA-RC-StAn	RegSA-DI-RC-StAn
IMAB	f311	1.22%	403970 Votorantim If 095 RF FI Cred Priv
	f278	1.24%	381152 Votorantim If 062 RF FI Cred Priv
IMAC	f277	1.24%	381144 Votorantim If 061 RF FI Cred Priv
	f281	1.24%	381187 Votorantim If 065 RF FI Cred Priv
IMAS	f279	1.24%	381160 Votorantim If 063 RF FI Cred Priv
	f282	1.24%	381195 Votorantim If 066 RF FI Cred Priv
IRFM	f280	1.24%	381179 Votorantim If 064 RF FI Cred Priv
	f285	1.24%	381225 Votorantim If 069 RF FI Cred Priv
IDA	f286	1.24%	381233 Votorantim If 070 RF FI Cred Priv
	f283	1.24%	381209 Votorantim If 067 RF FI Cred Priv
SELIC	f284	1.24%	381217 Votorantim If 068 RF FI Cred Priv
	f271	1.24%	381081 Votorantim If 055 RF FI Cred Priv
x	f270	1.24%	381071 Votorantim If 054 RF FI Cred Priv
	f274	1.24%	381111 Votorantim If 058 RF FI Cred Priv
x2	f273	1.24%	381101 Votorantim If 057 RF FI Cred Priv
	f272	1.24%	381098 Votorantim If 056 RF FI Cred Priv
DI_Adj	f268	1.24%	381055 Votorantim If 052 RF FI Cred Priv
	f267	1.24%	381047 Votorantim If 051 RF FI Cred Priv
Constan	f275	1.24%	381128 Votorantim If 059 RF FI Cred Priv
	f276	1.24%	381136 Votorantim If 060 RF FI Cred Priv
Observa	f269	1.24%	381063 Votorantim If 053 RF FI Cred Priv
	f59	1.24%	356621 CSHG As 7 7 FI RF Infra Cred Priv
Number	f19	1.25%	403644 Bosch Brasil Alm II FI RF
	f64	1.26%	383929 CSHG Omega Infra FI RF Cred Priv
Standar	f325	1.27%	406821 Votorantim If 109 RF FI Cred Priv
	f326	1.27%	406813 Votorantim If 110 RF FI Cred Priv
*** p<(f317	1.27%	406856 Votorantim If 101 RF FI Cred Priv
	f323	1.27%	406848 Votorantim If 107 RF FI Cred Priv
	f321	1.27%	406872 Votorantim If 105 RF FI Cred Priv
	f322	1.27%	406864 Votorantim If 106 RF FI Cred Priv
	f324	1.27%	406831 Votorantim If 108 RF FI Cred Priv
	f320	1.27%	406880 Votorantim If 104 RF FI Cred Priv
	f318	1.27%	406791 Votorantim If 102 RF FI Cred Priv
	f319	1.27%	406805 Votorantim If 103 RF FI Cred Priv
	f61	1.27%	360066 CSHG Infra 392 FI RF Infra Cred Priv
	f82	1.28%	142492 FI Minuano RF
	f292	1.28%	388823 Votorantim If 076 RF FI Cred Priv
	f293	1.28%	388777 Votorantim If 077 RF FI Cred Priv
Multicol	f296	1.28%	388750 Votorantim If 080 RF FI Cred Priv
	f295	1.28%	388866 Votorantim If 079 RF FI Cred Priv
VIF resu	f294	1.28%	388785 Votorantim If 078 RF FI Cred Priv
	f289	1.28%	388807 Votorantim If 073 RF FI Cred Priv
correlate	f291	1.28%	388815 Votorantim If 075 RF FI Cred Priv
	f290	1.28%	388769 Votorantim If 074 RF FI Cred Priv
results.	f288	1.28%	388793 Votorantim If 072 RF FI Cred Priv
	f287	1.28%	388831 Votorantim If 071 RF FI Cred Priv
	f191	1.29%	383368 Sicoob Institucional FI RF Cred. Priv.
	f297	1.29%	390917 Votorantim If 081 RF FI Cred Priv
	f298	1.29%	390933 Votorantim If 082 RF FI Cred Priv
	f303	1.29%	390781 Votorantim If 087 RF FI Cred Priv
	f304	1.29%	390828 Votorantim If 088 RF FI Cred Priv
	f302	1.29%	390771 Votorantim If 086 RF FI Cred Priv
	f300	1.29%	390844 Votorantim If 084 RF FI Cred Priv
	f299	1.29%	390801 Votorantim If 083 RF FI Cred Priv
	f301	1.29%	390763 Votorantim If 085 RF FI Cred Priv
	f305	1.29%	390836 Votorantim If 089 RF FI Cred Priv
	f306	1.29%	390852 Votorantim If 090 RF FI Cred Priv
	f188	1.29%	384917 Select FI RF Cred Priv
	f172	1.32%	381373 Petra Cap Estr II M Cred Priv FI RF LP
	f147	1.32%	388386 Maua Synta FI RF LP
	f132	1.33%	361550 Itau Verso B RF FI
	f100	1.41%	407811 Furf Cred Priv Absolute IV
	f99	1.42%	403695 Furf Cred Priv Absolute III
	f110	1.49%	382329 Gap Nexcare FI RF Cred Priv
	f109	1.50%	383465 Gap Miringuava FI RF Cred Priv
	f22	3.60%	259081 Bozano Rendimento RF FI LP
	f7	4.53%	168459 Anchor FI RF

use of a group of indexes that
 ve a significant impact in our

R-
 Squared

0.8887
 0.7757
 0.9130
 0.7304
 0.7489
 0.9105

f86	-1.87%	270830	FI RF Cred Priv Portfolio Master I
f92	-1.25%	213853	FI Security RF LP Cred Priv
f108	-0.24%	332925	Gap FI RF Cred Priv Imobiliario
f78	-0.13%	314412	FI Diferencial RF LP
f128	-0.12%	271594	Institucional Cred Priv FI RF
f16	0.30%	380261	BB Top RF Cred Priv Alto Rendimento 2 LP
f76	0.40%	354597	FI Catania RF LP
f139	0.41%	299081	Leme Ima B FI RF Prev
f207	0.44%	230332	Urca FI RF Cred Priv Previ
f148	0.47%	262617	Mb FIF RF Ans Cred Priv
f44	0.49%	137782	BRZ Credito Priv FI Mult
f119	0.57%	314587	Icatu Vang Protecao Real FI RF Cred Priv
f142	0.61%	291307	Lmx Ima B FI RF
f140	0.62%	288535	Leme Jurere RF FI LP
f72	0.69%	287415	F III FI RF Cred Priv
f200	0.72%	279137	Totem FI RF II
f90	0.73%	407909	FI RF Petros Cred Priv Recupera
f182	0.74%	287687	Rp FI RF de Cred Priv
f150	0.76%	150533	Microfin FI RF Cred Priv LP
f197	0.76%	328146	Ti Ld Icatu Vanguarda Cred Priv FI RF
f95	0.79%	392448	FI Vot Abs Corp Bonds II RF Cred Priv
f17	0.79%	222852	BNB FI RF Cred Priv Nordeste 100
f138	0.80%	218413	Leme Brasprev FI RF LP Prev Cred Priv
f107	0.81%	313084	Galt Icatu Vanguarda FI RF Cred Priv
f193	0.81%	299618	Silver Db Plan FI RF Prev
f175	0.83%	299601	Quartz Dc Plan FI RF Prev
f52	0.83%	235784	Caixa FI Xvi RF Cred Priv LP
f11	0.83%	246476	Banrisul Soberano FI RF LP
f62	0.84%	244546	CSHG Master RF FI Prev
f180	0.84%	247596	RF Concessoes Brasil I FI Cred Priv
f159	0.84%	302521	More RF Ativo Cred Priv FI
f65	0.84%	177466	CSHG Soberano FI RF
f136	0.84%	253261	Jpm Sovereign Master FI Ref DI
f97	0.84%	317306	Fibra Fundo Invest Premium RF Cred Priv
f154	0.85%	300217	Modal Raptor FI Ref DI LP
f68	0.85%	299626	Emerald Db Plan Furf Cred Priv Previden
f9	0.85%	150071	Bancoob Centralizacao RF Cred Priv
f29	0.85%	223107	Bradesco FI RF Cred Priv Uniprime
f186	0.86%	207179	Santander FI Cordoba RF Cred Priv
f43	0.86%	245062	Brasil Plural Yield FI Ref DI
f5	0.86%	266914	Alfa Empresa FI RF
f25	0.87%	209821	Brad FI RF Cred Priv Vr
f60	0.87%	195413	CSHG Estrategia RF FI RF LP
f47	0.87%	271934	Buriti FI RF Cred Priv
f67	0.87%	197068	Delfos Cred Priv RF FI
f160	0.87%	330329	Multinvest Capital Cred Priv Furf
f112	0.87%	249963	Gap Reacao FI RF
f143	0.87%	317012	Maam FI RF Cred Priv LP
f4	0.87%	215716	Alfa Cred Priv FI RF Cred Priv IQ
f201	0.87%	340146	Touareg FI RF Prev
f79	0.87%	291722	FI Frater RF Cred Priv
f127	0.87%	202460	Imarui Cred Priv RF FI