Empirical Research Partners

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Portfolio Strategy June 2013

Interest Rate Follies

The Bell Tolls, For Whom?

- The Fed signaled that monetary policy is going to become less accommodative setting off a true bear market in bonds. In the last year the losses taken at the long end of the curve have been among the worst in a century, yet unlike during most of the precedents the S&P 500 is up, by more than +20% no less. Perhaps it's turned out that way because the real earnings and cash flow yields started out high and remain that way. The equity market's resilience may also have something to do with the sensitivity of the economy to interest rates or lack thereof.
- We'd expect the rate sensitivity of the system to be greatest after a credit boom, when lots of people have availed themselves of cheap money. In the last few years the price of credit was low but so too was the volume of private-sector borrowing. It amounted to just 4% of GDP, less than half the average of the prior five decades and a quarter the peak level. Mortgages funded under half the value of home purchases, compared to almost 80% during the boom years. Many homeowners simply couldn't access the mortgage market, and at the beginning of this year the average rate they were paying was a record +150 basis points above the marginal one. Even after the latest back-up in yields that gap remains +50 basis points. In the formerly-hot market states cash buyers account for nearly half the activity and rental yields remain compelling. So does affordability. The risk isn't a credit bust, it's disillusioned bond investors.
- In the last 4½ years retail investors have poured $1.3 *trillion* into bond funds and ETFs, and the bulk of that came in when Ten-Year Treasuries offered less than 3%. Closed-end funds, a relatively small portion of the asset base often use leverage, and ETFs, that promise liquidity, have assets of around $250 billion. We generally don't believe that analyzing fund flows is a useful activity, but given the enormous sums involved and the clients' expectations for stability, the dawning disillusionment could play out over years, in fits and starts.

Conclusion: Capitalizing on the Dip

- Stable, higher-dividend yielding issues have done poorly in the past couple of months, and utilities have been the worst-performing sector. Even now, stable yield still looks to us decidedly overvalued. Even as it repudiated dividend yield the market has continued to reward companies offering higher free cash flow yields, particularly if they were returning lots of capital to shareholders. The game of shortening the duration of equities, thereby reducing the cash flow at the discretion of managements, has much longer to run.
- We're trying to capitalize on the dip and buy anti-bond market plays, with financials, technology and energy sectors all offering opportunities. Appendices 1 and 2 highlight large- and small-cap issues that stand out in both our core and trading models, while Appendix 3 presents attractive financial issues, of which there are still many.

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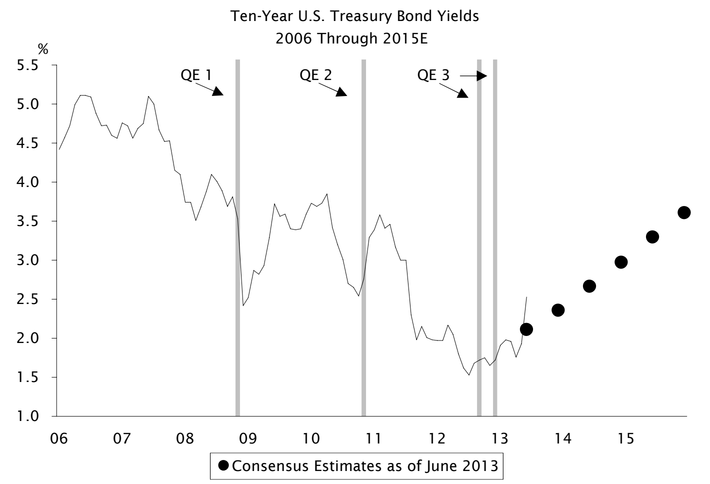
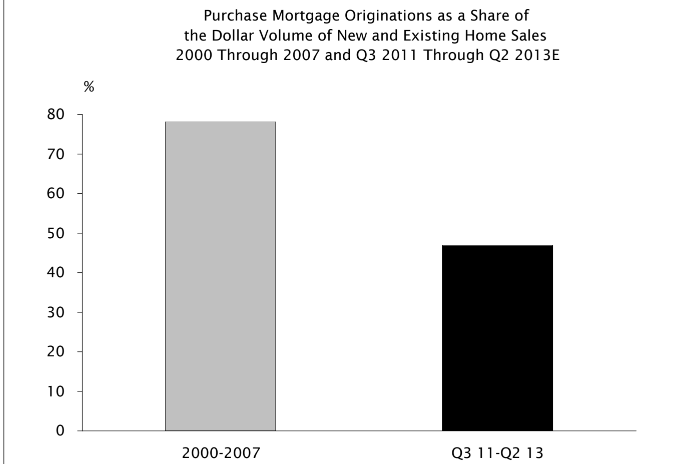
Conclusions in Brief

- The bull market in bonds is over…



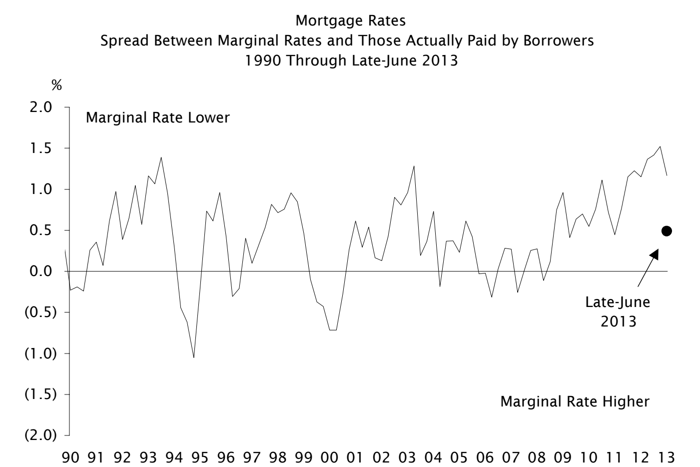
Source: Federal Reserve Board, *Wall Street Journal*, Empirical Research Partners Analysis.

- …And fortunately, low rates haven't been a big part of the story for the economy…



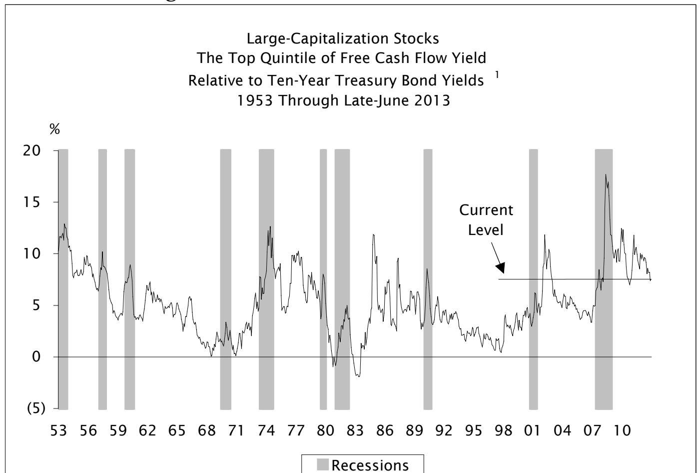
Source: Mortgage Bankers Association, National Association of Realtors, Census Bureau.

- …As many borrowers couldn't access them:



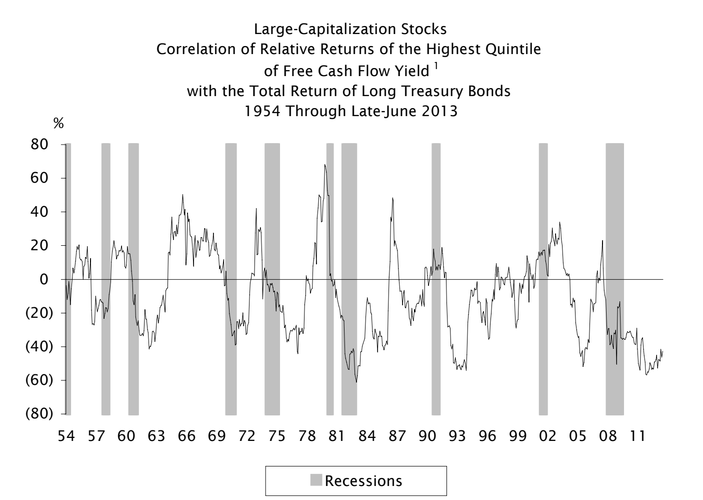
Source: U.S. Department of Commerce, Federal Reserve Board, Federal Home Loan Mortgage Association.

- The argument for emphasizing high-free cash flow yield remains strong…



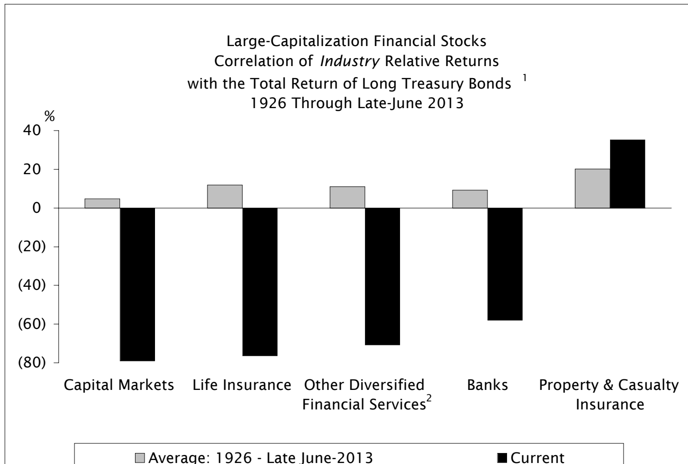
Source: Federal Reserve Board, Corporate Reports, Empirical Research Partners Analysis.
[1] Large-capitalization stocks exclude financial and utilities; equally-weighted data.

- …And the performance of those stocks has been anti-correlated with that of bonds…



Source: Empirical Research Partners Analysis.
[1] Constructed using trailing two-year, capitalization-weighted returns.

- …As has that of most large-cap financial stocks:



Source: Federal Reserve Board, Empirical Research Partners Analysis.
[1] Constructed using trailing two-year, capitalization-weighted returns. Start date varies.
[2] Comprised of J.P. Morgan and Bank of America.

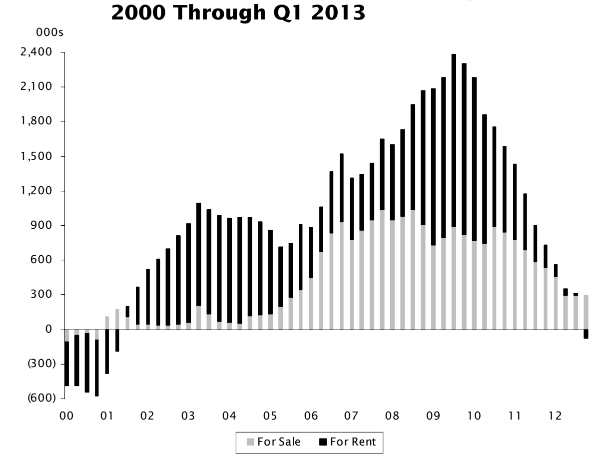
The Bells Tolls: For Whom?

Legitimacy, the End Game

There are two opposing views of what's gone on in financial markets in the last 4½ years. One camp believes that central bank activism inflated asset prices, of both financial and real varieties, by acting as the buyer of last resort. That drug of course proved addictive and there are a lot of users around. As they're weaned off it the grim reality of the situation will sink in. Proponents of this view wield charts that show that the financial markets have responded positively as the Fed and its brethren central banks repeatedly upped the dosage.

The other camp asserts that all of this has been about buying time, and the fundamental problem was that almost 2.5 million too many single-family homes were built, using cheap money (see Exhibit 1). They represented 2% of the stock outstanding, a sizeable overhang. The depressed marks on housing vanished once the effects of distressed sales dissipated, and in some places the recovery has been the mirror image of the collapse (see Exhibit 2). As home equity has gradually been restored, making collateral once again available, the engine of job growth, new businesses, has come back to life (see Exhibit 3). Job openings in real estate, finance and an array of related consumer cyclical industries have also rebounded (see Exhibit 4). In the end the application of Will proved successful, and animal spirits, the lifeblood of capitalism, were resuscitated. We've long been in that camp.

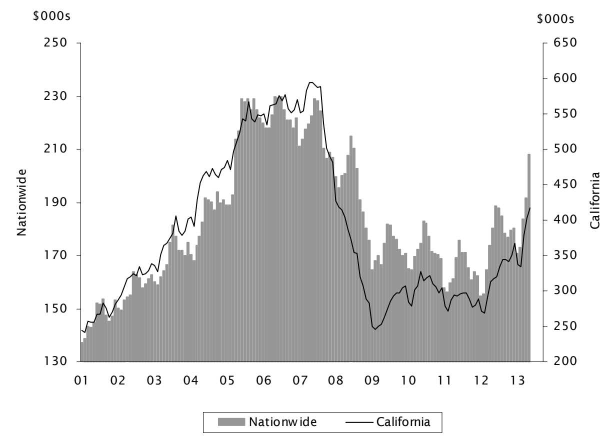
Exhibit 1: Number of Vacant Homes Relative to the Long-Term Average[1] 2000 Through Q1 2013



Source: Census Bureau, Empirical Research Partners Analysis.

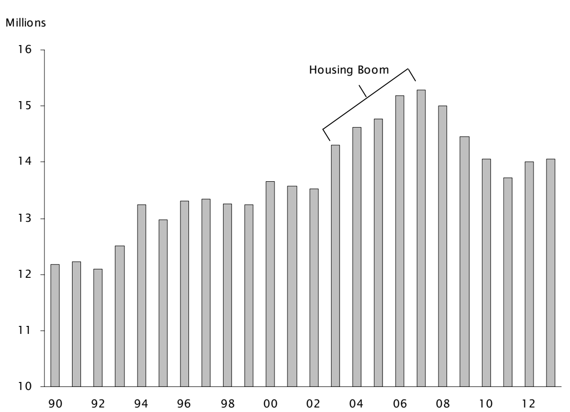
[1]Based on average rental and homeowner vacancy rates from 1994 to 2003.

Exhibit 2: Nationwide and California Existing Home Sales: Median Prices 2001 Through May 2013



Source: National Association of Realtors, California Association of Realtors, Empirical Research Partners Analysis.

Exhibit 3: The U.S. Number of Self-Employed Workers 1990 Through May 2013



Source: Bureau of Labor Statistics, Empirical Research Partners Analysis.

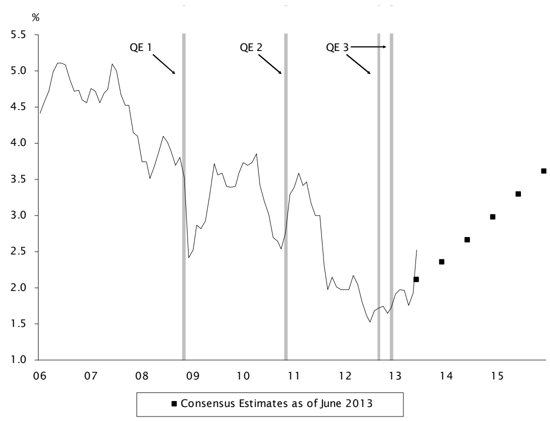
Exhibit 4: Job Openings FIRE, Retailers, Restaurants and Hotels[1] 2000 Through April 2013

Source: Bureau of Labor Statistics.

[1]FIRE is finance, insurance and real estate. Data smoothed on a trailing three-month basis.

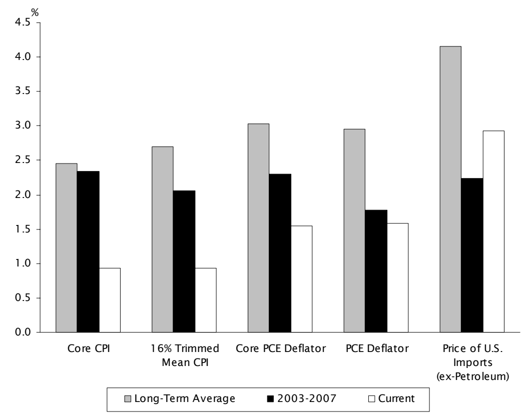
The back-up in interest rates constitutes a legitimate challenge to the positions held by those in the second camp like ourselves. The market was surprised by the optimism seen in the Fed's unemployment forecasts as well as its seemingly laissez-faire attitude toward disinflation. It was unmoved by the nuance of the Central Bank's story and it came to the conclusion that the bell had tolled and a decisive turn in monetary policy was in the cards. The +90 basis point rise in ten-year Treasury yields that's occurred since the outset of May is at the high end of the range we saw as plausible (in such a short period of time). Still, the trajectory of rates isn't far off the longer-term consensus expectation, represented by the black dots in Exhibit 5. It's the slope that's scary. Real yields are once again positive yet remain a hundred or so basis points below what might be considered normal (see Exhibit 6). As shown in the bars at the right hand side of the chart, that's least true when the disinflationary impulse imported from the rest of the world is taken into account. Of course we started off with a term premium that was decidedly negative.

Exhibit 5: Ten-Year U.S. Treasury Bond Yields 2006 Through 2015E



Source: Federal Reserve Board, *Wall Street Journal*, Empirical Research Partners Analysis.

Exhibit 6: Real Ten-Year U.S. Treasury Bond Yields[1] Using Various Deflators 1952 Through Late-June 2013



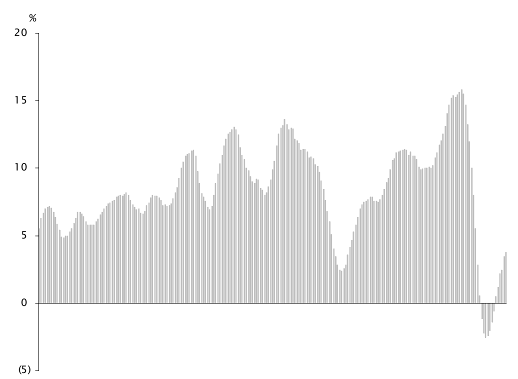
Source: Federal Reserve Board, Federal Reserve Bank of Cleveland, Bureau of Economic Analysis.

[1]Since 1952 for Core CPI (overall CPI used prior to 1958), since 1969 for trimmed, since 1960 for PCE.

The Interest Rate Sensitivity of the Economy: Less Than Before

We believe that the interest rate sensitivity of the economy is today less than normal. In the post-Crisis period credit creation has played a much smaller role in growth than it had in the prior five decades, and private-sector borrowing amounted to just shy of 4% of GDP (see Exhibit 7). Mortgage lending accounts for most of that shortfall, and new originations have funded less than half the value of new and existing home purchases, compared to an average of almost 80% from 2000 through 2007 (see Exhibit 8). In the formerly-hot market states, where the recovery has been most vigorous, investors have accounted for the bulk of activity, and for them, the yield backdrop remains supportive (see Exhibits 9 and 10). Affordability is still good everywhere because the troughs in the prices and rates were so extreme. Exhibits 11 and 12 present the data for Los Angeles and Boston.

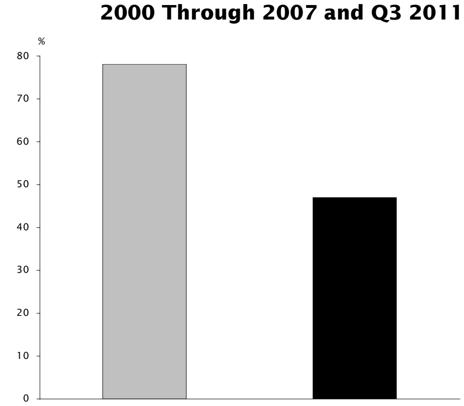
Exhibit 7: Private-Sector Borrowing Relative to GDP[1] 1955 Through Q1 2013



Source: Federal Reserve Board, Empirical Research Partners Analysis.

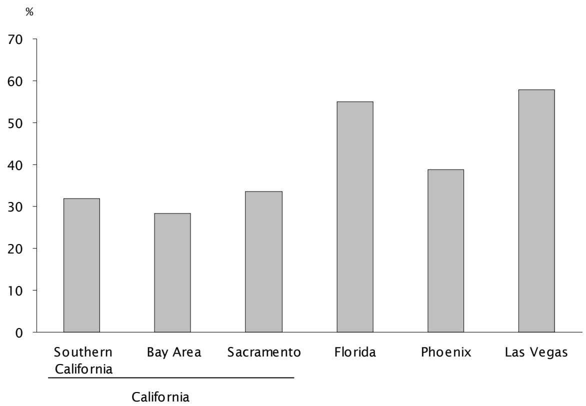
[1]Annualized quarterly data, smoothed on a trailing two-year basis.

Exhibit 8: Purchase Mortgage Originations as a Share of the Dollar Volume of New and Existing Home Sales 2000 Through 2007 and Q3 2011 Through Q2 2013E



Source: Mortgage Bankers Association, National Association of Realtors, Census Bureau.

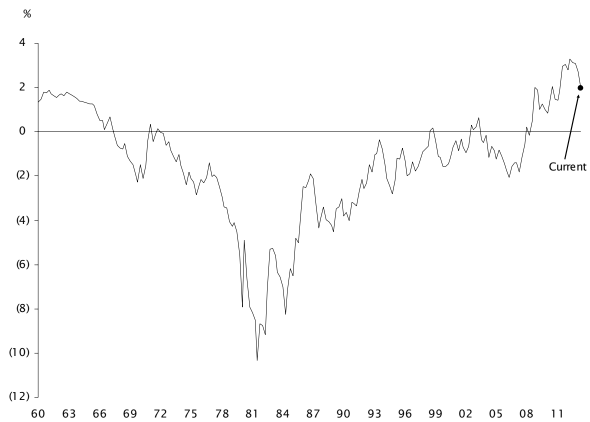
Exhibit 9: Formerly-Hot Market States
All-Cash Purchases as a Share of Existing Home Sales
April 2013[1]



Source: Economist Tom Lawler, Florida Association of Realtors, Dataquick, Empirical Research Partners Analysis.

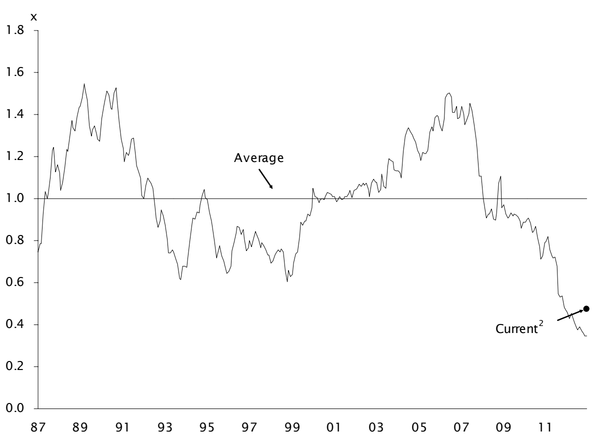
[1]Florida data as of May 2013.

Exhibit 10: Rental Yields on Residential Properties
Spread Versus Ten-Year Treasury Bond Yields
1960 Through Late-June 2013



Source: Federal Reserve Board, Empirical Research Partners Analysis.

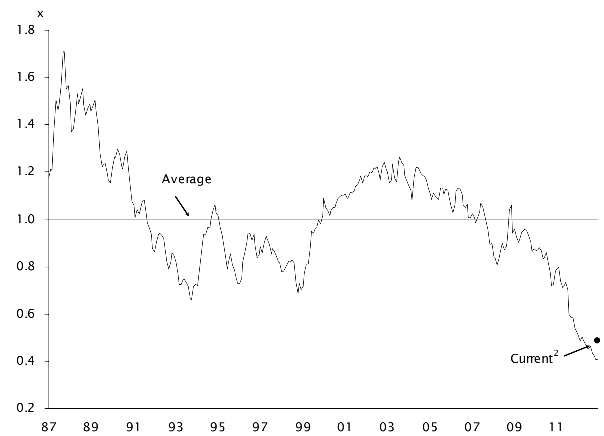
Exhibit 11: Los Angeles
All-In Cost of Homeownership[1]
Measured Relative-to-Income
1987 Through 2012



Source: Christopher Mayer at Columbia University, Empirical Research Partners Analysis.

[1]Includes the cost of maintenance and property taxes, the tax benefits from mortgage interest deductions, the risk premium required by homeowners and the risk free rate less expected home price appreciation.
[2]Assumes home price appreciation of +20% in 2013 and +2% income growth.

Exhibit 12: Boston
All-In Cost of Homeownership[1]
Measured Relative-to-Income
1987 Through 2012



Source: Christopher Mayer at Columbia University, Empirical Research Partners Analysis.

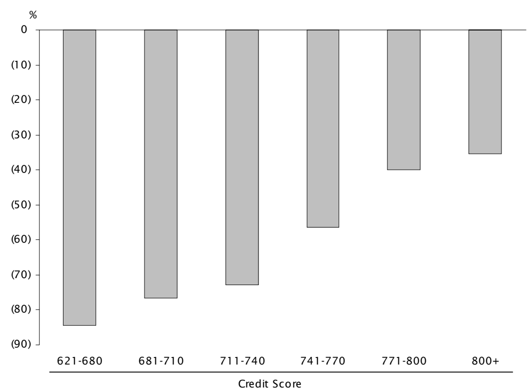
[1]Includes the cost of maintenance and property taxes, the tax benefits from mortgage interest deductions, the risk premium required by homeowners and the risk free rate less expected home price appreciation.
[2]Assumes home price appreciation of +10% in 2013 and +2% income growth.

It's not only the price of credit that matters, and in recent years the availability of it has been deterministic for activity. It's been tight, and the odds of a borrower with a FICO score of 680 or below, more than a third of the population, getting a mortgage have been (85)% less than where they were during the housing boom (see Exhibit 13). Liquidity for borrowers with lower credit scores has however been gradually recovering, evidenced by increasing prepayment speeds.

What's key is that many borrowers weren't able to avail themselves of the record-low rates, and the gap between the rate they're actually paying and the marginal one peaked at a record +150 basis points at the end of last year (see Exhibit 14). Even now, after the rise in yields, it's still around +50 basis points.

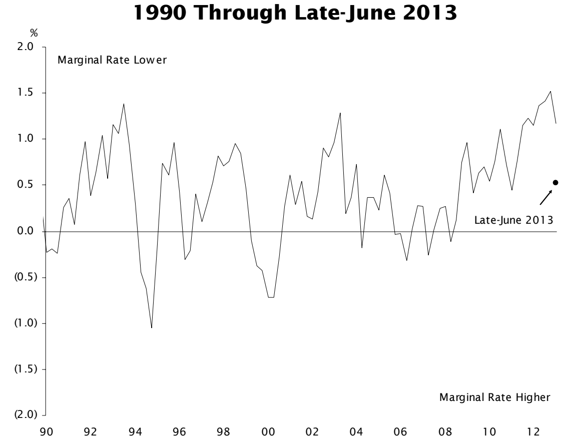
The bottom line is that the interest-rate sensitivity of the economy is generally greatest when credit has been easy, and borrowers have been able to avail themselves of it. That's far from where we've been, instead cash has been king. The excess isn't among borrowers, it's among investors. We'll now turn to their behavior.

Exhibit 13: Purchase Mortgage Originations
Change by Credit Score
February 2013 Compared to the End-of-2006



Source: Lender Processing Services, Federal Reserve Board, Empirical Research Partners Analysis.

Exhibit 14: Mortgage Rates
The Spread Between Marginal Rates and Those Actually Paid by Borrowers
1990 Through Late-June 2013

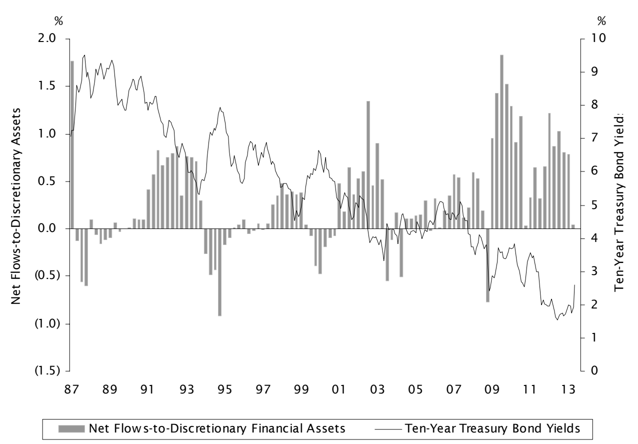


Source: U.S. Department of Commerce, Federal Reserve Board, Federal Home Loan Mortgage Association.

The Weight of Money is Large, and a Little Worrisome

While the low interest rate era didn't foster a broad-based boom in borrowing, it did create one among bond investors of many ilks. For example, since the outset of 2009, the cumulative inflows into bond mutual funds and ETFs have amounted to $1.3 trillion, and the assets of those funds now total almost $4 trillion. Over the last 4½ years consumers have reallocated 16% of the financial assets under their direct control into those vehicles (see Exhibit 15). Most of that money went in when Long Bond yields were below 3%, a scary thought. There's also a substantial sum of money, around $125 billion, in closed-end bond funds, where the use of leverage is common (see Exhibit 16). It amounts to just over a quarter of their assets, or $34 billion. That sum is dwarfed though by the leverage underlying bond positions in hedge funds.

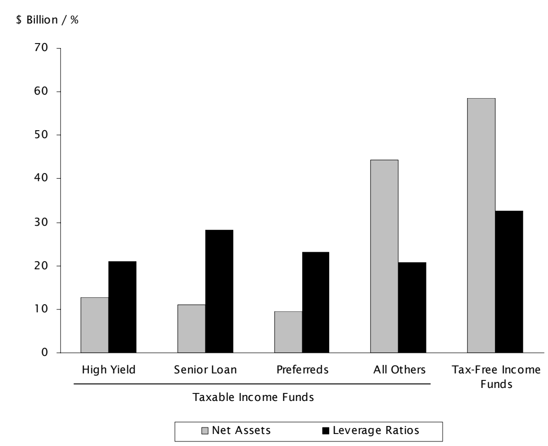
Exhibit 15: Bond Mutual Funds and ETFs[1]
Net Cash Inflow as a Share of Household's Discretionary Financial Assets at an Annual Rate and Ten-Year Treasury Bond Yields
1987 Through Mid-June 2013



Source: Investment Company Institute, Federal Reserve Board, Empirical Research Partners Analysis.

[1]ETF data begins in Q3 2002.

Exhibit 16: Domestic Closed-End Bond Funds
Net Assets and Leverage Ratios by Category
As of Mid-2013

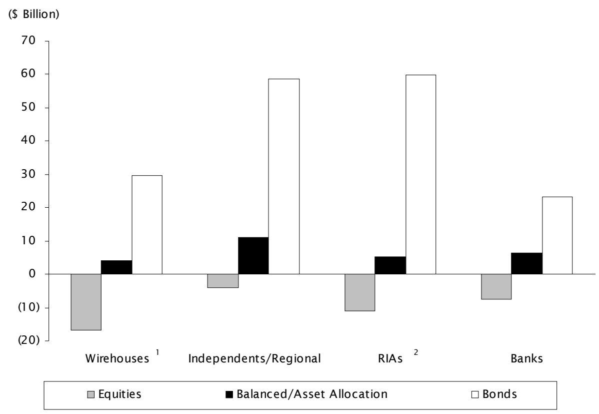


Source: Nuveen Closed End Fund Database.

Retail financial advisors have helped their clients "de-risk" their portfolios, and for years now they've been liquidating equities and shifting the proceeds into bonds (see Exhibit 17). Independent investment advisors have led the charge into bond-based ETFs, as they were drawn to their low fees, brand names and liquidity. Those tradable vehicles now have more than $250 billion in assets, up from $100 billion a few years ago. The assets of the top ten were $142 billion at the end-of-April and now they are $128 billion. The lure of liquidity has been ramped up over time as tactical asset allocation has become a bigger part of what advisors do.

As a rule we don't believe that flows of funds determine asset prices because generally the market is smarter than the participants that make it up. The behavior of the crowd can though, in certain circumstances, affect the pace of change. This could be one of those times because the asset class was seen as safe, and the run into it built on itself over a number of years. Consistent with that we expect that when the June data is available it will show record-setting outflows from these products.

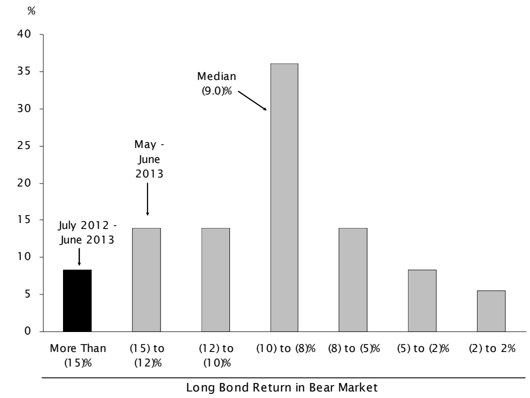
Exhibit 17: Mutual Fund Net Inflows
By Category and Distribution Channel
2012



Source: Strategic Insight Simfund.

[1]Excluding Merrill Lynch.
[2]Includes dual-registered reps.

Exhibit 18: Long-Term Treasury Bonds
Bear Market Outcomes[1]
1958 Through Late-June 2013



Source: Federal Reserve Board, Ibbotson, Bloomberg LP, Empirical Research Partners Analysis.

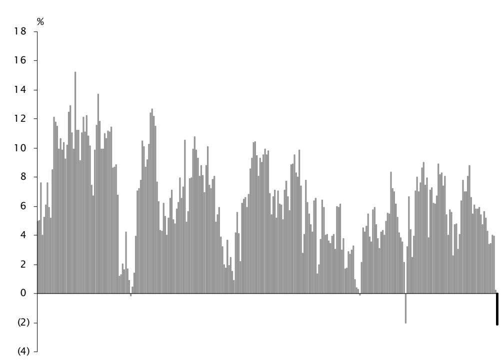
[1]There are a total of 36 observations ranging from 2 to 11 months in length. Returns are for 20-year Treasuries prior to 1973 and 30-year maturities thereafter.

Bear Markets in Bond Sell-Offs: The Empirical Evidence

Interest rates bottomed a year ago and since then the 30-year Treasury Bond has produced a total return of around (16)%. The losses on the Ten-Year are less than half as great. Even so, this will go down as one of the worst episodes for the bond market in the post-WWII era (see Exhibit 18). Even the holders of Vanguard's Total Bond Market Index Fund, the epitome of diversification, have *felt* losses lately (see Exhibit 19). That only happened once before, during the depths of the financial crisis.

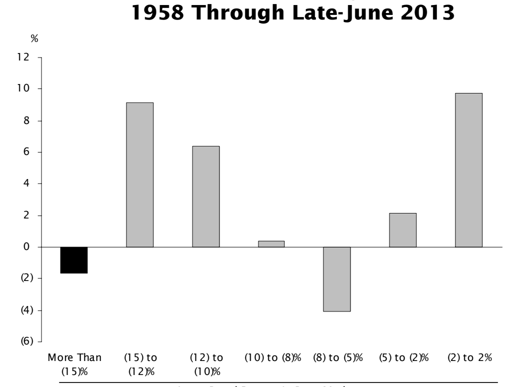
Generally equities have gone nowhere during deep bear markets in bonds (see Exhibit 20). Their performance of the last twelve months, +20%, is at odds with the precedents. We think that's because a year ago they were priced to real earnings yields of 5% and as such offered real value. That yield is now 4.6%, still a top-quartile observation. High-dividend-yielding issues generally perform worse than the market during periods of rising rates, and that's been true again this time (see Exhibit 21). Not surprisingly, equities do very well when the bear market in bonds ends (see Exhibit 22).

Exhibit 19: Bond Market *Experiential* Returns
1990 Through Late-June 2013



Source: The Vanguard Group, Empirical Research Partners Analysis.

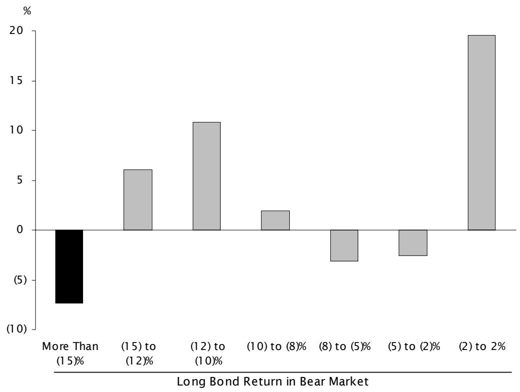
Exhibit 20: Large-Capitalization Stocks
Total Returns During Bear Markets in Bonds[1]
1958 Through Late-June 2013



Source: Federal Reserve Board, Ibbotson, Bloomberg LP, Empirical Research Partners Analysis.

[1]There are a total of 36 observations ranging from 2 to 11 months in length. Equity returns are capitalization-weighted.

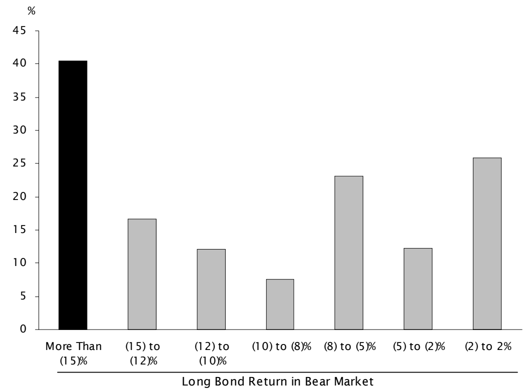
Exhibit 21: Large-Capitalization Stocks
Top Quintile of Dividend Yield
Total Returns During Bear Markets in Bonds[1]
1958 Through Late-June 2013



Source: Federal Reserve Board, Ibbotson, Bloomberg LP, Empirical Research Partners Analysis.

[1]There are a total of 36 observations ranging from 2 to 11 months in length. Returns are equally-weighted.

Exhibit 22: Large-Capitalization Stocks
Total Returns in the Year Following a
Bear Market in Bonds[1]
1958 Through Late-June 2013



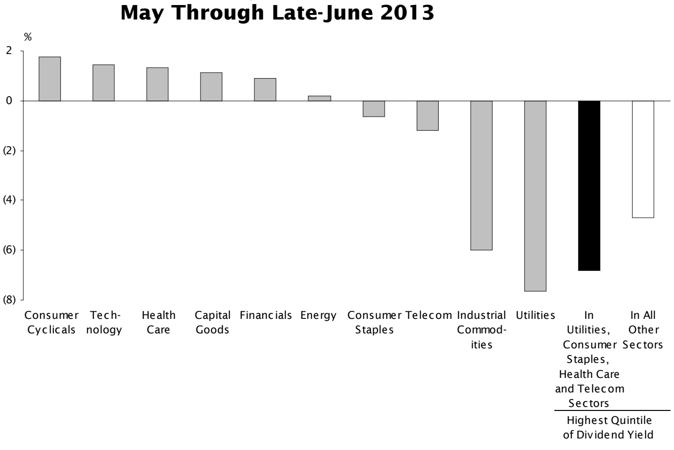
Source: Federal Reserve Board, Ibbotson, Bloomberg LP, Empirical Research Partners Analysis.

[1]There are a total of 36 observations ranging from 2 to 11 months in length. Equity returns are capitalization-weighted.

In the last two months stable, high-dividend-yielding stocks have done very poorly (see Exhibit 23). Even after that underperformance their valuation support still looks weak to us. That group's P/E premium to the market peaked at 25% last July is down to 9%, but over the long run they've sold at a (25)% *discount* to the market. There could be a long way down from here.

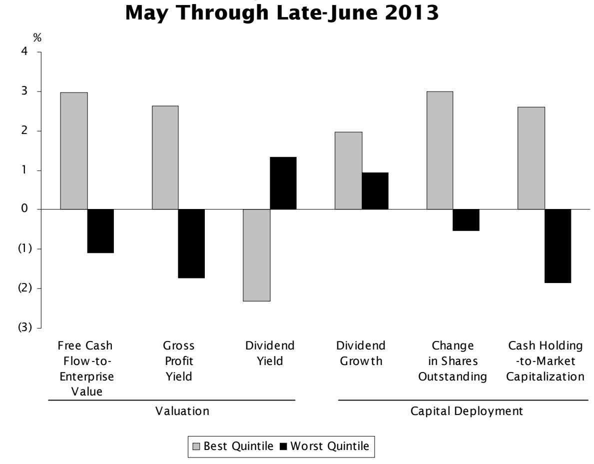
During the recent sell-off in bonds the equity market has rewarded the same attributes it had throughout the last few years: undervalued free cash flow or gross profits, and the aggregate return of capital to shareholders via either dividends or buybacks (see Exhibit 24).

Exhibit 23: Large-Capitalization Stocks
The Interest Rate Spike:
Relative Returns by Sector
Equally-Weighted Data Compounded
May Through Late-June 2013



Source: Empirical Research Partners Analysis.

Exhibit 24: Large-Capitalization Stocks
The Interest Rate Spike:
Relative Returns to Select Factors
Equally-Weighted Data Compounded
May Through Late-June 2013

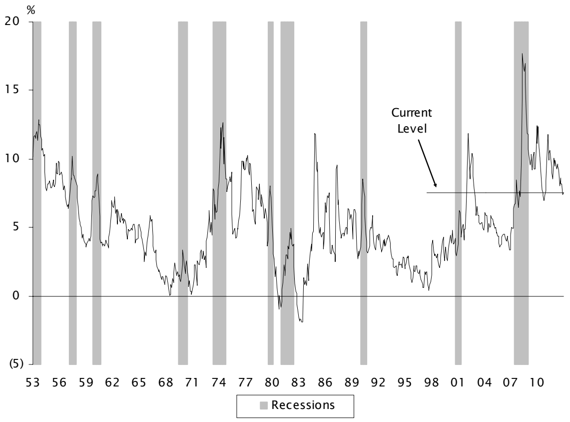


Source: Empirical Research Partners Analysis.

Conclusion: Looking to Capitalize on the Dip

What's gone on over the past couple of months has more-or-less fit in with the plot line we've had in mind for the recovery, although admittedly the recent spike in rates came in at the high-end of our expectations. The mixture of a blunt Fed, leverage and the huge sums of money that came to the party as it was winding down explain some of that trajectory. We're staying the course, looking for companies that are effectively reducing the duration of their equities by returning a significant share of their free cash flow to shareholders. The average high-free-cash-flow-yielding stock still offers 7.5 percentage points more than that of the Ten-Year Treasury Bond, consistent with where we stood back in the middle-of-2003 (see Exhibit 25). It's worth noting that the relative returns of the high-free-cash-flow-yielders have been anti-correlated with the performance of the Long Bond (see Exhibit 26).

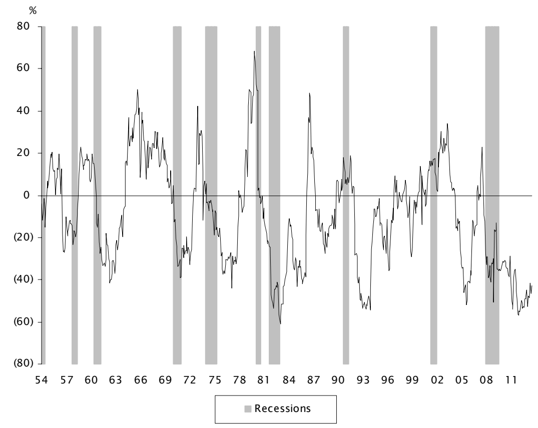
Exhibit 25: Large-Capitalization Stocks
The Top Quintile of Free Cash Flow Yield
Relative to Ten-Year Treasury Bond Yields[1]
1953 Through Late-June 2013



Source: Federal Reserve Board, Corporate Reports, Empirical Research Partners Analysis.

[1]Large-capitalization stocks excludes financial and utilities; equally-weighted data.

Exhibit 26: Large-Capitalization Stocks
Correlation of Relative Returns of the Highest Quintile of Free Cash Flow Yield[1]
with the Total Return of Long Treasury Bonds
1954 Through Late-June 2013

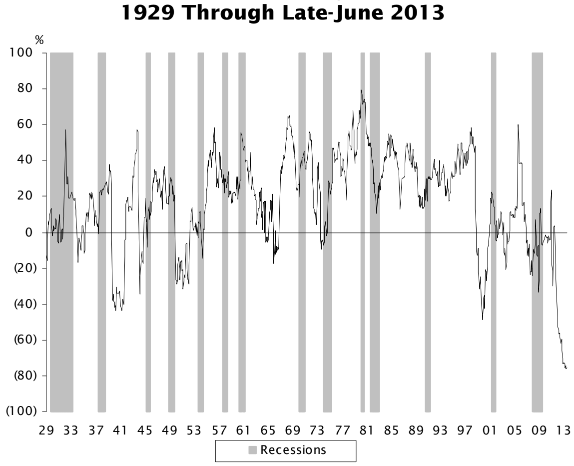


Source: Federal Reserve Board, Empirical Research Partners Analysis.

[1]Constructed using trailing two-year, capitalization-weighted returns.

The relative returns of the large-cap financial stocks have also been anti-correlated with those of the Long Bond (see Exhibit 27). The latest data point is extreme, and it speaks to the effects of quantitative easing on the system. That's been most true for capital markets firms and life insurers, the most curve-sensitive of the lot (see Exhibit 28). The life insurers have been our favorites because they have the most to gain. That said, we still have a lot of ideas in the sector.

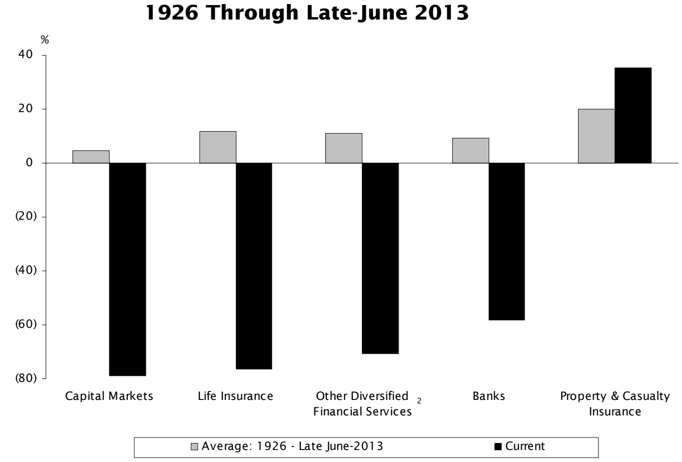
Exhibit 27: Large-Capitalization Financial Stocks
Correlation of Relative Returns with the
Total Return of Long Treasury Bonds[1]
1929 Through Late-June 2013



Source: Federal Reserve Board, Empirical Research Partners Analysis.

[1]Constructed using trailing two-year, capitalization-weighted returns.

Exhibit 28: Large-Capitalization Financial Stocks
Correlation of Relative Returns with the
Total Return of Long Treasury Bonds[1]
1926 Through Late-June 2013



Source: Federal Reserve Board, Empirical Research Partners Analysis.

[1]Constructed using trailing two-year, capitalization-weighted returns. Start date varies.
[2]Comprised of J.P. Morgan and Bank of America.

To take advantage of the correction we turned to our trading model, that identifies fundamentally-attractive issues that've underperformed their peers lately but otherwise don't have undesirable characteristics. Stocks that rank well in both our core and trading models have outperformed the market at a +9 percentage point annual rate in the recovery. Appendix 1 on page 10 presents a screen of large-cap issues that rank well on both scores and Appendix 2 on page 11 presents a small-cap version. Energy, technology and industrial commodity issues stand out. Appendix 3 on page 13 presents a list of attractive large-cap financials stocks.

Appendix 1: Large-Capitalization Stocks
Top Quintile of Trading Model and the Top Two Quintiles of Core Model
Core Model Ranking
Sorted by Sector
As of Late-June 2013

Symbol	Company	Price	Valuation	Capital Deployment	Earnings Quality and Trend	Market Reaction	Core Model Rank	Trading Model Rank	Forward P/E-Ratio		Market Capitalization ($ Billion)
			Quintile Ranks (1=Best; 5=Worst)								
			Super Factors						Memo:		
Capital Equipment											
SPW	SPX CORP	$71.25	3	1	1	3	1	1	16.4	x	$3.3
PHG	KONINKLIJKE PHILIPS ELECTRONICS -ADR	26.94	2	2	2	2	2	1	16.0		26.3
FLR	FLUOR CORP	58.61	3	1	3	3	2	1	14.4		9.5
Commercial Services											
MCO	MOODY'S CORP	$57.64	3	1	1	1	1	1	16.5	x	$12.8
Industrial Commodities											
LYB	LYONDELLBASELL INDUSTRIES NV	$65.03	2	2	2	1	1	1	10.8	x	$37.4
TCK	TECK RESOURCES LTD	20.27	1	1	2	5	1	1	10.8		11.8
CF	CF INDUSTRIES HOLDINGS INC	176.33	1	2	1	5	1	1	7.5		10.7
CE	CELANESE CORP	43.69	2	1	4	1	1	1	10.1		7.0
SEE	SEALED AIR CORP	22.80	3	1	1	1	1	1	20.2		4.5
IP	INTERNATIONAL PAPER CO	42.89	2	3	3	2	2	1	12.3		19.0
RKT	ROCK-TENN CO	99.97	2	2	5	1	2	1	13.8		7.2
ROC	ROCKWOOD HOLDINGS INC	62.09	3	2	2	1	2	1	19.3		4.8
Transports											
DAL	DELTA AIR LINES INC	$17.36	2	2	5	1	1	1	7.0	x	$14.9
UNP	UNION PACIFIC CORP	149.34	3	2	2	3	2	1	15.9		69.8
CNI	CANADIAN NATIONAL RAILWAY CO	93.98	3	2	2	4	2	1	NM		39.9
EXPD	EXPEDITORS INTERNATIONAL WASH INC	36.71	4	1	3	4	2	1	20.9		7.6
Technology											
CSCO	CISCO SYSTEMS INC	$24.06	2	1	3	3	1	1	11.8	x	$127.9
INTC	INTEL CORP	23.58	1	3	1	4	1	1	12.8		116.7
TSM	TAIWAN SEMICONDUCTOR MFG CO	16.93	4	5	1	1	1	1	14.0		87.8
HPQ	HEWLETT-PACKARD CO	23.43	1	3	3	1	1	1	6.9		45.1
GLW	CORNING INC	13.96	1	1	4	2	1	1	10.9		20.6
ATVI	ACTIVISION BLIZZARD INC	13.49	1	1	1	2	1	1	16.2		15.1
STX	SEAGATE TECHNOLOGY PLC	41.23	1	1	1	2	1	1	7.9		14.8
NOK	NOKIA CORP	3.80	3	1	2	2	1	1	66.7		14.1
WDC	WESTERN DIGITAL CORP	58.54	1	1	1	1	1	1	7.7		13.9
XRX	XEROX CORP	8.95	1	1	1	2	1	1	8.4		11.0
NVDA	NVIDIA CORP	14.12	2	1	1	5	1	1	20.6		8.2
ADSK	AUTODESK INC	33.48	2	1	1	4	1	1	17.6		7.5
MRVL	MARVELL TECHNOLOGY GROUP LTD	11.01	1	1	4	1	1	1	13.3		5.4
UMC	UNITED MICROELECTRONICS CORP -ADR	2.03	2	1	1	3	1	1	10.8		5.1
SNDK	SANDISK CORP	57.70	5	3	1	3	2	1	14.3		14.0
STM	STMICROELECTRONICS NV	8.70	5	1	5	1	2	1	91.3		7.7
BBRY	RESEARCH IN MOTION LTD	14.10	1	2	5	1	2	1	NM		7.3
CREE	CREE INC	58.42	5	2	4	1	2	1	35.6		6.9
SAI	SAIC INC	12.92	1	4	2	4	2	1	11.2		4.4
Pharmaceuticals and Biotechnology											
ACT	ACTAVIS INC	$120.22	4	3	5	1	1	1	14.4	x	$15.4
LIFE	LIFE TECHNOLOGIES CORP	74.00	3	3	1	1	1	1	17.5		12.7
MTD	METTLER-TOLEDO INTL INC	202.00	4	4	1	2	1	1	19.2		6.1
WCRX	WARNER CHILCOTT PLC	18.94	1	3	1	1	1	1	5.8		4.7
Health Care Equipment and Services											
ABC	AMERISOURCEBERGEN CORP	$53.61	2	1	3	1	1	1	16.4	x	$12.4
UHS	UNIVERSAL HEALTH SVCS INC	65.38	2	4	2	1	1	1	14.7		6.4
THC	TENET HEALTHCARE CORP	43.73	3	3	3	1	1	1	14.9		4.5
CYH	COMMUNITY HEALTH SYSTEMS INC	44.78	1	3	4	1	1	1	12.4		4.2
HCA	HCA HOLDINGS INC	36.60	1	4	3	2	2	1	12.0		16.3
Retail, Media, and Other Consumer Cyclicals											
None											
Financials											
HIG	HARTFORD FINANCIAL SERVICES	$28.66	2	3	na	1	1	1	9.1	x	$12.5
SLM	SLM CORP	22.05	4	1	na	1	1	1	8.9		9.8
CNA	CNA FINANCIAL CORP	31.15	1	2	na	2	1	1	10.2		8.4
GNW	GENWORTH FINANCIAL INC	10.61	2	4	na	1	1	1	9.0		5.2
BLK	BLACKROCK INC	245.63	4	1	na	1	2	1	15.6		42.1
EV	EATON VANCE CORP	36.72	5	4	na	1	2	1	16.8		4.5
Energy											
SU	SUNCOR ENERGY INC	$28.98	1	1	2	5	1	1	9.2	x	$43.8
PSX	PHILLIPS 66	57.19	1	3	3	1	1	1	7.5		35.4
MPC	MARATHON PETROLEUM CORP	70.38	1	1	1	1	1	1	7.7		23.0
VLO	VALERO ENERGY CORP	33.76	1	4	2	2	1	1	6.8		18.5
HFC	HOLLYFRONTIER CORP	40.73	1	1	4	4	1	1	7.2		8.3
TSO	TESORO CORP	51.90	1	2	1	1	1	1	10.2		7.1
HP	HELMERICH & PAYNE	61.81	2	2	2	2	1	1	11.1		6.6
NBR	NABORS INDUSTRIES LTD	15.31	1	1	3	4	1	1	15.4		4.5
CVI	CVR ENERGY INC	47.12	1	1	3	1	1	1	8.8		4.1
BTU	PEABODY ENERGY CORP	14.85	1	4	1	5	1	1	NM		4.0
APA	APACHE CORP	82.18	1	3	4	5	2	1	10.0		32.2
NE	NOBLE CORP	36.42	1	3	2	4	2	1	12.8		9.2
DNR	DENBURY RESOURCES INC	17.01	1	3	3	4	2	1	13.6		6.4
OIS	OIL STATES INTL INC	89.29	2	5	2	2	2	1	13.1		4.9
SPN	SUPERIOR ENERGY SERVICES INC	25.85	1	4	4	2	2	1	12.8		4.1
CZZ	COSAN LTD	15.34	1	3	4	2	2	1	12.3		4.1

Source: Empirical Research Partners Analysis.

Appendix 2: Small-Capitalization Stocks
Top Quintile of Trading Model and the Top Two Quintiles of Core Model
With Market Capitalization Greater Than $400 Million
Core Model Ranking
Sorted by Sector
As of Late-June 2013

			Quintile Ranks (1=Best; 5=Worst)						Memo:		
			Super Factors								
Symbol	Company	Price	Valuation	Capital Deployment	Earnings Quality and Trend	Market Reaction	Core Model Rank	Trading Model Rank	Forward P/E-Ratio		Market Capitalization ($ Million)
Consumer Durables											
TREX	TREX CO INC	$45.76	4	4	1	1	1	1	18.7	x	$786
REMY	REMY INTERNATIONAL INC	18.00	1	1	2	3	1	1	13.2		576
PGTI	PGT INC	7.89	4	2	1	1	1	1	23.1		410
DECK	DECKERS OUTDOOR CORP	47.35	1	4	4	2	2	1	13.8		1,631
IRBT	IROBOT CORP	36.68	3	2	2	2	2	1	39.9		1,027
WGO	WINNEBAGO INDUSTRIES	19.72	4	2	3	1	2	1	18.1		553
Capital Equipment											
TEX	TEREX CORP	$26.01	1	3	1	3	1	1	13.6	x	$2,872
MTW	MANITOWOC CO	16.87	3	4	1	2	1	1	14.6		2,252
BGC	GENERAL CABLE CORP/DE	29.43	2	1	2	3	1	1	13.3		1,464
HY	HYSTER-YALE MATERIALS HNDLNG	59.84	1	1	3	1	1	1	12.8		1,003
PIKE	PIKE ELECTRIC CORP	11.69	1	4	2	1	1	1	14.3		413
SCTY	SOLARCITY CORP	32.96	5	5	1	1	2	1	NM		2,481
TPC	TUTOR PERINI CORP	16.89	3	1	5	1	2	1	9.2		804
ARII	AMERICAN RAILCAR INDS INC	30.39	2	5	1	3	2	1	9.0		649
Commercial Services											
MINI	MOBILE MINI INC	$31.25	3	4	2	1	1	1	25.5	x	$1,443
PCO	PENDRELL CORP	2.59	4	3	1	1	1	1	NM		687
Industrial Commodities											
TROX	TRONOX LTD	$19.62	2	1	1	5	1	1	NM		$2,224
WLT	WALTER ENERGY INC	10.60	1	1	2	5	1	1	NM		663
Transports											
CAR	AVIS BUDGET GROUP INC	$27.89	1	5	2	1	1	1	12.0	x	$3,016
AAMRQ	AMR CORP/DE	3.90	2	2	3	1	1	1	2.1		1,308
Technology											
FSL	FREESCALE SEMICONDUCTOR LTD	$13.38	5	1	1	1	1	1	25.6	x	$3,385
AOL	AOL INC	34.50	1	1	2	3	1	1	23.9		2,667
BRCD	BROCADE COMMUNICATIONS SYS	5.36	1	1	2	5	1	1	8.4		2,427
ROVI	ROVI CORP	22.71	1	1	1	1	1	1	11.5		2,349
SOHU	SOHU.COM INC	58.90	1	1	2	1	1	1	26.5		2,252
VSH	VISHAY INTERTECHNOLOGY INC	13.39	1	1	2	1	1	1	15.4		1,923
LXK	LEXMARK INTERNATIONAL INC -CL A	29.82	1	1	3	2	1	1	8.0		1,897
VCLK	VALUECLICK INC	23.39	2	3	2	1	1	1	13.0		1,781
PLCM	POLYCOM INC	10.14	2	1	1	4	1	1	16.5		1,770
CLS	CELESTICA INC	9.03	1	1	2	2	1	1	NM		1,662
UBNT	UBIQUITI NETWORKS INC	17.08	4	4	1	1	1	1	15.2		1,487
IRF	INTERNATIONAL RECTIFIER CORP	20.30	4	1	1	3	1	1	146.4		1,410
TIVO	TIVO INC	10.77	4	1	1	1	1	1	NM		1,363
TTWO	TAKE-TWO INTERACTIVE SFTWR	14.53	5	2	3	1	1	1	6.6		1,362
SYNA	SYNAPTICS INC	35.15	3	2	1	1	1	1	11.5		1,140
SANM	SANMINA CORP	13.56	1	1	1	1	1	1	9.4		1,119
AVG	AVG TECHNOLOGIES NV	18.76	1	4	1	1	1	1	NM		1,014
UIS	UNISYS CORP	20.29	1	1	2	4	1	1	11.8		895
KLIC	KULICKE & SOFFA INDUSTRIES	10.69	1	1	2	4	1	1	12.1		804
AMKR	AMKOR TECHNOLOGY INC	4.03	1	1	2	4	1	1	7.5		614
MX	MAGNACHIP SEMICONDUCTOR CORP	16.71	1	1	2	2	1	1	6.8		592
CKP	CHECKPOINT SYSTEMS INC	13.75	2	1	2	1	1	1	19.8		562
ORBK	ORBOTECH LTD	11.85	3	2	1	2	1	1	16.2		514
FN	FABRINET	14.08	1	1	3	2	1	1	NM		488
PCCC	PC CONNECTION INC	15.45	2	2	4	1	1	1	11.6		403
BBOX	BLACK BOX CORP	24.96	1	2	2	4	1	1	9.1		403
LPS	LENDER PROCESSING SERVICES	31.50	2	4	1	2	2	1	12.1		2,675
SPWR	SUNPOWER CORP	17.89	3	1	4	1	2	1	25.2		2,161
CLGX	CORELOGIC INC	22.08	1	2	2	4	2	1	12.3		2,106
SUNE	SUNEDISON INC	7.52	5	1	2	1	2	1	51.9		1,739
SSTK	SHUTTERSTOCK INC	49.88	5	4	2	1	2	1	63.1		1,672
ADTN	ADTRAN INC	23.39	4	1	2	3	2	1	33.9		1,434
CACI	CACI INTL INC -CL A	60.92	1	2	3	3	2	1	10.0		1,404
OPEN	OPENTABLE INC	60.54	5	4	2	1	2	1	32.7		1,388
EFII	ELECTRONICS FOR IMAGING INC	27.39	4	1	4	1	2	1	19.3		1,274
RSTI	ROFIN SINAR TECHNOLOGIES INC	25.52	4	3	1	2	2	1	17.8		721
RLD	REALD INC	14.01	5	1	2	2	2	1	NM		692
UNTD	UNITED ONLINE INC	7.27	1	2	3	3	2	1	15.1		669
LOGM	LOGMEIN INC	24.01	4	1	3	2	2	1	49.5		586
LSCC	LATTICE SEMICONDUCTOR CORP	4.84	5	1	1	3	2	1	26.4		559
SGI	SILICON GRAPHICS INTL CORP	13.50	3	1	5	1	2	1	14.8		457
SIMG	SILICON IMAGE INC	5.28	5	1	2	4	2	1	17.3		407
TZOO	TRAVELZOO INC	26.15	2	2	3	2	2	1	22.4		402

Source: Empirical Research Partners Analysis.

Appendix 2 (cont.): Small-Capitalization Stocks
Top Quintile of Trading Model and the Top Two Quintiles of Core Model
With Market Capitalization Greater Than $400 Million
Core Model Ranking
Sorted by Sector
As of Late-June 2013

			Quintile Ranks (1=Best; 5=Worst)								
			Super Factors					Memo:			
Symbol	Company	Price	Valuation	Capital Deployment	Earnings Quality and Trend	Market Reaction	Core Model Rank	Trading Model Rank	Forward P/E-Ratio		Market Capitalization ($ Million)
Pharmaceuticals and Biotechnology											
TARO	TARO PHARMACEUTICL INDS LTD	$54.10	1	1	3	2	1	1	NM		$2,406
MYGN	MYRIAD GENETICS INC	26.24	1	2	3	3	1	1	14.5	x	2,094
CBPO	CHINA BIOLOGIC PRODUCTS INC	21.42	1	4	1	1	1	1	12.0		575
ECYT	ENDOCYTE INC	12.77	2	2	1	2	1	1	NM		459
SNTS	SANTARUS INC	20.33	5	4	3	1	2	1	23.7		1,314
NDZ	NORDION INC	7.20	1	1	1	3	2	1	NM		446
Health Care Equipment and Services											
HLS	HEALTHSOUTH CORP	$27.71	2	3	1	2	1	1	16.7	x	$2,417
KND	KINDRED HEALTHCARE INC	12.61	1	1	2	2	1	1	10.5		682
WOOF	VCA ANTECH INC	25.08	2	4	3	2	2	1	16.4		2,219
OMI	OWENS & MINOR INC	33.52	1	3	2	3	2	1	17.6		2,123
GTS	TRIPLE-S MANAGEMENT CORP	21.76	1	3	3	3	2	1	10.8		619
Retail, Media, and Other Consumer Cyclicals											
CTCM	CTC MEDIA INC	$11.14	1	2	3	2	1	1	11.4	x	$1,762
BLC	BELO CORP -SER A COM	14.00	3	3	2	1	1	1	17.7		1,453
SHOS	SEARS HOMETOWN & OUTLET STR	41.41	1	3	3	1	1	1	NM		957
BYD	BOYD GAMING CORP	10.48	2	1	4	1	1	1	NM		911
OWW	ORBITZ WORLDWIDE INC	7.54	1	1	2	1	1	1	4.9		793
FRGI	FIESTA RESTAURANT GROUP INC	33.62	4	5	1	1	1	1	46.3		770
EDMC	EDUCATION MANAGEMENT CORP	5.47	1	1	5	1	1	1	21.7		682
OSTK	OVERSTOCK.COM INC	25.44	3	3	1	1	1	1	24.8		602
SMRT	STEIN MART INC	13.10	2	4	3	1	1	1	21.9		574
EVC	ENTRAVISION COMMUNICATIONS	5.79	4	2	1	1	1	1	28.3		502
HGG	HHGREGG INC	14.96	1	1	5	1	1	1	19.9		471
BGFV	BIG 5 SPORTING GOODS CORP	19.15	1	4	1	1	1	1	16.1		419
GTN	GRAY TELEVISION INC	7.00	1	4	3	1	1	1	21.0		405
SBGI	SINCLAIR BROADCAST GP -CL A	27.71	3	3	4	1	2	1	21.3		2,265
CZR	CAESARS ENTERTAINMENT CORP	12.25	4	1	4	1	2	1	NM		1,536
TVL	LIN TV CORP	14.33	2	3	5	1	2	1	19.3		778
Consumer Staples											
RAD	RITE AID CORP	$2.76	2	4	2	1	1	1	18.8	x	$2,510
Financials											
NSM	NATIONSTAR MORTGAGE HOLDINGS	$36.08	3	4	na	1	1	1	9.1	x	$3,269
APO	APOLLO GLOBAL MANAGEMENT LLC	21.76	3	3	na	1	1	1	6.0		2,875
MBI	MBIA INC	12.42	1	3	na	1	1	1	13.9		2,397
VRTS	VIRTUS INVESTMENT PTNRS INC	185.10	5	4	na	1	2	1	22.4		1,447
GFIG	GFI GROUP INC	3.74	3	3	na	1	2	1	18.1		449
Energy											
OAS	OASIS PETROLEUM INC	$38.28	4	3	1	2	1	1	14.3	x	$3,583
PTEN	PATTERSON-UTI ENERGY INC	19.36	1	4	1	2	1	1	14.0		2,835
WNR	WESTERN REFINING INC	26.89	1	1	1	2	1	1	6.9		2,300
DK	DELEK US HOLDINGS INC	28.60	1	1	3	3	1	1	7.0		1,683
GTE	GRAN TIERRA ENERGY INC	5.58	1	2	1	2	1	1	9.2		1,577
SGY	STONE ENERGY CORP	20.96	1	4	1	4	1	1	8.0		1,020
ALJ	ALON USA ENERGY INC	14.92	1	1	1	3	1	1	8.3		932
PKD	PARKER DRILLING CO	4.87	1	2	1	4	1	1	19.2		580
PBF	PBF ENERGY INC	24.15	1	1	3	4	1	1	6.7		570
BAS	BASIC ENERGY SERVICES INC	12.10	1	1	1	3	1	1	NM		511
TGA	TRANSGLOBE ENERGY CORP	5.82	1	1	1	5	1	1	5.0		430
SFL	SHIP FINANCE INTL LTD	14.57	1	2	4	2	2	1	13.1		1,242
ANR	ALPHA NATURAL RESOURCES INC	5.05	1	2	3	4	2	1	NM		1,115
CLD	CLOUD PEAK ENERGY INC	16.75	1	2	4	4	2	1	18.6		1,019
CRK	COMSTOCK RESOURCES INC	16.18	2	2	1	5	2	1	NM		782
ACI	ARCH COAL INC	3.65	1	1	4	5	2	1	NM		775
Telecommunications											
IDT	IDT CORP	19.13	1	1	1	1	1	1	12.3	x	$437
NIHD	NII HOLDINGS INC	5.79	2	1	3	2	2	1	NM		994

Source: Empirical Research Partners Analysis.

Appendix 3: Large-Capitalization Financial Stocks
Top Two Quintiles of Core Model
Core Model Ranking Report
Sorted by Rank and Capitalization Within Industry
As of Late-June 2013

			Quintiles (1=Best, 5=Worst)										Memo:			
			Valuation				Capital Deployment									
			Price to:													
Symbol	Company	Price	Book Value	Estimated Earnings	Normalized Earnings	Valuation	Dividend Growth	Change in Shares Outstanding	Capital Deployment	Market Reaction	Core Model Rank	Trading Model Rank	Forward P/E-Ratio		Market Capitalization ($ Billion)
Banks and Diversified Financials															
JPM	JPMORGAN CHASE & CO	$52.08	1	1	1	1	2	2	2	2	1	2	9.2	x	$197.4
C	CITIGROUP INC	47.00	1	1	5	1	5	5	4	1	1	2	10.1		143.0
BAC	BANK OF AMERICA CORP	12.67	1	2	4	1	5	4	4	2	2	3	13.2		137.1
PNC	PNC FINANCIAL SERVICES GROUP INC	72.70	1	1	1	1	3	3	2	3	2	4	10.7		38.5
CMA	COMERICA INC	39.67	1	2	4	3	1	1	1	2	2	4	13.2		7.4
Capital Markets															
GS	GOLDMAN SACHS GROUP INC	$153.06	1	1	1	1	1	1	1	2	1	2	10.6	x	$73.3
STT	STATE STREET CORP	64.84	1	3	1	2	4	1	1	1	1	4	14.4		29.5
AMP	AMERIPRISE FINANCIAL INC	79.26	2	1	3	4	1	1	1	1	1	3	11.7		16.0
MS	MORGAN STANLEY	25.03	1	1	3	1	5	2	5	3	2	5	11.6		49.1
BLK	BLACKROCK INC	252.58	2	3	3	4	3	1	1	1	2	1	15.6		43.3
BK	BANK OF NEW YORK COMPANY INC	28.27	1	2	3	2	5	2	3	2	2	2	12.8		32.8
Consumer Finance															
SLM	SLM CORP	$22.92	2	1	3	4	2	1	1	1	1	4	8.9	x	$10.2
COF	CAPITAL ONE FINANCIAL CORP	61.11	1	1	2	1	5	4	4	4	2	3	9.3		35.7
DFS	DISCOVER FINANCIAL SERVICES INC	46.22	2	1	2	3	1	1	1	3	2	1	9.7		22.8
Life Insurers															
PRU	PRUDENTIAL FINANCIAL INC	$71.09	1	1	1	1	3	3	2	2	1	4	8.6	x	$33.2
HIG	HARTFORD FINANCIAL SERVICES	29.18	1	1	5	2	5	2	3	1	1	3	9.1		12.7
PFG	PRINCIPAL FINANCIAL GROUP INC	36.99	1	1	1	2	2	2	4	1	1	2	11.1		10.8
LNC	LINCOLN NATIONAL CORP	35.54	1	1	2	1	1	1	1	1	1	5	7.9		9.5
UNM	UNUM GROUP	28.75	1	1	1	1	2	1	1	1	1	5	8.9		7.7
TMK	TORCHMARK CORP	64.60	1	1	1	2	2	1	1	2	1	4	11.4		6.0
MET	METLIFE INC	44.82	1	1	2	1	5	5	5	3	2	4	8.2		49.0
AFL	AFLAC INC	56.82	2	1	1	2	4	3	3	3	2	5	9.2		26.5
P&C Insurers															
XL	XL GROUP PLC	$29.76	1	1	5	3	2	1	1	1	1	1	10.3	x	$8.7
CNA	CNA FINANCIAL CORP	31.61	1	1	2	1	1	3	2	2	1	1	10.2		8.5
RE	EVEREST REINSURANCE GROUP LTD	124.55	1	1	2	1	5	1	2	3	1	2	7.3		6.2
ACE	ACE LTD	86.38	1	1	1	1	5	4	3	3	2	2	10.6		29.4

Source: Empirical Research Partners Analysis.