



**QSG**  
Quantitative Services Group

Equity Research Group

# **Innovative Factors in Equity Modeling: Leveraging Specialty Data to Outperform**

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# Agenda

- **Current Trends in Equity Modeling**
- **Beyond the Standard Sources**
- **Industry Specific Modeling**



# Trends in Equity Modeling

# Trends in Equity Modeling

## Increasing adoption of Quantitative Strategies

Recent survey of 38 money management firms<sup>1</sup>

- 29% of managers had 75% or more Equity Assets managed Quantitatively
- 58% of Money Managers have some Equity managed Quantitatively
- 13% of Money Managers Manage no Assets Quantitatively<sup>1</sup>

From QSG clients:

- More “fundamental” managers exploring quantitative strategies
- QSG has developed and tracks over 350 factors in the U.S. market from the standard data sources

<sup>1</sup> Survey data from CFA Magazine, Jan-Feb 2007 issue

# Trends in Equity Modeling

## QSG's Client Survey Details

### Type of Firm

- 71% respondents from Asset Managers
- 17% of respondents work for Hedge Funds
- 10% of respondents work for Pension

### Primary Responsibilities (check all):

- 83% Quantitative Research
- 20% Fundamental Research
- 58% Portfolio Management
- 36% Risk Analysis & Attribution
- 14% Trading

# Trends in Equity Modeling

## QSG Client Survey: What Models Do You Need Now?

### Domestic Stock Selection Models

- Financial Services
  - REITs
  - Retail
- Information Technology
  - Energy / E&P
- Pharmaceuticals
  - Biotech
  - Utilities

### International Stock Selection Models

- Japan
- Asia-Pacific
- Emerging Markets
  - EU - Europe
- Frontier Countries



# **The Next Frontier of Quantitative Analysis: Beyond the Standard Sources**

# Beyond the Standard Sources

## Today's Quants Largely Use Similar Data / Tools

### Common Data

#### Financial Statement Data

- *Compustat (Restated/PIT)*
- *Worldscope*
- *Reuters (Multex)*
- *Ford Equity Research*

#### Analyst Estimates/Revisions

- *I/B/E/S Summary*
- *I/B/E/S Detail*
- *FirstCall*

#### Pricing Data

- *IDC*
- *Reuters*

### Common Tools

#### Testing / Simulation

- *Stat Packages*
- *FactSet*
- *ClariFI ModelStation*
- *Market QA*

#### Optimizers / Risk Models / Attribution

- *Barra*
- *Northfield*
- *Axioma*
- *ClariFI ModelStation*
- *Wilshire*



# Beyond the Standard Sources

## What are the Challenges in Using New Tools

- Finding the Specialty Data Providers
- Capturing and Cleaning the Data
- “History, why would you need history?”

# Beyond the Standard Sources

## What are the benefits

- Un-correlated sources of alpha
- Fundamental appeal
- Under-utilized in systematic environments

# Beyond the Standard Sources

## Examples of Recent/Ongoing Work

- Customer-Supplier Relationship
- Fund flow data
- Text-mining
- Country Specific Data (IASB Adjusted)
- Alternative Estimate Providers



# **Theory into Practice: Industry Specific Modeling**

# Industry Specific Modeling

## Better Data leads to Better Performance

- Example #1: Banks & Thrifts
- Example #2: NAV to Price
- Example #3: Same Store Sales

# Industry Specific Modeling

## Example #1: Banks & Thrifts – Top Factors in Last 3 Years

	<u>Avg Monthly Decile Spread</u>
• One-Year Repricing Gap to Total Assets	0.986%
• Quarterly Loan Growth	0.979%
• Loan 30-89 Days Past Due to Total Loans	0.942%
• Non-performing Assets + 90 Day Delinquents to Assets	0.908%
• Standardized Unexpected Interest Income	0.887%
• Deposit Growth	0.727%
• Other Real Estate Owned to Book Value	0.696%

# Industry Specific Modeling

## Banks & Thrifts Factor Correlations

	Repricing Gap	Loan Growth	30-89 Day Past Due	NPA plus 90D PD	SUII	Deposit Growth	OREO
Repricing Gap							
Loan Growth	-0.23						
30-89 Day Past Due	0.02	0.27					
NPA plus 90D PD	0.11	0.1	0.42				
SUII	-0.3	0.74	0	-0.03			
Deposit Growth	-0.08	0.72	0.07	-0.06	0.68		
OREO	-0.05	0.08	0.57	0.7	-0.01	-0.21	

*Industry Specific Ideas are Surprisingly Low Correlated*

# Industry Specific Modeling

## Example #2: NAV to Price – QSG REIT Universe

### Property Age

- Real Age: [Current Year – Year Built]
- Expansion Age: [Current Year – Year Expanded]
- Renovation Age: [Current Year – Year Renovated]
- Property Age = Min[Real Age, Expansion Age, Renovation Age]

### Property Class (i.e A = 1000 (best), B = 700, C = 400 or D=1)

- If NA, assume property class is B
- Note: Class data is very sparse

### Demographics is calculated at the City level (over 4,000 cities)

#### Population Age – Ages 35 to 54 are Preferred

- % of residents with Age between 0 and 14
- % of residents with Age between 15 and 34
- % of residents with Age between 35 and 54
- % of residents with Age over 55

#### Population Income – Income over \$50K is Preferred

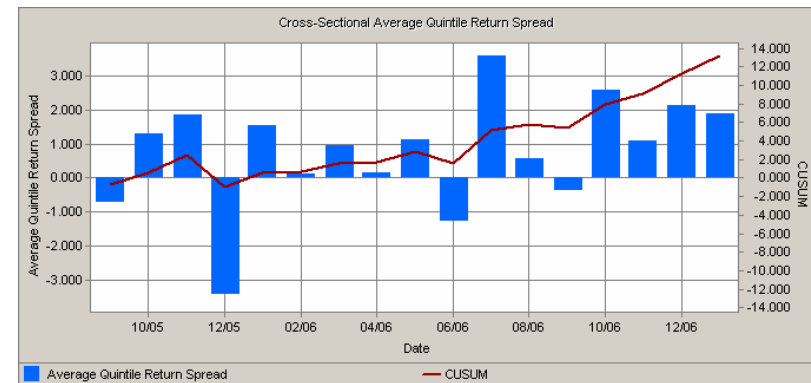
- % of Households with Income between \$0 and \$24,000
- % of Households with Income between \$25K and \$49K
- % of Households with Income greater than \$50K

### Location is calculated at the City level (over 4,000 cities)

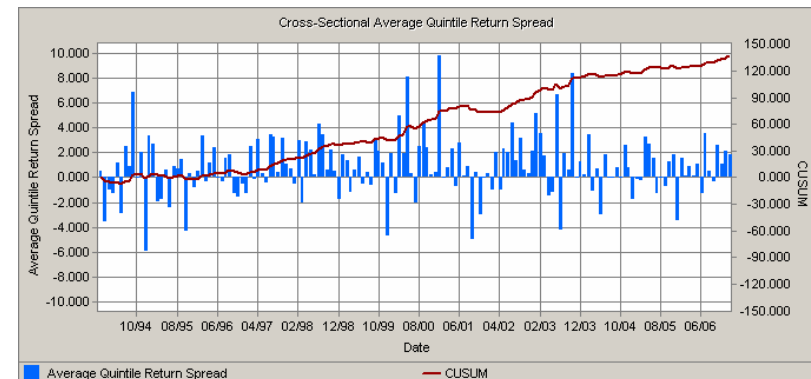
- Current population
- Expected 5-year population growth (%)
- Current Median Household Income
- Expected 5-year Household Income growth (%)
- Current Per Capita Income
- Expected 5-year Per Capita Income growth (%)
- Current Average Occupancy Levels

Here, Better  
Data Leads to  
Better Results

### Live from 9/05



### From 1994



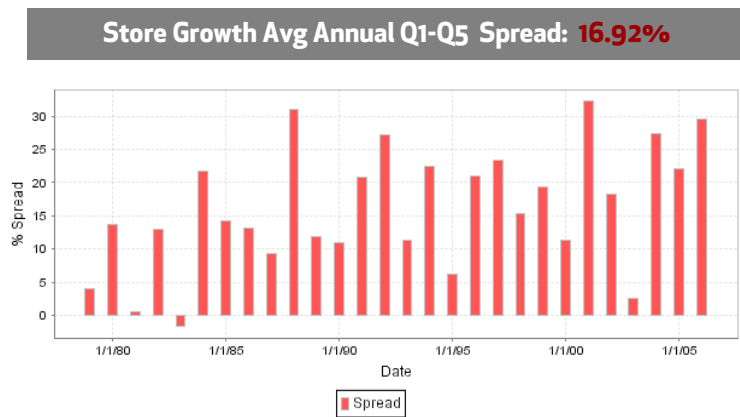


# Industry Specific Modeling

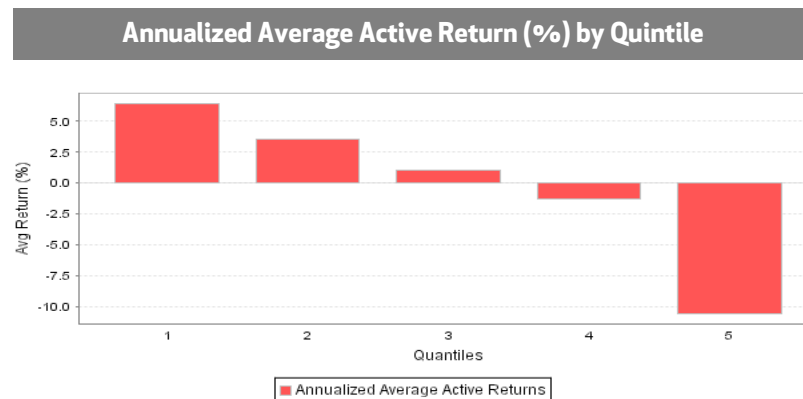
## Example #3: Store Growth Efficiency – QSG Retail Universe

This factor uses specialty data sources to assess the strength and efficiency of the company's store growth. Key components include:

- The Level and Changes in Monthly and Quarterly Same-Store-Sales are functionally related to the firm's Inventory Turnover.
- Efficiency is also captured by relating Store Sales Growth to Store Openings and Closing.
- Various measures are also used to gauge Operating Profit & Margin Sustainability.



**Note: Backtested results are overly conservative due to Same-Store-Sales Timing.**



\*Historical Backtested Results over QSG Retail Universe: 1/31/1979 to 7/31/2006; Equal-Weighted Portfolios; Monthly Rebalancing



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Retail factors calculated using ModelStation™ by:

