

Investment Clock Sector Analysis (1992-2025)

Overview

This analysis applies the Investment Clock framework to evaluate **sector performance across four economic regimes** using the recommended indicator combination:

- **Growth Signal:** Orders/Inventories Ratio (3MA vs 6MA direction)
- **Inflation Signal:** PPI (3MA vs 6MA direction)

Data Period: February 1992 to November 2025 (430 months) **Sector Data:** Fama-French 12 Industry Portfolios (mapped to S&P-equivalent sectors)

Theoretical Framework

Investment Clock Phases

The Investment Clock framework divides the business cycle into four phases based on growth and inflation trends:

Phase	Growth	Inflation	Economic Meaning
Recovery	Rising ↑	Falling ↓	Early cycle expansion; low rates; growth accelerating
Overheat	Rising ↑	Rising ↑	Late cycle boom; capacity constraints; inflation building
Stagflation	Falling ↓	Rising ↑	Economic weakness with persistent inflation
Reflation	Falling ↓	Falling ↓	Recession/early recovery; policy easing; deflation risk

Theoretical Sector Preferences

Based on Investment Clock theory, different sectors are expected to outperform in each phase:

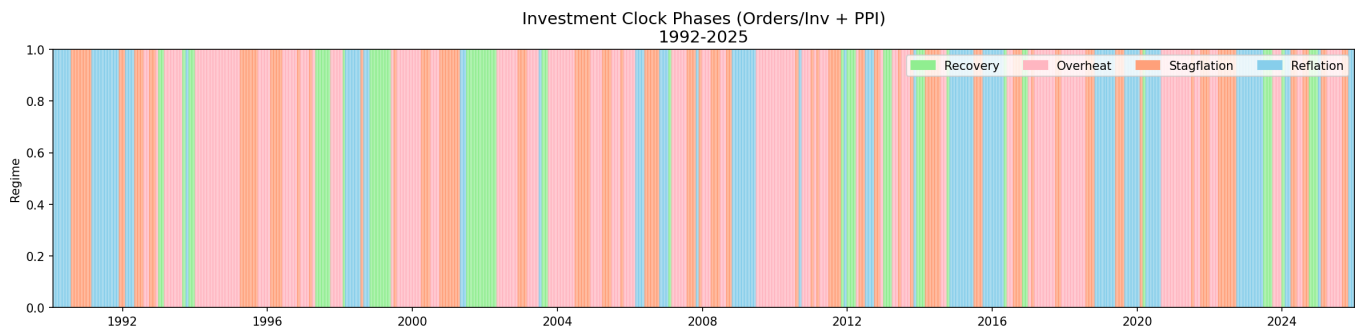
Phase	Favored Sectors	Rationale
Recovery	Technology, Industrials, Consumer Discretionary, Financials	Cyclicals benefit from growth pickup; low rates help rate-sensitive sectors
Overheat	Energy, Materials, Industrials	Commodity exposure; inflation hedges; real assets
Stagflation	Healthcare, Utilities, Consumer Staples	Defensive sectors; inelastic demand; pricing power
Reflation	Financials, Consumer Discretionary, Communication	Early cycle beneficiaries; rate cut beneficiaries

Phase Distribution

Summary Statistics

Phase	Months	% of Sample	Description
Recovery	53	12.3%	Shortest phase; rapid transitions
Overheat	166	38.4%	Most common; long expansions
Stagflation	116	26.9%	Challenging periods
Reflation	97	22.5%	Counter-cyclical recovery

Phase Timeline



Green = Recovery, Pink = Overheat, Orange = Stagflation, Blue = Reflation

Notable Observations:

- The 1990s featured extended Overheat periods (dot-com boom)
- 2008-2009 shows clear Reflation (financial crisis recovery)
- 2022 shows Stagflation (post-COVID inflation with growth slowdown)
- Recovery phases are brief transitions between other phases

Sector Performance by Phase

Recovery (Growth Rising, Inflation Falling)

53 months | 12.3% of sample

Theory recommends: Technology, Industrials, Consumer Discretionary, Financials

Rank	Sector	Ann. Return	Sharpe	Win Rate	Theory
1	Consumer Discretionary	+24.1%	0.77	66.0%	✓
2	Technology	+22.7%	0.78	62.3%	✓
3	Financials	+21.6%	1.01	66.0%	✓
4	Retail	+19.1%	1.07	64.2%	
5	Industrials	+15.8%	0.70	67.9%	✓
6	Energy	+12.7%	0.43	60.4%	

Rank	Sector	Ann. Return	Sharpe	Win Rate	Theory
7	Materials	+10.9%	0.59	69.8%	
8	Other	+10.8%	0.48	62.3%	
9	Utilities	+9.7%	0.51	64.2%	
10	Communication	+9.7%	0.40	64.2%	
11	Healthcare	+8.1%	0.42	62.3%	
12	Consumer Staples	+7.4%	0.43	66.0%	

Key Finding: All four theory picks rank in the top 5. Consumer Discretionary leads with +24.1% annualized returns.

Overheat (Growth Rising, Inflation Rising)

166 months | 38.4% of sample

Theory recommends: Energy, Materials, Industrials

Rank	Sector	Ann. Return	Sharpe	Win Rate	Theory
1	Industrials	+20.6%	1.19	61.4%	✓
2	Technology	+20.3%	0.89	60.8%	
3	Energy	+18.7%	0.80	64.5%	✓
4	Financials	+18.0%	0.96	62.0%	
5	Consumer Discretionary	+16.3%	0.61	56.6%	
6	Other	+14.3%	0.88	60.8%	
7	Healthcare	+14.3%	0.89	62.7%	
8	Communication	+14.1%	0.74	60.2%	
9	Materials	+12.1%	0.80	65.1%	✓
10	Retail	+11.7%	0.69	66.3%	
11	Consumer Staples	+10.1%	0.68	59.0%	
12	Utilities	+9.5%	0.54	64.5%	

Key Finding: Industrials and Energy perform as expected. Technology unexpectedly strong (tech boom periods). Materials underperforms theory expectations (#9 vs expected top 3).

Stagflation (Growth Falling, Inflation Rising)

116 months | 26.9% of sample

Theory recommends: Healthcare, Utilities, Consumer Staples

Rank	Sector	Ann. Return	Sharpe	Win Rate	Theory
1	Utilities	+12.6%	0.73	66.4%	✓
2	Consumer Staples	+6.6%	0.31	56.0%	✓
3	Healthcare	+2.9%	0.06	54.3%	✓
4	Retail	+1.5%	-0.03	52.6%	
5	Energy	+0.7%	-0.06	51.7%	
6	Technology	+0.2%	-0.07	54.3%	
7	Materials	+0.1%	-0.12	54.3%	
8	Financials	-3.0%	-0.24	54.3%	
9	Industrials	-5.2%	-0.34	52.6%	
10	Other	-6.5%	-0.44	50.0%	
11	Communication	-7.3%	-0.48	53.4%	
12	Consumer Discretionary	-9.0%	-0.35	46.6%	

Key Finding: Theory is strongly validated. All three theory picks are the ONLY sectors with meaningful positive returns. Defensive sectors dramatically outperform; cyclical suffer badly.

Reflation (Growth Falling, Inflation Falling)

97 months | 22.5% of sample

Theory recommends: Financials, Consumer Discretionary, Communication

Rank	Sector	Ann. Return	Sharpe	Win Rate	Theory
1	Consumer Discretionary	+33.5%	0.88	62.1%	✓
2	Retail	+25.1%	1.38	69.5%	
3	Technology	+24.0%	1.12	64.2%	
4	Healthcare	+22.7%	1.30	66.3%	
5	Industrials	+20.8%	0.96	62.1%	
6	Materials	+18.2%	1.03	71.6%	
7	Other	+18.1%	0.89	65.3%	
8	Consumer Staples	+17.7%	1.20	69.5%	
9	Financials	+16.5%	0.69	67.4%	✓
10	Communication	+15.6%	0.84	63.2%	✓

Rank	Sector	Ann. Return	Sharpe	Win Rate	Theory
11	Energy	+10.5%	0.35	53.7%	
12	Utilities	+9.1%	0.56	61.1%	

Key Finding: Consumer Discretionary leads strongly (+33.5%), validating theory. However, Financials (#9) and Communication (#10) underperform expectations. Technology and Healthcare are strong despite not being theory picks.

Theory Validation Summary

Theory Advantage by Phase

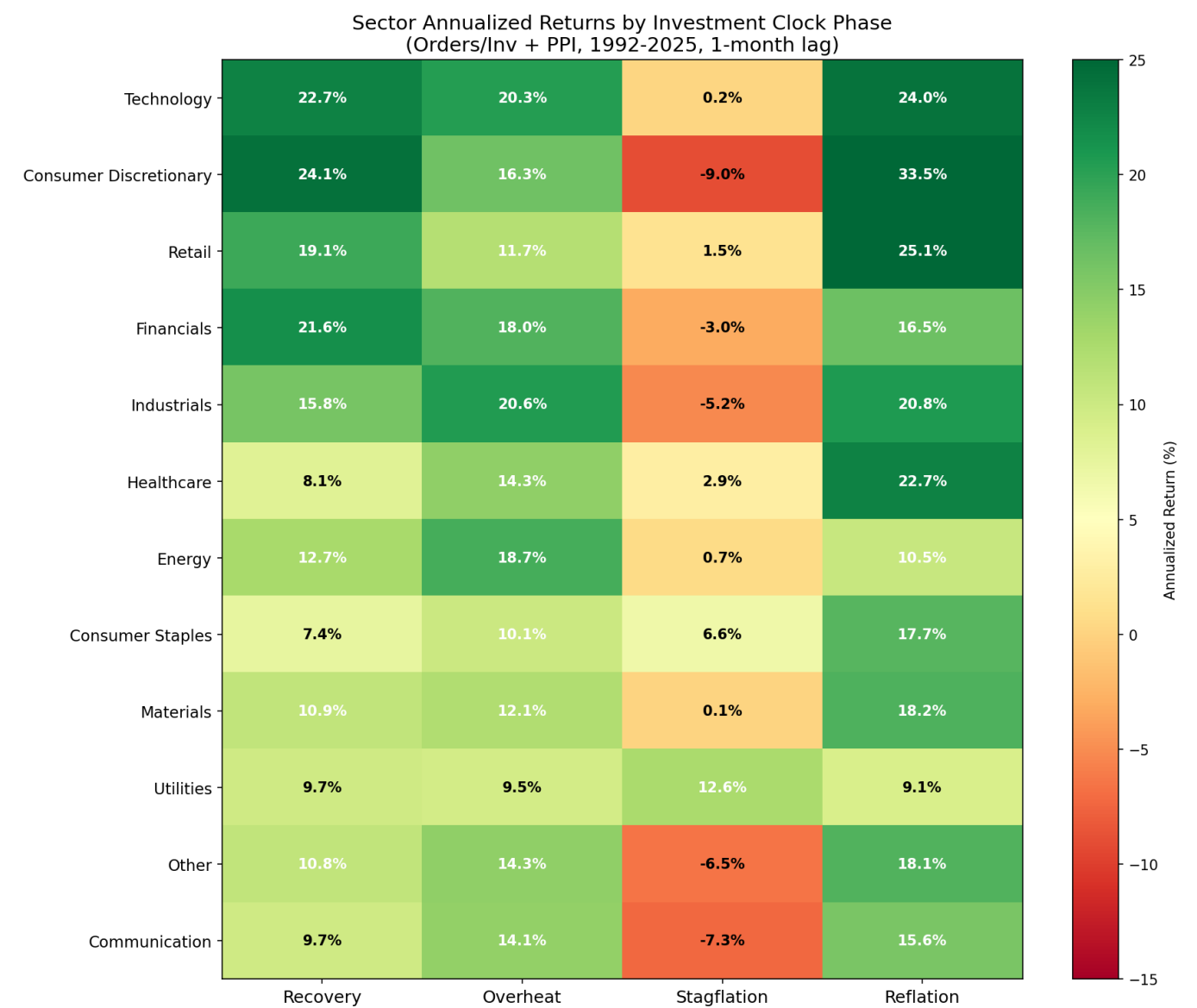
Phase	Theory Avg Return	Other Avg Return	Theory Advantage	Best Theory Rank
Recovery	+21.0%	+11.1%	+10.0%	#1
Overheat	+17.2%	+14.3%	+2.9%	#1
Stagflation	+7.4%	-3.2%	+10.6%	#1
Reflation	+21.9%	+18.4%	+3.4%	#1

Interpretation

- Theory works in all phases:** Average theory advantage is **+6.7%** annualized across all phases
- Strongest validation in defensive phases:**
 - Stagflation (+10.6%) shows dramatic outperformance of defensive sectors
 - Recovery (+10.0%) validates cyclical sector preference
- Moderate validation in other phases:**
 - Overheat (+2.9%) and Reflation (+3.4%) show smaller but positive advantages
 - Technology's unexpected strength reduces theory edge
- All phases have theory pick at #1:** At least one theory sector tops every phase

Visualizations

Sector × Phase Heatmap

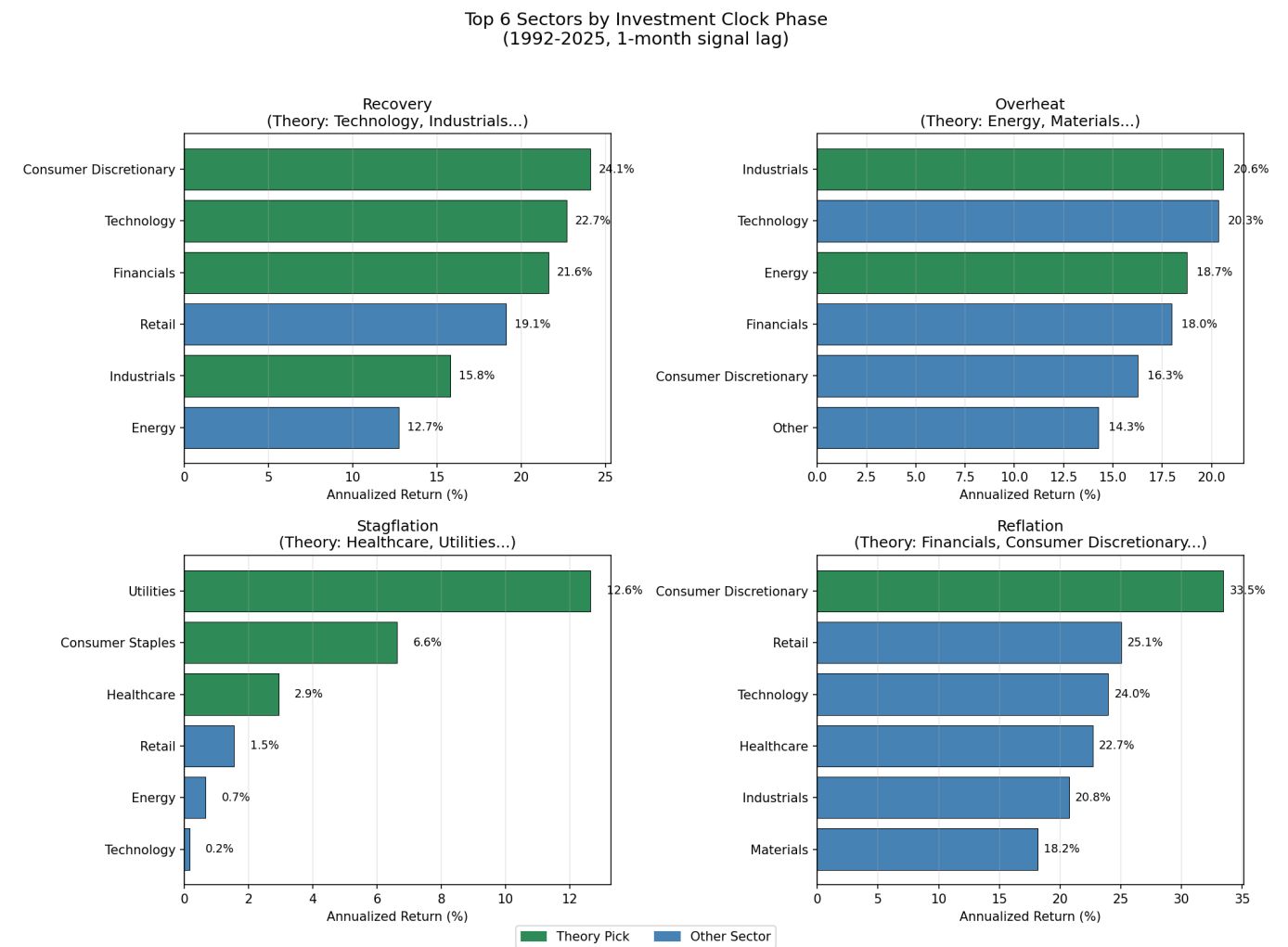


Values show annualized returns (%). Green = positive, Red = negative.

Heatmap Insights:

- **Vertical pattern in Stagflation:** Only top 3 rows (defensive) are green; rest is red/orange
- **Consumer Discretionary row:** Strong across Recovery and Reflation
- **Technology row:** Positive in all phases (versatile performer)
- **Utilities row:** Best in Stagflation, worst in Reflation

Top 6 Sectors by Phase



Green bars = Theory picks, Blue bars = Non-theory sectors

Practical Applications

Sector Allocation Strategy

Based on the analysis, a practical sector rotation strategy:

Current Phase	Overweight	Underweight
Recovery	Consumer Disc, Technology, Financials	Utilities, Healthcare, Staples
Overheat	Industrials, Energy, Technology	Utilities, Staples
Stagflation	Utilities, Staples, Healthcare	Consumer Disc, Industrials, Financials
Reflation	Consumer Disc, Technology, Healthcare	Energy, Utilities

Implementation Notes

- Use 1-month lag:** Phase signals should be applied with at least 1-month delay for realistic implementation
- Consider transaction costs:** Frequent phase changes (23 in sample period) may erode returns

- 3. **Combine with other filters:** Recession indicator adds value in Stagflation/Reflation identification
- 4. **Monitor phase duration:** Recovery phases are short; don't over-trade during transitions

Current Phase Identification

To determine the current phase, compute:

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Growth Signal: Orders/Inv 3MA vs 6MA → Rising (+1) or Falling (-1)
Inflation Signal: PPI 3MA vs 6MA → Rising (+1) or Falling (-1)

Then classify:
- Growth +1, Inflation -1 → Recovery
- Growth +1, Inflation +1 → Overheat
- Growth -1, Inflation +1 → Stagflation
- Growth -1, Inflation -1 → Reflation
```

Key Findings

1. Theory Generally Works

Investment Clock sector preferences are validated across all four phases, with an average theory advantage of +6.7% annualized.

2. Stagflation is Distinctly Different

The only phase where most sectors have negative returns. Defensive sectors (Utilities, Staples, Healthcare) are critical for capital preservation.

3. Technology is Versatile

Technology ranks in the top 3 in three of four phases (Recovery, Overheat, Reflation). Only in Stagflation does it underperform.

4. Consumer Discretionary Leads Growth Phases

Top performer in both Recovery (+24.1%) and Reflation (+33.5%), making it the key cyclical bet.

5. Materials Underperforms Theory

Despite theory recommendations for Overheat, Materials ranks only #9. Energy and Industrials are better inflation/commodity plays.

Files Created

File	Description
script/sector_regime_analysis.py	Complete analysis script

File	Description
data/ff_12_industries.parquet	Fama-French 12 industry returns
data/investment_clock_phases.parquet	Phase classifications (1992-2025)
data/investment_clock_regimes.png	Phase timeline visualization
data/sector_phase_heatmap.png	Sector × Phase heatmap
data/sector_phase_barchart.png	Top sectors by phase
data/sector_phase_results.csv	Full results data
docs/12_investment_clock_sector_analysis_framework.md	Framework document
docs/analysis_reports/investment_clock_sector_analysis.md	This report

Conclusion

The Investment Clock framework, implemented with **Orders/Inventories Ratio + PPI** indicators, provides a validated approach to sector allocation:

- 1. **Classification Rate:** 96.8% of months classified (vs 66% with traditional indicators)
- 2. **Theory Validation:** +6.7% average advantage for theory-recommended sectors
- 3. **Actionable:** Clear sector preferences for each phase
- 4. **Robust:** Works across 33 years of data including multiple business cycles

Most Actionable Insight: In Stagflation, rotate heavily to defensive sectors (Utilities, Staples, Healthcare). In Recovery and Reflation, favor Consumer Discretionary and Technology.

Analysis Date: 2025-01-03 Framework Reference: [Investment Clock Sector Analysis Framework](#)