



Portfolio Management Simulation

The Portfolio Process & Business Cycle

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Amplify PMtrader

THIS MORNING'S AIMS & OBJECTIVES

- To bring you up to speed with the key macro and economic factors that dominate traders' and investors decision making in Europe.
- To explain the European perspective on Global geopolitical and trade risks.
- To review Western monetary policy trends and analyse how the divergence between the monetary policies of US Federal Reserve and the European Central Bank is impacting on global market.

TOPICS:

Global Macro, Monetary Policy, Fiscal Policy, Geopolitics, Inflation, Labour markets, Economic Data and the return of market volatility in 2018.



- Portfolio Management Simulation
- Manage a \$20million Global Macro Multi Asset portfolio through 12 months of real price action and macro news flow from the past
- Use economic research to construct a Geographic and Asset allocation strategy
- Manage risk, react to break economic developments and continually rebalance your to ensure you deliver on your investment mandate
- Relative return, Absolute return and Peer group performance leaderboards.

The Portfolio Process & Business Cycle

- Investment Policy Statement
- Setting Capital Market Expectations
- Asset Allocation & Benchmarking
- Security Valuations
- Risk Management
- Monitoring & Rebalancing
- Performance Evaluation

 **Today's Simulation**

The Investment Policy Statement

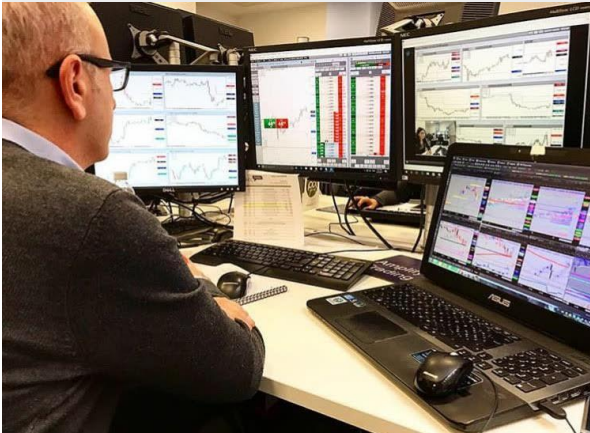
- **Know your Client – Institutional or Private Wealth**
- **Understand circumstances of client**
- **Document all circumstances for legal & regulatory reasons**

The IPS is formed to understand and appreciate the circumstances of client, whether institutional or private investor, and helps to align the clients interest with the actions that dominate the whole portfolio process.

The Investment Policy Statement

- Return Requirements
 - Risk Tolerance
-
- Liquidity Needs
 - Legal Requirements
 - Tax Requirements
 - Time Horizon
 - Unique Circumstances

These 2 risk/return characteristics, and portfolio constraints, dominate how the portfolio will be structured, allocation to each security & asset class, and other factors like legal and tax that dominate. These are individual to each investor, as a 80-year old ex-entrepreneur, might have no legal requirements and a short time horizon, while a Pension Fund, might have a long time horizon with high legal requirements.

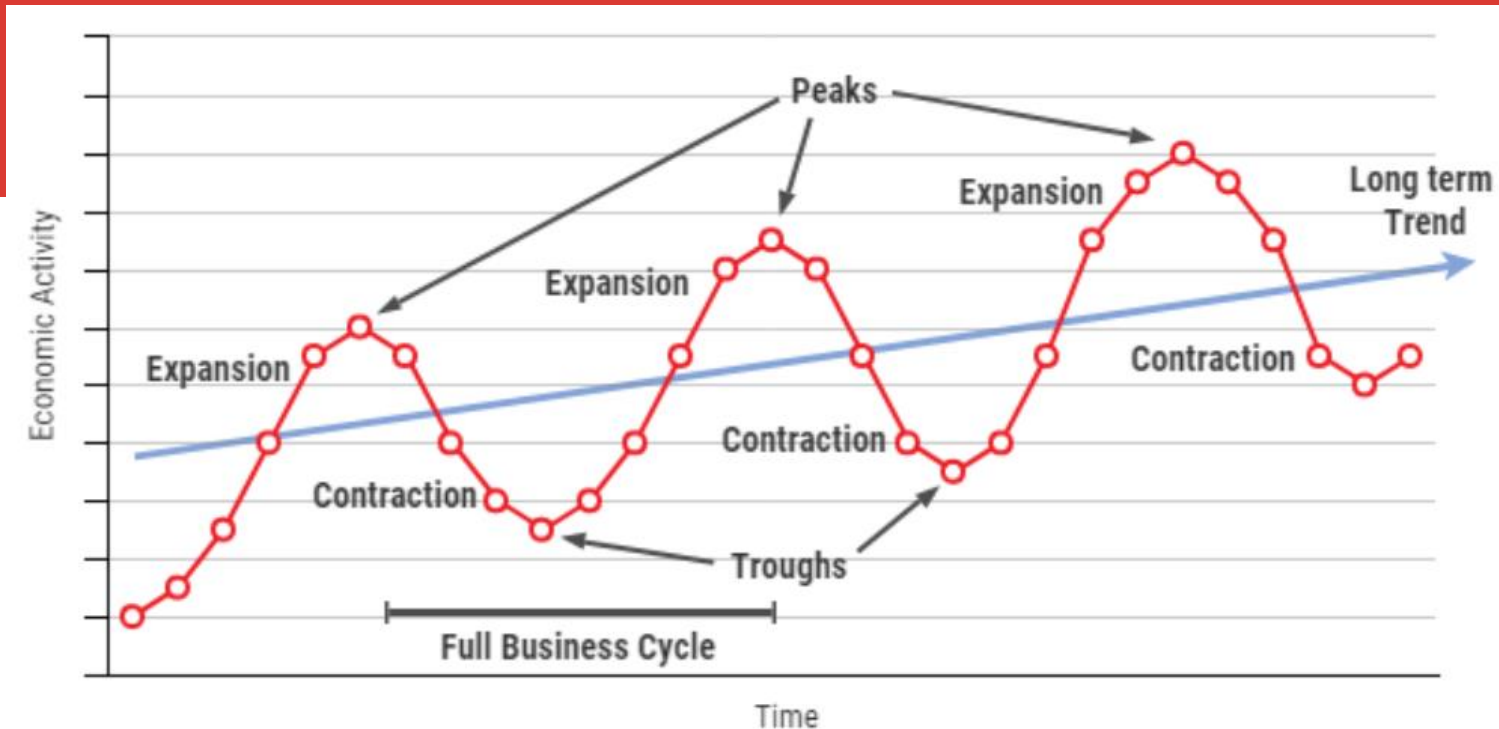


Setting Capital Market Expectations

- **Global economics**
- **Understand relative valuations of broad indices & asset classes globally**
 - Bonds
 - Equities
 - Short Term Interest Rates
 - Commodities
- **Understand macro & business cycle**

THE BUSINESS CYCLE

- Assuming **Population Growth & Productivity Improvement** over time, the Real GDP of an economy should consistently grow
- But this is not a linear growth - Reality is more of a noisy growth scenario and this is what we call the **Business or Economic Cycle**



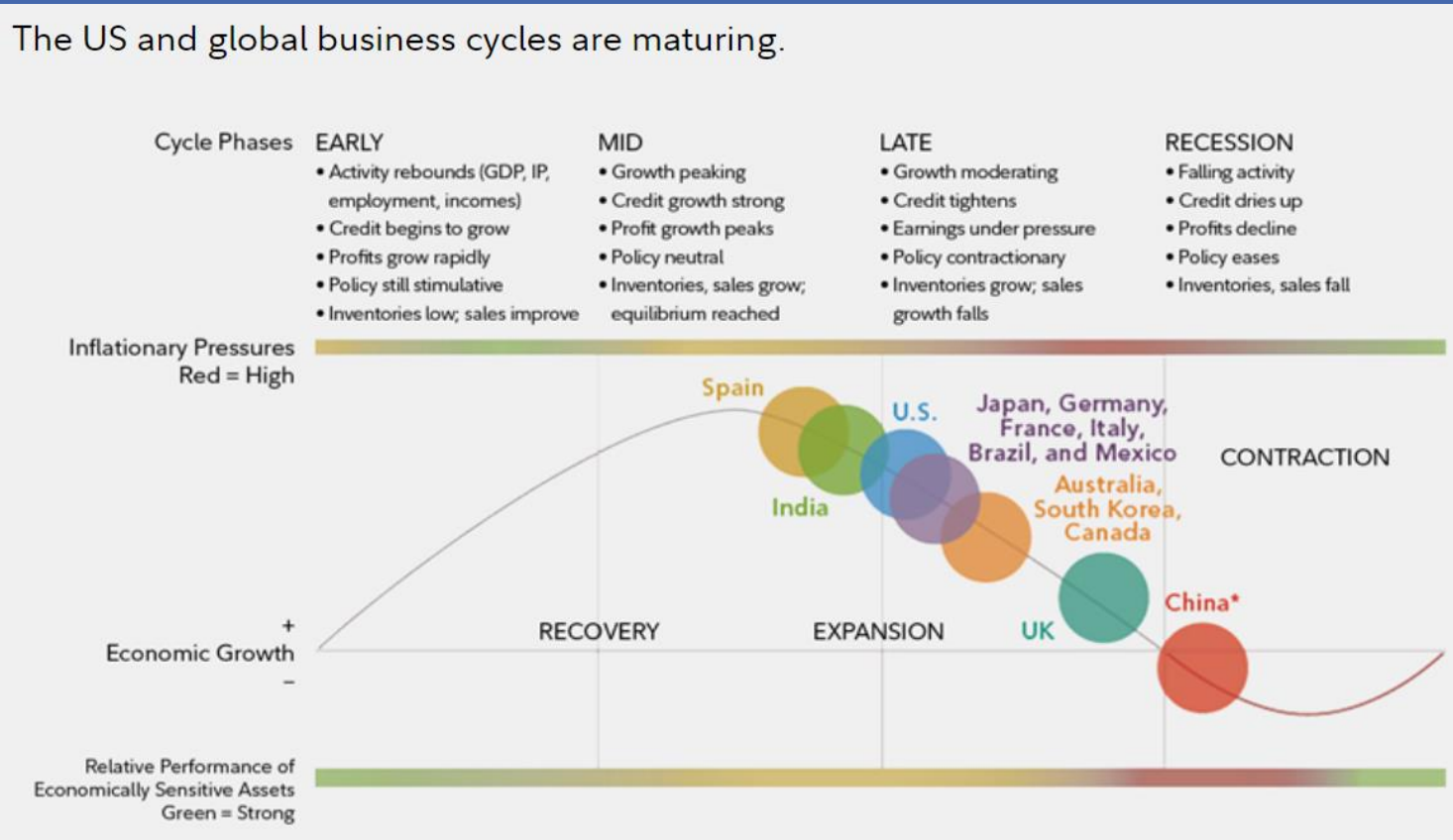
Four Phases of the Cycle

- **Early Cycle Phase:**
 - A “V-shaped”, sharp recovery from recession
 - Above average acceleration in economic activity (e.g. GDP, industrial production, employment)
 - Credit begins to grow amid easy monetary policy creating a healthy environment for rapid profit growth
 - Business inventories are low, whilst sales growth improves significantly
- **Mid-Cycle phase** – Normally the longest phase:
 - Positive but more moderate rate of growth
 - Economic activity gather momentum, credit growth becomes strong
 - Profitability is healthy against an accommodative – though increasingly neutral – monetary policy backdrop
 - Inventories and sales grow reaching equilibrium relative to each other
- **Late-Cycle phase:**
 - An overheated economy poised to slip into recession hindered by above trend rates of inflation
 - Economic growth rates slow to stall speed against a backdrop of restrictive monetary policy, tightening credit availability and deteriorating corporate profit earnings
 - Inventories tend to build as sales growth declines
- **Recession phase:**
 - This features a contraction in economic activity
 - Corporate profits decline and credit is scarce
 - Monetary policy becomes more accommodative and inventories gradually fall despite low sales levels
 - These factors then set up the next expansion and a move back to the Early-Cycle phase

Four Phases of the Cycle

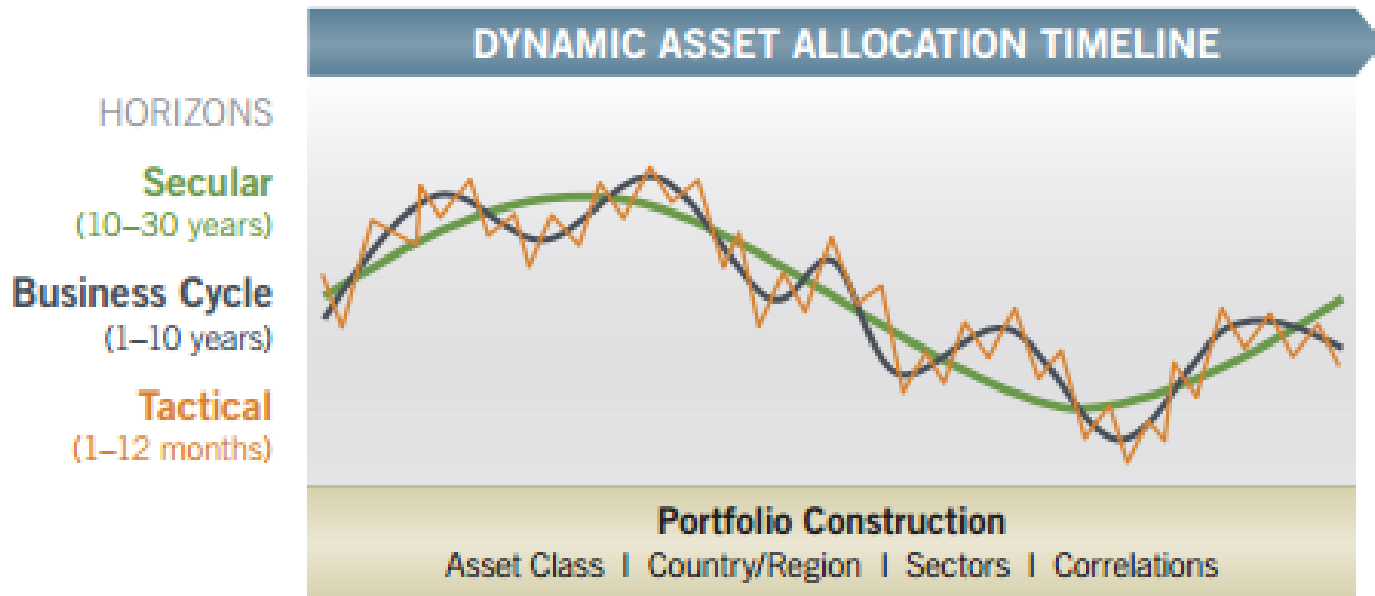
Keynesian economic theory: Monetary & Fiscal policy can help to smooth out the effects of the business cycle

The US and global business cycles are maturing.



(Source: Fidelity Investments, Nov 2018)

DURATION-BASED ASSET ALLOCATION FRAMEWORK



Asset performance is driven by a confluence of short, intermediate and long-term factors

Asset Allocation

Geographic allocation: Domestic bias?

- Analysis of economic performance on a relative geographic basis

Asset Allocation is the process of dividing a portfolio amongst major asset classes such as equities, bonds, commodities, cash.

- The objective is to reduce risk through diversification
- Geographic & Asset allocation: Domestic bias?
- Performance benchmarks, liquidity risk, tax implications

Asset Class Selection: 'Risk-On' / 'Risk Off'

- Risky Assets (Equities) – Economically sensitive, perform better during the early part of the cycle when growth is rising at an accelerated rate, the performance moderates through the other phases which finally declines during the recession phase
- Defensive Assets (Government Bonds) – Government bonds experience the opposite pattern with highest returns normally during recessions.
- Diversification – Alternatives such as Hedge funds, real estate, gold, cash

Additional Strategies

Equity Sector Performance Patterns

- Relative performance of equity market sectors tends to rotate as the overall economy shifts from one stage of the cycle to another
- Due to structural shifts in the economy, technological innovation, varying regulatory backdrops no one sector has behaved uniformly for every business cycle

Bottom-Up Analysis

- Fundamental company research may identify factors that will affect performance independently of the business cycle. New break-through in technology for example

Secular Overlay

- Longer term secular trends that are expected to unfold over several business cycles

Inflation Overlay

- Short term inflation trends tend to ebb and flow with the business cycle

Global Economic Analysis

- The US stock market has global exposure, which may warrant allocation away from domestically focused sectors depending on the phase of the US business cycle relative to the rest of the world.

Tactical & Quantitative Strategies

- Sectors may be impacted by tax changes or regulation changes which may affect performance outside of the typical business cycle trends

Equity Sectors

- S&P 1500 Index Companies by sector
- Relative performance of equity market sectors tends to rotate as the overall economy shifts from one stage of the cycle to another

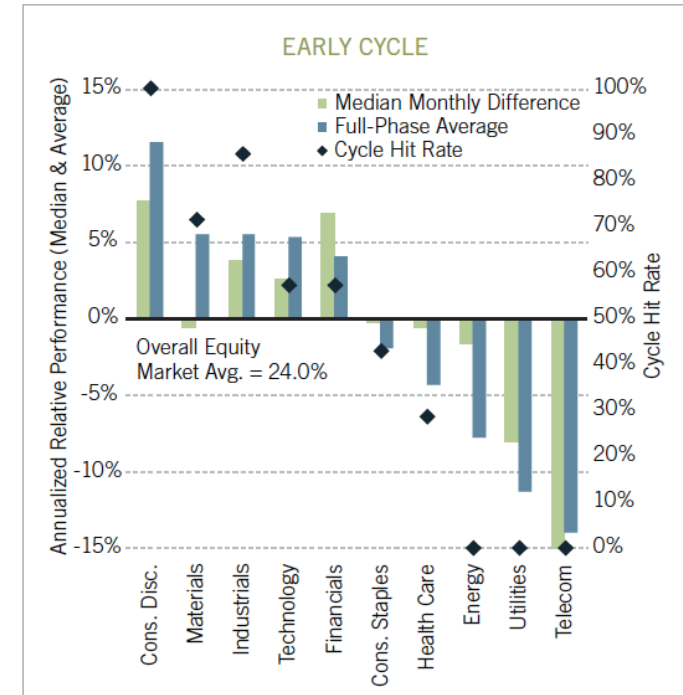
Rank (Sept. 19, 2016)	Sector	Equity Market Capitalization (Billions of dollars)	Equity Market Capitalization (Percent of total)
1	Information Technology	4,451	20.7
2	Health Care	3,017	14.0
3	Financials	2,759	12.8
4	Consumer Discretionary	2,744	12.8
5	Consumer Staples	2,195	10.2
6	Industrials	2,178	10.1
7	Energy	1,393	6.5
8	Real Estate	814	3.8
9	Utilities	731	3.4
10	Materials	697	3.2
11	Telecommunication Services	502	2.3
Total	All 11 Sectors	21,487	100.0

Source: S&P Dow Jones Indices, MSCI, FactSet

Sectorial Performance

Early Cycle Phase

- The best overall phase for equities – on average 24% per annum for 3000 biggest companies by market cap.
- Average length tends to be 15 months
- Interest rate sensitive sectors outperform with the back drop of accommodative monetary policy. Industries that benefit from increased borrowing
- **Consumer Discretionary** and **Financial** sectors
- Economically sensitive sectors such as **Industrials**, **Technology** and **Materials** are boosted by shifts from recession to recovery.
- Sectors that tend to underperform in this phase include **Utilities** and **Telecommunication** services
- These sectors are more 'defensive' in nature due to fairly persistent demand across all stages of the cycle
- **Energy** also tends to underperform as inflationary pressures – and thus energy prices – tend to be very low during the recovery from a recession

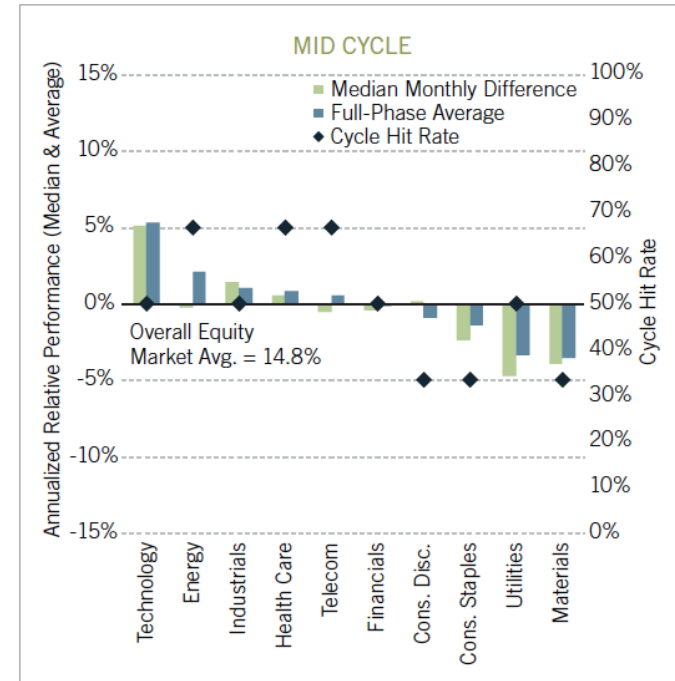


Includes equity market returns from 1962 through 2010. Returns are represented by the top 3000 U.S. stocks ranked by market capitalization. Sectors as defined by GICS. Source: Fidelity Investments (AART) as of Apr. 30, 2012. Past performance is no guarantee of future results.

Sectorial Performance

Mid Cycle Phase

- As the recovery and growth rates moderate, the leadership of interest rate sensitive sectors tapers
- Here economically sensitive sectors still tend to perform well. But average annual stock market performance tends to remain strong at 15% per year on average.
- This phase tends to be comfortably the longest at typically 4 yrs.
- Typically the most corrections take place in this phase with sector leadership rotating frequently. This phase has the least sector performance differentiation
- Information Technology has been the best performer during this phase – software and computers purchases tend to pick up when companies gain more confidence in the sustainability of the recovery.
- Parts of the Industrials sector are well suited for the mid-cycle expansion such as airlines and industrial conglomerates,
- Underperformance tends to be seen in Utilities and Materials
- Overall, due to a lack of clear sector leadership tactical sector bets are less necessary

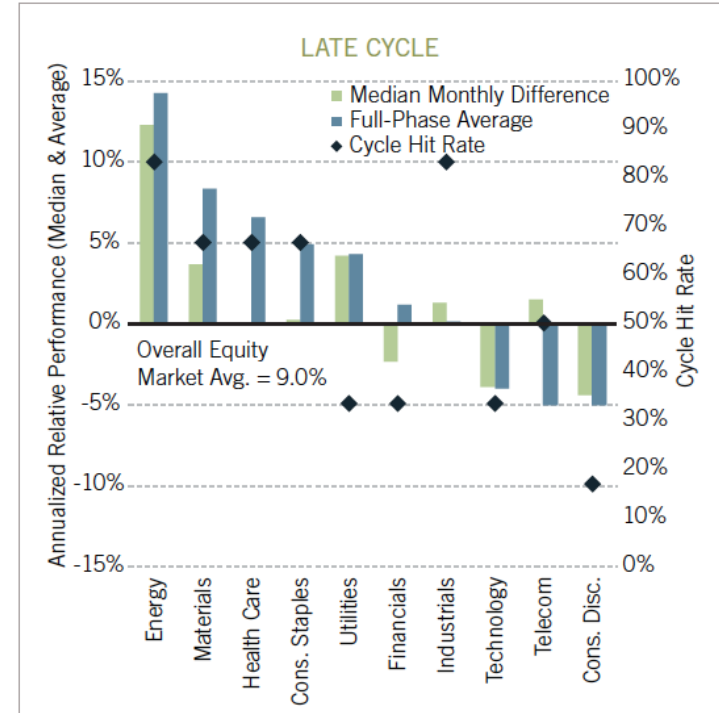


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Sectorial Performance

Late-Cycle Phase

- This phase tends to last approximately 12-18 months with an average stock market performance of 9% on an annualised basis
- Energy and Materials sectors tend to do well here as raw material prices climb as a result of inflationary pressures build and late-cycle economic expansion helps maintain solid demand
- Defensive sectors such as Health Care, Consumer Staples and Utilities, ones where revenues are tied to basic needs, start to show signs of out performance as investors glimpse signs of a forthcoming economic slowdown.
- Information Technology and Consumer Discretionary have lagged most often as investors begin to shift away from economically sensitive sectors

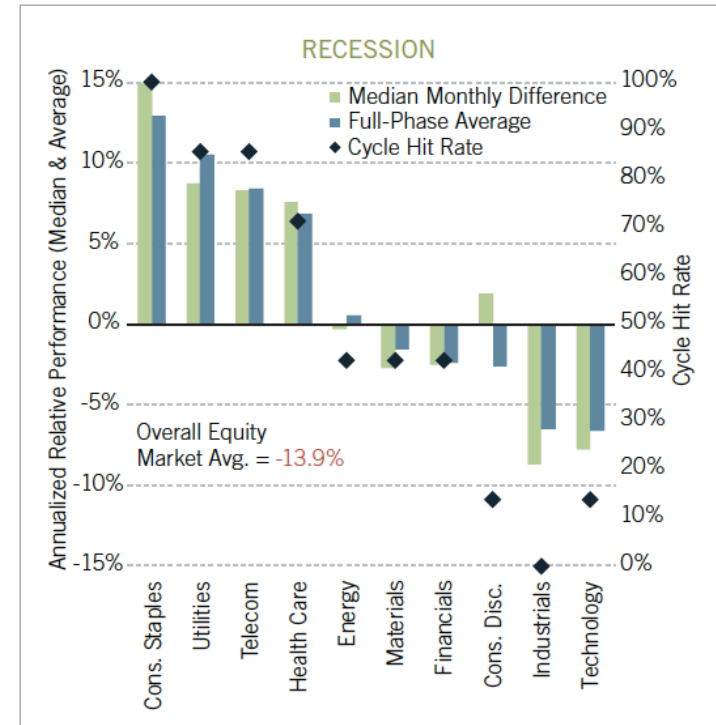


Includes equity market returns from 1962 through 2010. Returns are represented by the top 3000 U.S. stocks ranked by market capitalization. Sectors as defined by GICS. Source: Fidelity Investments (AART) as of Apr. 30, 2012.

Sectorial Performance

Recession Phase











- This phase tends to be the shortest with the average being 10 months with an average stock market performance of -14% annualised
- As economic growth stalls, economically sensitive sectors fall out of favour and those that are defensive orientated outperform
- Defensive sectors such as Consumer Staples, Utilities, Telecommunications and Health Care, produce things like toothpaste, phone services, electricity and prescription drugs. These are products that consumers are less likely to cut down on in a recession.
- Defensive sector profits tend to be more stable than those in other sectors
- High dividend yields provided by utility and telecom companies have also helped these two sectors in this phase.
- Underperformers are economically sensitive sectors such as Industrials, Information Technology and Consumer Discretionary



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Sector Rotation Strategy

- Sector rotation of asset allocation based on this business cycle approach offers potential considerable advantages
- As the probability in a shift in phase increases investors can adjust their exposures to sectors that have prominent performance patterns in the next phase
- Going a step further can see performance results improve. This would involve looking at breaking down each sector into its component industries and having a industry asset allocation strategy within each sector

Sector	Early	Mid	Late	Recession
 Financials	+			
 Consumer Discretionary	+		-	-
 Technology	+	+	-	-
 Industrials	+	+		-
 Materials	+	-	+	
 Consumer Staples			+	+
 Health Care			+	+
 Energy	-		+	
 Telecom	-			+
 Utilities	-	-	+	+

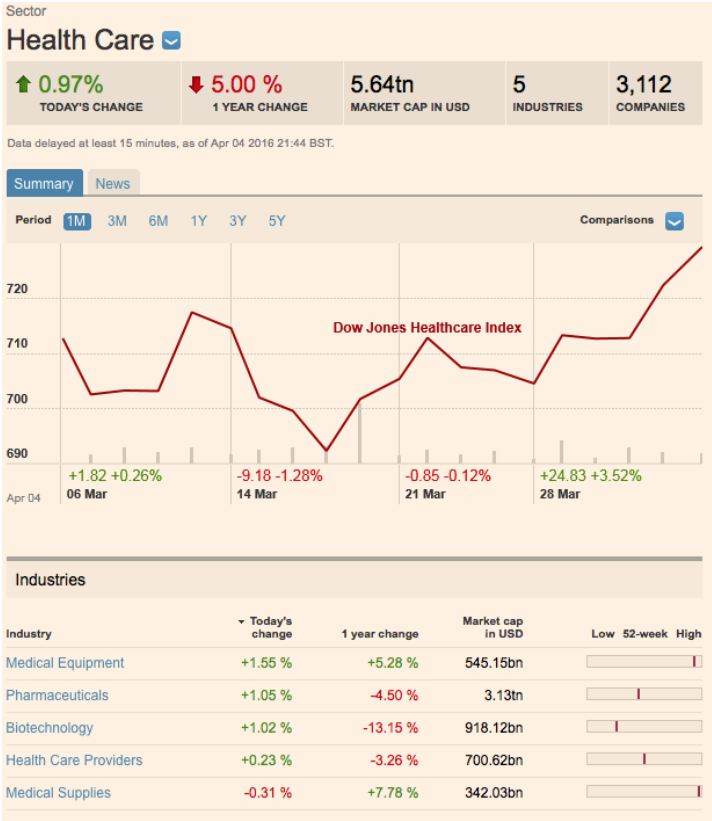
Source: Fidelity Investments (AART). Unshaded (white) portions above suggest no clear pattern of over- or underperformance vs. broader market.



Sector Break Down

▶ Health Care	5	3,112	-7.7%	↑ 0.97%
▶ Telecommunications	2	433	+11.05%	↑ 0.64%
▶ Utilities	5	980	+11.05%	↓ 0.46 %
▶ Technology	7	4,352	+2.28%	↓ 0.48 %
▶ Financials	20	20,934	-5.3%	↓ 0.51 %
▶ Consumer Services	16	4,896	-	↓ 0.55 %
▶ Oil & Gas	6	2,141	-24.49%	↓ 0.60 %
▶ Consumer Goods	19	6,783	+5.35%	↓ 0.61 %
▶ Industrials	20	10,095	-3.5%	↓ 1.01 %
▶ Basic Materials	10	6,120	-12.39%	↓ 1.03 %

Health Care & Telecommunications



Utilities & Technology

Sector

Utilities

↓ 0.46 % TODAY'S CHANGE	↑ 11.22% 1 YEAR CHANGE	2.32tn MARKET CAP IN USD	5 INDUSTRIES	981 COMPANIES
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Data delayed at least 15 minutes, as of Apr 04 2016 21:44 BST.

Summary News

Period 1M 3M 6M 1Y 3Y 5Y

Comparisons



Industries

Industry	Today's change	1 year change	Market cap in USD	Low	52-week	High
Water	+0.06 %	+24.38 %	134.31bn			
Multi-utilities	-0.19 %	+8.39 %	339.09bn			
Conventional Electricity	-0.50 %	+10.37 %	1.34tn			
Gas Distribution	-0.97 %	+22.87 %	276.34bn			
Alternative Electricity	-1.77 %	-49.57 %	235.52bn			

Sector

Technology

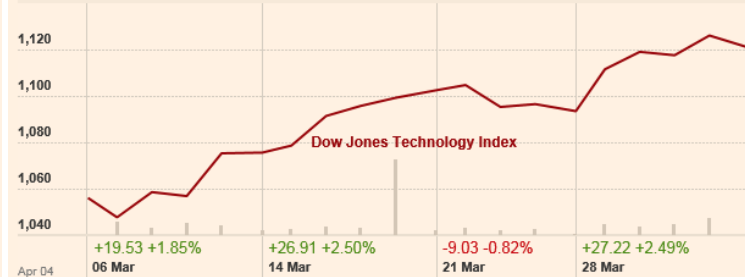
↓ 0.48 % TODAY'S CHANGE	↑ 4.44% 1 YEAR CHANGE	6.39tn MARKET CAP IN USD	7 INDUSTRIES	4,353 COMPANIES
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Data delayed at least 15 minutes, as of Apr 04 2016 21:44 BST.

Summary News

Period 1M 3M 6M 1Y 3Y 5Y

Comparisons



Industries

Industry	Today's change	1 year change	Market cap in USD	Low	52-week	High
Computer Hardware	+0.61 %	-10.72 %	955.21bn			
Software	-0.18 %	+15.31 %	1.47tn			
Computer Services	-0.65 %	-2.86 %	785.76bn			
Electronic Office Equipment	-0.79 %	-9.18 %	89.07bn			
Semiconductors	-0.95 %	-1.40 %	1.10tn			
Internet	-1.19 %	+25.83 %	1.40tn			
Telecommunications Equipment	-1.48 %	-6.36 %	587.05bn			

Financials



Industries				
Industry	▼ Today's change	1 year change	Market cap in USD	Low 52-week High
Specialty REITs	+0.21 %	+4.10 %	349.93bn	
Real Estate Services	0.00%	-26.23 %	97.49bn	
Real Estate Investment Trusts	-0.15 %	-0.90 %	357.20bn	
Residential REITs	-0.16 %	+9.21 %	180.02bn	
Real Estate Holding & Development	-0.22 %	-25.56 %	1.51tn	
Diversified REITs	-0.26 %	-21.14 %	115.12bn	
Retail REITs	-0.31 %	+2.47 %	453.26bn	
Banks	-0.37 %	-9.82 %	6.24tn	
Reinsurance	-0.45 %	+1.19 %	513.41bn	
Consumer Finance	-0.50 %	-0.87 %	564.66bn	
Insurance Brokers	-0.52 %	+4.07 %	90.69bn	
Property & Casualty Insurance	-0.69 %	+9.21 %	557.05bn	
Mortgage REITs	-0.77 %	-16.93 %	54.77bn	
Specialty Finance	-0.85 %	-8.63 %	619.84bn	
Asset Managers	-0.92 %	-17.11 %	497.31bn	
Full Line Insurance	-0.94 %	+0.50 %	380.19bn	
Investment Services	-1.10 %	-12.72 %	905.52bn	
Life Insurance	-1.38 %	-10.60 %	1.02tn	
Hotel & Lodging REITs	-1.49 %	-23.78 %	61.14bn	
Mortgage Finance	-1.61 %	-15.81 %	77.47bn	

Consumer Services



Industries				
Industry	▼ Today's change	1 year change	Market cap in USD	Low 52-week High
Recreational	+0.23 %	-4.19 %	252.18bn	
Drug Retailers	-0.03 %	-6.26 %	377.01bn	
Specialized Consumer Services	-0.08 %	-12.85 %	416.13bn	
Home Improvement Retailers	-0.15 %	+11.11 %	293.92bn	
Restaurants & Bars	-0.31 %	+17.36 %	492.16bn	
Broadcasting & Entertainment	-0.39 %	-4.97 %	1.14tn	
Hotels	-0.43 %	-14.20 %	215.67bn	
Media Agencies	-0.47 %	+9.75 %	278.29bn	
Food Retailers & Wholesalers	-0.50 %	-2.38 %	549.11bn	
Broadline Retailers	-0.63 %	+15.78 %	1.10tn	
Publishing	-0.79 %	-11.65 %	326.76bn	
Apparel Retailers	-0.90 %	-7.16 %	371.62bn	
Airlines	-0.90 %	-3.27 %	364.16bn	
Specialty Retailers	-1.33 %	+4.33 %	551.60bn	
Travel & Tourism	-1.81 %	-3.58 %	464.11bn	
Gambling	-1.87 %	-12.83 %	281.96bn	

Oil and Gas & Basic Materials



Consumer Goods



Industries				
Industry	Today's change	1 year change	Market cap in USD	Low 52-week High
Tobacco	+0.35 %	+28.53 %	724.26bn	
Soft Drinks	+0.10 %	+11.66 %	694.09bn	
Personal Products	-0.11 %	+8.12 %	845.71bn	
Nondurable Household Products	-0.35 %	+2.14 %	427.33bn	
Food Products	-0.63 %	+6.59 %	1.68tn	
Toys	-0.76 %	+31.43 %	182.42bn	
Automobiles	-0.86 %	-11.83 %	1.08tn	
Distillers & Vintners	-0.88 %	+20.74 %	313.35bn	
Durable Household Products	-0.96 %	+4.11 %	301.17bn	
Brewers	-0.97 %	+27.33 %	613.51bn	
Furnishings	-1.25 %	+0.33 %	115.09bn	
Clothing & Accessories	-1.68 %	-12.06 %	780.79bn	
Recreational Products	-1.86 %	-12.71 %	114.14bn	
Consumer Electronics	-1.97 %	-46.58 %	335.99bn	
Auto Parts	-2.25 %	-12.91 %	618.43bn	
Home Construction	-2.45 %	-8.15 %	158.57bn	
Footwear	-2.71 %	+13.78 %	200.30bn	
Tires	-3.10 %	+8.70 %	166.95bn	
Farming & Fishing	-3.23 %	-30.08 %	250.12bn	

Industrials



Industries					
Industry	Today's change	1 year change	Market cap in USD	Low	52-week High
Defense	+0.30 %	+10.24 %	292.61bn		
Delivery Services	-0.17 %	+4.46 %	241.98bn		
Aerospace	-0.29 %	-11.81 %	434.48bn		
Trucking	-0.41 %	+1.91 %	70.50bn		
Building Materials & Fixtures	-0.76 %	+11.53 %	851.05bn		
Railroads	-0.81 %	-25.01 %	239.29bn		
Business Support Services	-0.85 %	+9.02 %	544.80bn		
Containers & Packaging	-1.02 %	-6.91 %	226.48bn		
Transportation Services	-1.03 %	-23.34 %	535.04bn		
Financial Administration	-1.04 %	+2.32 %	312.55bn		
Commercial Vehicles & Trucks	-1.21 %	-14.79 %	540.48bn		
Business Training & Employment Agencies	-1.23 %	-40.72 %	113.60bn		
Electrical Components & Equipment	-1.31 %	-9.70 %	802.20bn		
Waste & Disposal Services	-1.35 %	+6.24 %	116.90bn		
Electronic Equipment	-1.36 %	-1.11 %	492.91bn		
Industrial Machinery	-1.42 %	-4.15 %	1.04tn		
Diversified Industrials	-1.61 %	+14.35 %	1.18tn		
Heavy Construction	-1.68 %	-10.18 %	725.80bn		
Industrial Suppliers	-2.28 %	+3.26 %	251.13bn		

Simulation Overview & Performance

Investment Mandate

- Global, Multi Asset, Long short Fund
- \$20million fund
- Invest through a one year period of real price action and real breaking news
- Constraint: At least **90% invested** at the start of each quarter
- Constraint: No more than **Maximum \$5million** exposure to any one asset
- Teams of 3 for fund of funds – Discussion on how to allocate leverage for multi-manager fund. 50%, 33%, 17% weightings to be split between participants. Reallocate leverage before the start of each quarter.

Performance Measurement:

- Relative Return vs Benchmark
- Absolute Return
- Peer group comparison

Tradable Assets & Benchmark

Sector	Code	Name	Asset Class	Geography
Consumer Discretionary	TRAV	Travel & Leisure	Equity	Europe
Consumer Discretionary	RETL	Retail	Equity	Europe
Consumer Discretionary	MEDI	Media	Equity	Europe
Industrials	INDU	Industrial Goods & Services	Equity	Europe
Industrials	CHEM	Chemicals	Equity	Europe
Technology	TECH	Technology	Equity	Europe
Financials	FINS	Financial Services	Equity	Europe
Financials	BANK	Banks	Equity	Europe
Financials	INSU	Insurance	Equity	Europe
Real Estate	REAL	Real Estate	Equity	Europe
Materials	CONST	Construction & Materials	Equity	Europe
Materials	BRES	Basic Resources	Equity	Europe
Consumer Staples	PERS	Personal & Household Goods	Equity	Europe
Consumer Staples	FOOD	Food & Beverages	Equity	Europe
Telecommunications	TELCO	Telecommunications	Equity	Europe
Utilities	UTIL	Utilities	Equity	Europe
Oil & Gas	OILS	Oil & Gas	Equity	Europe
Health Care	HLTH	HealthCare	Equity	Europe
Whole Index	SXXP	Stoxx 600	Equity	Europe

Simulation Structure

Q1

- 15 mins research
- 15 mins prices frozen – construct portfolio
- 15 mins price action - breaking news - trading

Q2

- 15 mins prices frozen – rebalance portfolio
- 15 mins price action - breaking news - trading

Q3

- 15 mins prices frozen – rebalance portfolio
- 15 mins price action - breaking news - trading

Q4

- 15 mins prices frozen – rebalance portfolio
- 15 mins price action - breaking news – trading



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