Investment Clock Analysis

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As part of the project, I analyzed returns of different asset classes, sectors across geographies at different phases of the business cycle, differentiated on the basis of the economic growth and inflation.

As we are trying to capture the behaviour of assets in different phases of the economy, and most assets, including stocks, are leading indicators, we needed to use indicators that show the leading growth and inflation trends in the economy

Growth	Inflation	Phase
↑ Increasing	↓ Decreasing	Reflation
↑ Increasing	↑ Increasing	Inflation
↓ Decreasing	↑ Increasing	Stagflation
↓ Decreasing	↓ Decreasing	Deflation

Table 1: Phases of Economy with based on growth & inflation cycles

As part of research, we wanted to capture broader trends of the economy during a particular period, and to capture that, we used the 2-year % change in OECD G7 lead indicator, using which I identified major peaks and troughs between January 1990 to September 2025 on a monthly basis, result of which is identified below

We used the 2-year % change to even out the short-term volatility and capture the broader trend in the economy

In the graph below, we can clearly see the big drops during the period of the dotcom bubble, GFC, COVID-19, and a sharp recovery after that. fig (1)

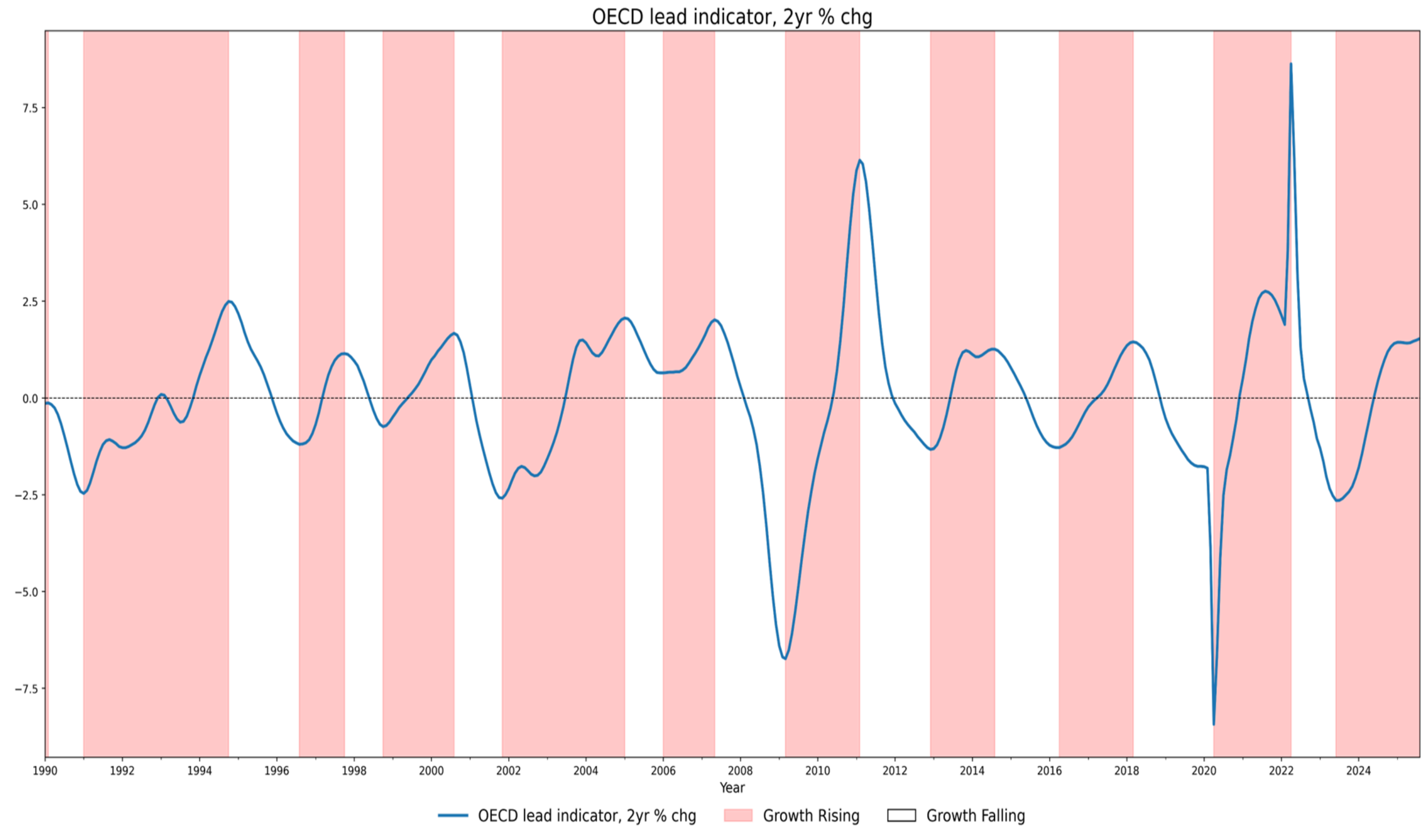

Fig (1)

For the inflation, I calculated the global inflation using the GDP-weighted inflation of USA, France, Canada, Germany, Italy, UK, Japan, Hong Kong, China, India, Brazil, South Korea, and Russia

As one will observe, inflation was volatile during the 90s, given the hyperinflation in some of the emerging markets during that period. To check for that, I winsorized the hyperinflation of those countries during the period. For inflation similar to growth, we focused on the broader trend, and put most of the 2010s in low inflation, as it was very low for the whole period, without any big jumps, which depicts the ‘Amazon Effect’ on the prices during that period while high inflation period post-covid is also clearly visible. fig (2)

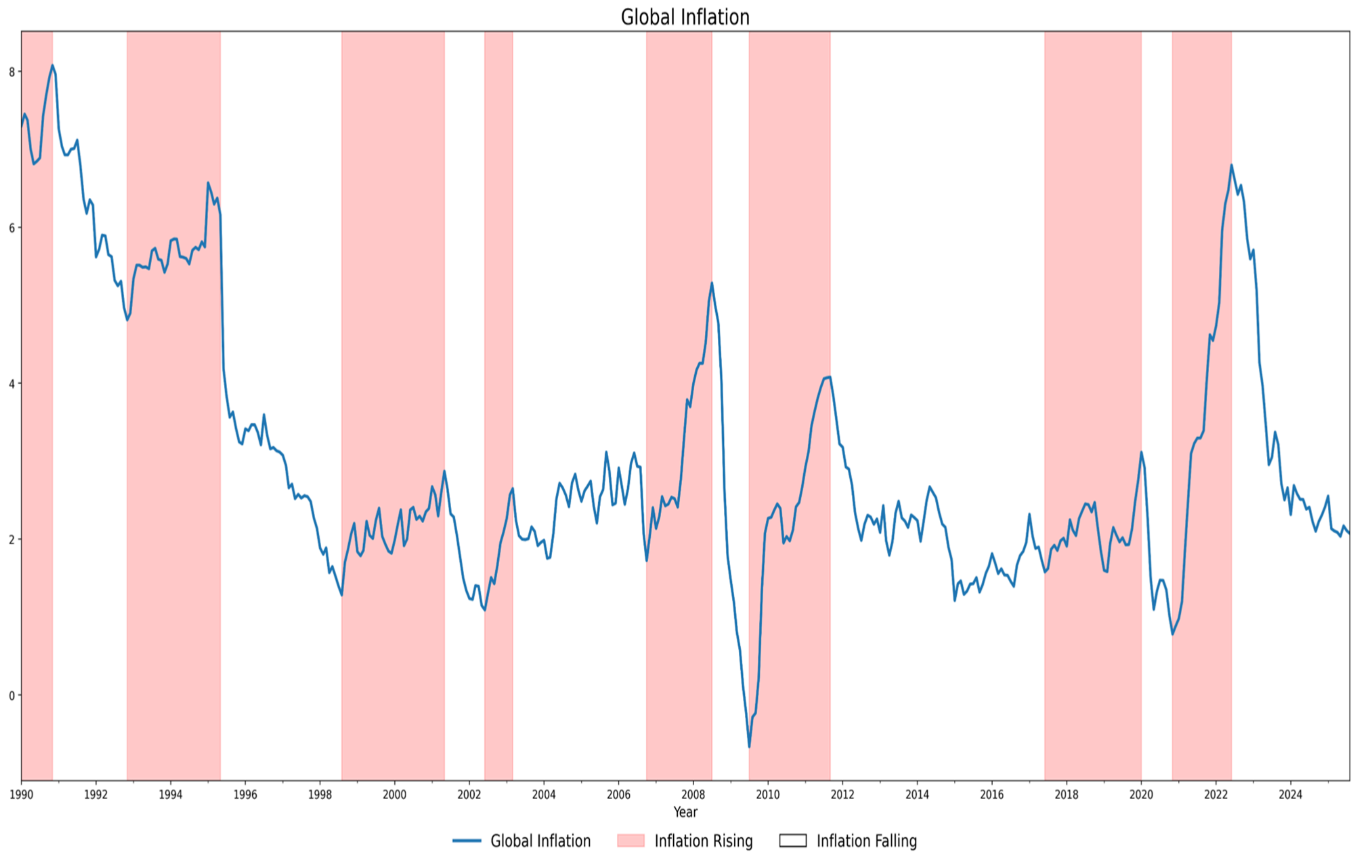

Fig (2)

Investment Clock Phases from 1990

After that, I separated the 4 phases of the economy using the criteria in Table 1 on a monthly basis for the period of study and looked at the average duration of each phase.

'Phase Analysis Summary:'

Phase	Total (months)	Frequency (%)	Avg duration (months)
Deflation	93	21.728972	9.300
Inflation	115	26.869159	14.375
Reflation	148	34.579439	14.800
Stagflation	72	16.822430	9.000

Table (2) For the given time period, the economy is in reflation for the highest time period, followed by inflation, with having average cycle of more than 1 year, which is in line with expectations as governments and central banks actively work to increase economic growth

Asset Class Performance Through the Cycle

During the reflation phase, equities are the best-performing asset class by a mile with an average CAGR of 19%. Among equities, emerging markets (26%) performed the best given the risk-off sentiment during this period. SP500 (22%) also outperformed the global equity (19%) markets
All other asset classes lagged very heavily vis-à-vis equities, given risk-off sentiment, with commodities the second-best performer with 5% average CAGR. **Table(3)**
Equities gave a positive return 70% of the time on a monthly basis during the reflation phase, the highest among all phases, with the lowest volatility compared to other phases

For the inflation phase, we observe that both equities and commodities have given an average CAGR of 13% highest among all asset classes, though equity has a higher volatility with emerging markets (21%) leading the way, though SP500 (12.8%) lags global equity markets during the inflationary phase. **Table (4)**
Bonds and cash are the worst performers during this phase as well, with bonds giving a negative return almost 50% of the time on a monthly basis during the inflationary phase

Table (3)

--- REFLATION PHASE (Expansion to Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
MSCI_Emerging	26.024527	17.405115	108	72.972973
SP500	22.324854	12.074216	108	72.972973
MSCI_All	19.290591	11.941878	103	69.594595
Commodity	5.195865	7.313239	82	55.405405
Bonds	3.709442	4.645193	91	61.486486
Cash	2.791025	0.647520	148	100.000000

--- INFLATION PHASE (Expansion above Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
MSCI_Emerging	21.435298	18.363351	72	62.608696
MSCI_All	13.232922	14.584684	74	64.347826
Commodity	13.123460	8.385143	74	64.347826
SP500	12.815519	14.490349	75	65.217391
Cash	2.552692	0.636772	115	100.000000
Bonds	1.935012	4.233624	61	53.043478

Table (4)

During the stagflationary phase, we observe that bonds (10.5%) are by far the best performing asset class, and cash (3.6%) are the only two asset class with a positive return, with equity returns eroding to -11% CAGR, with emerging markets giving an average CAGR of -17%, given the risk-on sentiment. Even during this period, we observe that the SP500 gave a positive return more than 50% of the time on a monthly basis. **Table (5)**

Against expectations, we see the commodity index gave a flat return, while we expected a positive return, which could be explained by the fact that slowing economic activity causes price pressure on metal commodities, which cancels out any positive gain of non-industrial commodities.

Table (5)

--- STAGFLATION PHASE (Contracting from Peak) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
Bonds	10.469808	4.382271	51	70.833333
Cash	3.637895	0.692835	72	100.000000
Commodity	-0.588781	8.923576	36	50.000000
SP500	-5.650320	16.369354	38	52.777778
MSCI_All	-11.122416	16.939218	33	45.833333
MSCI_Emerging	-17.171629	25.795051	33	45.833333

--- DEFLATION PHASE (Contracting below Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
Bonds	5.818321	4.916633	58	62.365591
Cash	2.543809	0.655991	93	100.000000
SP500	-0.146499	16.538193	53	56.989247
MSCI_All	-4.355277	17.428046	49	52.688172
Commodity	-10.763041	10.431705	40	43.010753
MSCI_Emerging	-12.363409	24.546241	39	41.935484

Table (6)

For the deflationary phase, we observe that bonds (5.8%) and cash (2.5%) are the only positive asset classes, with commodity (-10.7%) the worst-performing asset class. We also observe that SP500 gave flat returns with positive returns 57% of times on a monthly basis.**Table (6)**

SP500 return in all four phases of the economic cycle shows the comparative non-cyclical trend followed by the index giving positive return more than 50% of times on a monthly basis in all phases with less volatility than the global equity market in general, which it is usually known for. While we also observed that equities are the best asset classes during the period of growth increase, irrespective of inflation direction, while bonds become the best asset class during the risk-on phase when growth is falling, which is in line with the expectation

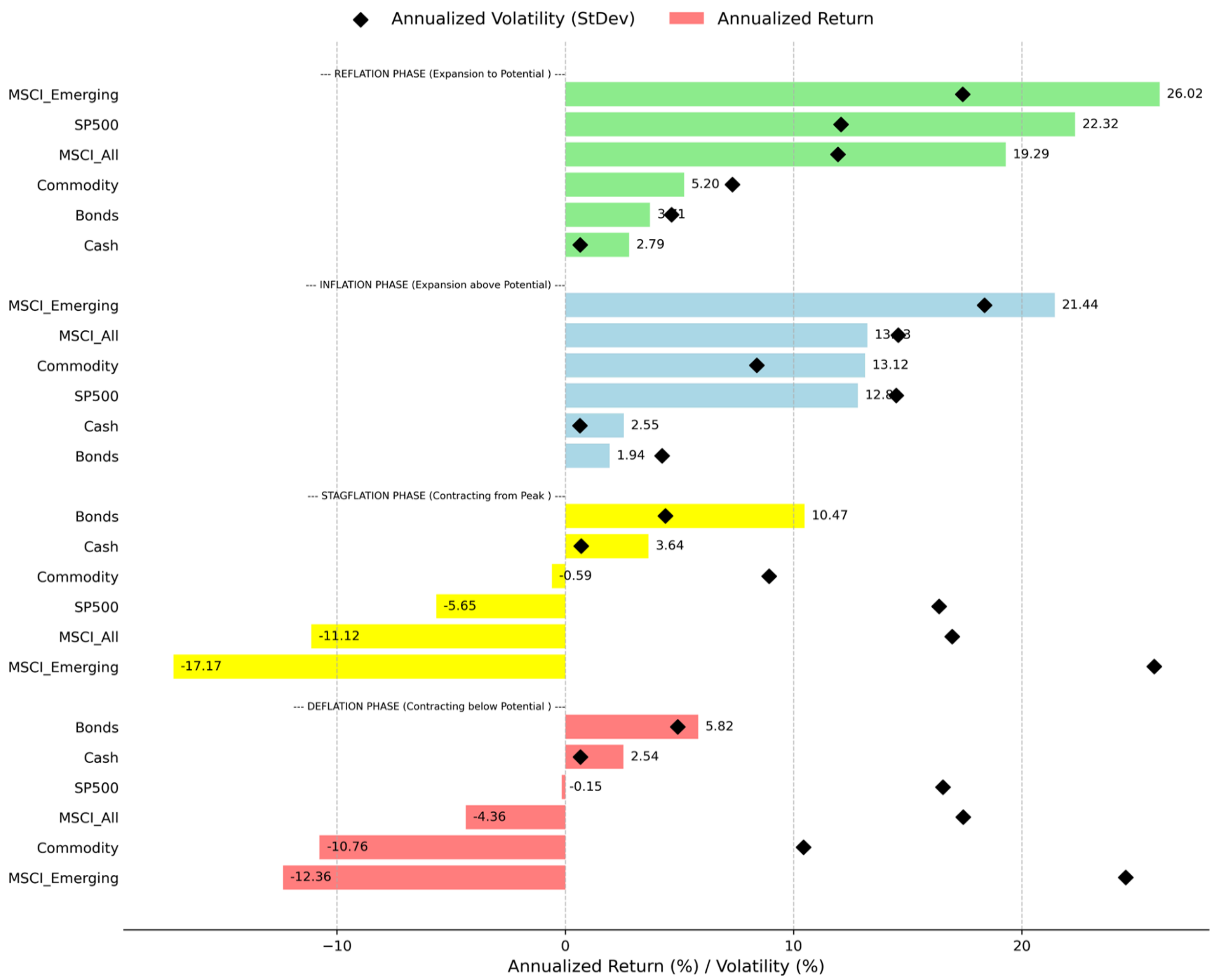

Fig (3)

Equity Sector Performance through Cycle

For the next part of the research, I analyzed the returns of different equity sectors based on GICS classification for S&P-listed companies.

During the reflation period, we can observe that every sector gave a positive return, with Finance, IT, Consumer Discretionary, Industrials, and Materials outperforming the SP500, with both SP500 and SP1500 outperforming the global equity index, while the sectors like Healthcare, Utility, Communication, and Energy are underperformers, given the comparative risk-off nature either due to low inflation or stable cash flow of this sectors compared to the high performing ones, which are more risky, but during a positive time for economy tend to perform better than risk-off sectors. **Table (7)**

During the inflationary phase, we observe that IT, Energy, Real Estate, and Industrials are top-performing sectors per expectation, while sectors like Utility, Consumer Staples, Communications, and Healthcare underperformed the SP500 as the rising inflation eats up their margins, while the rising prices give a tailwind to the Energy, and Real Estate. **Table (8)**

Like the reflationary phase, during inflation, all sectors gave positive returns on average, with each sector giving positive returns at least 50% of the time on a monthly basis.

--- REFLATION PHASE (Expansion to Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
SPY_Fin	31.754418	16.535896	101	68.243243
SPY_ConsDiscr	28.195777	16.383815	100	67.567568
SPY_IT	26.774624	19.739260	95	64.189189
MSCI_Emerging	26.024527	17.405115	108	72.972973
SP1500	24.084823	11.973598	91	72.222222
SPY_Inds	24.084118	14.794499	99	66.891892
SPY_Matr	22.839014	15.740153	96	64.864865
SP500	22.324854	12.074216	108	72.972973
MSCI_All	19.290591	11.941878	103	69.594595
SPY_RealEst	16.625628	18.261775	73	65.765766
SPY_ConsStaples	16.151182	11.559951	99	66.891892
SPY_Energy	15.778191	17.972916	87	58.783784
SPY_Health	14.999465	14.513400	92	62.162162
SPY_Comms	14.691396	15.779791	88	59.459459
SPY_Utilities	12.852742	13.198015	103	69.594595

Table (7)

--- INFLATION PHASE (Expansion above Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
SPY_IT	28.425949	24.435706	73	63.478261
SPY_Energy	24.209535	21.177920	71	61.739130
MSCI_Emerging	21.435298	18.363351	72	62.608696
SPY_RealEst	21.228936	18.084298	42	63.636364
SP1500	16.327890	15.558545	58	65.168539
SPY_Inds	15.856180	17.033761	75	65.217391
SPY_Fin	15.735010	20.329219	68	59.130435
MSCI_All	13.232922	14.584684	74	64.347826
SP500	12.815519	14.490349	75	65.217391
SPY_ConsDiscr	12.292916	17.953270	68	59.130435
SPY_Matr	12.101625	20.155149	71	61.739130
SPY_Health	7.155181	16.072162	72	62.608696
SPY_Comms	4.857033	22.529397	61	53.043478
SPY_Utilities	2.189637	16.315685	63	54.782609
SPY_ConsStaples	1.714270	14.148655	58	50.434783

Table (8)

During the stagflationary phase, which is a flight to risk-off phase with a slowing economy and rising prices, we saw that only Utility, Consumer Staples, and Healthcare gave positive returns while all other sectors gave negative returns per expectations, as these sectors have stable demand irrespective of the economy and thus cash flow, which is quite stable, wile Finance, Real Estate, Discretionary were the worst performing sectors, with SP500 giving a return of -5.6% during this phase though performed better than the global equity index. **Table (9)**

We can also see the overall increased volatility in the markets in each sector during stagflation, when compared to reflation and inflation

--- STAGFLATION PHASE (Contracting from Peak) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
SPY_Utilities	10.121711	13.886303	42	58.333333
SPY_ConsStaples	8.889080	14.087054	48	66.666667
SPY_Health	8.626274	15.993737	47	65.277778
SPY_Energy	-1.853694	23.296082	40	55.555556
SPY_Matr	-4.302571	20.899223	38	52.777778
SP1500	-5.626070	16.365374	36	58.064516
SP500	-5.650320	16.369354	38	52.777778
SPY_Inds	-5.887422	18.663107	34	47.222222
SPY_IT	-6.101737	28.908987	36	50.000000
SPY_Comms	-6.550786	19.203709	37	51.388889
SPY_RealEst	-7.152500	17.371249	25	55.555556
SPY_ConsDiscr	-8.155101	19.384124	35	48.611111
MSCI_All	-11.122416	16.939218	33	45.833333
SPY_Fin	-16.325082	24.025586	30	41.666667
MSCI_Emerging	-17.171629	25.795051	33	45.833333

Table (9)

We can also observe that even during the deflationary phase, equities gave a negative return, though slightly better than stagflation, with SP500 giving almost flat returns, with Healthcare, Staples, IT, Communications top performing sectors, while sectors like Energy, Real Estate, Materials were the worst performers. **Table (10)**
Here, we also observe, against expectations, IT gave a positive return, again pointing to its forever growth sector theory

--- DEFLATION PHASE (Contracting below Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
SPY_Health	8.297464	14.838449	55	59.139785
SPY_ConsStaples	5.747984	12.952738	51	54.838710
SPY_IT	5.717489	23.681955	49	52.688172
SPY_Comms	3.771027	18.931926	53	56.989247
SPY_ConsDiscr	2.439515	20.755045	52	55.913978
SP500	-0.146499	16.538193	53	56.989247
SP1500	-0.790496	16.862620	52	56.521739
SPY_Inds	-4.194783	20.401944	53	56.989247
MSCI_All	-4.355277	17.428046	49	52.688172
SPY_Utilities	-5.828857	16.632757	48	51.612903
SPY_Fin	-6.214839	23.980493	50	53.763441
SPY_Matr	-8.533418	22.359727	39	41.935484
SPY_RealEst	-10.798302	29.553171	31	48.437500
SPY_Energy	-11.216403	26.252757	42	45.161290
MSCI_Emerging	-12.363409	24.546241	39	41.935484

Table (10)

Global Equity Market Performance through Cycle

In global equity markets during the reflationary phase, BRIC nations are the biggest outperformers, with India leading the way with CAGR of 40% followed by China (35%) and Brazil (30%), with emerging markets outperforming global equity markets, given the positive sentiment during this phase. SP500 & SP1500 also outperformed global markets, while defensive markets like Japan, Korea, Australia, and the UK were lagging even though they also gave positive double-digit returns. **Table (11)**

--- REFLATION PHASE (Expansion to Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
India	40.176413	28.568773	99	66.891892
China	35.950531	56.522568	86	58.108108
Brazil	29.882046	23.150645	78	61.904762
Russia	27.500462	25.038453	66	59.459459
MSCI_Emerging	26.024527	17.405115	108	72.972973
Hongkong	24.760890	19.961828	100	67.567568
SP1500	24.084823	11.973598	91	72.222222
Germany	23.860402	16.649869	99	66.891892
SP500	22.324854	12.074216	108	72.972973
MSCI_All	19.290591	11.941878	103	69.594595
Canada	18.430029	10.492704	102	68.918919
Swiss	17.794218	11.846247	103	69.594595
Europe	17.159555	14.018306	98	66.216216
MSCI_Singapore	16.033346	15.449500	95	64.189189
France	15.235957	14.236253	99	66.891892
Singapore	14.771345	15.605409	93	62.837838
UK	13.548020	11.258434	98	66.216216
Australia	13.547386	10.759177	91	69.465649
Japan	13.285212	17.844008	78	52.702703
Korea	13.001443	21.443404	80	54.054054

Table (11)

During the Inflationary phase, we observed commodity-export-heavy countries like Russia, Brazil, and China are the biggest outperformers, with SP1500 and emerging markets outperforming global markets, while SP500 lagged the global markets. Like reflation in the inflationary phase, we see defensive markets with heavy import reliance, like that of Japan, Switzerland, UK are lagging the global equities. **Table (12)**

Here, in the inflationary phase, like reflation, all the countries we observed for research gave positive returns

--- INFLATION PHASE (Expansion above Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
Russia	61.170050	41.904945	56	62.921348
Brazil	55.502208	36.637120	65	67.708333
China	34.700140	61.220352	63	55.752212
Singapore	26.933692	21.829047	71	61.739130
MSCI_Singapore	24.352530	21.741186	70	60.869565
Korea	23.428959	26.872177	67	58.260870
MSCI_Emerging	21.435298	18.363351	72	62.608696
Hongkong	19.356822	25.229206	66	57.391304
India	18.636536	22.920177	69	60.000000
Canada	17.411585	12.943469	78	67.826087
SP1500	16.327890	15.558545	58	65.168539
MSCI_All	13.232922	14.584684	74	64.347826
Germany	13.093310	20.710043	66	57.391304
France	13.091027	19.614815	67	58.260870
Australia	12.993027	12.487677	72	63.716814
SP500	12.815519	14.490349	75	65.217391
Europe	12.667732	19.335245	66	57.391304
UK	8.763154	14.653159	68	59.130435
Swiss	7.920456	15.149963	66	57.391304
Japan	5.222286	19.433083	62	53.913043

Table (12)

During stagflation, every country's equity market gave a negative return except India (5.7%), though with high volatility, which could be explained by the recent continuous growth of the Indian economy in the past decade, irrespective of the global environment.

SP500 & SP1500 gave negative returns, though still performed better than the global MSCI index. **Table (13)**

Japan, Europe, Singapore, Canada, Switzerland, France, and Germany are among the worst-performing markets during the stagflationary phase, with every country seeing increased volatility compared to inflation and reflation.

--- STAGFLATION PHASE (Contracting from Peak) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
India	5.670963	26.369491	35	48.611111
China	-4.190385	29.440328	31	49.206349
Russia	-5.256177	35.264849	32	57.142857
SP1500	-5.626070	16.365374	36	58.064516
SP500	-5.650320	16.369354	38	52.777778
Australia	-6.169666	13.756966	30	47.619048
Hongkong	-6.219342	24.941046	35	48.611111
UK	-9.172046	14.276901	32	44.444444
Brazil	-9.922675	31.800520	29	46.031746
MSCI_All	-11.122416	16.939218	33	45.833333
Canada	-12.037190	16.786043	34	47.222222
Swiss	-12.898944	18.054528	36	50.000000
Korea	-13.895430	25.910148	29	40.277778
Germany	-15.330218	22.012975	36	50.000000
Europe	-16.725348	18.036181	28	38.888889
France	-16.726190	19.233745	28	38.888889
MSCI_Emerging	-17.171629	25.795051	33	45.833333
Singapore	-17.391400	20.206449	32	44.444444
MSCI_Singapore	-17.749825	20.788054	33	45.833333
Japan	-20.839855	22.580196	32	44.444444

Table (13)

During Deflation, we see defensive markets like Japan, Switzerland, and Germany gave positive returns, while the MSCI global index gave negative returns, with emerging markets, along with Singapore, being the worst performers. SP500 & SP1500 both performed better than the global markets. **Table (14)**

In this broader trend, we observed is SP500 & SP1500 both usually performed better than the global markets in general, while the emerging markets leading the way during the risk-on period and defensive markets being best during the flight to safety period.

--- DEFLATION PHASE (Contracting below Potential) ---

	Annualized Return (%)	Standard Deviation (%)	Positive Months (Count)	Positive Months (%)
Germany	6.286934	21.311133	53	56.989247
Swiss	5.121394	15.290677	54	58.064516
Japan	2.488158	22.043599	57	61.290323
Brazil	2.139123	28.647773	46	50.000000
Europe	1.743462	19.769492	50	53.763441
France	1.157921	19.913543	52	55.913978
China	-0.041118	28.986693	43	46.739130
SP500	-0.146499	16.538193	53	56.989247
SP1500	-0.790496	16.862620	52	56.521739
UK	-1.799602	14.382284	49	52.688172
Korea	-2.933370	30.596696	45	48.387097
Australia	-3.218882	16.401130	49	53.260870
MSCI_All	-4.355277	17.428046	49	52.688172
India	-4.499748	24.960797	43	46.236559
Russia	-5.153768	37.975616	48	61.538462
Canada	-6.837664	15.789041	45	48.387097
Hongkong	-10.555197	26.966588	42	45.161290
MSCI_Emerging	-12.363409	24.546241	39	41.935484
Singapore	-12.923247	23.476296	43	46.236559
MSCI_Singapore	-13.554791	22.923373	41	44.086022

Table (14)

Effect of Company Reclassification

In September of 2018companies like Meta & Google moved from IT to Communications, and Disney & Netflix from Discretionary to Communications. On comparing the effect of this move on the three sector performance during different phases before and after the reclassification, I used dummy variables.

As observed from **Table(15)**, Communications outperformed SP500 in all phases except inflation; it also gave positive return in stagflation, going from underperforming SP500 to outperforming post change, while its return became exceptionally well in the reflationary period when compared to before the change.

IT still maintains its attractiveness and market-leading capacity in most of the phases.

--- Analysis of Returns Before (0) and After (1) GICS Reclassification in Sep 2018 (Annualized %)

Phase	Reclassification	SPY_Comms	SPY_IT	SPY_ConsDiscr	SP500
Deflation	0	4.836146	4.417358	3.993367	1.208540
	1	-2.568170	14.050456	-6.663537	-8.125695
Inflation	0	5.229204	30.126661	13.147919	11.812890
	1	2.872130	19.606575	7.786480	18.361902
Reflation	0	8.039976	22.885080	25.481961	20.691091
	1	39.828809	40.654462	37.692504	27.951852
Stagflation	0	-11.463022	-11.411153	-9.534032	-8.433370
	1	8.502361	10.288454	-4.206135	2.527879

Table (15)

Snail Trail Economic Indicator

To create a leading snail trail showing the phase of the economy, I used the following indicators and created two types of leading snail trail, one with OECD G7 leading indicator **[Fig (4)]** which showed the global economy entering a reflationary period as of August 2025 while using USA

OECD leading indicator **[Fig (5)]**, while keeping all other indicators same, I found the US economy to be entering inflationary phase

Growth Indicators	Inflation Indicators
OECD G7 / USA Leading Indicator	US-3M Yield
ISM New Orders	PMI Price Paid
US Initial Jobless Claims	CRB Commodity Index
Consumer Confidence	Global Inflation

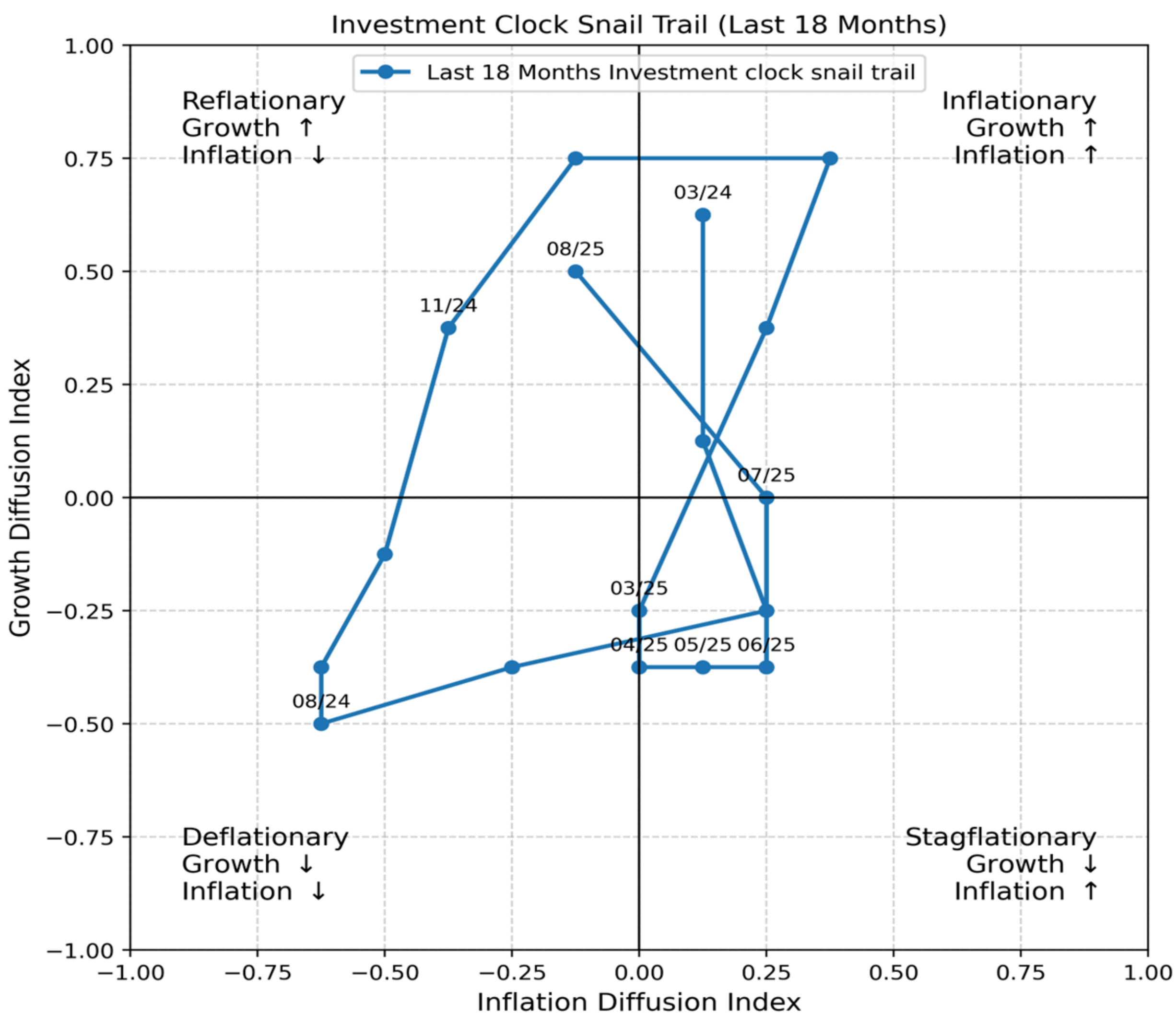

Fig (4)

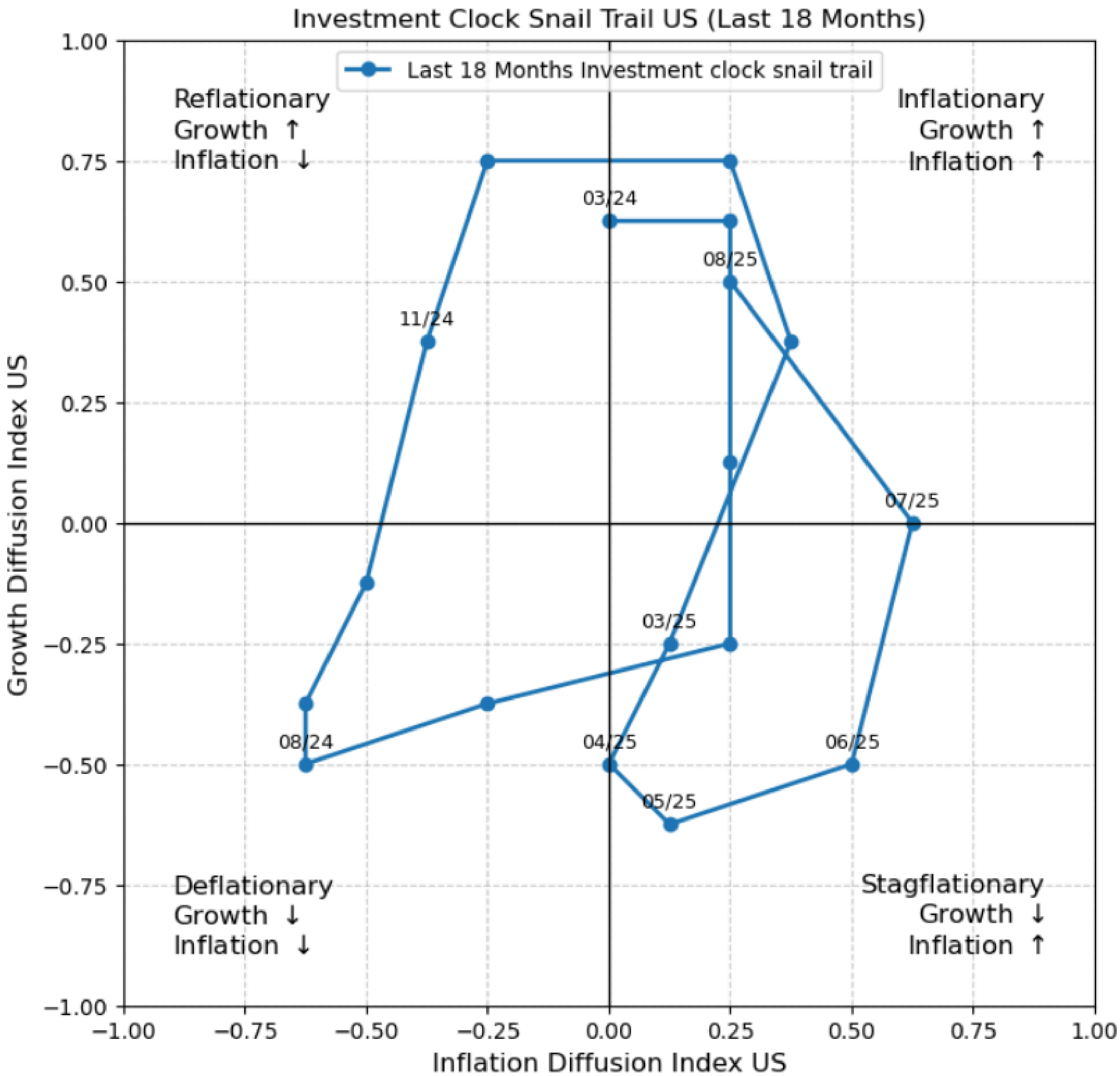
Investment Clock Snail Trail US (Last 18 Months)
Last 18 Months Investment clock snail trail
Reflationary
Growth ↑
Inflation ↓
Inflationary
Growth ↑
Inflation ↑
Deflationary
Growth ↓
Inflation ↓
Stagflationary
Growth ↓
Inflation ↑
03/24
08/25
11/24
07/25
03/25
08/24
04/25
06/25
05/25
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00
Growth Diffusion Index US
−1.00
−0.75
−0.50
−0.25
0.00
0.25
0.50
0.75
1.00
Inflation Diffusion Index US

Fig (5)