The Chart That Changes How You See 77 Years of UK Economic History

What Bootstrap CUSUM reveals about the long deceleration of UK GDP — and why conventional analysis has been telling us the wrong story.

Data: World Bank/ONS · UK GDP cumulative index 1949=100 · N=77 · Loops=3,000 · By Syd Stewart, StepChangeAnalysis.com · May 2026

Four findings

Three charts, one wrong question

Applied to annual GDP growth rates, all three methods — X-mR, Run Chart, and Bootstrap CUSUM — find nothing. Even Bootstrap CUSUM reports 1 stage across 77 years. Annual growth rates are mean-reverting by design: a recession pulls the rate down, a recovery pulls it back up, and the long-run average stays roughly the same regardless of whether the underlying trajectory has permanently shifted. The question being asked is wrong.

The right question changes everything

Switch to cumulative GDP level data — compounding annual growth rates into an index starting at 100 in 1949 — and Bootstrap CUSUM finds 8 distinct structural stages at 90% confidence. The same method, the same data, a different question: has the economy's long-run growth path permanently shifted?

The 2008 Financial Crisis was not a structural break

Stage 7 runs from 2003 to 2014, absorbing the 2008 Financial Crisis entirely. Bootstrap CUSUM finds no evidence that it created a new structural growth trajectory. The real structural breaks fall at 1958, 1966, 1976, 1986, 1996, 2003, and 2014 — moments of institutional and policy change, not crisis points.

A 60-year structural deceleration

Each successive stage delivers less growth than the last: +24.1% → +20.5% → +12.5% → +13.3% → +9.9% → +8.2% → +6.0%. Continuous across governments of every political persuasion. Notice how the steps in the Bootstrap CUSUM get smaller over time — the visual signature of a system that is still growing but decelerating with each stage. Robust at 90%, 95%, and 99.7% confidence.

The eight structural stages

Stage	Period	Index Mean	Change %	Growth Regime
1	1949–1958	115.35	Baseline	Post-war recovery
2	1958–1966	143.19	+24.1%	Macmillan boom
3	1966–1976	172.55	+20.5%	Wilson turbulence, sterling crisis
4	1976–1986	194.16	+12.5%	IMF crisis, end of post-war consensus
5	1986–1996	220.04	+13.3%	Lawson boom, financial deregulation
6	1996–2003	241.90	+9.9%	New Labour stability
7	2003–2014	261.77	+8.2%	Pre-crisis peak — absorbs 2008 entirely
8	2014–2025	277.40	+6.0%	Post-austerity new normal — weakest in 77 years

+24.1% → +20.5% → +12.5% → +13.3% → +9.9% → +8.2% → +6.0%

Each successive stage delivers less growth than the last — a 60-year structural deceleration, continuous across governments of every political persuasion. Notice how the steps in the Bootstrap CUSUM chart get smaller over time — each stage boundary is closer to the last than the one before it. The economy is still growing, but each growth regime delivers less than its predecessor.

WHAT THIS MEANS FOR ECONOMIC ANALYSIS

If the deceleration predates 2008, 2016, and 2020, then fixing those "events" will not reverse it. The structural breaks identified — 1966, 1976, 1986, 2014 — suggest trajectory shifted at moments of institutional and policy change. Understanding why those breaks occurred is a more useful question than relitigating the financial crisis or Brexit.

Honest caveats: this uses total GDP, not per capita; GDP methodology has changed over 77 years; the analysis identifies that shifts occurred and when — attribution requires separate economic analysis. This is a statistical description, not an economic forecast.

Robustness across confidence levels

Confidence	Stages	What it shows
90%	8 stages	Full staircase — all structural shifts including marginal ones
95%	5 stages	Three marginal stages drop out; staircase and deceleration remain
99.7%	4 stages	Only the four largest shifts survive. Deceleration +24% to +6% still unambiguous

The core finding is robust across all confidence levels. The direction of change and the approximate magnitude of the overall deceleration are consistent whether you choose 90%, 95%, or 99.7%. This robustness is itself a form of evidence.

Reproduce this analysis

Settings: X-Axis = Year, Y-Axis = Cumulative Index, Date Format = YYYY, Turn Length = 10, Loops = 3000, Conf% = 90. Download uk-gdp-data.csv from the article and upload directly to stepchangeanalysis.com.

References

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• Data: World Bank / ONS UK annual GDP growth rates 1949–2025.

Read the full article and download the data
stepchangeanalysis.com/uk-gdp-analysis.html

The prepared CSV (uk-gdp-data.csv) is available for download directly from the article. Upload to StepChangeAnalysis.com to reproduce all six charts shown, free in your browser.