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Gold up or down days in a row: 20 years of XAUUSD streaks

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Abstract

How long can gold rise or fall day after day? Using 5,138 daily XAUUSD closes from 2005 to 2024 we count up and down streaks and compare them with a coin-flip model using gold's own odds. The longest up streak was 11 days (December 2017 to January 2018) and the longest down streak 9 days, four times. Streaks were shorter than chance: 80 up and 42 down streaks of five days or more against 98.4 and 62.7 expected (runs test $z = 4.01$, $p = 0.000060$). No streak length reliably predicted the next day's direction after correction for 12 tests.

Keywords: gold; XAUUSD; streaks; runs test; momentum; mean reversion

JEL: G14; C12; Q02

Highlights

- **Longest up streak: 11 days.** From 15 Dec 2017 to 2 Jan 2018, gold closed higher 11 days in a row (+5.22%).
- **Longest down streak: 9 days, 4 times.** The latest ran from 25 Sep 2023 to 5 Oct 2023 (−5.45%).
- **5 days in a row is not rare.** Gold had 80 up streaks of 5 days or more (4.00 a year) and 42 down streaks of 5 days or more (2.10 a year).
- **Streaks were shorter than chance.** A coin flip with gold's odds gives 98.4 up and 62.7 down streaks of 5 days or more. Gold had more short streaks and fewer long ones. A standard runs test puts the gap at $z = 4.01$ ($p = 0.000060$).
- **No reliable signal for the next day.** After 4 down days in a row gold rose the next day 63.5% of the time, but none of our 12 next-day tests against gold's normal odds passes the 0.0042 level.

1. Introduction

How many days in a row can gold rise or fall, and how often does a long streak happen? We took 5,138 daily closes of XAUUSD from January 2005 to December 2024 and cut them into streaks: runs of up days or down days in a row. We count streaks by length, list the longest ones, and compare everything with a simple coin-flip model that uses gold's own odds.

2. Data and method

Method

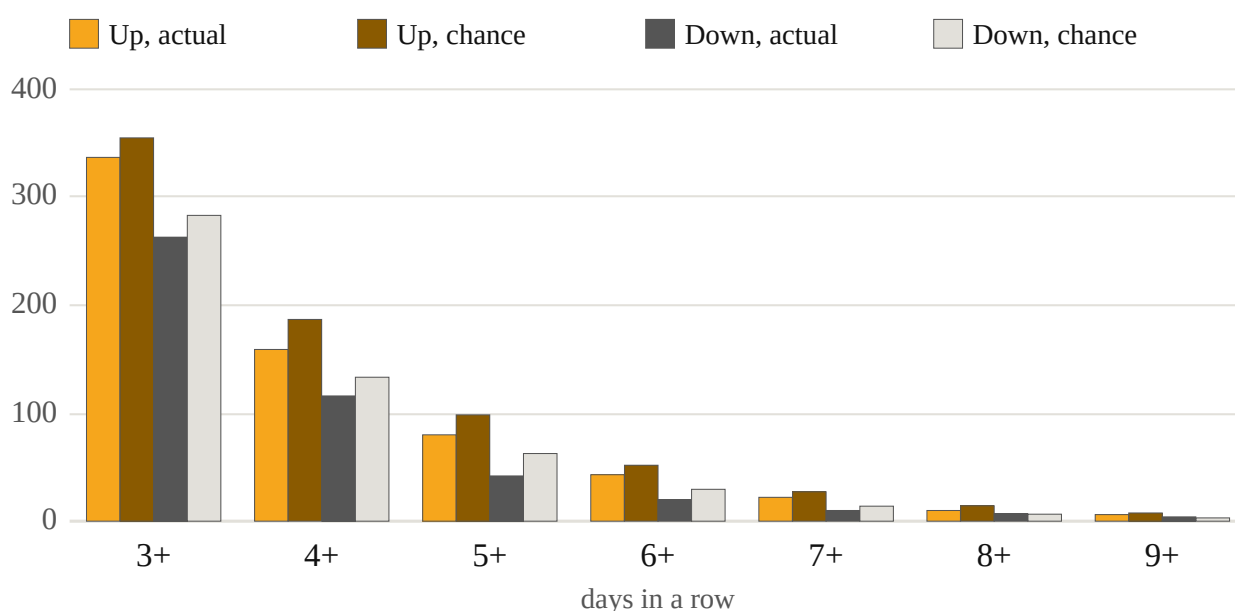
1. **Data:** daily XAUUSD bars from the public dataset "xauusd-gold-price-historical-data-2004-2025" on Hugging Face (file XAU_1d_data.jsonl), the same file as notes 08, 12, 13 and 14. Window 3 Jan 2005 to 31 Dec 2024, 5,138 days, the same days as note 08. No 2025 data is used.
2. **Up, down, flat:** daily return = close divided by the previous available close, minus 1. The first day uses the 30 Dec 2004 close. 2,706 up days, 2,418 down days and 14 flat days, the same as note 08.
3. **Streaks:** a run of back-to-back days with the same sign. A flat day ends a streak. The two days after the Thanksgiving holes (28 Nov 2005 and 27 Nov 2006) are left out, as in notes 08 and 13, and a streak never runs across them. Streak move = last close against the close before the first day.
4. **Chance model:** each day independent, up with probability 0.527, down 0.471, flat otherwise, on the same 3 stretches of days. Expected counts and the chance of a streak of a given length or longer are exact (no simulation).

Runs test: Wald-Wolfowitz on the 5,124 days with a move, normal approximation.

5. **Next day:** exact two-sided binomial tests on continued vs turned (flat next days left out), against 50% and against the share of all moving days with that sign. 12 tests, so the Bonferroni level is 0.0042.
6. **Weeks:** week close = the last daily close of each calendar week (ISO weeks); week return against the previous week close; same streak rules.

3. Results

How often gold rises or falls several days in a row



Number of streaks of N days or more, XAUUSD, 2005 to 2024, against the number expected if each day were an independent coin flip with gold's own odds of an up day (0.527) or a down day (0.471). Source: our calculation on the Hugging Face daily file (see Method).

Gold (XAUUSD) streaks of N days or more, 2005 to 2024

Days in a row	Up streaks	Per year	Chance	Down streaks	Per year	Chance
3 or more	337	16.85	355.1	263	13.15	283.3
4 or more	159	7.95	186.9	116	5.80	133.3
5 or more	80	4.00	98.4	42	2.10	62.7
6 or more	43	2.15	51.8	20	1.00	29.5
7 or more	22	1.10	27.3	10	0.50	13.9
8 or more	10	0.50	14.3	7	0.35	6.5
9 or more	6	0.30	7.6	4	0.20	3.1

A streak is a run of back-to-back up days (close above the previous close) or down days (close below). A flat day ends a streak. "Per year" = count divided by 20 years. "Chance" = the expected count if each day were independent, with gold's own share of up days (0.527) and down days (0.471), on the same days. Source: our calculation, file `streak_lengths.csv`.

Gold had 2,702 streaks in total: 1,351 up and 1,351 down. The average up streak lasted 2.00 days and the average down streak 1.79 days. The coin-flip model gives 2.11 and 1.89 days, and 2,562.4 streaks in total. So gold switched direction a little more often than chance.

The longest up streaks

The 10 longest up streaks in gold, 2005 to 2024

#	Days	Dates	Move	Move (US\$)
1	11	15 Dec 2017 to 2 Jan 2018	+5.22%	+US\$65.32
2	10	5 Jul 2011 to 18 Jul 2011	+7.91%	+US\$117.61
3	9	17 Jul 2020 to 29 Jul 2020	+9.68%	+US\$173.98
4	9	13 Nov 2009 to 25 Nov 2009	+8.03%	+US\$88.65
5	9	24 Oct 2006 to 3 Nov 2006	+7.96%	+US\$46.20
6	9	28 Feb 2024 to 11 Mar 2024	+7.50%	+US\$152.27
7	8	8 Dec 2008 to 17 Dec 2008	+14.77%	+US\$111.60
8	8	29 May 2019 to 7 Jun 2019	+4.76%	+US\$60.84
9	8	13 Apr 2011 to 25 Apr 2011	+3.84%	+US\$55.83
10	8	28 Jul 2010 to 6 Aug 2010	+3.76%	+US\$43.68

Days = up days in a row. Move = close of the last day against the close before the first day. Source: our calculation, file streak_top10.csv.

The longest down streaks

The 10 longest down streaks in gold, 2005 to 2024

#	Days	Dates	Move	Move (US\$)
1	9	26 Sep 2016 to 6 Oct 2016	-6.30%	-US\$84.33
2	9	18 May 2016 to 30 May 2016	-5.62%	-US\$71.86
3	9	25 Sep 2023 to 5 Oct 2023	-5.45%	-US\$105.01
4	9	2 Mar 2015 to 12 Mar 2015	-4.89%	-US\$59.26
5	8	5 Jun 2006 to 14 Jun 2006	-12.47%	-US\$79.50
6	8	23 Feb 2009 to 4 Mar 2009	-8.76%	-US\$86.90
7	8	28 Oct 2015 to 6 Nov 2015	-6.68%	-US\$77.88
8	7	9 May 2013 to 17 May 2013	-7.79%	-US\$114.76
9	7	23 May 2014 to 2 Jun 2014	-3.85%	-US\$49.75
10	7	2 Nov 2018 to 12 Nov 2018	-2.67%	-US\$32.88

Ties are listed by size of the move. Source: our calculation, file streak_top10.csv.

Long streaks were not the biggest moves. The largest rise inside one streak was +14.77% over 8 days (8 Dec 2008 to 17 Dec 2008). The largest fall was -13.64% over just 2 days (12 Apr 2013 to 15 Apr 2013). On average a 5-day up streak moved +3.84% and a 5-day down streak -3.38%.

Long streaks show up in every year. The longest up streak in any one year was never shorter than 4 days, and the longest down streak never shorter than 4. 2015 had the most streaks of 5 days or more: 10.

Are gold streaks longer than chance?

No. They were shorter. If each day were a coin flip with gold's odds, we would expect 355.1 up streaks of 3 days or more; gold had 337. For 5 days or more it was 80 against 98.4, and for down streaks 42 against 62.7.

The runs test looks at the 5,124 days with a move, in date order. It counts how often the sign changes. Gold had 2,698 runs against 2,554.9 expected (z 4.01, p 0.000060). More runs than expected means the next day turned more often than chance. The effect is small, but it is clear in this data.

The longest streaks were normal for 20 years of data. The coin-flip model gives a 0.878 chance of at least one up streak of 11 days or more, and a 0.954 chance of at least one down streak of 9 days or more.

What happens the day after a streak?

The next day after N up or down days in a row

After	Cases	Continued	Turned	p vs 50%	p vs base
Up 1 day	1,350	51.6%	48.4%	0.264	0.368
Up 2 days	695	48.6%	51.4%	0.494	0.030
Up 3 days	337	47.3%	52.7%	0.354	0.049
Up 4 days	158	50.6%	49.4%	0.937	0.633
Up 5 days	80	53.8%	46.2%	0.576	0.911
Up 6 days	43	51.2%	48.8%	1.000	0.879
Down 1 day	1,350	45.0%	55.0%	0.000256	0.107
Down 2 days	605	43.7%	56.3%	0.002	0.087
Down 3 days	263	44.1%	55.9%	0.064	0.324
Down 4 days	116	36.5%	63.5%	0.005	0.025
Down 5 days	42	47.6%	52.4%	0.878	1.000
Down 6 days	20	50.0%	50.0%	1.000	0.826

Cases = times a streak reached that many days and a next day exists. Continued = the next day moved the same way; turned = it moved the other way (flat next days left out). p vs 50% = exact two-sided sign test against a coin flip. p vs base = the same test against the share of all moving days that went that way (52.8% up, 47.2% down). Source: our calculation, file streak_next_day.csv.

- **After up days:** after 2 and 3 up days in a row, gold went up again 48.6% and 47.3% of the time, a little below the normal 52.8% (p 0.030 and 0.049 against base).
- **After down days:** after 1 down day, gold fell again only 45.0% of the time (p 0.000256 against 50%). But down days are less common anyway; against the normal 47.2% the p is 0.107. After 4 down days in a row the next day was up 63.5% of the time (73 of 115), p 0.025 against base.
- **The test:** we ran 12 tests (up and down, 1 to 6 days). 3 were below 0.05 against base, and none was below 0.0042 (0.05 divided by 12). So there is no next-day rule here that we would trust.

Weeks in a row

On weekly closes (1,044 weeks), gold closed higher in 55.6% of weeks. The longest run of up weeks was 9 weeks, twice: weeks ending 17 Mar 2006 to 12 May 2006 (+32.14%) and 12 Jun 2020 to 7 Aug 2020 (+20.71%). The longest run of down weeks was 7 weeks, also twice: weeks ending 26 Jun 2015 to 7 Aug 2015 (−8.83%) and 11 Nov 2016 to 23 Dec 2016 (−13.10%). There were 26 up runs and 9 down runs of 5 weeks or more. Source: our calculation, files weekly_streaks.csv and weekly_top.csv.

4. Discussion

What this means for an EA

- Grid and martingale EAs that add to a losing position need to survive long one-way runs. In these 20 years gold fell 9 days in a row 4 times and 8 days or more 7 times. Test a grid on these dates, not only on average days.
- A streak is a count of days, not a size. The worst falls came in short, fast streaks, such as −13.64% in 2 days. For the size side, see the largest daily moves (note 08) and what follows a big drop (note 14).
- "It has fallen 4 days, so it must bounce" has weak support. The next day was up more often than usual, but the sample is small and does not pass our test. Spread and swap come off any edge.

5. Limitations

Limits

- **One data source.** Not checked against a second feed. A broker with another daily close can turn a small up day into a small down day, which changes streak counts.
- **Broker day.** Days follow the broker's server date, not New York or London time.
- **Price only.** No spread, swap or slippage, and we did not test a trading rule.
- **Small samples.** There are few streaks of 7 days or more, so those rows only describe what happened.
- **Data ends in 2024.** The last day of the window ends an up streak of 1 day; streaks in 2025 and 2026 are not in this sample.

Appendix

Related notes

- The single biggest days, and how often gold moves 2% or more: XAUUSD largest daily moves: 20 years of gold data.
- Direction by day of the week: Best day of the week for gold: 20 years of XAUUSD weekday returns.
- Direction by calendar month: Gold seasonality by month: 20 years of XAUUSD returns.

FAQ

What is the longest winning streak for gold?

From 2005 to 2024 the longest run of up days in gold (XAUUSD) was 11 days, from 15 Dec 2017 to 2 Jan 2018 (+5.22%). The next longest was 10 days, from 5 Jul 2011 to 18 Jul 2011 (+7.91%).

How many days in a row can gold fall?

The longest down streak was 9 days. It happened 4 times: in Mar 2015, May 2016, Sep 2016 and Sep 2023. The latest, from 25 Sep 2023 to 5 Oct 2023, took gold down 5.45% (US\$105.01).

Is gold down 5 days in a row rare?

It happens about twice a year. Gold had 42 down streaks of 5 days or more in 20 years (2.10 a year). If each day were a coin flip with gold's own odds, we would expect 62.7.

Does gold bounce after several down days in a row?

Slightly more often than usual, but not clearly. After 4 down days in a row, gold rose the next day 63.5% of the time (73 of 115 cases), against 52.8% for all days with a move. With so few cases the test gives $p = 0.025$, which does not pass the 0.0042 level we use for 12 tests.

References

- XAUUSD daily data: Hugging Face, ZombitX64/xauusd-gold-price-historical-data-2004-2025 (file XAU_1d_data.jsonl, revision ff6469dc, downloaded 18 Oct 2026). The dataset card names the Kaggle dataset "novandraanugrah/xauusd-gold-price-historical-data-2004-2024" as its source.

Declarations

- **Author:** Huyen X. Vu, Quantex Research, AlgoTrade Pte. Ltd., Singapore (ORCID 0000-0002-2209-842X).
- **Data availability:** Daily XAUUSD prices from a public dataset (Hugging Face, ZombitX64/xauusd-gold-price-historical-data-2004-2025), as described in the Method section. Our calculation files are available on request.
- **Use of AI tools:** Data processing, analysis code and drafting were assisted by AI tools (Claude, Anthropic). The author checked the results and is responsible for the content.
- **Conflict of interest:** The author is the founder of AlgoTrade Pte. Ltd., which develops and runs systematic trading models.
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