

RiskModels API v3 smoke report

Generated: 2026-05-07T03:05:54.465321+00:00

Base: <https://riskmodels.app/api>

Stock: AAPL Fund search: AGTHX bw_fund_id: BW-FUND-S000009228

SKIP_EXPENSIVE: False

Full response bodies: smoke_report.json in the same folder.

POST /batch/analyze → 200 OK

https://riskmodels.app/api/batch/analyze

```
{
  "results": {
    "AAPL": {
      "ticker": "AAPL",
      "status": "success",
      "full_metrics": {
        "ticker": "AAPL",
        "date": "2026-05-01",
        "volatility": 0.257243394851685,
        "stock_var": 0.000221121808863245,
        "l1_mkt_hr": -0.862140953540802,
        "l1_mkt_er": 0.365421682596207,
        "l1_res_er": 0.634578287601471,
        "l2_mkt_hr": -1.38402199745178,
        "l2_sec_hr": 0.35667085647583,
        "l2_mkt_er": 0.365421682596207,
        "l2_sec_er": 0.00730817671865225,
        "l2_res_er": 0.62727016210556,
        "l3_mkt_hr": -1.98585534095764,
        "l3_sec_hr": -0.0317107737064362,
        "l3_sub_hr": 0.409737259149551,
        "l3_mkt_er": 0.365421682596207,
        "l3_sec_er": 0.00730817671865225,
        "l3_sub_er": 0.0165686439722776,
        "l3_res_er": 0.610701501369476,
        "l1_mkt_beta": 0.862140953540802,
        "l2_sec_beta": -0.35667085647583,
        "l3_sub_beta": -0.409737259149551,
        "market_cap": 4148973273088,
        "close_price": 280.140014648438
      },
      "meta": {
        "market_etf": "SPY",
        "sector_etf": "XLK",
        "subsector_etf": "RSPT"
      }
    }
  },
  "summary": {
    "total": 1,
    "success": 1,
    "errors": 0
  },
  "agent": {
    "cost_usd": 0.01,
    "request_id": "req_mouwK3aq_jeqt8g"
  },
  "metadata": {
    "model_version": "3.0",
    "data_as_of": "2026-05-01",
    "factor_set_id": "SPY_uni_mc_3000",
    "universe_size": 2974,
    "wiki_uri": "https://riskmodels.net/docs/methodology",
    "factors": [
      "SPY",
      "XLK",
      "XLF",
      "XLV",
      "XLE",
      "XLI",
      "XLY",
      "XLP",
      "XLU",
      "XLB",
      "XLRE",
      "XLC"
    ]
  }
}
```

POST /correlation → 200 OK

https://riskmodels.app/api/correlation

```
{
  "ticker": "AAPL",
  "return_type": "l3_residual",
  "window_days": 252,
  "method": "pearson",
  "correlations": {
    "vix_spot": -0.7245966631330617
  },
  "overlap_days": 252,
  "warnings": [],
  "stock_series_length": 309,
  "macro_factors_loaded": 1,
  "_metadata": {
    "model_version": "3.0",
    "data_as_of": "2026-05-01",
    "factor_set_id": "SPY_uni_mc_3000",
    "universe_size": 2974,
    "wiki_uri": "https://riskmodels.net/docs/methodology",
    "factors": [
      "SPY",
      "XLK",
      "XLF",
      "XLV",
      "XLE",
      "XLI",
      "XLY",
      "XLP",
      "XLU",
      "XLB",
      "XLRE",
      "XLC"
    ]
  },
  "_agent": {
    "latency_ms": 1867,
    "request_id": "req_mouw6q7_d80bum"
  }
}
```

POST /decompose → 200 OK

https://riskmodels.app/api/decompose

```
{
  "ticker": "AAPL",
  "symbol": "BW-BBG000B9XRY4",
  "data_as_of": "2026-05-01",
  "teo": "2026-05-01",
  "exposure": {
    "market": {
      "er": 0.365421682596207,
      "hr": -1.98585534095764,
      "hedge_etf": "SPY"
    },
    "sector": {
      "er": 0.00730817671865225,
      "hr": -0.0317107737064362,
      "hedge_etf": "XLK"
    },
    "subsector": {
      "er": 0.0165686439722776,
      "hr": 0.409737259149551,
      "hedge_etf": "RSPT"
    },
    "residual": {
      "er": 0.610701501369476,
      "hr": null,
      "hedge_etf": null
    }
  },
  "hedge": {
    "SPY": 1.98585534095764,
    "XLK": 0.0317107737064362,
    "RSPT": -0.409737259149551
  },
  "metadata": {
    "model_version": "3.0",
    "data_as_of": "2026-05-01",
    "factor_set_id": "SPY_uni_mc_3000",
    "universe_size": 2974,
    "wiki_uri": "https://riskmodels.net/docs/methodology",
    "factors": [
      "SPY",
      "XLK",
      "RSPT"
    ]
  },
  "data_health": {
    "er_populated": true,
    "er_sum": 1.0000000046566129
  }
}
```

GET /etf-returns → 404 FAIL

<https://riskmodels.app/api/etf-returns?ticker=SPY&years=1>

```
<!DOCTYPE html><html lang="en" class="dark"><head><meta charset="utf-8"/><meta name="viewport"
content="width=device-width, initial-scale=1"/><link rel="stylesheet"
href="/_next/static/css/1b2792122216f613.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="stylesheet"
href="/_next/static/css/b52425393b32ab29.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="preload" as="script" fetchPriority="low"
href="/_next/static/chunks/webpack-462f270ae756ac99.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"/><script
src="/_next/static/chunks/4bd1b696-100b9d70ed4e49c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1255-4e82364081f209c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script src="/_next/static/chunks/main-
app-b7ac91ae224968d9.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" async=""></script><script
src="/_next/static/chunks/2619-04bc32f026a0d946.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1029-3ef9e7fa38612fae.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
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src="/_next/static/chunks/5417-31fe42baeae2c07b.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
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src="/_next/static/chunks/8577-3da0d11b3db55f88.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/4148-b291be3f536cdb07.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/layout-1c667e9d157e7516.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/9779-f3dd8d5274e4301e.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/5045-5a04a2528134aa67.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/page-33f86da8611c17ed.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><meta name="robots" content="noindex"/><meta name="next-size-adjust"
content=""></title>404: This page could not be found.</title><script
src="/_next/static/chunks/polyfills-42372ed130431b0a.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
noModule=""></script></head><body class="__className_f367f3 __variable_3c557b"><div
hidden=""><!--$?--><template id="B:0"></template><!--/$?--></div><div class="flex flex-col min-h-
screen"><nav class="fixed top-0 left-0 right-0 z-50 border-b border-zinc-800/80 bg-zinc-950/85 shadow-sm
shadow-black/20 backdrop-blur-md supports-[backdrop-filter]:bg-zinc-950/75"><div class="max-w-7xl mx-auto
px-4 sm:px-6 lg:px-8"><div class="flex items-center gap-3 lg:gap-4 h-16 min-w-0"><div class="flex-
shrink-0"><a class="flex items-center" title="RiskModels - Back to home" href="/"></a></div><div class="hidden md:block
flex-1 min-w-0 max-w-md lg:max-w-lg xl:max-w-xl"><div class="relative " role="combobox" aria-
expanded="false" aria-controls="portal-search-results" aria-haspopup="listbox"><div class="flex items-
center gap-2 rounded-lg border bg-zinc-900/80 px-3 py-2 transition-colors border-zinc-800 hover:border-
zinc-700"><svg xmlns="http://www.w3.org/2000/svg" width="24" height="24" viewBox="0 0 24 24" fill="none"
stroke="currentColor" stroke-width="2" stroke-linecap="round" stroke-linejoin="round" class="lucide
lucide-search h-4 w-4 sh
```

... PDF excerpt truncated (23017 chars in JSON report)

GET /l3-decomposition → 200 OK (page 1/3)

<https://riskmodels.app/api/l3-decomposition?ticker=AAPL&years=1>

```
{
  "ticker": "AAPL",
  "dates": [
    "2025-05-07",
    "2025-05-08",
    "2025-05-09",
    "2025-05-12",
    "2025-05-13",
    "2025-05-14",
    "2025-05-15",
    "2025-05-16",
    "2025-05-19",
    "2025-05-20",
    "2025-05-21",
    "2025-05-22",
    "2025-05-23",
    "2025-05-27",
    "2025-05-28",
    "2025-05-29",
    "2025-05-30",
    "2025-06-02",
    "2025-06-03",
    "2025-06-04",
    "2025-06-05",
    "2025-06-06",
    "2025-06-09",
    "2025-06-10",
    "2025-06-11",
    "2025-06-12",
    "2025-06-13",
    "2025-06-16",
    "2025-06-17",
    "2025-06-18",
    "2025-06-20",
    "2025-06-23",
    "2025-06-24",
    "2025-06-25",
    "2025-06-26",
    "2025-06-27",
    "2025-06-30",
    "2025-07-01",
    "2025-07-02",
    "2025-07-03",
    "2025-07-07",
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    "2025-07-09",
    "2025-07-10",
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    "2025-07-25",
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    "2025-07-30",
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    "2025-08-04",
    "2025-08-05",
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    "2025-08-11",
    "2025-08-12",
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    "2025-08-19",
    "2025-08-20",
    "2025-08-21",
    "2025-08-22",
    "2025-08-25",
    "2025-08-26",
    "2025-08-27",
    "2025-08-28",
    ... continued (116 lines left → JSON)
```

<https://riskmodels.app/api/l3-decomposition?ticker=AAPL&years=1>

"2025-08-29",
"2025-09-02",
"2025-09-03",
"2025-09-04",
"2025-09-05",
"2025-09-08",
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"2025-09-10",
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"2025-12-16",
"2025-12-17",
"2025-12-18",
"2025-12-19",
"2025-12-22",
"2025-12-23",
"2025-12-24",

... continued (34 lines left → JSON)

<https://riskmodels.app/api/l3-decomposition?ticker=AAPL&years=1>

```
"2025-12-26",  
"2025-12-29",  
"2025-12-30",  
"2025-12-31",  
"2026-01-02",  
"2026-01-05",  
"2026-01-06",  
"2026-01-07",  
"2026-01-08",  
"2026-01-09",  
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"2026-01-29",  
"2026-01-30",  
"2026-02-02",  
"2026-02-03",  
"2026-02-04",  
"2026-02-05",  
"2026-02-06",  
"2026-02-09",  
"2026-02-10",  
"2026
```

... PDF excerpt truncated (32050 chars in JSON report)

GET /metrics/{ticker} → 200 OK

https://riskmodels.app/api/metrics/AAPL

```
{
  "symbol": "BW-BBG000B9XRY4",
  "ticker": "AAPL",
  "teo": "2026-05-01",
  "periodicity": "daily",
  "metrics": {
    "vol_23d": 0.257243394851685,
    "vol_252d_ann": 0.23188840077820277,
    "price_close": 280.140014648438,
    "market_cap": 4148973273088,
    "stock_var": 0.000221121808863245,
    "l1_mkt_hr": -0.862140953540802,
    "l1_mkt_er": 0.365421682596207,
    "l1_res_er": 0.634578287601471,
    "l1_cfr": 0.00238730479031801,
    "l1_rr": 0.0300062820315361,
    "l2_mkt_hr": -1.38402199745178,
    "l2_sec_hr": 0.35667085647583,
    "l2_mkt_er": 0.365421682596207,
    "l2_sec_er": 0.00730817671865225,
    "l2_res_er": 0.62727016210556,
    "l2_cfr": -0.00146733340807259,
    "l2_rr": 0.0338609218597412,
    "l3_mkt_hr": -1.98585534095764,
    "l3_sec_hr": -0.0317107737064362,
    "l3_sub_hr": 0.409737259149551,
    "l3_mkt_er": 0.365421682596207,
    "l3_sec_er": 0.00730817671865225,
    "l3_sub_er": 0.0165686439722776,
    "l3_res_er": 0.610701501369476,
    "l3_cfr": -0.00178957800380886,
    "l3_rr": 0.0341831669211388,
    "l1_mkt_beta": 0.862140953540802,
    "l2_sec_beta": -0.35667085647583,
    "l3_sub_beta": -0.409737259149551
  },
  "meta": {
    "sector_etf": "XLK",
    "subsector_etf": "RSPT",
    "asset_type": "stock"
  },
  "metadata": {
    "model_version": "3.0",
    "data_as_of": "2026-05-01",
    "factor_set_id": "SPY_uni_mc_3000",
    "universe_size": 2974,
    "wiki_uri": "https://riskmodels.net/docs/methodology",
    "factors": [
      "SPY",
      "XLK",
      "RSPT"
    ]
  },
  "data_health": {
    "er_populated": true,
    "vol_populated": true,
    "l1_populated": true,
    "l2_populated": true,
    "data_as_of": "2026-05-01"
  }
}
```

GET /metrics/{ticker}/correlation → 200 OK

https://riskmodels.app/api/metrics/AAPL/correlation?factors=vix_spot&years=1

```
{
  "ticker": "AAPL",
  "return_type": "l3_residual",
  "window_days": 252,
  "method": "pearson",
  "correlations": {
    "vix_spot": -0.7245966631330617
  },
  "overlap_days": 252,
  "warnings": [],
  "stock_series_length": 309,
  "macro_factors_loaded": 1,
  "_metadata": {
    "model_version": "3.0",
    "data_as_of": "2026-05-01",
    "factor_set_id": "SPY_uni_mc_3000",
    "universe_size": 2974,
    "wiki_uri": "https://riskmodels.net/docs/methodology",
    "factors": [
      "SPY",
      "XLK",
      "XLF",
      "XLV",
      "XLE",
      "XLI",
      "XLY",
      "XLP",
      "XLU",
      "XLB",
      "XLRE",
      "XLC"
    ]
  },
  "_agent": {
    "latency_ms": 513,
    "request_id": "req_mouwkg6v_l7t396"
  }
}
```

GET /metrics/{ticker}/snapshot.pdf → 200 OK

<https://riskmodels.app/api/metrics/AAPL/snapshot.pdf>

<application/pdf 1491 bytes – not stored>

POST /portfolio/risk-index → 200 OK

https://riskmodels.app/api/portfolio/risk-index

```
{
  "portfolio_risk_index": {
    "variance_decomposition": {
      "market": 0.365421682596207,
      "sector": 0.00730817671865225,
      "subsector": 0.0165686439722776,
      "residual": 0.610701501369476,
      "systematic": 0.38929850328713683
    },
    "portfolio_volatility_23d": 0.257243394851685,
    "position_count": 1
  },
  "per_ticker": {
    "AAPL": {
      "weight": 1,
      "symbol": "BW-BBG000B9XRY4",
      "teo": "2026-05-01",
      "sector_etf": "XLK",
      "subsector_etf": "RSPT",
      "l3_mkt_er": 0.365421682596207,
      "l3_sec_er": 0.00730817671865225,
      "l3_sub_er": 0.0165686439722776,
      "l3_res_er": 0.610701501369476,
      "vol_23d": 0.257243394851685,
      "price_close": 280.140014648438
    }
  },
  "summary": {
    "total_positions": 1,
    "resolved": 1,
    "errors": 0
  },
  "agent": {
    "cost_usd": 0.03,
    "request_id": "req_mouwkkcr_dizr7l"
  },
  "metadata": {
    "model_version": "3.0",
    "data_as_of": "2026-05-01",
    "factor_set_id": "SPY_uni_mc_3000",
    "universe_size": 2974,
    "wiki_uri": "https://riskmodels.net/docs/methodology",
    "factors": [
      "SPY",
      "XLK",
      "XLF",
      "XLV",
      "XLE",
      "XLI",
      "XLY",
      "XLP",
      "XLU",
      "XLB",
      "XLRE",
      "XLC"
    ]
  }
}
```

POST /portfolio/risk-snapshot → 200 OK

https://riskmodels.app/api/portfolio/risk-snapshot

```
{
  "title": "Portfolio",
  "as_of": "2026-05-01",
  "portfolio_risk_index": {
    "variance_decomposition": {
      "market": 0.365421682596207,
      "sector": 0.00730817671865225,
      "subsector": 0.0165686439722776,
      "residual": 0.610701501369476,
      "systematic": 0.38929850328713683
    },
    "portfolio_volatility_23d": 0.257243394851685,
    "position_count": 1
  },
  "per_ticker": {
    "AAPL": {
      "weight": 1,
      "symbol": "BW-BBG000B9XRY4",
      "teo": "2026-05-01",
      "sector_etf": "XLK",
      "subsector_etf": "RSPT",
      "l3_mkt_er": 0.365421682596207,
      "l3_sec_er": 0.00730817671865225,
      "l3_sub_er": 0.0165686439722776,
      "l3_res_er": 0.610701501369476,
      "vol_23d": 0.257243394851685,
      "price_close": 280.140014648438,
      "l3_mkt_hr": -1.98585534095764,
      "l3_sec_hr": -0.0317107737064362,
      "l3_sub_hr": 0.409737259149551
    }
  },
  "summary": {
    "total_positions": 1,
    "resolved": 1,
    "errors": 0
  },
  "_agent": {
    "cost_usd": 0.25,
    "request_id": "req-mouwkm8r_2f2exe"
  },
  "metadata": {
    "model_version": "3.0",
    "data_as_of": "2026-05-01",
    "factor_set_id": "SPY_uni_mc_3000",
    "universe_size": 2974,
    "wiki_uri": "https://riskmodels.net/docs/methodology",
    "factors": [
      "SPY",
      "XLK",
      "XLF",
      "XLV",
      "XLE",
      "XLI",
      "XLY",
      "XLP",
      "XLU",
      "XLB",
      "XLRE",
      "XLC"
    ]
  }
}
```

GET /rankings/top → 200 OK

https://riskmodels.app/api/rankings/top?cohort=universe&window=252d&metric=mkt_cap&limit=5

```
{
  "teo": "2026-05-01",
  "metric": "mkt_cap",
  "cohort": "universe",
  "window": "252d",
  "limit": 5,
  "rankings": [],
  "_metadata": {
    "model_version": "3.0",
    "data_as_of": "2026-05-01",
    "factor_set_id": "SPY_uni_mc_3000",
    "universe_size": 2974,
    "wiki_uri": "https://riskmodels.net/docs/methodology",
    "factors": [
      "SPY",
      "XLK",
      "XLF",
      "XLV",
      "XLE",
      "XLI",
      "XLY",
      "XLP",
      "XLU",
      "XLB",
      "XLRE",
      "XLC"
    ]
  },
  "_agent": {
    "cost_usd": 0.001,
    "request_id": "req_mouwknzr_4kby2l",
    "latency_ms": 223
  }
}
```

GET /rankings/{ticker} → 200 OK (page 1/2)

https://riskmodels.app/api/rankings/AAPL

```
{
  "ticker": "AAPL",
  "symbol": "BW-BBG000B9XRY4",
  "teo": "2026-05-01",
  "date": "2026-05-01",
  "rankings": [
    {
      "metric": "mkt_cap",
      "cohort": "universe",
      "window": "1d",
      "rank_ordinal": 3,
      "cohort_size": 3498,
      "rank_percentile": 99.94282447112636,
      "display_label": "1d \u00b7 universe \u00b7 mkt_cap"
    },
    {
      "metric": "gross_return",
      "cohort": "universe",
      "window": "1d",
      "rank_ordinal": 304,
      "cohort_size": 2807,
      "rank_percentile": 89.2055575347346,
      "display_label": "1d \u00b7 universe \u00b7 gross_return"
    },
    {
      "metric": "sector_residual",
      "cohort": "universe",
      "window": "1d",
      "rank_ordinal": 217,
      "cohort_size": 2807,
      "rank_percentile": 92.30495190594941,
      "display_label": "1d \u00b7 universe \u00b7 sector_residual"
    },
    {
      "metric": "subsector_residual",
      "cohort": "universe",
      "window": "1d",
      "rank_ordinal": 165,
      "cohort_size": 2807,
      "rank_percentile": 94.15746348414677,
      "display_label": "1d \u00b7 universe \u00b7 subsector_residual"
    },
    {
      "metric": "er_l1",
      "cohort": "universe",
      "window": "1d",
      "rank_ordinal": null,
      "cohort_size": null,
      "rank_percentile": null,
      "display_label": "1d \u00b7 universe \u00b7 er_l1"
    },
    {
      "metric": "er_l2",
      "cohort": "universe",
      "window": "1d",
      "rank_ordinal": null,
      "cohort_size": null,
      "rank_percentile": null,
      "display_label": "1d \u00b7 universe \u00b7 er_l2"
    },
    {
      "metric": "er_l3",
      "cohort": "universe",
      "window": "1d",
      "rank_ordinal": null,
      "cohort_size": null,
      "rank_percentile": null,
      "display_label": "1d \u00b7 universe \u00b7 er_l3"
    },
    {
      "metric": "mkt_cap",
      "cohort": "sector",
      "window": "1d",
      "rank_ordinal": 2,
      "cohort_size": 383,
      "rank_percentile": 99.73890339425587,
      "display_label": "1d \u00b7 sector \u00b7 mkt_cap"
    },
    {
      "metric": "gross_return",
      "cohort": "sector",
      "window": "1d",

```

... continued (51 lines left → JSON)

https://riskmodels.app/api/rankings/AAPL

```
{
  "rank_ordinal": 123,
  "cohort_size": 383,
  "rank_percentile": 68.1462140992167,
  "display_label": "1d \u00b7 sector \u00b7 gross_return"
},
{
  "metric": "sector_residual",
  "cohort": "sector",
  "window": "1d",
  "rank_ordinal": 74,
  "cohort_size": 383,
  "rank_percentile": 80.93994778067885,
  "display_label": "1d \u00b7 sector \u00b7 sector_residual"
},
{
  "metric": "subsector_residual",
  "cohort": "sector",
  "window": "1d",
  "rank_ordinal": 30,
  "cohort_size": 383,
  "rank_percentile": 92.42819843342036,
  "display_label": "1d \u00b7 sector \u00b7 subsector_residual"
},
{
  "metric": "er_l1",
  "cohort": "sector",
  "window": "1d",
  "rank_ordinal": null,
  "cohort_size": null,
  "rank_percentile": null,
  "display_label": "1d \u00b7 sector \u00b7 er_l1"
},
{
  "metric": "er_l2",
  "cohort": "sector",
  "window": "1d",
  "rank_ordinal": null,
  "cohort_size": null,
  "rank_percentile": null,
  "display_label": "1d \u00b7 sector \u00b7 er_l2"
},
{
  "metric": "er_l3",
  "cohort": "sector",
  "window": "1d",
  "rank_ordinal": null,
  "cohort_size": null,
  "rank_percentile": null,
  "display_label": "1d \\"
}
```

... PDF excerpt truncated (21333 chars in JSON report)

GET /rankings/{ticker}/badge → 200 OK

`https://riskmodels.app/api/rankings/AAPL/badge`

```
{  
  "schemaVersion": 1,  
  "label": "rank 252d",  
  "message": "77.8 pct",  
  "color": "yellow"  
}
```

GET /returns → 404 FAIL

https://riskmodels.app/api/returns?ticker=AAPL

```
<!DOCTYPE html><html lang="en" class="dark"><head><meta charset="utf-8"/><meta name="viewport"
content="width=device-width, initial-scale=1"/><link rel="stylesheet"
href="/_next/static/css/1b2792122216f613.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="stylesheet"
href="/_next/static/css/b52425393b32ab29.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="preload" as="script" fetchPriority="low"
href="/_next/static/chunks/webpack-462f270ae756ac99.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"/><script
src="/_next/static/chunks/4bd1b696-100b9d70ed4e49c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1255-4e82364081f209c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script src="/_next/static/chunks/main-
app-b7ac91ae224968d9.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" async=""></script><script
src="/_next/static/chunks/2619-04bc32f026a0d946.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1029-3ef9e7fa38612fae.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/5417-31fe42baeae2c07b.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/8577-3da0d11b3db55f88.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/4148-b291be3f536cdb07.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/layout-1c667e9d157e7516.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/9779-f3dd8d5274e4301e.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/5045-5a04a2528134aa67.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/page-33f86da8611c17ed.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><meta name="robots" content="noindex"/><meta name="next-size-adjust"
content=""></title>404: This page could not be found.</title><script
src="/_next/static/chunks/polyfills-42372ed130431b0a.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
noModule=""></script></head><body class="__className_f367f3 __variable_3c557b"><div
hidden=""><!--$?--><template id="B:0"></template><!--/$?--></div><div class="flex flex-col min-h-
screen"><nav class="fixed top-0 left-0 right-0 z-50 border-b border-zinc-800/80 bg-zinc-950/85 shadow-sm
shadow-black/20 backdrop-blur-md supports-[backdrop-filter]:bg-zinc-950/75"><div class="max-w-7xl mx-auto
px-4 sm:px-6 lg:px-8"><div class="flex items-center gap-3 lg:gap-4 h-16 min-w-0"><div class="flex-
shrink-0"><a class="flex items-center" title="RiskModels - Back to home" href="/"></a></div><div class="hidden md:block
flex-1 min-w-0 max-w-md lg:max-w-lg xl:max-w-xl"><div class="relative " role="combobox" aria-
expanded="false" aria-controls="portal-search-results" aria-haspopup="listbox"><div class="flex items-
center gap-2 rounded-lg border bg-zinc-900/80 px-3 py-2 transition-colors border-zinc-800 hover:border-
zinc-700"><svg xmlns="http://www.w3.org/2000/svg" width="24" height="24" viewBox="0 0 24 24" fill="none"
stroke="currentColor" stroke-width="2" stroke-linecap="round" stroke-linejoin="round" class="lucide
lucide-search h-4 w-4 sh
```

... PDF excerpt truncated (22978 chars in JSON report)

https://riskmodels.app/api/snapshot

```

{
  "snapshot": {
    "as_of": "2026-05-01",
    "lookback_trading_days": 60,
    "mode": "frozen",
    "benchmark": null,
    "positions": [
      {
        "ticker": "AAPL",
        "weight": 1,
        "symbol": "BW-BBG000B9XRY4",
        "teo": "2026-05-01",
        "l3_mkt_er": 0.365421682596207,
        "l3_sec_er": 0.00730817671865225,
        "l3_sub_er": 0.0165686439722776,
        "l3_res_er": 0.610701501369476,
        "l3_mkt_hr": -1.98585534095764,
        "l3_sec_hr": -0.0317107737064362,
        "l3_sub_hr": 0.409737259149551,
        "vol_23d": 0.257243394851685
      }
    ],
    "variance_decomposition": {
      "market": 0.365421682596207,
      "sector": 0.00730817671865225,
      "subsector": 0.0165686439722776,
      "residual": 0.610701501369476,
      "systematic": 0.38929850328713683
    },
    "portfolio_volatility_23d": 0.257243394851685,
    "unresolved": [],
    "ticker_meta": {
      "ticker": "AAPL",
      "symbol": "BW-BBG000B9XRY4",
      "sector_etf": "XLK",
      "subsector_etf": "RSPT",
      "asset_type": "stock",
      "factors": [
        "SPY",
        "XLK",
        "RSPT"
      ]
    }
  },
  "time_behavior": {
    "teo": [
      "2026-02-05",
      "2026-02-06",
      "2026-02-09",
      "2026-02-10",
      "2026-02-11",
      "2026-02-12",
      "2026-02-13",
      "2026-02-17",
      "2026-02-18",
      "2026-02-19",
      "2026-02-20",
      "2026-02-23",
      "2026-02-24",
      "2026-02-25",
      "2026-02-26",
      "2026-02-27",
      "2026-03-02",
      "2026-03-03",
      "2026-03-04",
      "2026-03-05",
      "2026-03-06",
      "2026-03-09",
      "2026-03-10",
      "2026-03-11",
      "2026-03-12",
      "2026-03-13",
      "2026-03-16",
      "2026-03-17",
      "2026-03-18",
      "2026-03-19",
      "2026-03-20",
      "2026-03-23",
      "2026-03-24",
      "2026-03-25",
      "2026-03-26",
      "2026-03-27",
    ]
  }
}
... continued (67 lines left → JSON)

```

https://riskmodels.app/api/snapshot

```

"2026-03-30",
"2026-03-31",
"2026-04-01",
"2026-04-02",
"2026-04-06",
"2026-04-07",
"2026-04-08",
"2026-04-09",
"2026-04-10",
"2026-04-13",
"2026-04-14",
"2026-04-15",
"2026-04-16",
"2026-04-17",
"2026-04-20",
"2026-04-21",
"2026-04-22",
"2026-04-23",
"2026-04-24",
"2026-04-27",
"2026-04-28",
"2026-04-29",
"2026-04-30",
"2026-05-01"
],
"cumulative_return": [
-0.0020975160878151655,
0.0058954169992391225,
-0.0058338756570653905,
-0.009236818560127258,
-0.0026481420239237163,
-0.052497634114234915,
-0.07403753817564185,
-0.044714307333270864,
-0.04301283591999039,
-0.05666080851849986,
-0.0421802005066193,
-0.03638795759388702,
-0.014811852437718653,
-0.007245734733202558,
-0.011879529022722157,
-0.0436282623339778,
-0.04167338019544797,
-0.04518492763866244,
-0.049637714401283506,
-0.057710653642794596,
-0.06795568404644703,
-0.05919491637640184,
-0.055755772058478814,
-0.05582817509855975,
-0.0741099429351415,
-0.0945275991586787,
-0.08475318902417428,
-0.07964877500747569,
-0.09517922597437511,
-0.09872697497877514,
-0.10223852237181452,
-0.08956799019920214,
-0.08902496742413257,
-0.08547721845723755,
-0.084499777476292,
-0.09930619964772947,
-0.1071619291846343,
-0.08124164189350958,
-0.

```

... PDF excerpt truncated (18515 chars in JSON report)

GET /ticker-returns → 200 OK (page 1/2)

<https://riskmodels.app/api/ticker-returns?ticker=AAPL&years=1>

```
{
  "symbol": "BW-BBG000B9XRY4",
  "ticker": "AAPL",
  "asset_type": "stock",
  "periodicity": "daily",
  "data": [
    {
      "date": "2025-05-07",
      "returns_gross": -0.011384851299226284,
      "price_close": 196.25,
      "l1_cfr": 0.005052788648754358,
      "l2_cfr": 0.004534661304205656,
      "l3_cfr": 0.0008878398220986128,
      "l3_mkt_hr": -2.215329885482788,
      "l3_sec_hr": -0.4438559114933014,
      "l3_sub_hr": 0.6556816697120667,
      "l3_mkt_er": 0.5109527707099915,
      "l3_sec_er": 0.006785877980291843,
      "l3_sub_er": 0.0020672848913818598,
      "l3_res_er": 0.4801940321922302
    },
    {
      "date": "2025-05-08",
      "returns_gross": 0.006318373139947653,
      "price_close": 197.49000549316406,
      "l1_cfr": 0.008371826261281967,
      "l2_cfr": 0.008395575918257236,
      "l3_cfr": 0.005487202666699886,
      "l3_mkt_hr": -2.2158617973327637,
      "l3_sec_hr": -0.4439397156238556,
      "l3_sub_hr": 0.6556816697120667,
      "l3_mkt_er": 0.5167847275733948,
      "l3_sec_er": 0.005890874657779932,
      "l3_sub_er": 0.0017556434031575918,
      "l3_res_er": 0.4755687415599823
    },
    {
      "date": "2025-05-09",
      "returns_gross": 0.005266155581921339,
      "price_close": 198.52999877929688,
      "l1_cfr": -0.0015308960573747754,
      "l2_cfr": -0.0015986224170774221,
      "l3_cfr": -0.0026626125909388065,
      "l3_mkt_hr": -2.2158236503601074,
      "l3_sec_hr": -0.44398394227027893,
      "l3_sub_hr": 0.6556816697120667,
      "l3_mkt_er": 0.5174728035926819,
      "l3_sec_er": 0.00519869988784194,
      "l3_sub_er": 0.0016022210475057364,
      "l3_res_er": 0.47572627663612366
    },
    {
      "date": "2025-05-12",
      "returns_gross": 0.06314612925052643,
      "price_close": 210.7899932861328,
      "l1_cfr": 0.03970656171441078,
      "l2_cfr": 0.03967835009098053,
      "l3_cfr": 0.0367472879588604,
      "l3_mkt_hr": -2.218461275100708,
      "l3_sec_hr": -0.44618281722068787,
      "l3_sub_hr": 0.6556816697120667,
      "l3_mkt_er": 0.51833176612854,
      "l3_sec_er": 0.0045334044843912125,
      "l3_sub_er": 0.0014057556400075555,
      "l3_res_er": 0.4757291078567505
    },
    {
      "date": "2025-05-13",
      "returns_gross": 0.010152247734367847,
      "price_close": 212.92999267578125,
      "l1_cfr": 0.00793458428233862,
      "l2_cfr": 0.0063886381685733795,
      "l3_cfr": 0.0028659971430897713,
      "l3_mkt_hr": -2.2208094596862793,
      "l3_sec_hr": -0.44640430808006732,
      "l3_sub_hr": 0.6556816697120667,
      "l3_mkt_er": 0.5191321969032288,
      "l3_sec_er": 0.003906885627657175,
      "l3_sub_er": 0.0011121233692392707,
      "l3_res_er": 0.4758487939834595
    }
  ],
  ... continued (25 lines left → JSON)
}
```

GET /ticker-returns → 200 OK (page 2/2)

https://riskmodels.app/api/ticker-returns?ticker=AAPL&years=1

```
{
  "date": "2025-05-14",
  "returns_gross": -0.002817923203110695,
  "price_close": 212.3300018310547,
  "l1_cfr": 0.0015355844516307116,
  "l2_cfr": 0.0009474894613958895,
  "l3_cfr": 0.003324259305372834,
  "l3_mkt_hr": -2.2207632064819336,
  "l3_sec_hr": -0.44614794850349426,
  "l3_sub_hr": 0.6556816697120667,
  "l3_mkt_er": 0.519745409488678,
  "l3_sec_er": 0.0034983186051249504,
  "l3_sub_er": 0.0009809760376811028,
  "l3_res_er": 0.47577527165412903
},
{
  "date": "2025-05-15",
  "returns_gross": -0.004144349601119757,
  "price_close": 211.4499969482422,
  "l1_cfr": 0.005868517793715,
  "l2_cfr": 0.006553007289767265,
  "l3_cfr": 0.007740095257759094,
  "l3_mkt_hr": -2.22041392326355,
```

... PDF excerpt truncated (32050 chars in JSON report)

GET /data/funds-latest/{bw_fund_id} → 401 FAIL

`https://riskmodels.app/api/data/funds-latest/BW-FUND-S000009228`

```
{  
  "error": "Invalid service key"  
}
```

POST /data/funds/batch → 401 FAIL

`https://riskmodels.app/api/data/funds/batch`

```
{  
  "error": "Invalid service key"  
}
```


GET /data/funds/search → 401 FAIL

`https://riskmodels.app/api/data/funds/search?q=AGTHX&limit=5`

```
{  
  "error": "Invalid service key"  
}
```

GET /data/funds/style/{slug}/members → 401 FAIL

`https://riskmodels.app/api/data/funds/style/large-growth/members`

```
{  
  "error": "Invalid service key"  
}
```

GET /data/funds/{bw_fund_id} → 401 FAIL

`https://riskmodels.app/api/data/funds/BW-FUND-S000009228`

```
{  
  "error": "Invalid service key"  
}
```

GET /funds/snapshot.pdf/{bw_fund_id} → 503 FAIL

<https://riskmodels.app/api/funds/snapshot.pdf/BW-FUND-S000009228>

```
{
  "error": "PDF rendering disabled",
  "message": "Set PLAYWRIGHT_PDF_ENABLED=true on the API runtime; the F1 fund tearsheet has no pdf-lib
fallback."
}
```

https://riskmodels.app/api/funds/snapshot/BW-FUND-S000009228

```

{
  "bw_fund_id": "BW-FUND-S000009228",
  "ticker": "AGTHX",
  "fund_name": "Growth Fund of America",
  "equity_style_9box": "Large Growth",
  "report_date": "2026-04-30",
  "filing_date": "2026-07-14",
  "metrics": {
    "bw_fund_id": "BW-FUND-S000009228",
    "ticker": "AGTHX",
    "fund_name": "Growth Fund of America",
    "equity_style_9box": "Large Growth",
    "report_date": "2026-04-30",
    "filing_date": "2026-07-14",
    "extracted_at": "2026-05-03T06:25:04.475416+00:00",
    "returns": {
      "gross": 0,
      "market": 0,
      "sector": 0,
      "subsector": 0,
      "idiosyncratic": 0,
      "identity_residual": 0
    },
    "diagnostics": {
      "weight_sum": 0,
      "n_holdings_active": 0,
      "effective_n": 0,
      "top10_weight_sum": 0
    },
    "meta": {
      "total_adj_mv": 0,
      "n_funds_in_cell_at_report_date": null,
      "morningstar_category": "Large Growth",
      "primary_bw_fund_id": null
    },
    "metadata": {
      "model_version": "funds_dag.v20260503",
      "factor_set_id": "uni_mc_3000_SPY",
      "data_as_of": "2026-04-30",
      "data_freshness": "2026-05-03T06:25:04.475416+00:00",
      "last_synced_at": "2026-05-03T06:25:04.475416+00:00"
    }
  },
  "holdings": {
    "n_total_holdings": 182,
    "n_returned": 25,
    "top": [
      {
        "bw_sym_id": "BW-BBG000BBJQV0",
        "adj_mv": 18881381013,
        "weight": null
      },
      {
        "bw_sym_id": "BW-BBG000BPH459",
        "adj_mv": 15939022625.29,
        "weight": null
      },
      {
        "bw_sym_id": "BW-BBG000BNBDC2",
        "adj_mv": 13634438698.32,
        "weight": null
      },
      {
        "bw_sym_id": "BW-BBG000MM2P62",
        "adj_mv": 13016145950.25,
        "weight": null
      },
      {
        "bw_sym_id": "BW-BBG000BVPV84",
        "adj_mv": 10654583401.8,
        "weight": null
      },
      {
        "bw_sym_id": "BW-BBG009S3NB30",
        "adj_mv": 9996153232.28,
        "weight": null
      },
      {
        "bw_sym_id": "BW-BBG000N9MNX3",
        "adj_mv": 9220308947.85,
        "weight": null
      }
    ]
  },
  ... continued (65 lines left → JSON)

```

https://riskmodels.app/api/funds/snapshot/BW-FUND-S000009228

```
{
  "bw_sym_id": "BW-BBG000B9XRY4",
  "adj_mv": 7550459094.75,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000CL9VN6",
  "adj_mv": 7075527025.38,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000C1S2X2",
  "adj_mv": 5629422042.85,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG002B04MT8",
  "adj_mv": 5041320925.8,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000BB5792",
  "adj_mv": 4816233791.25,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG008H8D923",
  "adj_mv": 4606234870.08,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000BFGNJ5",
  "adj_mv": 4428831474.6,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000C5Z1S3",
  "adj_mv": 4405732363.2,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000L8CBX4",
  "adj_mv": 3647007498.96,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG001WMKHH5",
  "adj_mv": 3573177501.08,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000F1ZS02",
  "adj_mv": 3144801878.01,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000J2XL74",
  "adj_mv": 2644480852.76,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000BBPFB9",
```

... PDF excerpt truncated (9199 chars in JSON report)

GET /funds/style/{slug} → 200 OK

https://riskmodels.app/api/funds/style/large-growth

```
{
  "equity_style_9box": "Large Growth",
  "slug": "large-growth",
  "report_date": "2026-04-30",
  "filing_date_max": "2026-07-14",
  "n_funds_in_cell": null,
  "weightings": {
    "ew": {
      "portfolio_gross_return": 0.0933299,
      "portfolio_market_return": 0.118475,
      "portfolio_sector_return": -0.0017679,
      "portfolio_subsector_return": -0.0144448,
      "portfolio_idiosyncratic_return": -0.00493416,
      "identity_residual": -0.00399815,
      "weight_sum": 0.997873,
      "n_holdings_active": 588,
      "effective_n": 29.2328,
      "top10_weight_sum": 0.482351
    },
    "mv": {
      "portfolio_gross_return": 0.0861734,
      "portfolio_market_return": 0.108399,
      "portfolio_sector_return": -0.00217762,
      "portfolio_subsector_return": -0.00865444,
      "portfolio_idiosyncratic_return": -0.00797442,
      "identity_residual": -0.00341886,
      "weight_sum": 0.999278,
      "n_holdings_active": 588,
      "effective_n": 9.6708,
      "top10_weight_sum": 0.622542
    }
  },
  "_metadata": {
    "model_version": "funds_dag.v20260503",
    "data_as_of": "2026-04-30",
    "data_freshness": "2026-05-03T06:28:08.404876+00:00",
    "last_synced_at": "2026-05-03T06:28:08.404876+00:00"
  }
}
```

GET /funds/style/{slug}/holdings → 404 FAIL

`https://riskmodels.app/api/funds/style/large-growth/holdings`

```
{
  "error": "No cohort holdings panel available for this cell",
  "equity_style_9box": "Large Growth",
  "slug": "large-growth"
}
```


GET /funds/style/{slug}/portfolio → 404 FAIL

`https://riskmodels.app/api/funds/style/large-growth/portfolio`

```
{
  "error": "No cohort portfolio history available for this cell",
  "equity_style_9box": "Large Growth",
  "slug": "large-growth"
}
```

GET /funds/style/{slug}/rankings/{cohort_type} → 404 FAIL

https://riskmodels.app/api/funds/style/large-growth/rankings/fund?metric=gross_return&period_window=12m&limit=5

```
{
  "error": "No rankings available for this (cell, cohort_type, metric, period_window, weighting)",
  "equity_style_9box": "Large Growth",
  "slug": "large-growth",
  "cohort_type": "fund",
  "metric": "gross_return",
  "period_window": "12m"
}
```

https://riskmodels.app/api/funds/style/large-growth/snapshot

```

{
  "equity_style_9box": "Large Growth",
  "slug": "large-growth",
  "report_date": "2026-04-30",
  "filing_date_max": "2026-07-14",
  "n_funds_in_cell": null,
  "metrics": {
    "weightings": {
      "ew": {
        "portfolio_gross_return": 0.0933299,
        "portfolio_market_return": 0.118475,
        "portfolio_sector_return": -0.0017679,
        "portfolio_subsector_return": -0.0144448,
        "portfolio_idiosyncratic_return": -0.00493416,
        "identity_residual": -0.00399815,
        "weight_sum": 0.997873,
        "n_holdings_active": 588,
        "effective_n": 29.2328,
        "top10_weight_sum": 0.482351
      },
      "mv": {
        "portfolio_gross_return": 0.0861734,
        "portfolio_market_return": 0.108399,
        "portfolio_sector_return": -0.00217762,
        "portfolio_subsector_return": -0.00865444,
        "portfolio_idiosyncratic_return": -0.00797442,
        "identity_residual": -0.00341886,
        "weight_sum": 0.999278,
        "n_holdings_active": 588,
        "effective_n": 9.6708,
        "top10_weight_sum": 0.622542
      }
    }
  },
  "holdings": null,
  "portfolio_history": {
    "lookback_months": 12,
    "n_periods": 0,
    "rows": []
  },
  "top_funds": {
    "metric": "portfolio_gross_return",
    "period_window": "12m",
    "weighting": "ew",
    "rows": [
      {
        "rank": 1,
        "entity_id": "BW-FUND-S000046191",
        "value": null,
        "cohort_size": 421
      },
      {
        "rank": 2,
        "entity_id": "BW-FUND-S000012907",
        "value": null,
        "cohort_size": 421
      },
      {
        "rank": 3,
        "entity_id": "BW-FUND-S000012894",
        "value": null,
        "cohort_size": 421
      },
      {
        "rank": 4,
        "entity_id": "BW-FUND-S000064789",
        "value": null,
        "cohort_size": 421
      },
      {
        "rank": 5,
        "entity_id": "BW-FUND-S000054095",
        "value": null,
        "cohort_size": 421
      },
      {
        "rank": 6,
        "entity_id": "BW-FUND-S000062810",
        "value": null,
        "cohort_size": 421
      }
    ]
  },
  ... continued (69 lines left → JSON)

```

https://riskmodels.app/api/funds/style/large-growth/snapshot

```

    "rank": 7,
    "entity_id": "BW-FUND-S000068374",
    "value": null,
    "cohort_size": 421
  },
  {
    "rank": 8,
    "entity_id": "BW-FUND-S000012895",
    "value": null,
    "cohort_size": 421
  },
  {
    "rank": 9,
    "entity_id": "BW-FUND-S00006878",
    "value": null,
    "cohort_size": 421
  },
  {
    "rank": 10,
    "entity_id": "BW-FUND-S000021575",
    "value": null,
    "cohort_size": 421
  }
]
},
"top_symbols": {
  "metric": "weight",
  "period_window": "1m",
  "weighting": "mv",
  "rows": [
    {
      "rank": 1,
      "entity_id": "BW-BBG01NBNTCM3",
      "value": null,
      "cohort_size": 2862
    },
    {
      "rank": 2,
      "entity_id": "BW-BBG000BBJQV0",
      "value": null,
      "cohort_size": 2862
    },
    {
      "rank": 3,
      "entity_id": "BW-BBG000BPH459",
      "value": null,
      "cohort_size": 2862
    },
    {
      "rank": 4,
      "entity_id": "BW-BBG000BVPV84",
      "value": null,
      "cohort_size": 2862
    },
    {
      "rank": 5,
      "entity_id": "BW-BBG000B9XRY4",
      "value": null,
      "cohort_size": 2862
    },
    {
      "rank": 6,
      "entity_id": "BW-BBG000MM2P62",
      "value": null,
      "cohort_size": 2862
    }
  ]
},

```

... PDF excerpt truncated (4808 chars in JSON report)

GET /funds/style/{slug}/snapshot.pdf → 503 FAIL

<https://riskmodels.app/api/funds/style/large-growth/snapshot.pdf>

```
{
  "error": "PDF rendering disabled",
  "message": "Set PLAYWRIGHT_PDF_ENABLED=true on the API runtime; the C1 cohort tearsheet has no pdf-lib
fallback."
}
```

GET /funds/{bw_fund_id} → 200 OK

https://riskmodels.app/api/funds/BW-FUND-S000009228

```
{
  "bw_fund_id": "BW-FUND-S000009228",
  "ticker": "AGTHX",
  "fund_name": "Growth Fund of America",
  "equity_style_9box": "Large Growth",
  "report_date": "2026-04-30",
  "filing_date": "2026-07-14",
  "extracted_at": "2026-05-03T06:25:04.475416+00:00",
  "returns": {
    "gross": 0,
    "market": 0,
    "sector": 0,
    "subsector": 0,
    "idiosyncratic": 0,
    "identity_residual": 0
  },
  "diagnostics": {
    "weight_sum": 0,
    "n_holdings_active": 0,
    "effective_n": 0,
    "top10_weight_sum": 0
  },
  "meta": {
    "total_adj_mv": 0,
    "n_funds_in_cell_at_report_date": null,
    "morningstar_category": "Large Growth",
    "primary_bw_fund_id": null
  },
  "metadata": {
    "model_version": "funds_dag.v20260503",
    "factor_set_id": "uni_mc_3000_SPY",
    "data_as_of": "2026-04-30",
    "data_freshness": "2026-05-03T06:25:04.475416+00:00",
    "last_synced_at": "2026-05-03T06:25:04.475416+00:00"
  }
}
```

GET /funds/{bw_fund_id}/hedge → 200 OK (page 1/3)

https://riskmodels.app/api/funds/BW-FUND-S000009228/hedge

```
{
  "bw_fund_id": "BW-FUND-S000009228",
  "ticker": "AGTHX",
  "fund_name": "Growth Fund of America",
  "equity_style_9box": "Large Growth",
  "teo": "1970-01-01",
  "L1": [
    {
      "etf": "SPY",
      "hr": -1.1934365535231728
    }
  ],
  "L2": [
    {
      "etf": "SPY",
      "hr": -0.2879964918377157
    },
    {
      "etf": "XLB",
      "hr": -0.014072109921352022
    },
    {
      "etf": "XLC",
      "hr": -0.110026435213584
    },
    {
      "etf": "XLE",
      "hr": -0.014485395987869977
    },
    {
      "etf": "XLF",
      "hr": -0.06950285337405868
    },
    {
      "etf": "XLI",
      "hr": -0.0658134832733176
    },
    {
      "etf": "XLK",
      "hr": -0.28852146617730945
    },
    {
      "etf": "XLP",
      "hr": -0.017573658306792604
    },
    {
      "etf": "XLRE",
      "hr": -0.0002195861667866146
    },
    {
      "etf": "XLU",
      "hr": -0.010238410811824881
    },
    {
      "etf": "XLV",
      "hr": -0.16196585502995067
    },
    {
      "etf": "XLY",
      "hr": -0.13977817962880754
    }
  ],
  "L3": [
    {
      "etf": "AMPL",
      "hr": 0
    },
    {
      "etf": "CARZ",
      "hr": -0.01704167180468303
    },
    {
      "etf": "EVX",
      "hr": -0.0057228942815416494
    },
    {
      "etf": "FDN",
      "hr": -0.024302901351003128
    },
    {
      "etf": "GGME",
      "hr": -0.03660413122438242
    }
  ]
}
... continued (134 lines left → JSON)
```

https://riskmodels.app/api/funds/BW-FUND-S000009228/hedge

```
{
  {
    "etf": "IAI",
    "hr": -0.002664924398087554
  },
  {
    "etf": "IDGT",
    "hr": 0
  },
  {
    "etf": "IGV",
    "hr": -0.13035871941302063
  },
  {
    "etf": "IHF",
    "hr": -0.0008085704852185974
  },
  {
    "etf": "IHI",
    "hr": -0.01860245851684825
  },
  {
    "etf": "ITB",
    "hr": 0
  },
  {
    "etf": "IYG",
    "hr": -0.007657291754314517
  },
  {
    "etf": "IYJ",
    "hr": 0.008584884857656589
  },
  {
    "etf": "IYK",
    "hr": -0.0005602741389752036
  },
  {
    "etf": "IYM",
    "hr": 0.001402415565420383
  },
  {
    "etf": "IYT",
    "hr": -0.018614036335008362
  },
  {
    "etf": "IYW",
    "hr": 0.0023875618949828602
  },
  {
    "etf": "KIE",
    "hr": -0.00839774880810256
  },
  {
    "etf": "KRE",
    "hr": -0.0011265880493741554
  },
  {
    "etf": "PBJ",
    "hr": 0.002940527103428412
  },
  {
    "etf": "PBW",
    "hr": -0.0016732938940687834
  },
  {
    "etf": "PEJ",
    "hr": -0.012884034150455921
  },
  {
    "etf": "PPA",
    "hr": -0.01967642829926715
  },
  {
    "etf": "RSPT",
    "hr": 0.013140341292568783
  },
  {
    "etf": "SMH",
    "hr": -0.06742054102382278
  },
  {
    ... continued (52 lines left → JSON)
  }
}
```


https://riskmodels.app/api/funds/BW-FUND-S000009228/hedge

```
{
  "etf": "SOXX",
  "hr": -0.01964356589655689
},
{
  "etf": "SPY",
  "hr": 0.2296809764745633
},
{
  "etf": "VNO",
  "hr": 0.0005440531372481814
},
{
  "etf": "VOX",
  "hr": 0.008857104699765476
},
{
  "etf": "VPU",
  "hr": -3.0122901925176618e-05
},
{
  "etf": "WOOD",
  "hr": 0
},
{
  "etf": "XBI",
  "hr": -0.015988748080448895
},
{
  "etf": "XES",
  "hr": -0.003953547945085109
},
{
  "etf": "XHB",
  "hr": -0.01440060683442086
},
{
  "etf": "XLB",
  "hr": -0.014238422858743494
},
{
  "etf": "XLC",
  "hr": -0.05959452529561497
},
{
  "etf": "XLE",
  "hr": -0.005048809363608628
},
{
  "etf": "XLF",
  "hr": -0.05
}
```

... PDF excerpt truncated (4259 chars in JSON report)

GET /funds/{bw_fund_id}/holdings → 200 OK (page 1/2)

https://riskmodels.app/api/funds/BW-FUND-S000009228/holdings

```
{
  "bw_fund_id": "BW-FUND-S000009228",
  "ticker": "AGTHX",
  "fund_name": "Growth Fund of America",
  "equity_style_9box": "Large Growth",
  "teo": "1970-01-01",
  "aum_reported": null,
  "aum_erm3": null,
  "n_holdings_returned": 25,
  "n_total_holdings": 182,
  "holdings": [
    {
      "bw_sym_id": "BW-BBG000BBJQV0",
      "adj_mv": 18881381013,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000BPH459",
      "adj_mv": 15939022625.29,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000BNBDC2",
      "adj_mv": 13634438698.32,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000MM2P62",
      "adj_mv": 13016145950.25,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000BVPV84",
      "adj_mv": 10654583401.8,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000S3NB30",
      "adj_mv": 9996153232.28,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000N9MNX3",
      "adj_mv": 9220308947.85,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000B9XRY4",
      "adj_mv": 7550459094.75,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000CL9VN6",
      "adj_mv": 7075527025.38,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000C1S2X2",
      "adj_mv": 5629422042.85,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG002B04MT8",
      "adj_mv": 5041320925.8,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000BB5792",
      "adj_mv": 4816233791.25,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000HBD923",
      "adj_mv": 4606234870.08,
      "weight": null
    },
    {
      "bw_sym_id": "BW-BBG000BFGNJ5",
      "adj_mv": 4428831474.6,
      "weight": null
    }
  ],
  ... continued (56 lines left → JSON)
```

https://riskmodels.app/api/funds/BW-FUND-S000009228/holdings

```
{
  "bw_sym_id": "BW-BBG000C5Z1S3",
  "adj_mv": 4405732363.2,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000L8CBX4",
  "adj_mv": 3647007498.96,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG001WMKHH5",
  "adj_mv": 3573177501.08,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000F1ZSQ2",
  "adj_mv": 3144801878.01,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000J2XL74",
  "adj_mv": 2644480852.76,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000BBPFB9",
  "adj_mv": 2342155880.5,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000PSKYX7",
  "adj_mv": 2265557093.64,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000BN2DC2",
  "adj_mv": 2213235410.42,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000GPB11",
  "adj_mv": 2137687465.36,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000BCQ6J8",
  "adj_mv": 2021315730.39,
  "weight": null
},
{
  "bw_sym_id": "BW-BBG000DQTX6",
  "adj_mv": 1995660252.33,
  "weight": null
}
]
```

GET /funds/{bw_fund_id}/nav → 404 FAIL

`https://riskmodels.app/api/funds/BW-FUND-S000009228/nav`

```
{  
  "error": "No NAV history available for this fund",  
  "bw_fund_id": "BW-FUND-S000009228"  
}
```


https://riskmodels.app/api/funds/BW-FUND-S000009228/portfolio

```
"weight_sum": 0,
"n_holdings_active": 0,
"effective_n": 0,
"top10_weight_sum": 0
},
{
  "teo": "1970-01-01",
  "portfolio_gross_return": 0,
  "portfolio_market_return": 0,
  "portfolio_sector_return": 0,
  "portfolio_subsector_return": 0,
  "portfolio_idiosyncratic_return": 0,
  "identity_residual": 0,
  "weight_sum": 0,
  "n_holdings_active": 0,
  "effective_n": 0,
  "top10_weight_sum": 0
},
{
  "teo": "1970-01-01",
  "portfolio_gross_return": 0,
  "portfolio_market_return": 0,
  "portfolio_sector_return": 0,
  "portfolio_subsector_return": 0,
  "portfolio_idiosyncratic_return": 0,
  "identity_residual": 0,
  "weight_sum": 0,
  "n_holdings_active": 0,
  "effective_n": 0,
  "top10_weight_sum": 0
},
{
  "teo": "1970-01-01",
  "portfolio_gross_return": 0,
  "portfolio_market_return": 0,
  "portfolio_sector_return": 0,
  "portfolio_subsector_return": 0,
  "portfolio_idiosyncratic_return": 0,
  "identity_residual": 0,
  "weight_sum": 0,
  "n_holdings_active": 0,
  "effective_n": 0,
  "top10_weight_sum": 0
}
```

... PDF excerpt truncated (32050 chars in JSON report)

GET /.well-known/agentic-disclosure.json → 404 FAIL

https://riskmodels.app/.well-known/agentic-disclosure.json

```
<!DOCTYPE html><html lang="en" class="dark"><head><meta charset="utf-8"/><meta name="viewport"
content="width=device-width, initial-scale=1"/><link rel="stylesheet"
href="/_next/static/css/1b2792122216f613.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="stylesheet"
href="/_next/static/css/b52425393b32ab29.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="preload" as="script" fetchPriority="low"
href="/_next/static/chunks/webpack-462f270ae756ac99.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"/><script
src="/_next/static/chunks/4bd1b696-100b9d70ed4e49c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1255-4e82364081f209c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script src="/_next/static/chunks/main-
app-b7ac91ae224968d9.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" async=""></script><script
src="/_next/static/chunks/2619-04bc32f026a0d946.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1029-3ef9e7fa38612fae.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/5417-31fe42baeae2c07b.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/8577-3da0d11b3db55f88.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/4148-b291be3f536cdb07.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/layout-1c667e9d157e7516.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/9779-f3dd8d5274e4301e.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/5045-5a04a2528134aa67.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/page-33f86da8611c17ed.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><meta name="robots" content="noindex"/><meta name="next-size-adjust"
content=""><title>404: This page could not be found.</title><script
src="/_next/static/chunks/polyfills-42372ed130431b0a.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
noModule=""></script></head><body class="__className_f367f3 __variable_3c557b"><div
hidden=""><!--$?--><template id="B:0"></template><!--/$?--></div><div class="flex flex-col min-h-
screen"><nav class="fixed top-0 left-0 right-0 z-50 border-b border-zinc-800/80 bg-zinc-950/85 shadow-sm
shadow-black/20 backdrop-blur-md supports-[backdrop-filter]:bg-zinc-950/75"><div class="max-w-7xl mx-auto
px-4 sm:px-6 lg:px-8"><div class="flex items-center gap-3 lg:gap-4 h-16 min-w-0"><div class="flex-
shrink-0"><a class="flex items-center" title="RiskModels - Back to home" href="/"></a></div><div class="hidden md:block
flex-1 min-w-0 max-w-md lg:max-w-lg xl:max-w-xl"><div class="relative " role="combobox" aria-
expanded="false" aria-controls="portal-search-results" aria-haspopup="listbox"><div class="flex items-
center gap-2 rounded-lg border bg-zinc-900/80 px-3 py-2 transition-colors border-zinc-800 hover:border-
zinc-700"><svg xmlns="http://www.w3.org/2000/svg" width="24" height="24" viewBox="0 0 24 24" fill="none"
stroke="currentColor" stroke-width="2" stroke-linecap="round" stroke-linejoin="round" class="lucide
lucide-search h-4 w-4 sh
```

... PDF excerpt truncated (22960 chars in JSON report)

GET /.well-known/ai-plugin.json → 404 FAIL

https://riskmodels.app/.well-known/ai-plugin.json

```
<!DOCTYPE html><html lang="en" class="dark"><head><meta charset="utf-8"/><meta name="viewport"
content="width=device-width, initial-scale=1"/><link rel="stylesheet"
href="/_next/static/css/1b2792122216f613.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="stylesheet"
href="/_next/static/css/b52425393b32ab29.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="preload" as="script" fetchPriority="low"
href="/_next/static/chunks/webpack-462f270ae756ac99.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"/><script
src="/_next/static/chunks/4bd1b696-100b9d70ed4e49c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1255-4e82364081f209c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script src="/_next/static/chunks/main-
app-b7ac91ae224968d9.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" async=""></script><script
src="/_next/static/chunks/2619-04bc32f026a0d946.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1029-3ef9e7fa38612fae.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
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async=""></script><script
src="/_next/static/chunks/8577-3da0d11b3db55f88.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/4148-b291be3f536cdb07.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/layout-1c667e9d157e7516.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/9779-f3dd8d5274e4301e.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/5045-5a04a2528134aa67.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/page-33f86da8611c17ed.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><meta name="robots" content="noindex"/><meta name="next-size-adjust"
content=""><title>404: This page could not be found.</title><script
src="/_next/static/chunks/polyfills-42372ed130431b0a.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
noModule=""></script></head><body class="__className_f367f3 __variable_3c557b"><div
hidden=""><!--$?--><template id="B:0"></template><!--/$?--></div><div class="flex flex-col min-h-
screen"><nav class="fixed top-0 left-0 right-0 z-50 border-b border-zinc-800/80 bg-zinc-950/85 shadow-sm
shadow-black/20 backdrop-blur-md supports-[backdrop-filter]:bg-zinc-950/75"><div class="max-w-7xl mx-auto
px-4 sm:px-6 lg:px-8"><div class="flex items-center gap-3 lg:gap-4 h-16 min-w-0"><div class="flex-
shrink-0"><a class="flex items-center" title="RiskModels - Back to home" href="/"></a></div><div class="hidden md:block
flex-1 min-w-0 max-w-md lg:max-w-lg xl:max-w-xl"><div class="relative " role="combobox" aria-
expanded="false" aria-controls="portal-search-results" aria-haspopup="listbox"><div class="flex items-
center gap-2 rounded-lg border bg-zinc-900/80 px-3 py-2 transition-colors border-zinc-800 hover:border-
zinc-700"><svg xmlns="http://www.w3.org/2000/svg" width="24" height="24" viewBox="0 0 24 24" fill="none"
stroke="currentColor" stroke-width="2" stroke-linecap="round" stroke-linejoin="round" class="lucide
lucide-search h-4 w-4 sh
```

... PDF excerpt truncated (22951 chars in JSON report)

GET /.well-known/mcp.json → 404 FAIL

https://riskmodels.app/.well-known/mcp.json

```
<!DOCTYPE html><html lang="en" class="dark"><head><meta charset="utf-8"/><meta name="viewport"
content="width=device-width, initial-scale=1"/><link rel="stylesheet"
href="/_next/static/css/1b2792122216f613.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="stylesheet"
href="/_next/static/css/b52425393b32ab29.css?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" data-
precedence="next"/><link rel="preload" as="script" fetchPriority="low"
href="/_next/static/chunks/webpack-462f270ae756ac99.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"/><script
src="/_next/static/chunks/4bd1b696-100b9d70ed4e49c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1255-4e82364081f209c1.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script src="/_next/static/chunks/main-
app-b7ac91ae224968d9.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1" async=""></script><script
src="/_next/static/chunks/2619-04bc32f026a0d946.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/1029-3ef9e7fa38612fae.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/5417-31fe42baeae2c07b.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/8577-3da0d11b3db55f88.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/4148-b291be3f536cdb07.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/layout-1c667e9d157e7516.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/9779-f3dd8d5274e4301e.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/5045-5a04a2528134aa67.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><script
src="/_next/static/chunks/app/page-33f86da8611c17ed.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
async=""></script><meta name="robots" content="noindex"/><meta name="next-size-adjust"
content=""><title>404: This page could not be found.</title><script
src="/_next/static/chunks/polyfills-42372ed130431b0a.js?dpl=dpl_4VpC6pu2xd8eAfNo1AsnS1Nu85z1"
noModule=""></script></head><body class="__className_f367f3 __variable_3c557b"><div
hidden=""><!--$?--><template id="B:0"></template><!--/$?--></div><div class="flex flex-col min-h-
screen"><nav class="fixed top-0 left-0 right-0 z-50 border-b border-zinc-800/80 bg-zinc-950/85 shadow-sm
shadow-black/20 backdrop-blur-md supports-[backdrop-filter]:bg-zinc-950/75"><div class="max-w-7xl mx-auto
px-4 sm:px-6 lg:px-8"><div class="flex items-center gap-3 lg:gap-4 h-16 min-w-0"><div class="flex-
shrink-0"><a class="flex items-center" title="RiskModels - Back to home" href="/"></a></div><div class="hidden md:block
flex-1 min-w-0 max-w-md lg:max-w-lg xl:max-w-xl"><div class="relative " role="combobox" aria-
expanded="false" aria-controls="portal-search-results" aria-haspopup="listbox"><div class="flex items-
center gap-2 rounded-lg border bg-zinc-900/80 px-3 py-2 transition-colors border-zinc-800 hover:border-
zinc-700"><svg xmlns="http://www.w3.org/2000/svg" width="24" height="24" viewBox="0 0 24 24" fill="none"
stroke="currentColor" stroke-width="2" stroke-linecap="round" stroke-linejoin="round" class="lucide
lucide-search h-4 w-4 sh
```

... PDF excerpt truncated (22945 chars in JSON report)

GET /auth/free-tier-status → 200 OK

<https://riskmodels.app/api/auth/free-tier-status>

```
{
  "tier": "unavailable",
  "message": "Could not load billing profile. Use GET /balance for account status.",
  "agent": {
    "latency_ms": 205,
    "degraded": true
  }
}
```

POST /auth/provision → None OK | skip mutating auth provision

skip mutating auth provision

POST /auth/provision-free → None OK | skip mutating auth provision

skip mutating auth provision

POST /auth/token → None OK | skip OAuth token (needs RISKMODELS_CLIENT_ID / RISKMODELS_CLIENT_SECRET)

skip OAuth token (needs RISKMODELS_CLIENT_ID / RISKMODELS_CLIENT_SECRET)

GET /balance → 200 OK

<https://riskmodels.app/api/balance>

```
{
  "user_id": "93b549aa-7ccf-45cf-8c2e-4fcfbf757cc1",
  "email": "conrad@bwmacro.com",
  "balance_usd": 9915.1405,
  "balance_tokens": 495757024,
  "currency": "USD",
  "last_updated": "2026-05-07T03:05:43.919Z",
  "account_type": "agent",
  "auto_refill": {
    "enabled": false,
    "min_threshold_tokens": 249999,
    "refill_amount_usd": 50,
    "refill_tokens": 2500000
  },
  "links": {
    "top_up": "https://riskmodels.app/api/billing/top-up",
    "invoices": "https://riskmodels.app/api/invoices",
    "usage": "https://riskmodels.app/api/usage"
  },
  "status": {
    "account": "active",
    "billing": "active",
    "can_make_requests": true
  },
  "limits": {
    "rate_limit_per_minute": 60,
    "concurrent_requests": 10,
    "daily_request_limit": 10000
  }
}
```

PATCH /balance → None OK | skip mutating PATCH

skip mutating PATCH

POST /chat → None OK | skip LLM spend (set RUN_CHAT=1 to enable)

skip LLM spend (set RUN_CHAT=1 to enable)

POST /cli/query → 200 OK

<https://riskmodels.app/api/cli/query>

```
{
  "results": [
    {
      "ticker": "AAPL",
      "symbol": "BW-BBG000B9XRY4"
    }
  ],
  "count": 1,
  "sql": "SELECT ticker, symbol FROM symbols WHERE ticker = 'AAPL' LIMIT 1"
}
```

POST /estimate → 200 OK

<https://riskmodels.app/api/estimate>

```
{
  "estimated_cost_usd": 0.005,
  "estimated_tokens": 250,
  "estimated_rows": 252,
  "estimated_bytes": 10080,
  "capability": "ticker-returns",
  "tier": "baseline",
  "pricing_model": "per_request",
  "unit_cost_usd": 0.005,
  "note": "Actual cost may vary. Cached responses are free."
}
```

GET /health → 200 OK (page 1/2)

https://riskmodels.app/api/health

```
{
  "status": "healthy",
  "timestamp": "2026-05-07T03:05:46.591Z",
  "version": "2.0.0-agent",
  "services": {
    "api": {
      "status": "healthy",
      "latency_ms": 0
    },
    "database": {
      "status": "healthy",
      "latency_ms": 99
    }
  },
  "capabilities": {
    "batch-analysis": {
      "status": "unavailable",
      "avg_latency_ms_24h": 932,
      "success_rate_24h": 0.5
    },
    "ticker-returns": {
      "status": "unavailable",
      "avg_latency_ms_24h": 1238,
      "success_rate_24h": 0.5
    },
    "rankings": {
      "status": "unavailable",
      "avg_latency_ms_24h": 2293,
      "success_rate_24h": 0.5
    },
    "factor-correlation": {
      "status": "unavailable",
      "avg_latency_ms_24h": 1162,
      "success_rate_24h": 0.5
    },
    "metrics-snapshot": {
      "status": "unavailable",
      "avg_latency_ms_24h": 822,
      "success_rate_24h": 0.4884
    },
    "portfolio-risk-snapshot": {
      "status": "unavailable",
      "avg_latency_ms_24h": 1517,
      "success_rate_24h": 0.5
    },
    "fund-snapshot-json": {
      "status": "unavailable",
      "avg_latency_ms_24h": 823,
      "success_rate_24h": 0.4857
    },
    "fund-holdings": {
      "status": "unavailable",
      "avg_latency_ms_24h": 809,
      "success_rate_24h": 0.4737
    },
    "fund-portfolio-history": {
      "status": "unavailable",
      "avg_latency_ms_24h": 751,
      "success_rate_24h": 0.4737
    },
    "fund-nav-history": {
      "status": "unavailable",
      "avg_latency_ms_24h": 1368,
      "success_rate_24h": 0
    },
    "fund-hedge": {
      "status": "unavailable",
      "avg_latency_ms_24h": 761,
      "success_rate_24h": 0.4737
    },
    "decompose-position": {
      "status": "unavailable",
      "avg_latency_ms_24h": 708,
      "success_rate_24h": 0.5
    },
    "l3-decomposition": {
      "status": "unavailable",
      "avg_latency_ms_24h": 903,
      "success_rate_24h": 0.5
    },
    "portfolio-risk-index": {
      "status": "unavailable",
      "avg_latency_ms_24h": 708,
      "success_rate_24h": 0.5
    }
  },
  ... continued (60 lines left → JSON)
```

https://riskmodels.app/api/health

```
    "avg_latency_ms_24h": 686,
    "success_rate_24h": 0.5
  },
  "style-cohort-metrics": {
    "status": "unavailable",
    "avg_latency_ms_24h": 635,
    "success_rate_24h": 0.5
  },
  "style-cohort-holdings": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1281,
    "success_rate_24h": 0
  },
  "style-cohort-portfolio-history": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1222,
    "success_rate_24h": 0
  },
  "style-cohort-rankings": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1298,
    "success_rate_24h": 0
  },
  "style-cohort-snapshot-json": {
    "status": "unavailable",
    "avg_latency_ms_24h": 701,
    "success_rate_24h": 0.5
  },
  "fund-metrics": {
    "status": "unavailable",
    "avg_latency_ms_24h": 657,
    "success_rate_24h": 0.5
  },
  "cli-query": {
    "status": "unavailable",
    "avg_latency_ms_24h": 655,
    "success_rate_24h": 0.5
  },
  "macro-factor-series": {
    "status": "unavailable",
    "avg_latency_ms_24h": 904,
    "success_rate_24h": 0.5
  },
  "fund-snapshot-pdf": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1232,
    "success_rate_24h": 0
  },
  "style-cohort-snapshot-pdf": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1138,
    "success_rate_24h": 0
  }
},
"teo_coverage": {
  "latest_teo": "2026-05-01",
  "universe_stock_count": 2974,
  "non_null_returns_symbo
```

... PDF excerpt truncated (4343 chars in JSON report)

GET /invoices → 200 OK (page 1/2)

https://riskmodels.app/api/invoices

```
{
  "summary": {
    "period": "month",
    "total_invoices": 500,
    "total_spent_usd": 5.755,
    "total_requests": 500,
    "current_period_cost_usd": 5.755
  },
  "invoices": [
    {
      "id": "bcaa7916-03d7-4be5-bf06-471dcb210eac",
      "status": "paid",
      "amount_usd": 0.003,
      "created_at": "2026-05-07T03:05:45.911+00:00",
      "capability_id": "cli-query",
      "description": null,
      "type": "debit"
    },
    {
      "id": "d0329cb0-6fd9-426e-8480-b41bc3940c0a",
      "status": "paid",
      "amount_usd": 0.003,
      "created_at": "2026-05-07T03:05:45.82+00:00",
      "capability_id": "cli-query",
      "description": "Request: cli-query",
      "type": "debit"
    },
    {
      "id": "6b3325ee-dcc0-4a87-ba9c-a28ad36611dd",
      "status": "paid",
      "amount_usd": 0.005,
      "created_at": "2026-05-07T03:05:42.261+00:00",
      "capability_id": "fund-portfolio-history",
      "description": null,
      "type": "debit"
    },
    {
      "id": "4628af0d-d111-4237-b519-1bcc7fac5856",
      "status": "paid",
      "amount_usd": 0.005,
      "created_at": "2026-05-07T03:05:42.146+00:00",
      "capability_id": "fund-portfolio-history",
      "description": "Request: fund-portfolio-history",
      "type": "debit"
    },
    {
      "id": "41a333d5-08aa-404f-ade1-e0f5c6cd9796",
      "status": "paid",
      "amount_usd": 0,
      "created_at": "2026-05-07T03:05:39.961+00:00",
      "capability_id": "fund-nav-history",
      "description": null,
      "type": "debit"
    },
    {
      "id": "40fbe670-bf5f-4a95-8243-52e689562c56",
      "status": "paid",
      "amount_usd": 0.005,
      "created_at": "2026-05-07T03:05:38.206+00:00",
      "capability_id": "fund-holdings",
      "description": null,
      "type": "debit"
    },
    {
      "id": "62f3632a-f3f7-4cc7-bdf6-a4c616233688",
      "status": "paid",
      "amount_usd": 0.005,
      "created_at": "2026-05-07T03:05:38.09+00:00",
      "capability_id": "fund-holdings",
      "description": "Request: fund-holdings",
      "type": "debit"
    },
    {
      "id": "bef9eb75-d995-4f8e-b7a7-56eb4b014620",
      "status": "paid",
      "amount_usd": 0.005,
      "created_at": "2026-05-07T03:05:35.77+00:00",
      "capability_id": "fund-hedge",
      "description": null,
      "type": "debit"
    }
  ],
  ... continued (42 lines left → JSON)
```

GET /invoices → 200 OK (page 2/2)

https://riskmodels.app/api/invoices

```
{
  "id": "22f61537-767c-4431-a231-b5eb382e6f44",
  "status": "paid",
  "amount_usd": 0.005,
  "created_at": "2026-05-07T03:05:35.677+00:00",
  "capability_id": "fund-hedge",
  "description": "Request: fund-hedge",
  "type": "debit"
},
{
  "id": "96347f39-8809-4652-a019-26673baee2e6",
  "status": "paid",
  "amount_usd": 0.005,
  "created_at": "2026-05-07T03:05:33.432+00:00",
  "capability_id": "fund-metrics",
  "description": null,
  "type": "debit"
},
{
  "id": "6c81542a-e8f7-4965-ac4b-4d9652f2129d",
  "status": "paid",
  "amount_usd": 0.005,
  "created_at": "2026-05-07T03:05:33.315+00:00",
  "capability_id": "fund-metrics",
  "description": "Request: fund-metrics",
  "type": "debit"
},
{
  "id": "b3e55db4-b7c3-4b26-bba9-f570863c8259",
  "status": "paid",
  "amount_usd": 0,
  "created_at": "2026-05-07T03:05:31.219+00:00",
  "capability_id": "style-cohort-snapshot-pdf",
  "description": null,
  "type": "debit"
},
{
  "id": "f5dba6e5-6a61-4e1f-907c-c407b4038911",
  "status": "paid",
  "amount_usd": 0.005,

```

... PDF excerpt truncated (5617 chars in JSON report)

<https://riskmodels.app/api/macro-factors?years=1>

```
{
  "factors_requested": [
    "inflation",
    "term_spread",
    "short_rates",
    "credit",
    "oil",
    "gold",
    "usd",
    "volatility",
    "bitcoin",
    "vix_spot",
    "momentum",
    "quality",
    "low_vol",
    "value",
    "growth",
    "size",
    "dividend",
    "moat"
  ],
  "start": "2021-05-07",
  "end": "2026-05-07",
  "row_count": 10000,
  "series": [
    {
      "factor_key": "inflation",
      "teo": "2021-05-07",
      "return_gross": 0.00211771670728922,
      "metadata": {
        "close": 127.77,
        "level": 127.77,
        "source": "ds_macro_factor_zarr",
        "ticker": "TIP"
      }
    },
    {
      "factor_key": "term_spread",
      "teo": "2021-05-07",
      "return_gross": 0.00118135195225477,
      "metadata": {
        "close": 67.8,
        "level": 67.8,
        "source": "ds_macro_factor_zarr",
        "ticker": "VGIT"
      }
    },
    {
      "factor_key": "short_rates",
      "teo": "2021-05-07",
      "return_gross": -0.000108984975668136,
      "metadata": {
        "close": 91.49,
        "level": 91.49,
        "source": "ds_macro_factor_zarr",
        "ticker": "BIL"
      }
    },
    {
      "factor_key": "credit",
      "teo": "2021-05-07",
      "return_gross": 0.000688038126099855,
      "metadata": {
        "close": 87.33,
        "level": 87.33,
        "source": "ds_macro_factor_zarr",
        "ticker": "HYG"
      }
    },
    {
      "factor_key": "usd",
      "teo": "2021-05-07",
      "return_gross": -0.00736298784613609,
      "metadata": {
        "close": 24.27,
        "level": 24.27,
        "source": "ds_macro_factor_zarr",
        "ticker": "UUP"
      }
    },
    {
      "factor_key": "volatility",
      ... continued (76 lines left → JSON)
    }
  ]
}
```

https://riskmodels.app/api/macro-factors?years=1

```

    "teo": "2021-05-07",
    "return_gross": -0.0567394085228443,
    "metadata": {
      "close": 36.74,
      "level": 36.74,
      "source": "ds_macro_factor_zarr",
      "ticker": "VXX"
    }
  },
  {
    "factor_key": "vix_spot",
    "teo": "2021-05-07",
    "return_gross": -0.0924415439367294,
    "metadata": {
      "close": 16.69,
      "level": 16.69,
      "source": "fred_vixcls",
      "ticker": "VIX_FRED",
      "fred_series": "VIXCLS"
    }
  },
  {
    "factor_key": "gold",
    "teo": "2021-05-07",
    "return_gross": 0.00899682473391294,
    "metadata": {
      "close": 171.59,
      "level": 171.59,
      "source": "ds_macro_factor_zarr",
      "ticker": "GLD"
    }
  },
  {
    "factor_key": "oil",
    "teo": "2021-05-07",
    "return_gross": 0.00045034903450869,
    "metadata": {
      "close": 44.43,
      "level": 44.43,
      "source": "ds_macro_factor_zarr",
      "ticker": "USO"
    }
  },
  {
    "factor_key": "growth",
    "teo": "2021-05-07",
    "return_gross": 0.00744973821565509,
    "metadata": {
      "close": 256.94000244140625,
      "source": "ds_etf_style_mirror",
      "ticker": "IWF",
      "category": "style"
    }
  },
  {
    "factor_key": "size",
    "teo": "2021-05-07",
    "return_gross": 0.012579427100718,
    "metadata": {
      "close": 225.38999938964844,
      "source": "ds_etf_style_mirror",
      "ticker": "IWM",
      "category": "style"
    }
  },
  {
    "factor_key": "low_vol",
    "teo": "2021-05-07",
    "return_gross": 0.00440775463357568,
    "metadata": {
      "close": 72.91999816894531,
      "source": "ds_etf_style_mirror",
      "ticker": "USMV",

```

... PDF excerpt truncated (32050 chars in JSON report)

GET /mcp/sse → None OK | skip streaming GET (use POST tools/list below)

skip streaming GET (use POST tools/list below)

https://riskmodels.app/api/mcp/sse

```
{
  "result": {
    "tools": [
      {
        "name": "riskmodels_decompose",
        "title": "RiskModels Single-Stock Decomposition",
        "description": "Decompose one stock into market, sector, subsector, and residual risk. Returns chart_data, suggested_chart, plain_english, and reproducible_api_call metadata.",
        "inputSchema": {
          "$schema": "http://json-schema.org/draft-07/schema#",
          "type": "object",
          "properties": {
            "ticker": {
              "type": "string",
              "minLength": 1,
              "description": "Ticker symbol, e.g. NVDA or AAPL"
            }
          },
          "required": [
            "ticker"
          ]
        },
        "execution": {
          "taskSupport": "forbidden"
        }
      },
      {
        "name": "riskmodels_compare",
        "title": "RiskModels Multi-Ticker Comparison",
        "description": "Compare tickers across market, sector, subsector, and residual risk layers. Prefer grouped bar charts when chart_data is present.",
        "inputSchema": {
          "$schema": "http://json-schema.org/draft-07/schema#",
          "type": "object",
          "properties": {
            "tickers": {
              "minItems": 2,
              "maxItems": 100,
              "type": "array",
              "items": {
                "type": "string",
                "minLength": 1
              }
            },
            "description": "Ticker symbols to compare"
          },
          "required": [
            "tickers"
          ]
        },
        "execution": {
          "taskSupport": "forbidden"
        }
      },
      {
        "name": "riskmodels_hedge_position",
        "title": "RiskModels Position Hedge",
        "description": "Scale ETF hedge ratios for a ticker to a dollar position. Returns chart-ready hedge notionals.",
        "inputSchema": {
          "$schema": "http://json-schema.org/draft-07/schema#",
          "type": "object",
          "properties": {
            "ticker": {
              "type": "string",
              "minLength": 1,
              "description": "Ticker symbol, e.g. NVDA"
            },
            "dollars": {
              "type": "number",
              "exclusiveMinimum": 0,
              "description": "Dollar notional of the stock position"
            }
          },
          "required": [
            "ticker",
            "dollars"
          ]
        },
        "execution": {
          "taskSupport": "forbidden"
        }
      }
    ]
  }
}
```

... continued (32 lines left → JSON)

https://riskmodels.app/api/mcp/sse

```
    },
    {
      "name": "riskmodels_portfolio_decompose",
      "title": "RiskModels Portfolio Decomposition",
      "description": "Decompose a weighted portfolio into market, sector, subsector, and residual risk
layers.",
      "inputSchema": {
        "$schema": "http://json-schema.org/draft-07/schema#",
        "type": "object",
        "properties": {
          "positions": {
            "minItems": 1,
            "maxItems": 100,
            "type": "array",
            "items": {
              "type": "object",
              "properties": {
                "ticker": {
                  "type": "string",
                  "minLength": 1
                },
                "weight": {
                  "type": "number",
                  "exclusiveMinimum": 0
                },
                "dollars": {
                  "type": "number",
                  "exclusiveMinimum": 0
                }
              }
            }
          }
        }
      }
    }
  ]
}
```

... PDF excerpt truncated (9921 chars in JSON report)

POST /plaid/exchange-public-token → None OK | skip Plaid (needs user session)

skip Plaid (needs user session)

GET /plaid/holdings → None OK | skip Plaid (needs user session)

skip Plaid (needs user session)

POST /plaid/link-token → None OK | skip Plaid (needs user session)

skip Plaid (needs user session)

https://riskmodels.app/api/pricing

```
{
  "version": "2026-04-01",
  "currency": "USD",
  "tiers": [
    "baseline",
    "premium"
  ],
  "endpoints": [
    {
      "id": "ticker-returns",
      "name": "Get Ticker Returns",
      "path": "/api/ticker-returns",
      "method": "GET",
      "tier": "baseline",
      "pricing_model": "per_request",
      "cost_usd": 0.005,
      "input_cost_per_1k": null,
      "output_cost_per_1k": null,
      "min_charge": null,
      "billing_code": "ticker_returns_v2"
    },
    {
      "id": "metrics",
      "name": "Latest Risk Metrics",
      "path": "/api/metrics/{ticker}",
      "method": "GET",
      "tier": "baseline",
      "pricing_model": "per_request",
      "cost_usd": 0.001,
      "input_cost_per_1k": null,
      "output_cost_per_1k": null,
      "min_charge": null,
      "billing_code": "metrics_v3"
    },
    {
      "id": "rankings",
      "name": "Cross-Sectional Rankings",
      "path": "/api/rankings/{ticker}",
      "method": "GET",
      "tier": "baseline",
      "pricing_model": "per_request",
      "cost_usd": 0.001,
      "input_cost_per_1k": null,
      "output_cost_per_1k": null,
      "min_charge": null,
      "billing_code": "rankings_v3"
    },
    {
      "id": "risk-decomposition",
      "name": "L3 Risk Decomposition",
      "path": "/api/l3-decomposition",
      "method": "GET",
      "tier": "premium",
      "pricing_model": "per_request",
      "cost_usd": 0.02,
      "input_cost_per_1k": null,
      "output_cost_per_1k": null,
      "min_charge": null,
      "billing_code": "l3_decomp_v3"
    },
    {
      "id": "chat-risk-analyst",
      "name": "AI Risk Analyst",
      "path": "/api/chat",
      "method": "POST",
      "tier": "premium",
      "pricing_model": "per_token",
      "cost_usd": null,
      "input_cost_per_1k": 0.001,
      "output_cost_per_1k": 0.002,
      "min_charge": null,
      "billing_code": "chat_risk_analyst_v2"
    },
    {
      "id": "plaid-link-token",
      "name": "Plaid Link token (setup)",
      "path": "/api/plaid/link-token",
      "method": "POST",
      "tier": "baseline",
      "pricing_model": "per_request",
      "cost_usd": 0,
      "input_cost_per_1k": null,
      "output_cost_per_1k": null,
      "min_charge": null,
      "billing_code": "plaid_link_token_v2"
    }
  ],
  ... continued (49 lines left → JSON)
}
```

https://riskmodels.app/api/pricing

```

    "output_cost_per_1k": null,
    "min_charge": null,
    "billing_code": "plaid_link_token_v1"
  },
  {
    "id": "plaid-exchange-public-token",
    "name": "Plaid public token exchange (setup)",
    "path": "/api/plaid/exchange-public-token",
    "method": "POST",
    "tier": "baseline",
    "pricing_model": "per_request",
    "cost_usd": 0,
    "input_cost_per_1k": null,
    "output_cost_per_1k": null,
    "min_charge": null,
    "billing_code": "plaid_exchange_v1"
  },
  {
    "id": "plaid-holdings",
    "name": "Plaid investment holdings",
    "path": "/api/plaid/holdings",
    "method": "GET",
    "tier": "premium",
    "pricing_model": "per_request",
    "cost_usd": 0.02,
    "input_cost_per_1k": null,
    "output_cost_per_1k": null,
    "min_charge": null,
    "billing_code": "plaid_holdings_v2"
  },
  {
    "id": "batch-analysis",
    "name": "Portfolio Batch Analysis",
    "path": "/api/batch/analyze",
    "method": "POST",
    "tier": "premium",
    "pricing_model": "per_position",
    "cost_usd": 0.005,
    "input_cost_per_1k": null,
    "output_cost_per_1k": null,
    "min_charge": 0.01,
    "billing_code": "batch_analysis_v3"
  },
  {
    "id": "ticker-search",
    "name": "Ticker Search",
    "path"

```

... PDF excerpt truncated (13322 chars in JSON report)

https://riskmodels.app/api/telemetry?days=1

```
{
  "status": "healthy",
  "timestamp": "2026-05-07T03:05:52.434Z",
  "version": "2.0.0-agent",
  "services": {
    "api": {
      "status": "healthy",
      "latency_ms": 0
    },
    "database": {
      "status": "healthy",
      "latency_ms": 98
    }
  },
  "capabilities": {
    "batch-analysis": {
      "status": "unavailable",
      "avg_latency_ms_24h": 932,
      "success_rate_24h": 0.5
    },
    "ticker-returns": {
      "status": "unavailable",
      "avg_latency_ms_24h": 1238,
      "success_rate_24h": 0.5
    },
    "rankings": {
      "status": "unavailable",
      "avg_latency_ms_24h": 2293,
      "success_rate_24h": 0.5
    },
    "factor-correlation": {
      "status": "unavailable",
      "avg_latency_ms_24h": 1162,
      "success_rate_24h": 0.5
    },
    "metrics-snapshot": {
      "status": "unavailable",
      "avg_latency_ms_24h": 822,
      "success_rate_24h": 0.4884
    },
    "portfolio-risk-snapshot": {
      "status": "unavailable",
      "avg_latency_ms_24h": 1517,
      "success_rate_24h": 0.5
    },
    "fund-snapshot-json": {
      "status": "unavailable",
      "avg_latency_ms_24h": 823,
      "success_rate_24h": 0.4857
    },
    "fund-holdings": {
      "status": "unavailable",
      "avg_latency_ms_24h": 809,
      "success_rate_24h": 0.4737
    },
    "fund-portfolio-history": {
      "status": "unavailable",
      "avg_latency_ms_24h": 751,
      "success_rate_24h": 0.4737
    },
    "fund-nav-history": {
      "status": "unavailable",
      "avg_latency_ms_24h": 1368,
      "success_rate_24h": 0
    },
    "fund-hedge": {
      "status": "unavailable",
      "avg_latency_ms_24h": 761,
      "success_rate_24h": 0.4737
    },
    "decompose-position": {
      "status": "unavailable",
      "avg_latency_ms_24h": 708,
      "success_rate_24h": 0.5
    },
    "l3-decomposition": {
      "status": "unavailable",
      "avg_latency_ms_24h": 903,
      "success_rate_24h": 0.5
    },
    "portfolio-risk-index": {
      "status": "unavailable",
      "avg_latency_ms_24h": 708,
      "success_rate_24h": 0.5
    }
  }
}
```

... continued (60 lines left → JSON)

https://riskmodels.app/api/telemetry?days=1

```

    "avg_latency_ms_24h": 686,
    "success_rate_24h": 0.5
  },
  "style-cohort-metrics": {
    "status": "unavailable",
    "avg_latency_ms_24h": 635,
    "success_rate_24h": 0.5
  },
  "style-cohort-holdings": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1281,
    "success_rate_24h": 0
  },
  "style-cohort-portfolio-history": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1222,
    "success_rate_24h": 0
  },
  "style-cohort-rankings": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1298,
    "success_rate_24h": 0
  },
  "style-cohort-snapshot-json": {
    "status": "unavailable",
    "avg_latency_ms_24h": 701,
    "success_rate_24h": 0.5
  },
  "fund-metrics": {
    "status": "unavailable",
    "avg_latency_ms_24h": 657,
    "success_rate_24h": 0.5
  },
  "cli-query": {
    "status": "unavailable",
    "avg_latency_ms_24h": 655,
    "success_rate_24h": 0.5
  },
  "macro-factor-series": {
    "status": "unavailable",
    "avg_latency_ms_24h": 911,
    "success_rate_24h": 0.5
  },
  "fund-snapshot-pdf": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1232,
    "success_rate_24h": 0
  },
  "style-cohort-snapshot-pdf": {
    "status": "unavailable",
    "avg_latency_ms_24h": 1138,
    "success_rate_24h": 0
  }
},
"teo_coverage": {
  "latest_teo": "2026-05-01",
  "universe_stock_count": 2974,
  "non_null_returns_symbo

```

... PDF excerpt truncated (4385 chars in JSON report)

GET /tickers → 200 OK (page 1/4)

<https://riskmodels.app/api/tickers?limit=5>

```
{
  "tickers": [
    "A",
    "AA",
    "AAL",
    "AAOI",
    "AAON",
    "AAP",
    "AAPG",
    "AAPL",
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    "ABT",
    "ABTC",
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    "AEVA",
    "AFG",
    "AFL",
    "AFRM",
    "AFYA",
    "AG",
    "AGCO",
    "AGG",
    ... continued (224 lines left → JSON)
  ]
}
```

<https://riskmodels.app/api/tickers?limit=5>

```
"AGI",
"AGIO",
"AGL",
"AGM",
"AGNC",
"AGNCZ",
"AGO",
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"AIN",
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"ATV",
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... continued (142 lines left → JSON)
```

<https://riskmodels.app/api/tickers?limit=5>

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... continued (60 lines left → JSON)

https://riskmodels.app/api/tickers?limit=5

"ASTL",
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"AYI",
"AZO",
"AZZ",
"B",
"BA",
"BABA",
"BAC",

... PDF excerpt truncated (32050 chars in JSON report)

GET /user/billing-config → 500 FAIL

`https://riskmodels.app/api/user/billing-config`

```
{  
  "error": "Failed to load billing settings"  
}
```

PATCH /user/billing-config → None OK | skip mutating PATCH

skip mutating PATCH

DELETE /webhooks/subscribe → None OK | skip webhook subscription lifecycle

skip webhook subscription lifecycle

GET /webhooks/subscribe → None OK | skip webhook subscription lifecycle

skip webhook subscription lifecycle

POST /webhooks/subscribe → None OK | skip webhook subscription lifecycle

skip webhook subscription lifecycle