MCP SERVER | NO CODE | CLOUD HOSTED

FRED Series MCP

Analyze official U.S. economic trends instantly.

FRED Series — U.S. Economic Time Series accesses over 816,000 official economic indicators from the Federal Reserve. You can pull raw data points for anything from GDP and inflation to interest rates and unemployment figures. It handles complex requests like year-over-year percentage changes or aggregating daily readings into quarterly summaries automatically.

A+ Quality Score 98.33/100

time-series | economic-indicators | data-transformation | macroeconomics | financial-analysis | statistical-data

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vinkius.com/mcp/fred-series-us-economic-time-series

SCAN TO VIEW

The infrastructure that powers AI agents in the real world.

Vinkius connects AI to the world's software through secure, enterprise-grade infrastructure — enabling real-world execution at scale, built on the Model Context Protocol (MCP).

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the cloud infrastructure where AI agents connect to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

FRED Series — U.S. Economic Time Series MCP

5 tools available
Cloud-hosted on Vinkius

This MCP connects your AI agent directly to the full FRED database, giving you access to America's most comprehensive economic data engine. You don't have to manually sift through spreadsheets looking for CPI numbers or federal funds rates; you just ask for what you need. Your client handles searching across hundreds of thousands of indicators by keyword. Need historical context? It pulls in ALFRED-style revisions so you can see how the data was adjusted over time. Furthermore, it doesn't just give you a raw number; it performs built-in transformations, like calculating year-over-year percentage changes or aggregating daily metrics up to quarterly totals, all with one prompt. Connecting this MCP via Vinkius gives your agent access to the entire catalog of tools needed for deep financial and economic analysis, making complex research instantaneous.

Core Capabilities

01 — Find any U.S. economic indicator

Your agent searches a massive database by keyword to locate indicators like unemployment rates or housing starts.

02 — Pull raw date/value pairs

It retrieves actual data points for specific series, supporting complex filters and time ranges.

03 — Transform and aggregate metrics

The MCP automatically calculates units like percent change or aggregates daily data into monthly or annual totals.

04 — Analyze historical revisions

You can access vintage analysis to understand how official data has been revised by the Federal Reserve over decades.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/fred-series-us-economic-time-series** — connect your AI agent in three steps.

01 First, you tell your agent what economic indicator you need and which time period you're interested in.

02 Next, your client runs the request through this MCP, letting it handle the data retrieval, applying necessary unit transformations (like calculating percent change), and aggregating the results into a usable format.

03 You get back clean, structured data ready for analysis—whether that's a comparison of interest rates or a multi-year trend chart.

The bottom line is you get instant access to authoritative economic data without needing specialized database knowledge.

Built For

Anyone who works with financial modeling, risk assessment, or macroeconomics needs this. It's for the quantitative analyst tired of manual data cleanup and the academic researcher who needs historical revisions to validate a thesis.

Quantitative Analyst

Uses this MCP to pull complex, multi-period data sets, applying unit transformations like log or percent change to model market behavior.

Economist

Retrieves and compares indicators across decades using vintage analysis, validating theories against official historical records.

Financial Advisor

Checks current trends by comparing key rates, like the federal funds rate versus 10-year treasury yields, for client investment recommendations.

What Changes When You Connect

01 Stop guessing which indicator ID you need. Use `search_series` to find any of the 816,000+ indicators—from GDP to CPI—just by typing a keyword like 'unemployment rate'.

02 You never have to manually calculate percentage changes or aggregate data again. The `get_observations` tool handles unit transformations and frequency adjustments automatically.

03 Need to know if the current inflation number is accurate? Use `get_vintage_dates` for ALFRED-style analysis, seeing exactly how the Federal Reserve revised past metrics.

04 Get a full profile of any indicator using `get_series`. This gives you all the metadata—units, source, frequency—before you even pull the data points.

05 Track major economic announcements without constant manual checks. The `get_series_updates` tool alerts your agent when key macro series have been newly released.

Real-World Applications

Determining investment risk based on yield curve shifts

A financial advisor needs to compare the federal funds rate against 10-year treasury yields. They ask their agent to use `get_observations` to pull both series, allowing them to instantly calculate and track the yield curve inversion over time for client reports.

Building a quarterly economic forecast model

A quantitative analyst requires historical GDP data. Instead of pulling daily records, they use `get_observations` and specify aggregation from daily to quarterly, getting clean, ready-to-use numbers for their forecasting script.

Validating a thesis on long-term inflation trends

An academic researcher must account for historical data revisions. They use `get_vintage_dates` to retrieve the official revision history of the CPI series, ensuring their findings are based on the most accurate, adjusted metrics.

Monitoring market reaction to new Fed announcements

A portfolio manager wants to know if any key interest rate indicators were updated that morning. They run `get_series_updates` to quickly identify recently changed data before calling their trading team.

Patterns to Avoid

Trying to find a specific indicator ID manually

✗ AVOID

A user wastes time searching FRED's website documentation, trying to remember if the unemployment rate code is UNRATE or something else entirely.

✓ INSTEAD

Just ask your agent to use `search_series` with keywords like 'unemployment rate'. It finds the correct ID and metadata instantly.

Treating all data as raw numbers

✗ AVOID

A user pulls a list of quarterly spending totals but forgets that they need to calculate the year-over-year percentage change for comparison.

✓ INSTEAD

Use `get_observations` and specify units=pch (percent change) in your request. The MCP handles the calculation so you get comparable metrics right away.

Assuming data is final

✗ AVOID

A writer publishes an article using old CPI figures, only for the Federal Reserve to revise them three months later.

✓ INSTEAD

Always run `get_vintage_dates` before publishing. This ensures you know if and when the official series undergoes historical revisions.

The Right Fit

Use this MCP if your task involves analyzing, comparing, or modeling any kind of U.S. economic time-series data (GDP, CPI, interest rates, etc.). You need authoritative numbers from the Federal Reserve and the ability to transform those numbers (e.g., calculating percent change or aggregating frequency). Don't use this if you just need a simple definition of an indicator; `get_series` handles that metadata lookup. Also, don't rely on it for predicting future events—it only retrieves historical facts. If your goal is pure predictive modeling without access to foundational data, you might be better off using a dedicated machine learning framework instead.

Dealing with disparate economic sources is a headache.

Today, pulling an analysis together means jumping between dozens of websites. You pull the inflation rate from one page, then copy-paste unemployment data into a spreadsheet, and finally cross-reference interest rates using another database. Every step involves manual clicking, checking version numbers, and spending hours just cleaning up mismatched formats.

With this MCP, you ask your agent to 'Compare U.S. GDP growth over the last decade.' It handles the searching, pulling the raw data from multiple sources, applying the necessary percentage change calculations, and structuring it all into a single, clean output for you.

Get instant historical context with `get_vintage_dates`.

Manual research often fails to account for data revisions. You might pull the CPI number from 1985, but without knowing if that figure was revised later by the Fed, your entire analysis is flawed. Tracking these adjustments requires diving deep into technical documentation.

Using `get_vintage_dates` immediately surfaces the revision timeline. It lets you know how much the official numbers shifted over time, giving you confidence in historical comparisons.

FRED Series — U.S. Economic Time Series (5 Tools)

These tools allow your agent to search, retrieve metadata, pull raw observations, check for updates, and analyze historical revisions across 816,000+ economic data points.

#	TOOL	DESCRIPTION
01	search_series	Searches through all 816,000+ economic indicators by keyword to find the correct series ID or metadata.
02	get_series	Retrieves core details, including units and frequency, for a specific known FRED series using its official ID.
03	get_observations	Pulls the actual data values for a time series, allowing you to filter by date range or request built-in transformations.
04	get_series_updates	Checks which economic indicators were recently updated, helping track the release of new official data points.
05	get_vintage_dates	Provides historical revision dates for a series, crucial for understanding how past data was officially adjusted.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U What is the current U.S. unemployment rate?

U.S. Unemployment Rate (UNRATE)

Latest: 3.7% (January 2025)
Previous: 3.7% (December 2024)
Frequency: Monthly, seasonally adjusted

12-month trend: Stable around 3.5-3.9%
Historical low: 2.5% (May 1953)
Pandemic peak: 14.7% (April 2020)

The labor market remains tight by historical standards.

U Show me U.S. GDP growth rate over the last 5 years

U.S. GDP — Percent Change from Previous Quarter (Annualized)

YEAR	Q1	Q2	Q3	Q4
2024	1.4%	3.0%	2.8%	2.3%
2023	2.0%	2.1%	4.9%	3.4%
2022	-1.6%	-0.6%	3.2%	2.6%

Using series GDP with units=pch (percent change) and frequency=q (quarterly).

U Compare the federal funds rate with 10-year Treasury yield

🏦 **FEDFUNDS vs DGS10 — Rate Comparison**

Federal Funds Rate (FEDFUNDS): 5.33%
10-Year Treasury (DGS10): 4.15%

Yield curve inversion: -118 bps
This inversion has persisted for 18+ months, historically signaling recession risk.

Both series retrieved from FRED with daily frequency.

Frequently Asked Questions

01 **How do I use FRED Series MCP to find a series ID?**

Use `search_series`. You just need to type keywords like 'inflation' or 'unemployment rate', and the tool returns matching indicators with their full metadata.

02 **Can I calculate annual percentage change using get_observations?**

Yes. When calling `get_observations`, you specify units=pch (percent change) in your request. The MCP performs that calculation for you on the raw data points.

03 **Is FRED Series MCP suitable for modeling future rates?**

No, this MCP only retrieves historical and current official data from the Federal Reserve. It is a data source, not a predictive model; it provides facts, not forecasts.

04 **What if I need to compare multiple indicators like CPI and GDP?**

You can retrieve multiple series in one go using `get_observations`. Just provide the list of desired indicator IDs, and your agent will pull all the corresponding data points for comparison.

05 **How do I check if FRED Series MCP has new data releases?**

Run the `get_series_updates` tool. This checks which major economic indicators were recently updated, which is key for tracking breaking macro news.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"fred-series-us-economic-time-series": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

FRED Series — U.S. Economic Time Series is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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