

# BUILDING METADATA FOR ECONOMIC DATA DESCRIPTION AND ACCESS

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# Disclaimer

The views expressed in this presentation do not necessarily reflect official positions of the Federal Reserve Bank of St. Louis or the Federal Reserve System.

# Agenda

- Background
- The schema and the questions it attempts to answer
- Next steps

# BACKGROUND

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THE EVOLUTION OF FRED

Categories > National Accounts > National Income & Product Accounts > GDP/GNP

## FRED Graph

DOWNLOAD 

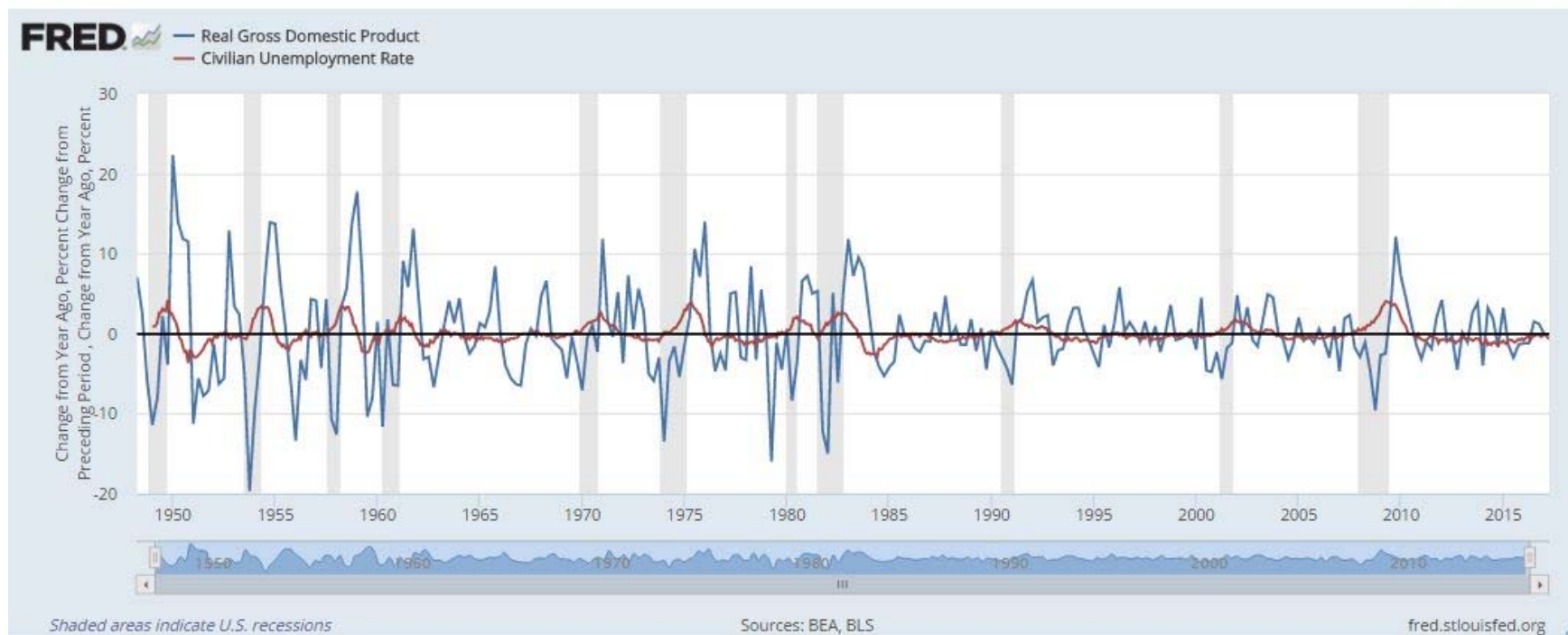
1Y | 5Y | 10Y | Max

1948-04-01

to

2017-04-01

EDIT GRAPH 





### Browse Data

- [Categories](#)
- [Releases](#)
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## Federal Reserve Economic Data

35,000 economic time series from 38 sources. Download, graph, and track economic data.

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[Business/Fiscal \(3,328\)](#)

[Employment & Population \(2,143\)](#)

[Exchange Rates \(95\)](#)

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[Foreign Exchange Intervention \(21\)](#)

[Gross Domestic Product \(GDP\) & Components \(241\)](#)

[Interest Rates \(401\)](#)

[International Data \(4,243\)](#)

[Monetary Aggregates \(128\)](#)

[Prices \(1,356\)](#)

[Reserves & Monetary Base \(271\)](#)

[U.S. Regional Data \(22,395\)](#)

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ECONOMIC RESEARCH  
FEDERAL RESERVE BANK OF ST. LOUIS

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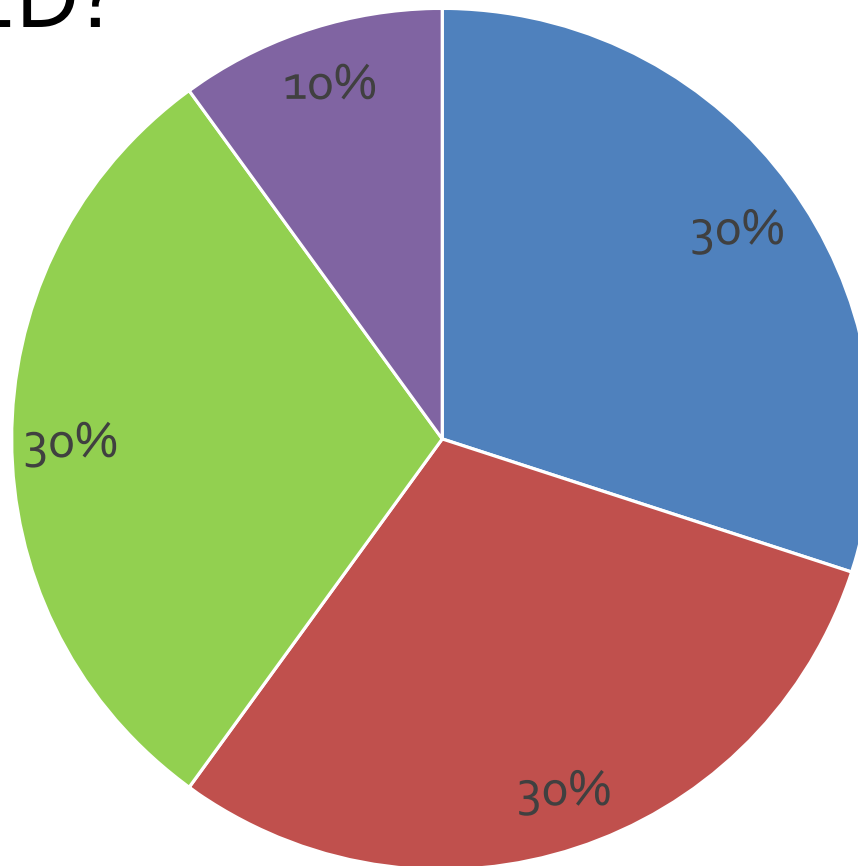
Download, graph, and track **470,000** US and international time series from **85** sources.



Browse data by [Tag](#), [Category](#), [Release](#), [Source](#), [Release Calendar](#) or [Get Help](#)

# Who is using FRED?

- Educators and students
- Researchers
- Business professionals
- Journalists, retired economists, and data geeks





# User problems

- How can I be sure my search results are what I'm really looking for?
- What are the differences between two (or more) series, and what are the similarities?
- How do I know I'm making the correct assumptions about this series?
- How do I avoid easy or common mistakes?
- Where should I look first for help understanding this series?
- Where is my metadata on data I download or import?

# Added Context

- Consistent presentation
- Related links
  - Research
  - Blogs
  - Teaching materials
  - Library materials
- Related series
- Other formats
- Release tables
- Categories and tags

## Related Resources

**PAGE ONE**  
Economics®

Newsletter  
Money and Inflation: A  
Functional Relationship



Education Resource  
Market Basket



FRASER Historical Document  
Stemming Inflation : The  
Office of Emergency  
Preparedness and the 90-Day ...



Education Resource  
FRED in the Classroom:  
Measures of Inflation



Education Resource  
Calculate the Price Changes  
Over Your Lifetime



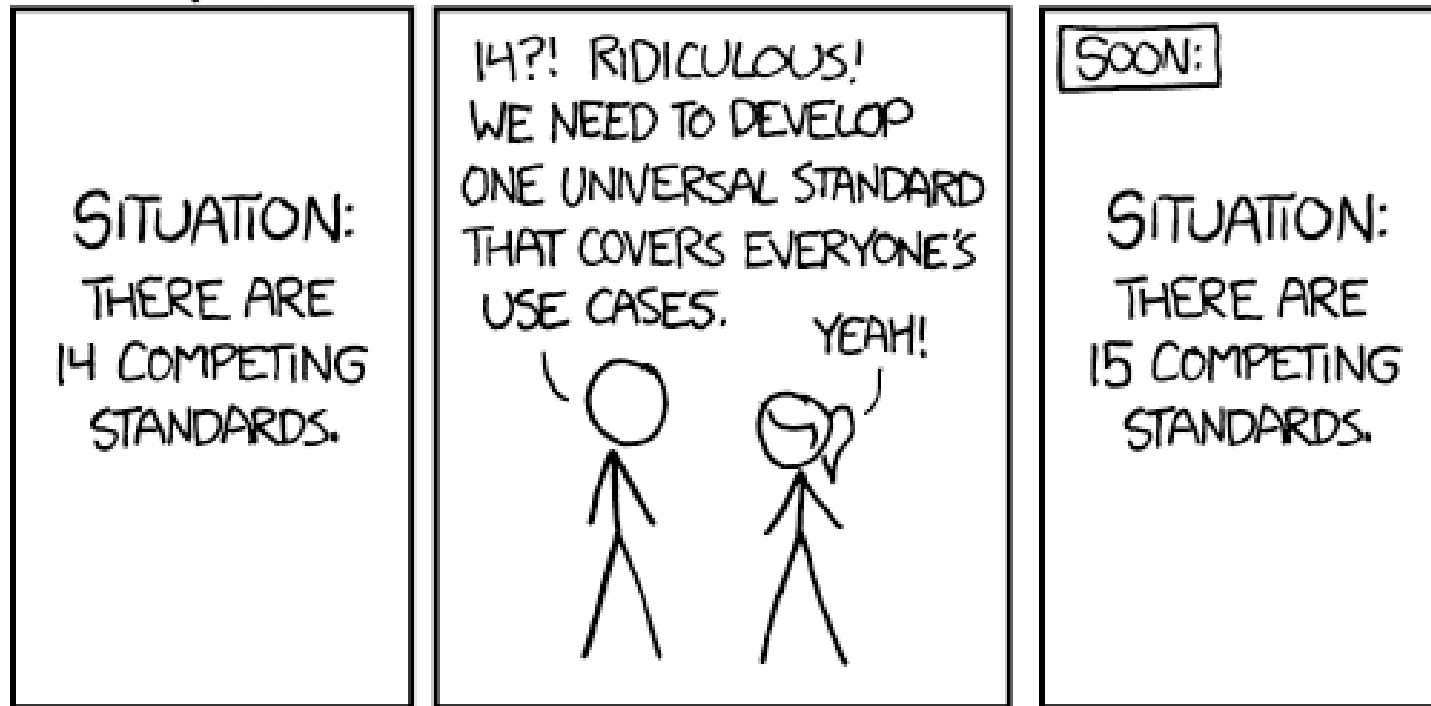
FRED Blog  
The Great Recession and  
trade collapse: Comparing  
Missouri and the nation

# THE ACCIDENTAL SCHEMA

# BTN 2014: The expert consensus:

1. Time series metadata is a mess, but improving it would be valuable to the community
2. Metadata has to be machine-readable and linkable
3. There are standards out there, but they're in pieces and applied differently
4. Context is key, and we can't keep assuming our users already know it
5. Economics isn't as tied to natural language as it seems; identical terms might be built on different calculations
6. The goals are discoverability and comprehensibility for our users

HOW STANDARDS PROLIFERATE:  
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)



# FRED's Metadata Needs

- Time series-focused (not publication- or survey-focused)
- Lightweight
- In tune with linked data principles
- Machine- and human-readable
- Consistent
- Facilitates automation
- Able to be heavily crosswalked

# The competition... or is it?

## **DDI**

- Microdata/survey data
- Soup-to-nuts description
- Methods, data, admin, codebooks
- Documentation-focused

## **SDMX**

- Time series/aggregate data
- Structure description
- Complex to implement
- Data transfer- or exchange-focused

# FRED-S

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# The Problem of Translation

## State and Area Employment, Hours, and Earnings

**Series Title** : Seasonality : Total Nonfarm - Total Nonfarm  
**Series ID** : SMS01000000000000026  
**Seasonality** : Seasonally Adjusted  
**Survey Name** : [State and Area Employment, Hours, and Earnings](#)  
**Measure Data Type** : All Employees, 3-month average change, In Thousands, seasonally adjusted  
**Industry** : Total Nonfarm  
**Sector** : Total Nonfarm  
**Area** : Alabama

<http://beta.bls.gov/dataViewer/view/timeseries/SMS01000000000000026>

## All Employees: Total Nonfarm in Alabama (SMS01000000000000026)

[DOWNLOAD](#)

Observation:  
Aug 2016: 2.8 (+ more)  
Updated: Sep 29, 2016

Units:  
3-month Average Change, Thousands of  
Persons,  
Seasonally Adjusted

Frequency:  
Monthly

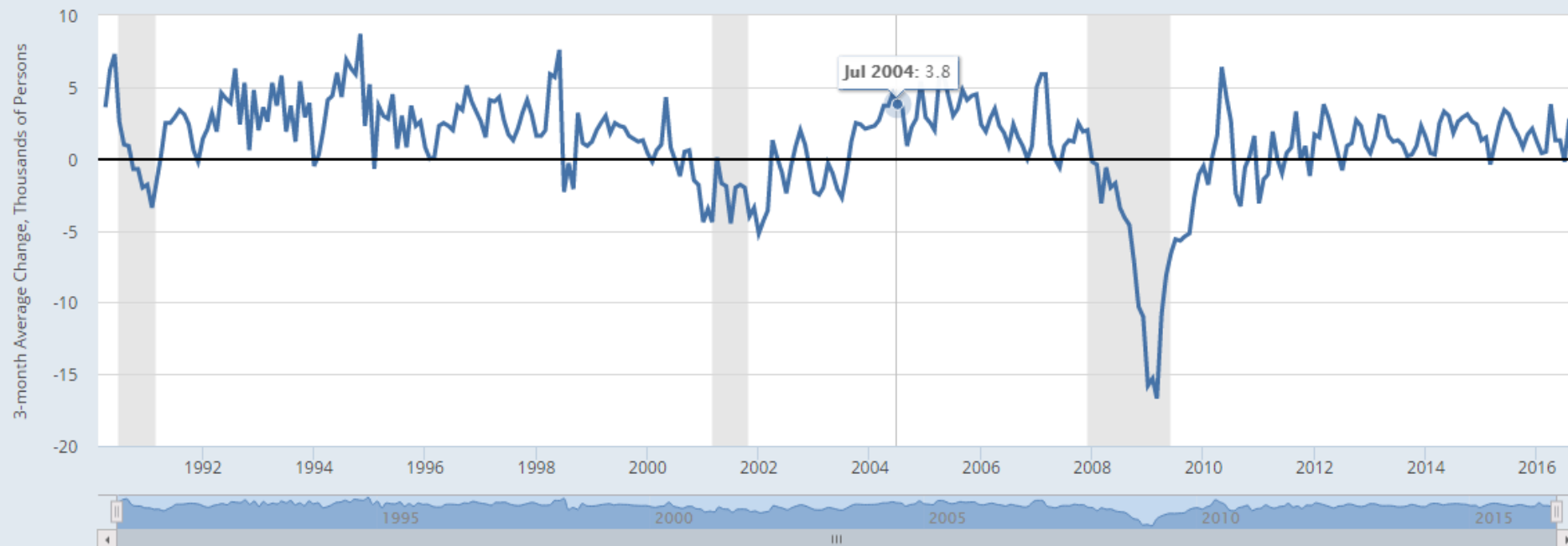
1Y | 5Y | 10Y | Max

1990-04-01 to 2016-08-01

[EDIT GRAPH](#)

**FRED**

— All Employees: Total Nonfarm in Alabama

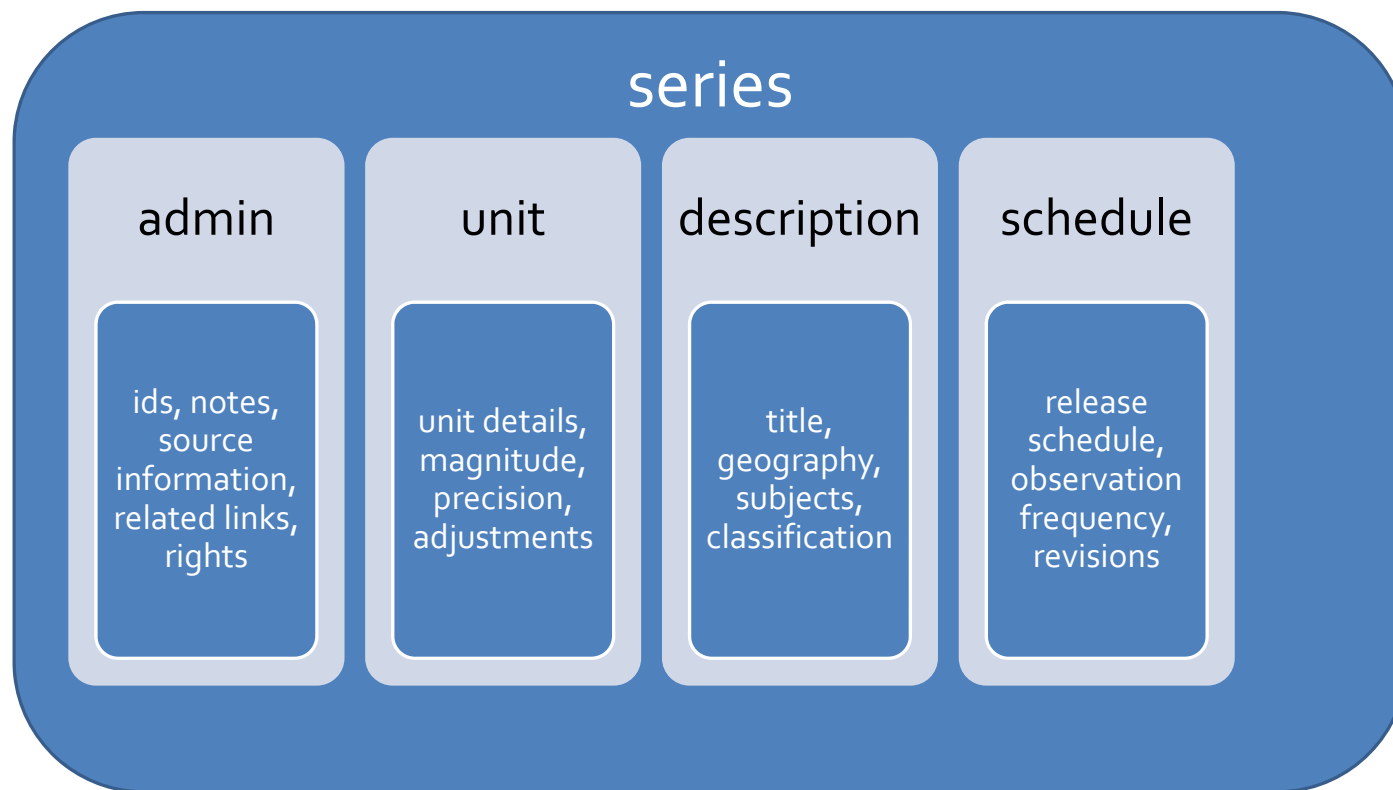


Shaded areas indicate US recessions

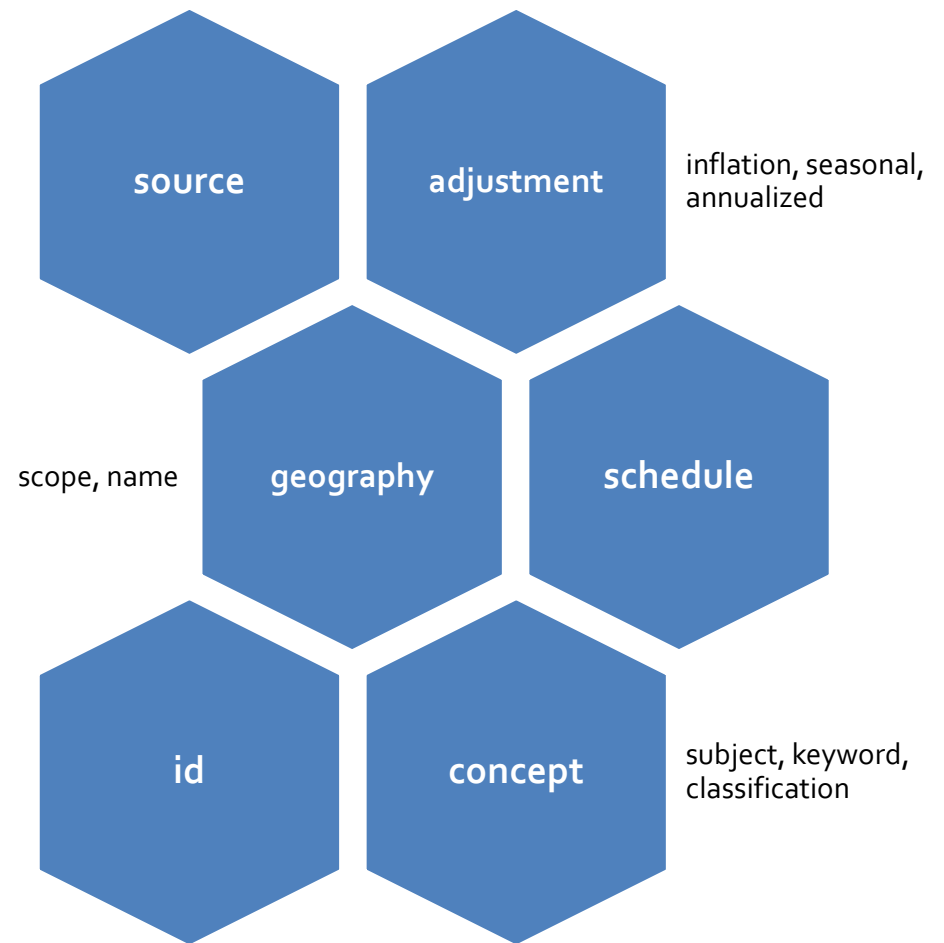
Source: US. Bureau of Labor Statistics, Federal Reserve Bank of St. Louis

fred.stlouisfed.org

# FRED-S Design



Modular  
description can  
help build a  
faceted search



## Current Unit: Billions of Chained 2009 Dollars, Seasonally Adjusted Annual Rate

unit type=currency

unit=U.S. Dollar

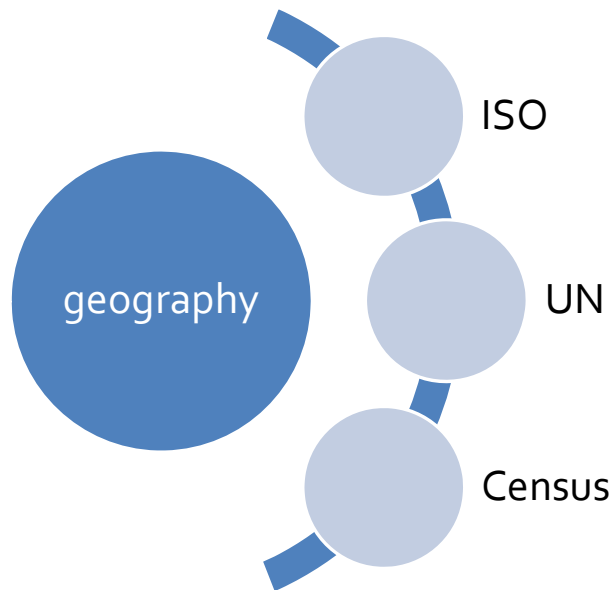
magnitude= $10^9$

adjustment type=inflation

base period= 20090101/20091231

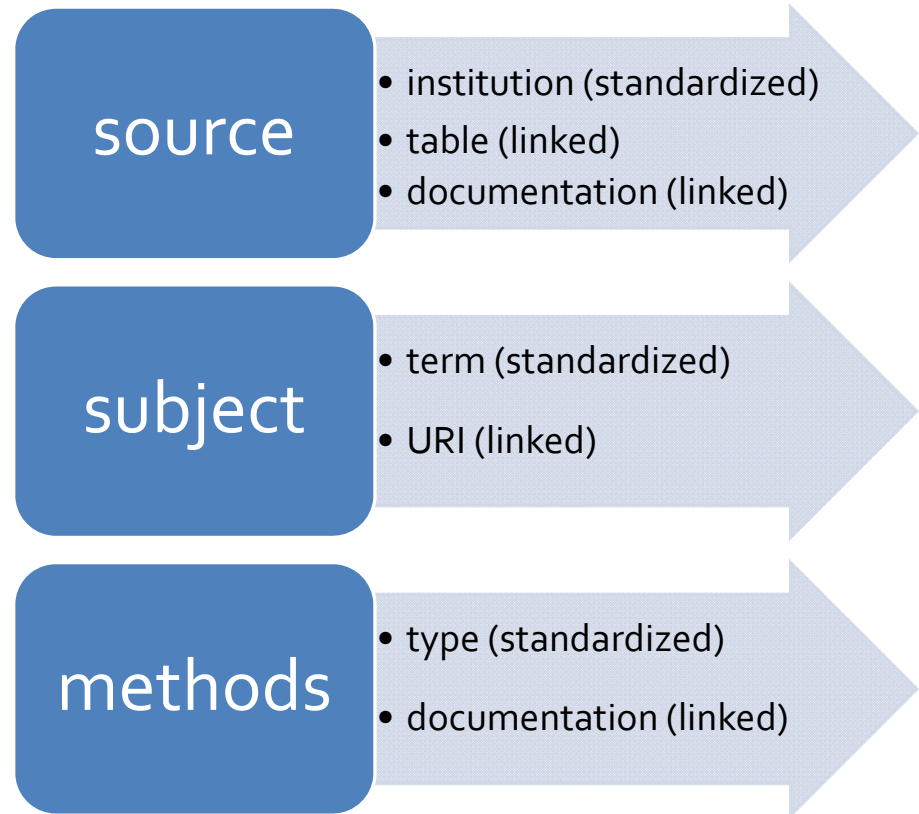
adjustment type= seasonal

adjustment type= annualized

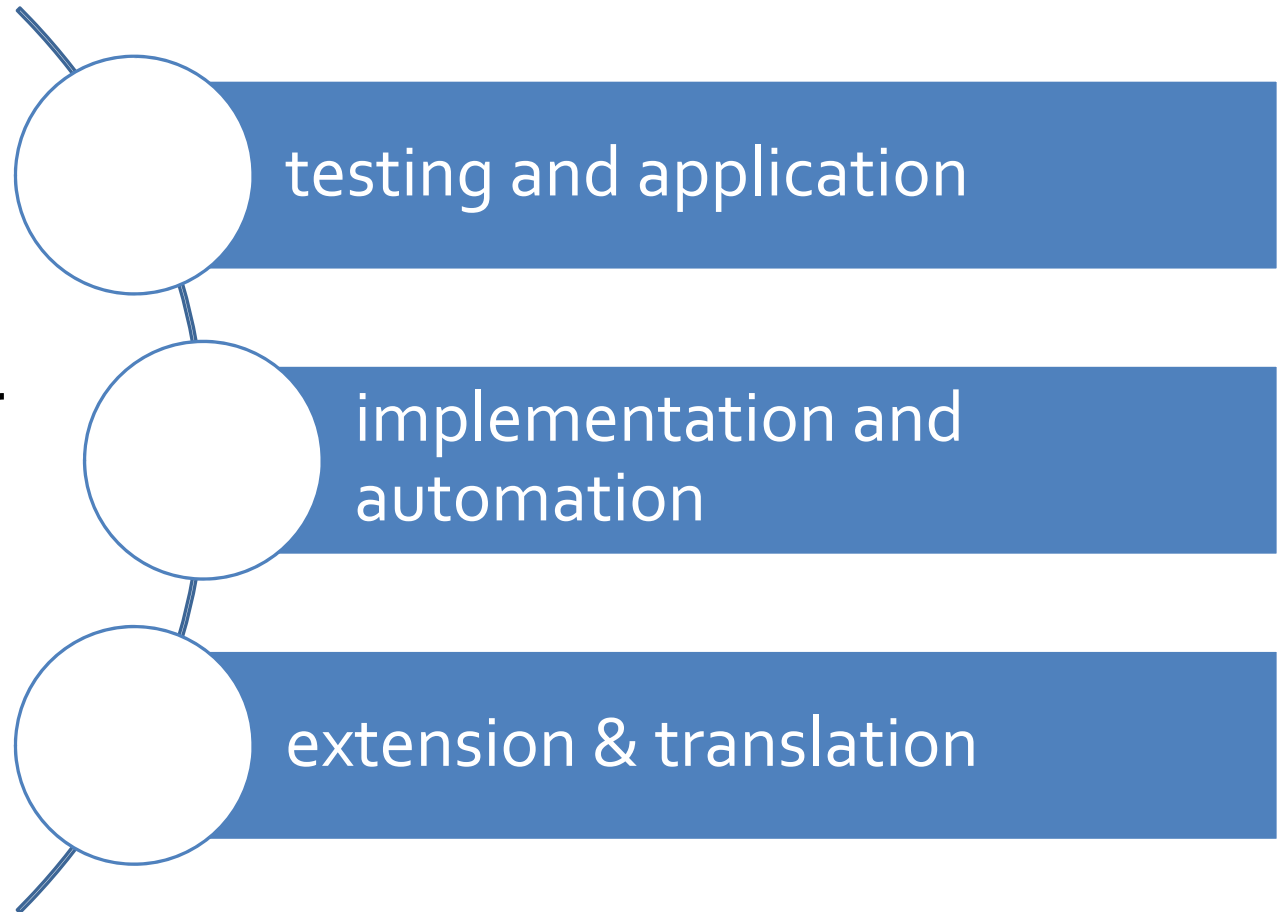


Declaration of  
equivalencies and  
links to standards  
and definitions  
help build user  
understanding

Links to  
documentation  
help clarify  
ambiguities



What's next for  
FRED-S?





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