



# **Public Data, Public Impact**

**How to Use Open and Public Data to Amplify Your Nonprofit's Impact**

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# Heights Philadelphia is an Economic Mobility Catalyst.







# How do we serve as an Economic Mobility Catalyst?

## Heights is a connector.

Our students are at the center of a complex ecosystem. We help students create their pathway.

## We leverage micro + macro solutions.

We work with businesses, schools, and colleges to increase total opportunity while simultaneously providing personal and individual support to our students.

## We operate at a scale that can make impact.

3,500+ students | 75 staff | \$12M budget | \$28M endowment  
25 District School Partners | 13 University Partners





# As an Economic Mobility Catalyst, Heights focuses on 4 key pillars:

## Advising & Enrichment



College and career advising and financial support to 3,300+ students, beginning in middle school and continuing through college.

## Pathways to Careers



Defined pathways to key industries that provide family sustaining pay and career opportunity in the Philadelphia region.

## Partnerships



Transformative partnerships to make educational systems and the workforce better for Philadelphia youth.

## Community



Community of support and network of people who invest in their success made up of alumni, dedicated staff, educators, and volunteers.



# About Me

**2001-2004:** Programmer in SF

**2005-2008:** Law School (UVA)

**2008-2018:** Legal Aid Lawyer in Philadelphia

**2018-2023:** Director of Analytics for DA Krasner  
in Philadelphia

**2023-present:** VP of Data and Innovation at  
Heights Philadelphia





**12/15/2009:** “Fugitives now owe taxpayers a whopping \$1 billion in forfeited bail, according to court officials”

**6/26/2010:** “Philadelphia court officials are poised to launch a campaign to go after \$1 billion in bail money forfeited by defendants who skipped trial. . . [T]he courts will dun more than 200,000 people.”

## **Violent Criminals Flout Broken Bail System**

Tens of thousands of Philadelphia fugitives are on the streets, abetted by the city's deeply flawed program.

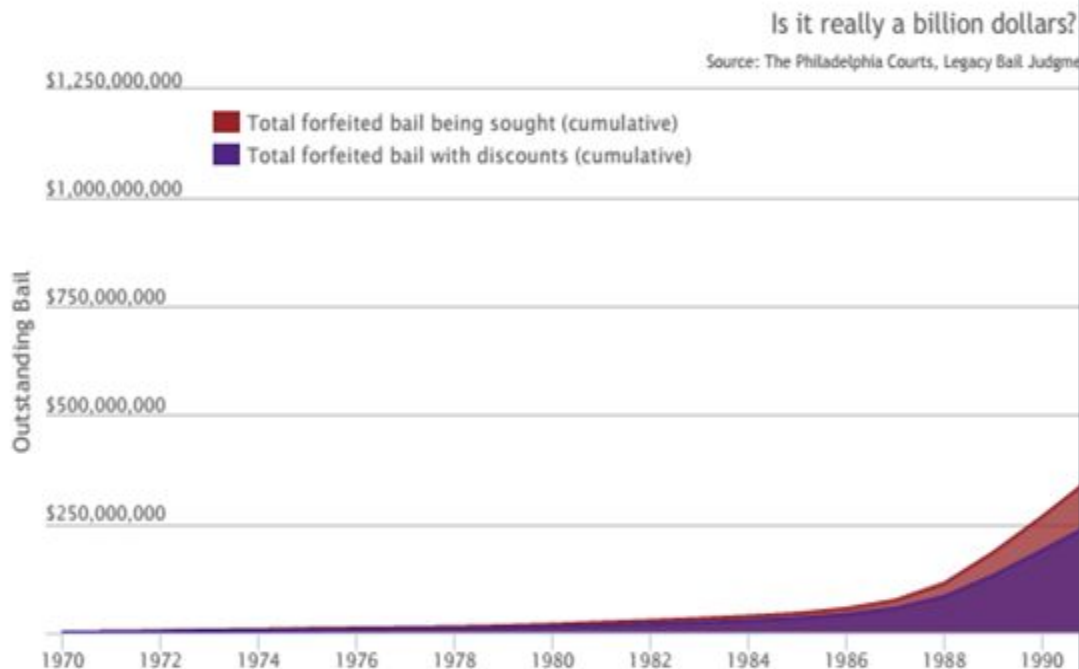
**By Dylan Purcell**

The robber had a gun in his hand and a smirk on his face. "Y'all gonna make me kill you," he said. "Where's the safe?" There was no safe inside the Caprice Villa bar, just a handful of middle-aged patrons passing a Tuesday evening. Shaking bartender Marcia Williamson gave the gunman the little bit of money in her till: \$115. He took cash from the customers and fled into the West Philadelphia





## Using Public Data to Change the Story



### NEWS



## Nearly \$1 billion owed by bail jumpers wiped off books

In a single act, nearly \$1 billion in debt owed to Philadelphia by onetime fugitives has disappeared. Philadelphia's court system, at the request of the city, wiped off the books longtime debt owed by tens of thousands of criminal defendants who failed to appear for their court dates.

by Dylan Purcell, Inquirer Staff Writer  
Published Oct. 10, 2014, 8:27 p.m. ET

In a single act, nearly \$1 billion in debt owed to Philadelphia by onetime fugitives has disappeared. [Source](#)





## What is public and open data?

Public data... means any data that is in the public domain... Public data is definitely not always open data.

<https://www.tpximpact.com>

Open data and content can be freely used, modified, and shared by anyone for any purpose.

<https://opendefinition.org/>

Open data is generally easier to use and is more reliable, but both can be valuable



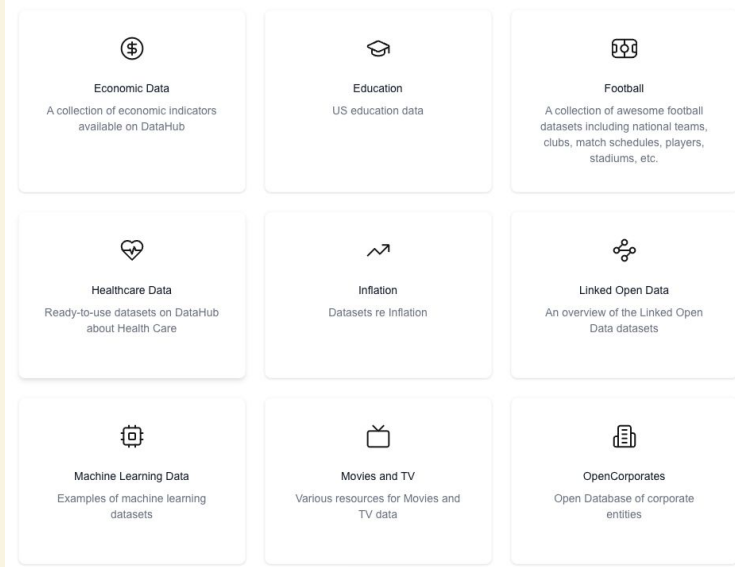




# Open Data is Everywhere

There are an uncountable number of open and public data sources:

- [DataHub](#)
- [Data.gov](#)
- [FRED](#)
- City open data websites (e.g. <https://opendataphilly.org/>)
- GIS data from cities, states, federal gov't, schools, etc...
- [Curated data sets](#) ([github.com/awesomedata](https://github.com/awesomedata))



*A Sample of Categories on DataHub*







## Public and Open Data Has a Hugely Important Role in the Work that We Do

- Context: Discover who we are
- Problem detection: Issue spotting
- Rangefinding: What are the reach and limits of the systems I work with?
- Change: What are the changes in data over time?
- Evaluate: What impact will a proposed policy have or did a prior policy create?
- Micro and macro: Connect federal issues to state and local issues; compare across jurisdictions
- Comparison: Who do you serve and how does that compare to your potential service population?







***Not everything that can be  
counted counts, and not  
everything that counts can be  
counted***

***- William Bruce Cameron***





## Pitfalls with (Open) Data

- Think about what data may be missing: are crosstabs available? Is the data only measuring 'easy' things?
- Data sets often cannot be connected.
- Qualitative data is important but is more rare.
- Data can be stale - what is the sell-by date?
- Data may not be presented to you at the right granularity (e.g. age brackets, geographic area)
- Data has bias. Who did the measurement? What did they measure and what did they not measure?
- Who is responding to surveys/creating the data?
  - [More potholes in wealthy parts of Boston](#)
  - [Systematic undercounting in the Census](#)







## Shootings Near Schools

**What:** A violence intervention grant application. One of the modalities was educational support.

**Role that data played:** Provided context to the work we were proposing: what was the need for violence intervention in the neighborhoods where we worked

**Data:** [57 blocks in Philly](#) with 10+ shootings 2015-2021; [shooting victims data](#) from opendataphilly; Heights schools

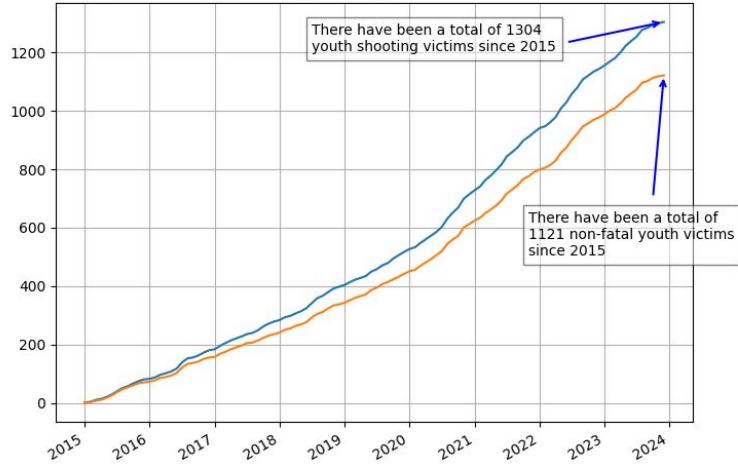






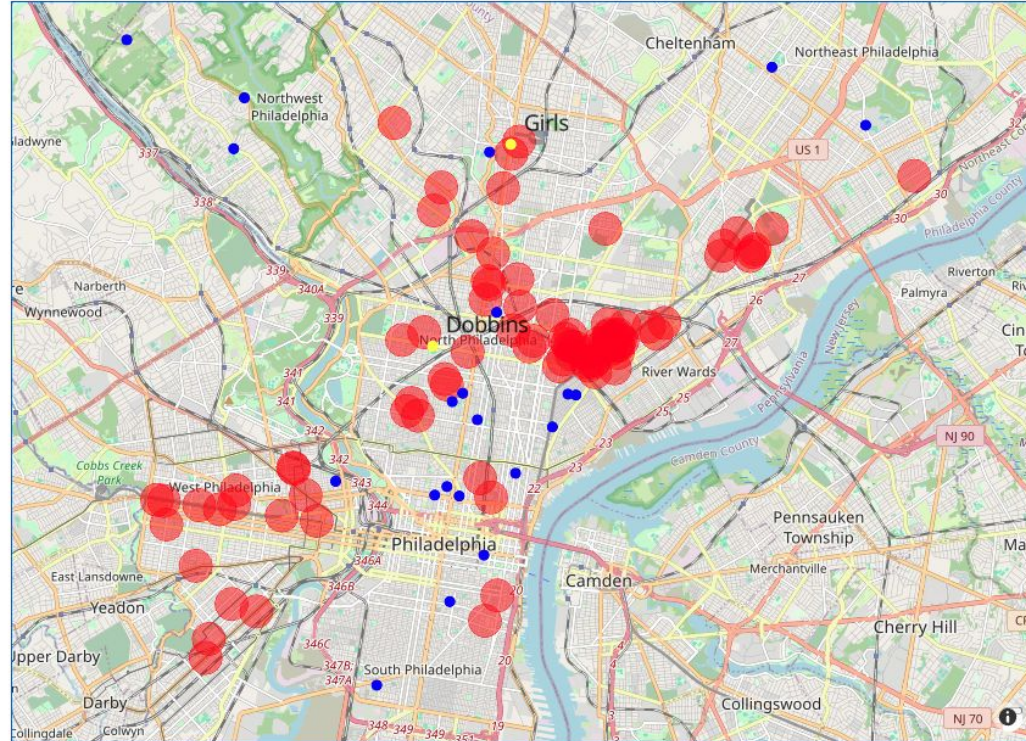
# Shootings Near Schools

Philadelphia's Young Shooting Victims, 2016-2023



## Heights Schools Overlayed With High Shooting Areas since 2015

This map overlays Heights' partner schools with the areas of the city with the most shootings between 2015 and August 2023. Two of our schools are in these areas: Dobbins and Girls High. Carver, Duckery, and Bethune are all virtually in these areas. Central, Parkway Center City, and Kensington HS, Kensington CAPA are all very near a high shooting area.







## Comparing School Population to Heights' Students

**What:** Internal dashboard that compares Heights' students/outcomes to the wider school community

**Role that data played:** Allows us to understand the context of our work within the greater school community. Do our students reflect the school's population? What is the trajectory of the school's grad, matriculation rates? How does that change our work?

**Data:** [School catchment shapefiles](#); [school population, graduation, college matriculation data](#); Heights data

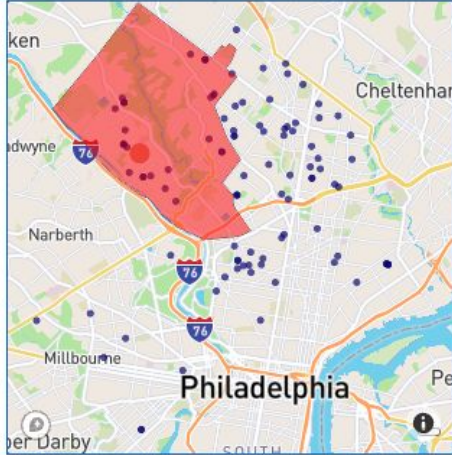






# Comparing School Population to Heights' Students

## Heights Students - Roxborough



Source: Heights Philadelphia.  
Heights partner schools are highlighted in orange.  
Map produced on 07/22/2025

School Type: Catchment  
Population: 613  
Black Pop.: 86%  
Latino Pop.: 6%  
Grad Rate: 64%  
College Matric: 44%

## Roxborough

Cohorted Students

77

Black/Latinx

99%

Enrichment Students

1

Low Income

81%

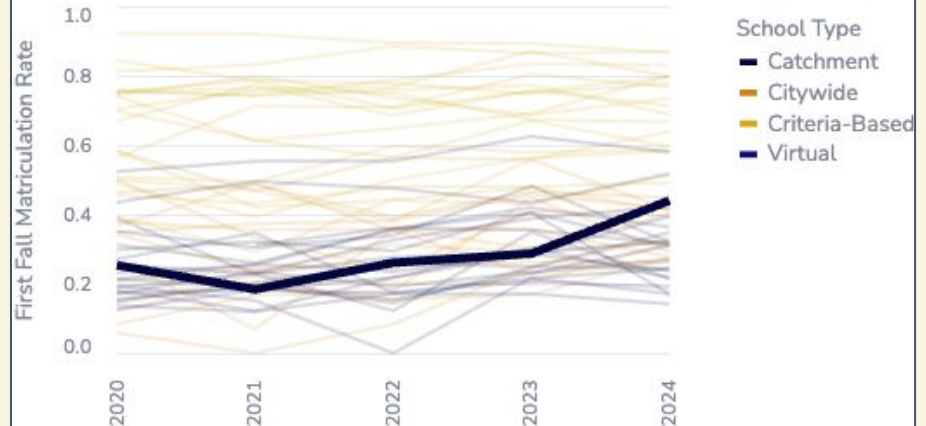
In One Time Events

156

First Gen

67%

## Roxborough's College Matriculation Rate As compared to SDP High Schools







## Making Sense of Unemployment Data

**What:** Making sense of local unemployment data, on a national scale.

**Role that data played:** Allowed advocates around the country to track their state's UI system both longitudinally and in comparison to other states. Allowed concentrated expertise in calculations to benefit wide group of advocates who could then run their own individual campaigns.

**Data:** 15-20 [data files](#) from the USDOL on various aspects of state unemployment programs







# Making Sense of Unemployment Data

This is what states submit to the federal government each month.

Advocates in the know could get this data from the state.

Few advocates knew what to do with it or that it could be downloaded en-masse from the federal gov't.

## ETA 5130 BENEFIT APPEALS

STATE: OR		REGION: 06		REPORT FOR PERIOD ENDING: 11/30/2020			
SECTION A. SINGLE CLAIMANT AND MULTICLAIMANT APPEAL DECISIONS BY PROGRAM AND OTHER DISPOSITIONS							
Line No.	UI Decisions		UCFE-NO UI		UCX Only		
	Lower Authority	Higher Authority	Lower Authority	Higher Authority	Lower Authority	Higher Authority	Other Dispositions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
100	471	35	2	0	0	0	110
SECTION B. CLAIMANTS INVOLVED IN STATE UI APPEALS CASES BY STATUS OF APPEALS							
Line No.	Status of Appeals	Single-Claimant Appeals		Multi-Claimant Appeals			
		Lower Authority	Higher Authority	Lower Authority	Higher Authority		
		(8)	(9)	(10)	(11)		
200	Filed During Month	1,288	56	0	0		
210	Disposed of During Month	471	35	0	0		
SECTION C. STATE UI APPEALS DECISIONS BY TYPE OF APPELLANT							







## Making Sense of Unemployment Data

There are 32 different reports that are available digitally and 64 different data files to download.

<b>ETA 5130</b>	Benefit Appeals Report					
<b>General Description</b>	The ETA 5130 report is the basic source of information on the appeals case workload in each state under the regular programs of state unemployment insurance, unemployment compensation for Federal employees, and unemployment compensation for ex-service members (referred to as UI, UCFE, and UCX respectively). The report is used to evaluate the appeals function, to develop plans for remedial action when unreasonable backlogs develop, and to support and justify the allocation of funds to service this functional area.					
<b>Keywords:</b>	Appeals, decisions, remands, higher authority, lower authority, misconduct, able and available, refusal of suitable work, voluntary quit					
Program	Data Map	Reporting Instructions	Data Edits	Frequency	Raw Data	Notes
Regular Program	<a href="#">Data Map</a>	<a href="#">link</a> page I-3-1	<a href="#">Report Edits</a>	monthly	<a href="#">Data</a>	
Extended Benefits	<a href="#">Data Map</a>	See above	<a href="#">Report Edits</a>	monthly	<a href="#">Data</a>	
EUC (1991-1994)	<a href="#">Data Map</a>	See above		monthly	<a href="#">Data</a>	
TEUC (2002-2004)	<a href="#">Data Map</a>	See above		monthly	<a href="#">Data</a>	
EUC08 (2008-2013)	<a href="#">Data Map</a>	See above		monthly	<a href="#">Data</a>	
PEUC (2020)	<a href="#">Data Map</a>	See above	<a href="#">Report Edits</a>	monthly	<a href="#">Data</a>	







## Making Sense of Unemployment Data

Each file can have 40+ columns and represents monthly data for each state since 1971.

Columns can be decoded by reading a data dictionary.

Many metrics (e.g. reciprocity) are hard to calculate and span reports.

st	rptdate	c1	c2	c3	c4	c5	c6	c7	c9	c10	c11	c12	c13	c14	c15
AK	1/31/1971	19	0	4	0	1	0	0	21	1	0	0	19	0	0
AK	2/28/1971	19	0	2	0	2	0	0	18	1	0	0	19	0	0
AK	3/31/1971	26	2	2	1	0	0	0	34	3	0	0	26	2	0
AK	4/30/1971	30	5	3	0	1	0	0	25	3	0	0	30	5	0
AK	5/31/1971	19	3	2	0	1	0	0	18	3	0	0	19	3	0
AK	6/30/1971	17	3	3	0	0	0	0	14	5	0	0	17	3	0
AK	7/31/1971	19	0	1	0	0	0	0	12	15	0	0	19	0	0
AK	8/31/1971	19	19	2	1	2	0	0	15	102	0	0	19	19	0
AK	9/30/1971	7	4	5	0	3	0	0	15	14	0	0	7	4	0
AK	10/31/1971	23	0	2	0	1	0	0	23	4	0	0	23	0	0
AK	11/30/1971	17	118	2	0	3	0	0	20	4	0	0	17	118	0
AK	12/31/1971	14	0	0	0	3	0	0	27	5	0	0	14	0	0
AK	1/31/1972	32	3	2	0	2	0	0	21	5	0	0	32	3	0

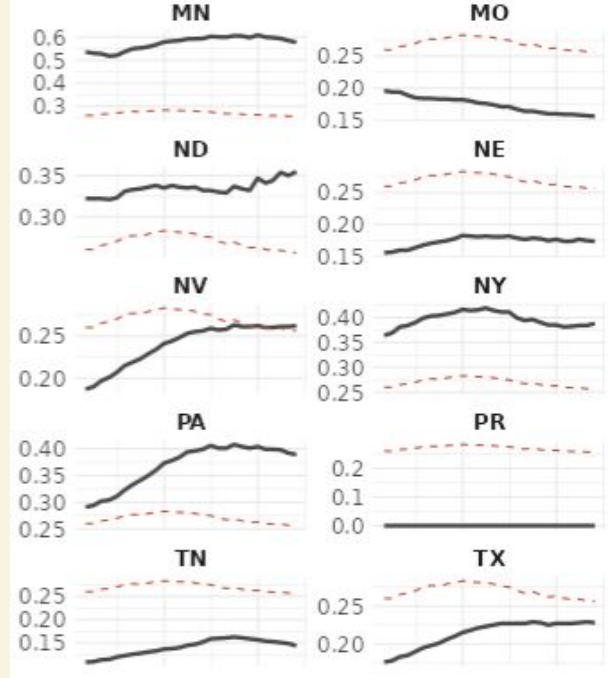






# Making Sense of Unemployment Data

## 50-state Comparison of UI Reciprocity Rate



[UI Data Explorer](#)



## Unemployment Insurance Dashboard

Line graphs are updated weekly on Fridays. Maps include monthly data and are updated at the end of the month with the previous month's data.

How well does UI work

How much does UI pay

How many are getting UI

How is UI financed

How many years of benefits are saved?

Trust fund balance

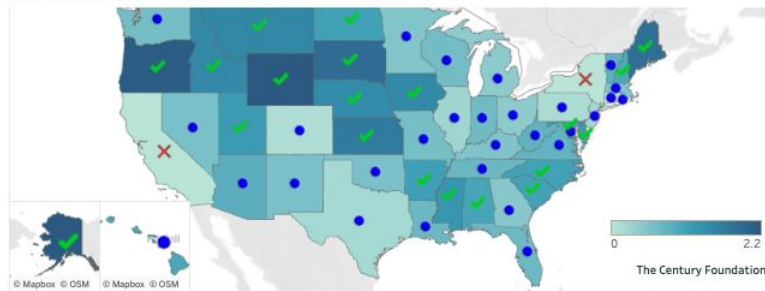
### 4.1. How Many Years of Benefits are Saved?

Year:

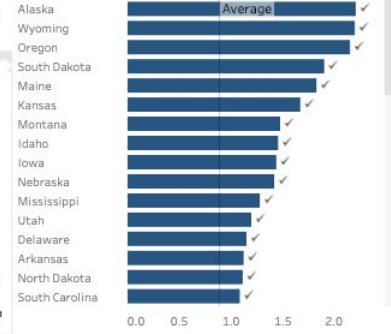
[State Factsheets](#)

Data for 2023

End of year trust fund balance expressed as ability to pay a year of recession level benefits (AHCM), value is years saved. States with check marks meet the 1 year standard per federal regulations. Hover for more.

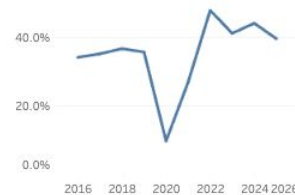


Data Source: Department of Labor data and authors' calculations.

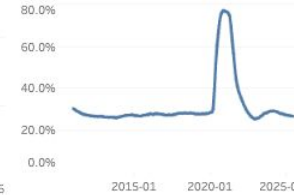


[Download Data](#)

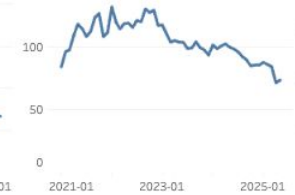
National Denial Rate



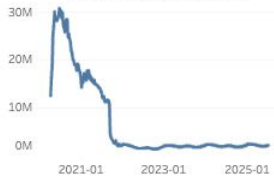
Regular Benefits Reciprocity



Wait Time for Appeals



National Continued Claims



[View on Tableau Public](#)

[Share](#)

[TCF Unemployment Dashboard](#)





***I'm excited about using open data!***

***What are some tools that I can use to do this kind of work?***





## Tools to Analyze Open Data

Virtually any tool that can handle data can help you gain insights

- Spreadsheets
- Databases
- Programming languages (R, python)
- Visualization programs (PowerBI, Tableau)
- AI tools: claude, gemini, chatgpt

Connected data is often more interesting than singular datasets.







***If I didn't give an AI example, I'd  
be committing  
speaker-malpractice***





## Analyzing Housing Prices with Claude.ai

**Question:** How have housing prices changed in SF vs Dallas? What is the impact of new construction and population changes on prices?

**Data:** Case Shiller Housing Index for [SF](#) and [Dallas](#)  
Private Structure Permits for [SF](#) and [Dallas](#)  
Resident Population for [SF](#) and [Dallas](#)

**Tool:** [Claude.ai](#)

[See full transcript](#) - <http://bit.ly/4o6HbdQ>

**Output:** <https://bit.ly/3ILDp9u>







# Analyzing Housing Prices with Claude.ai

**T** You are an economist and data scientist. Your goal is to help me make sense of data that I have relating to housing prices. You should look at any data that I give you and pull out interesting trends that you see, including finding correlations between datasets if you see any.

Edit

I'm ready to help you analyze housing price data! As an economist and data scientist, I can help you identify trends, patterns, and correlations in your data.

To get started, please share the housing data you'd like me to examine. This could be in various formats like:

- CSV files with price data over time
- Spreadsheets with regional comparisons
- Data including factors like square footage, location, amenities
- Market indicators alongside housing prices







# Analyzing Housing Prices with Claude.ai

T First I am going to give you the case shiller home price index for Dallas, TX and San Francisco, CA. I'd like you to pull out any insights that you have within and between the two cities.

T Now i'd like you to analyze new building permits for private structures in each city.

Edit

## Building Permits Analysis: Key Insights

The building permits data reveals **dramatic supply-side differences** that explain much of the price performance gap between San Francisco and Dallas:

### Construction Volume Disparity

**Dallas builds 6.5x more housing units annually** than San Francisco across the entire 35-year period (1990-2024). This isn't just a recent phenomenon - Dallas has consistently outbuilt SF by 4-9x in every economic period.

**Per capita construction rates** show an even starker divide: Dallas builds **10.2x more units per million residents** than San Francisco in 2024, highlighting SF's severe supply constraints relative to population.







# Analyzing Housing Prices with Claude.ai

T Is there any correlation between building permits and housing prices in either city?

Edit

T Does your analysis use time series analysis, looking at how changes in price at time 0 impact permits at later times? And vice versa: how permit numbers at time 0 impact prices at later times?

T Can you create a short document that summarizes the most salient features of our analysis? I'd like that summary to include:

- a short description of what was analyzed
- a few graphs that show the change in population, housing prices, and permits over time (only include the time period that is common to all of the data sets)
- A few key conclusions from our analysis as to the relationship between the three data sets
- A few conclusions about factors that impact housing price that may be outside of the data that we presented (such as regulatory complexity or external economic forces in the region)

Edit







## Key Conclusions from Our Analysis

### 1. Supply Constraints Trump Demand

SF built only 32-68 permits per 1% price growth vs Dallas's 229-2,323. This "construction efficiency" gap explains sustained price premiums.

### 2. Market Responsiveness Varies

Dallas showed stronger correlations (0.590) between permits and prices vs SF (0.378). Time-lag analysis revealed Dallas responds faster to price signals.

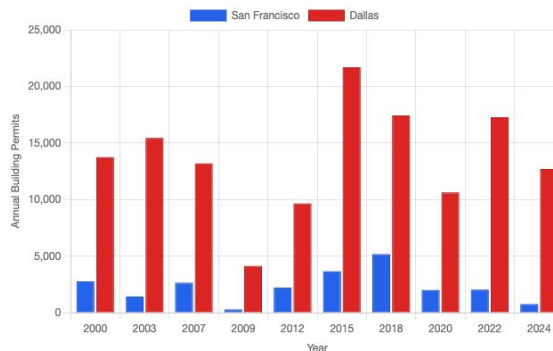
### 3. Demographics Don't Determine Returns

Despite 6.4x slower growth over 54 years, SF achieved higher returns. Supply responsiveness matters more than raw demand levels.

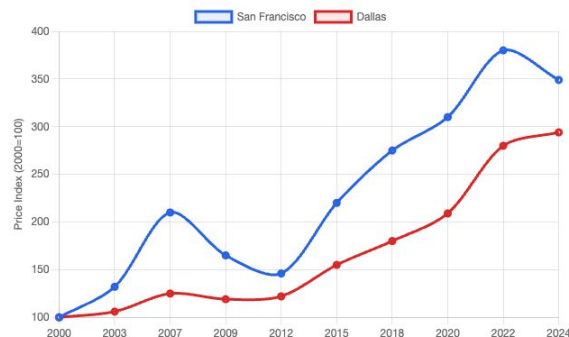
### 4. Volatility Reflects Supply Rigidity

SF was 1.9x more volatile in prices and 2.1x more volatile in construction. During 2008: SF declined 44% vs Dallas's 8.7%.

#### Dallas Built 6.5x More Housing Despite Lower Price Growth



#### Supply Constraints Drive Higher Returns: SF +249% vs Dallas +194%







# How do you use public data?







# Thank you!

**Please reach out:**

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