# TidyTuesday Week 40

Pranay Gundam

Sunday 6$^{\text{th}}$ October, 2024

## Contents

# 1 Weekly Summary

Yet another week where I think the two series show such a strong relationship since I haven't detrended anything. I will say that one way I can at least identify if these series exhibit a clear trend one way or the other is simply by plotting both of the timeseries. Outside of this though, I think wages and sales both generally do go up over time but a detrended regression I would think also has some linkage as well in some trickle down economics way.

# 2 Date: 2024-09-30

**Series ID: PRIICLAIMS**

This series is titled Initial Claims in Puerto Rico and has a frequency of Weekly, Ending Saturday. The units are Number and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 1986-02-15 and the observation end date is 2024-09-21.The popularity of this series is 5.

**Series ID: WPU321101**

This series is titled Producer Price Index by Commodity: Warehousing, Storage, and Related Services and has a frequency of Monthly. The units are Index Dec 2008=100 and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 2008-12-01 and the observation end date is 2024-08-01.The popularity of this series is 1.

## 2.1 Regression Tables and Plots

| Dep. Variable: | value_fred_WPU321101 | R-squared: | 0.028 |
|---|---|---|---|
| Model: | OLS | Adj. R-squared: | -0.014 |
| Method: | Least Squares | F-statistic: | 0.6714 |
| Date: | Mon, 30 Sep 2024 | Prob (F-statistic): | 0.421 |
| Time: | 09:26:38 | Log-Likelihood: | -101.43 |
| No. Observations: | 25 | AIC: | 206.9 |
| Df Residuals: | 23 | BIC: | 209.3 |
| Df Model: | 1 | | |
| Covariance Type: | nonrobust | | |

| | coef | std err | t | P>\|t\| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| const | 113.9020 | 7.173 | 15.880 | 0.000 | 99.064 | 128.740 |
| value_fred_PRIICLAIMS | -0.0026 | 0.003 | -0.819 | 0.421 | -0.009 | 0.004 |

| Omnibus: | 9.006 | Durbin-Watson: | 0.100 |
|---|---|---|---|
| Prob(Omnibus): | 0.011 | Jarque-Bera (JB): | 7.958 |
| Skew: | 1.374 | Prob(JB): | 0.0187 |
| Kurtosis: | 3.295 | Cond. No. | 5.66e+03 |

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

[2] The condition number is large, 5.66e+03. This might indicate that there are strong multicollinearity or other numerical problems.
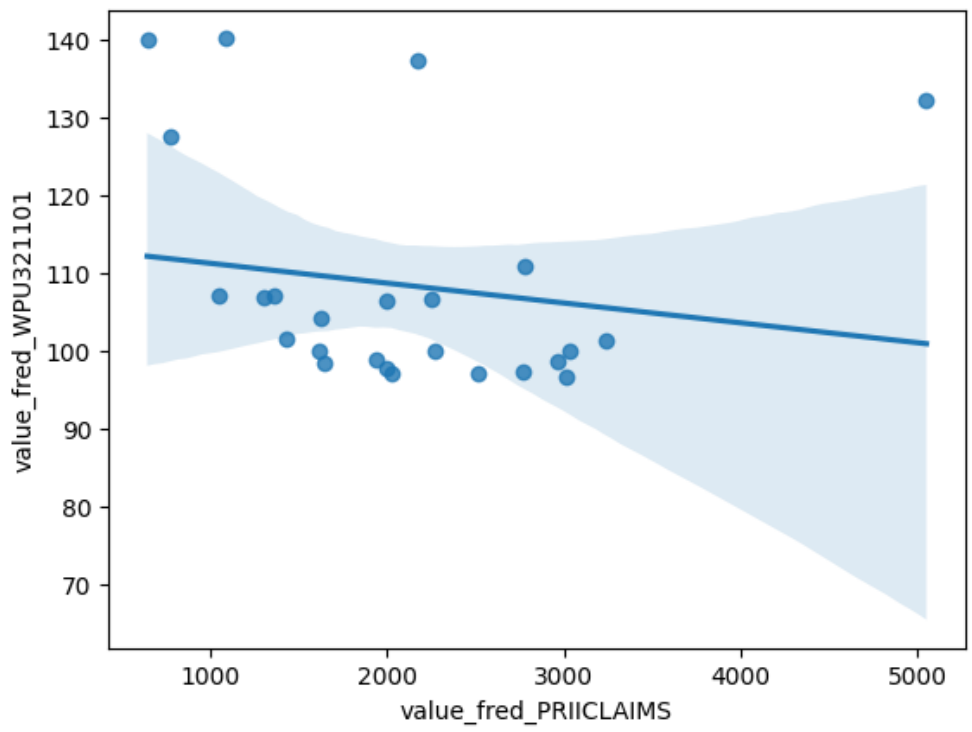
**Figure 1:** Regression Plot for 2024-09-30

# 3 Date: 2024-10-01

**Series ID: BSCICP035AM665S**

This series is titled Composite Leading Indicators: Composite Business Confidence Amplitude Adjusted for Major Five Asia Economies and has a frequency of Monthly. The units are Normalised (Normal=100) and the seasonal adjustment is Seasonally Adjusted.The observation start date is 2000-02-01 and the observation end date is 2023-12-01.The popularity of this series is 4.

**Series ID: CCDIOANYQ156N**

This series is titled CredAbility Consumer Distress Index for New York (DISCONTINUED) and has a frequency of Quarterly. The units are Percent and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 1980-01-01 and the observation end date is 2013-01-01.The popularity of this series is 1.

## 3.1 Regression Tables and Plots

| Dep. Variable: | value_fred_CCDIOANYQ156N | R-squared: | 0.176 |
|---|---|---|---|
| Model: | OLS | Adj. R-squared: | 0.159 |
| Method: | Least Squares | F-statistic: | 10.66 |
| Date: | Tue, 01 Oct 2024 | Prob (F-statistic): | 0.00198 |
| Time: | 14:58:10 | Log-Likelihood: | -154.57 |
| No. Observations: | 52 | AIC: | 313.1 |
| Df Residuals: | 50 | BIC: | 317.0 |
| Df Model: | 1 | | |
| Covariance Type: | nonrobust | | |

| | coef | std err | t | P> \|t\| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| **const** | -68.2822 | 44.847 | -1.523 | 0.134 | -158.360 | 21.796 |
| **value_fred_BSCICP035AM665S** | 1.4562 | 0.446 | 3.265 | 0.002 | 0.560 | 2.352 |

| | | | |
|---|---|---|---|
| **Omnibus:** | 1.626 | **Durbin-Watson:** | 0.180 |
| **Prob(Omnibus):** | 0.444 | **Jarque-Bera (JB):** | 1.406 |
| **Skew:** | -0.248 | **Prob(JB):** | 0.495 |
| **Kurtosis:** | 2.366 | **Cond. No.** | 6.74e+03 |

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

[2] The condition number is large, 6.74e+03. This might indicate that there are strong multicollinearity or other numerical problems.
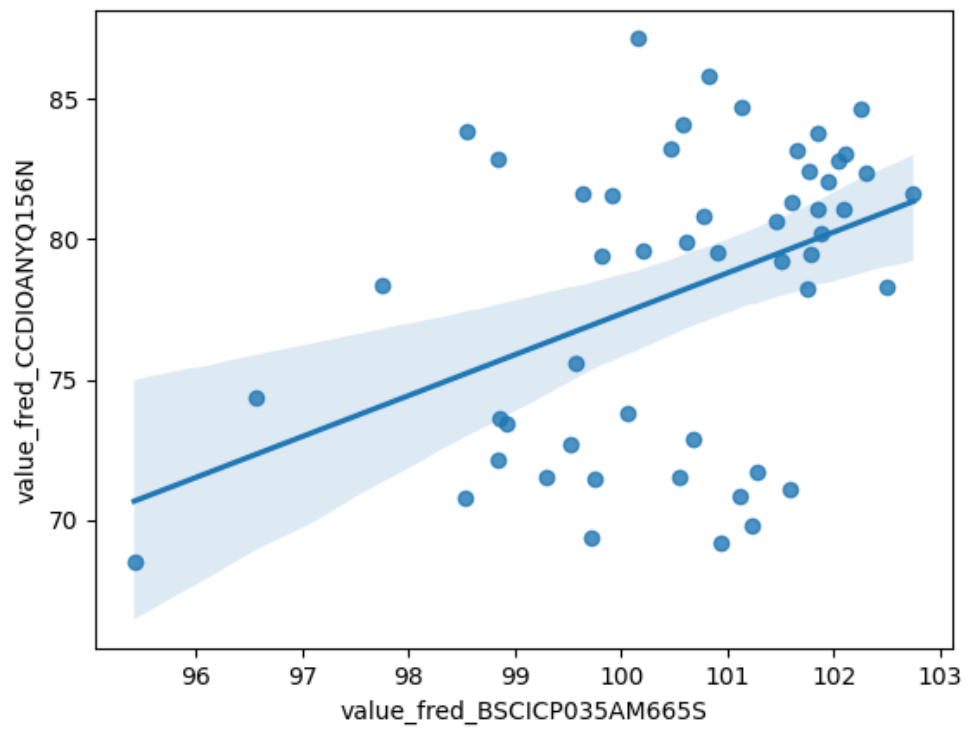
**Figure 2:** Regression Plot for 2024-10-01

# 4 Date: 2024-10-02

**Series ID: MPCV04XXS**

This series is titled Total Private Construction Spending: Health Care in the United States and has a frequency of Monthly. The units are Percent Change from Preceding Period and the seasonal adjustment is Seasonally Adjusted.The observation start date is 2002-02-01 and the observation end date is 2024-08-01.The popularity of this series is 5.

**Series ID: BOPXM**

This series is titled Exports of Merchandise: Adjusted, Excluding Military (DISCONTINUED) and has a frequency of Quarterly. The units are Billions of Dollars and the seasonal adjustment is Seasonally Adjusted.The observation start date is 1960-01-01 and the observation end date is 2014-01-01.The popularity of this series is 1.

## 4.1 Regression Tables and Plots

| Dep. Variable: | value_fred_BOPXM | R-squared: | 0.004 |
|---|---|---|---|
| Model: | OLS | Adj. R-squared: | -0.017 |
| Method: | Least Squares | F-statistic: | 0.1986 |
| Date: | Wed, 02 Oct 2024 | Prob (F-statistic): | 0.658 |
| Time: | 13:58:20 | Log-Likelihood: | -275.87 |
| No. Observations: | 48 | AIC: | 555.7 |
| Df Residuals: | 46 | BIC: | 559.5 |
| Df Model: | 1 | | |
| Covariance Type: | nonrobust | | |

| | coef | std err | t | P> \|t\| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| **const** | 290.1043 | 11.193 | 25.919 | 0.000 | 267.575 | 312.634 |
| **value_fred_MPCV04XXS** | 2.0497 | 4.599 | 0.446 | 0.658 | -7.208 | 11.307 |

| Omnibus: | 17.228 | Durbin-Watson: | 0.036 |
|---|---|---|---|
| Prob(Omnibus): | 0.000 | Jarque-Bera (JB): | 3.442 |
| Skew: | -0.003 | Prob(JB): | 0.179 |
| Kurtosis: | 1.688 | Cond. No. | 2.44 |

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
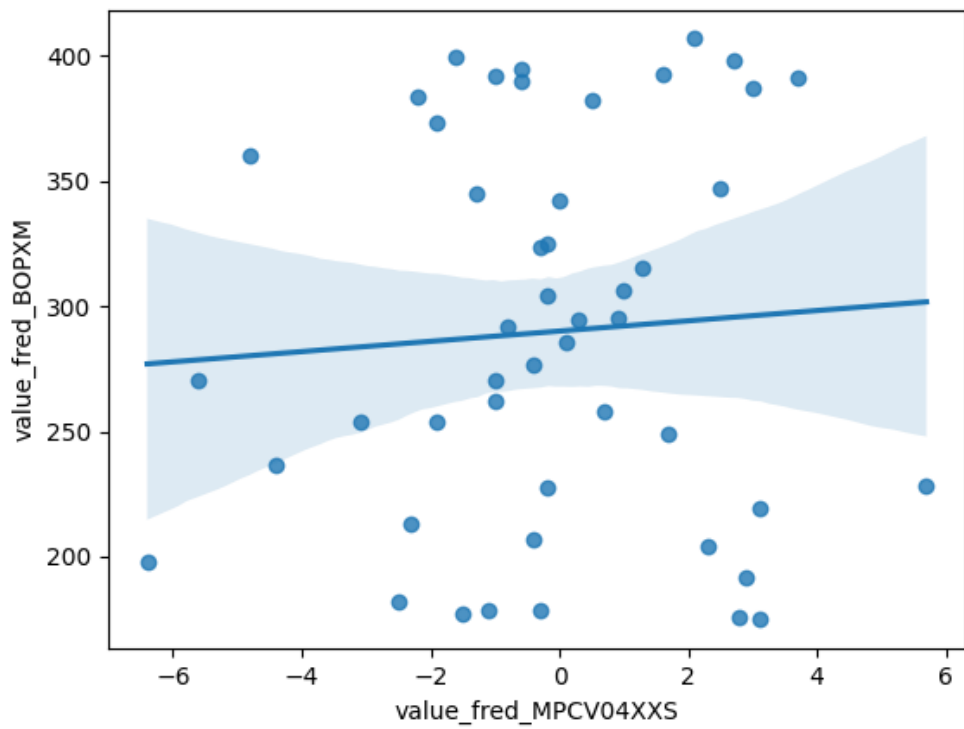
**Figure 3:** Regression Plot for 2024-10-02

# 5   Date: 2024-10-03

**Series ID: MORTMRGN1SW**

This series is titled Margin for 1-Year Adjustable Rate Mortgage in the Southwest Freddie Mac Region (DISCONTINUED) and has a frequency of Weekly, Ending Thursday. The units are Percent and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 1988-02-19 and the observation end date is 2015-12-31.The popularity of this series is 1.

**Series ID: DHIDFHRVIWTU**

This series is titled DHI-DFH Index of Recruiting Intensity per Vacancy by Industry: Warehouse, Trans. & Utilities (DISCONTINUED) and has a frequency of Monthly. The units are Index and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 2001-01-01 and the observation end date is 2018-04-01.The popularity of this series is 0.

## 5.1   Regression Tables and Plots

| Dep. Variable: | value_fred_DHIDFHRVIWTU | R-squared: | 0.054 |
|---|---|---|---|
| Model: | OLS | Adj. R-squared: | 0.011 |
| Method: | Least Squares | F-statistic: | 1.257 |
| Date: | Thu, 03 Oct 2024 | Prob (F-statistic): | 0.274 |
| Time: | 12:34:14 | Log-Likelihood: | 22.287 |
| No. Observations: | 24 | AIC: | -40.57 |
| Df Residuals: | 22 | BIC: | -38.22 |
| Df Model: | 1 | | |
| Covariance Type: | nonrobust | | |

| | coef | std err | t | P> \|t\| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| **const** | 3.3356 | 2.073 | 1.609 | 0.122 | -0.963 | 7.635 |
| **value_fred_MORTMRGN1SW** | -0.8370 | 0.746 | -1.121 | 0.274 | -2.385 | 0.711 |

| | | | |
|---|---|---|---|
| Omnibus: | 0.563 | Durbin-Watson: | 0.601 |
| Prob(Omnibus): | 0.755 | Jarque-Bera (JB): | 0.529 |
| Skew: | 0.315 | Prob(JB): | 0.768 |
| Kurtosis: | 2.637 | Cond. No. | 319. |

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
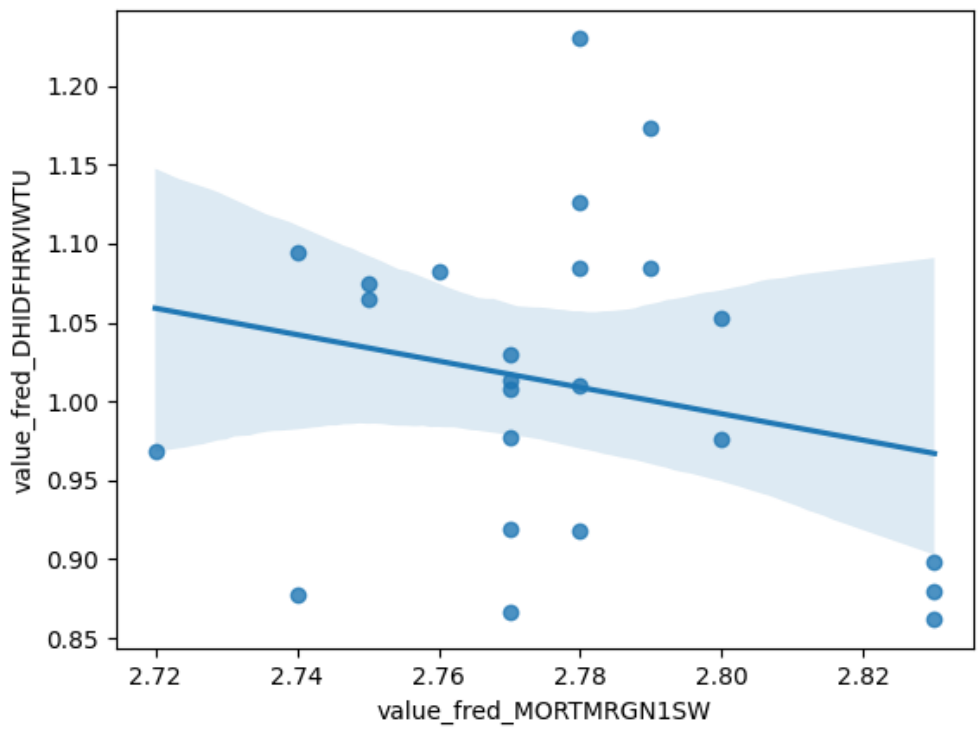
**Figure 4:** Regression Plot for 2024-10-03

# 6   Date: 2024-10-04

**Series ID: DTRNSNM**

This series is titled One to Four Family Real Estate Loans Securitized by Finance Companies, Level and has a frequency of Monthly. The units are Millions of Dollars and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 1996-06-01 and the observation end date is 2024-07-01.The popularity of this series is 1.

**Series ID: LNU02026623**

This series is titled Multiple Jobholders, Women and has a frequency of Monthly. The units are Thousands of Persons and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 1994-01-01 and the observation end date is 2024-09-01.The popularity of this series is 6.

## 6.1   Regression Tables and Plots

| Dep. Variable: | value_fred_LNU02026623 | R-squared: | 0.089 |
|---|---|---|---|
| Model: | OLS | Adj. R-squared: | 0.087 |
| Method: | Least Squares | F-statistic: | 32.97 |
| Date: | Fri, 04 Oct 2024 | Prob (F-statistic): | 2.10e-08 |
| Time: | 11:32:04 | Log-Likelihood: | -2345.0 |
| No. Observations: | 338 | AIC: | 4694. |
| Df Residuals: | 336 | BIC: | 4702. |
| Df Model: | 1 | | |
| Covariance Type: | nonrobust | | |

| | coef | std err | t | P> \|t\| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| **const** | 3783.4423 | 17.699 | 213.765 | 0.000 | 3748.627 | 3818.257 |
| **value_fred_DTRNSNM** | -0.0044 | 0.001 | -5.742 | 0.000 | -0.006 | -0.003 |

| Omnibus: | 15.893 | Durbin-Watson: | 0.456 |
|---|---|---|---|
| Prob(Omnibus): | 0.000 | Jarque-Bera (JB): | 40.526 |
| Skew: | -0.014 | Prob(JB): | 1.58e-09 |
| Kurtosis: | 4.696 | Cond. No. | 3.01e+04 |

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
[2] The condition number is large, 3.01e+04. This might indicate that there are strong multicollinearity or other numerical problems.
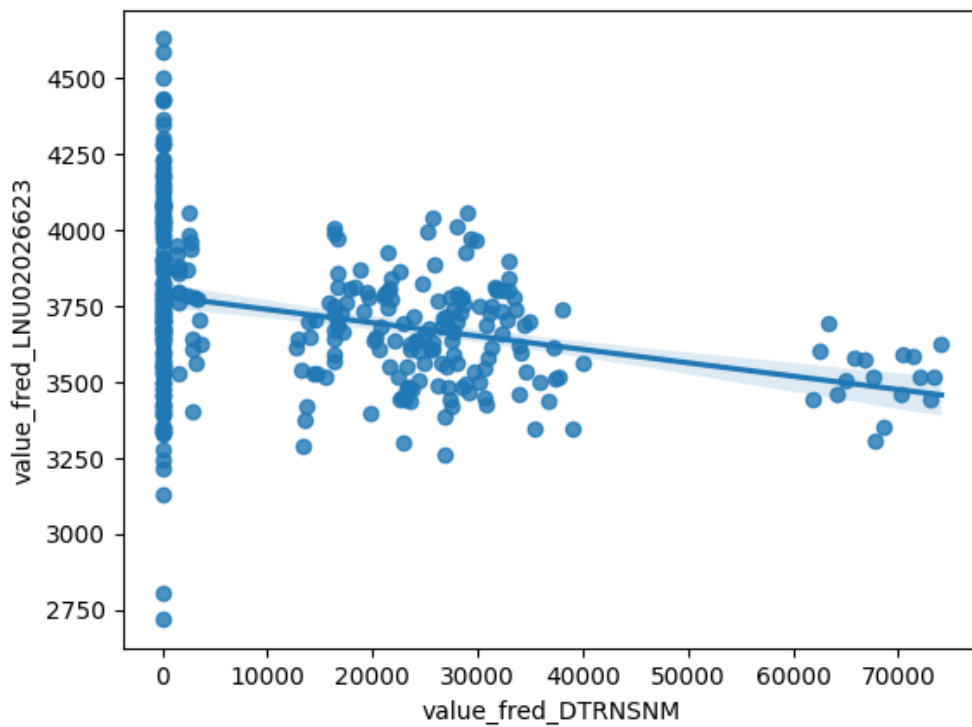
**Figure 5:** Regression Plot for 2024-10-04

# 7 Date: 2024-10-05

**Series ID: CIS2023211000000I**

This series is titled Employment Cost Index: Wages and salaries for Private industry workers in Aircraft manufacturing and has a frequency of Quarterly. The units are Index Dec 2005=100 and the seasonal adjustment is Seasonally Adjusted.The observation start date is 2003-01-01 and the observation end date is 2024-04-01.The popularity of this series is 12.

**Series ID: WHLSLRSMNSA**

This series is titled Merchant Wholesalers Sales and has a frequency of Monthly. The units are Millions of Dollars and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 1992-01-01 and the observation end date is 2024-07-01.The popularity of this series is 4.

## 7.1 Regression Tables and Plots

| Dep. Variable: | value_fred_WHLSLRSMNSA | R-squared: | 0.882 |
|---|---|---|---|
| Model: | OLS | Adj. R-squared: | 0.881 |
| Method: | Least Squares | F-statistic: | 628.4 |
| Date: | Sat, 05 Oct 2024 | Prob (F-statistic): | 9.35e-41 |
| Time: | 12:30:01 | Log-Likelihood: | -1032.8 |
| No. Observations: | 86 | AIC: | 2070. |
| Df Residuals: | 84 | BIC: | 2075. |
| Df Model: | 1 | | |
| Covariance Type: | nonrobust | | |

| | coef | std err | t | P> |t| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| **const** | -2.363e+05 | 2.71e+04 | -8.724 | 0.000 | -2.9e+05 | -1.82e+05 |
| **value_fred_CIS2023211000000I** | 5336.9804 | 212.904 | 25.068 | 0.000 | 4913.597 | 5760.364 |

| Omnibus: | 4.890 | Durbin-Watson: | 0.918 |
|---|---|---|---|
| Prob(Omnibus): | 0.087 | Jarque-Bera (JB): | 4.435 |
| Skew: | -0.381 | Prob(JB): | 0.109 |
| Kurtosis: | 3.811 | Cond. No. | 794. |

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
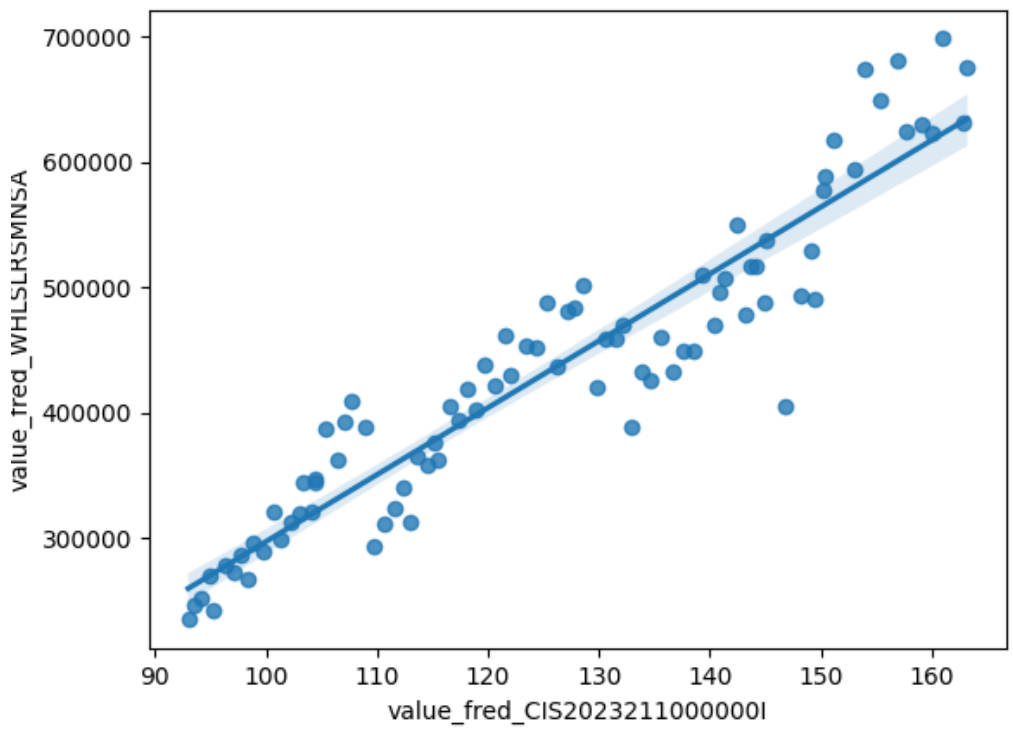
**Figure 6:** Regression Plot for 2024-10-05

# 8   Date: 2024-10-06

**Series ID: CUURD000SAEC**

This series is titled Consumer Price Index for All Urban Consumers: Education and Communication Commodities in Size Class D (DISCONTINUED) and has a frequency of Monthly. The units are Index Dec 2009=100 and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 2009-12-01 and the observation end date is 2017-12-01.The popularity of this series is 1.

**Series ID: CBBTCUSD**

This series is titled Coinbase Bitcoin and has a frequency of Daily, 7-Day. The units are U.S. Dollars and the seasonal adjustment is Not Seasonally Adjusted.The observation start date is 2014-12-01 and the observation end date is 2024-10-05.The popularity of this series is 63.

## 8.1   Regression Tables and Plots

| Dep. Variable: | value_fred_CBBTCUSD | R-squared: | 0.394 |
|---|---|---|---|
| Model: | OLS | Adj. R-squared: | 0.376 |
| Method: | Least Squares | F-statistic: | 22.13 |
| Date: | Sun, 06 Oct 2024 | Prob (F-statistic): | 4.14e-05 |
| Time: | 18:26:47 | Log-Likelihood: | -318.54 |
| No. Observations: | 36 | AIC: | 641.1 |
| Df Residuals: | 34 | BIC: | 644.2 |
| Df Model: | 1 | | |
| Covariance Type: | nonrobust | | |

| | coef | std err | t | P> \|t\| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| **const** | 6.616e+04 | 1.38e+04 | 4.804 | 0.000 | 3.82e+04 | 9.41e+04 |
| **value_fred_CUURD000SAEC** | -727.6150 | 154.676 | -4.704 | 0.000 | -1041.954 | -413.276 |

| Omnibus: | 28.328 | Durbin-Watson: | 0.530 |
|---|---|---|---|
| Prob(Omnibus): | 0.000 | Jarque-Bera (JB): | 68.935 |
| Skew: | 1.804 | Prob(JB): | 1.07e-15 |
| Kurtosis: | 8.739 | Cond. No. | 4.24e+03 |

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

[2] The condition number is large, 4.24e+03. This might indicate that there are strong multicollinearity or other numerical problems.
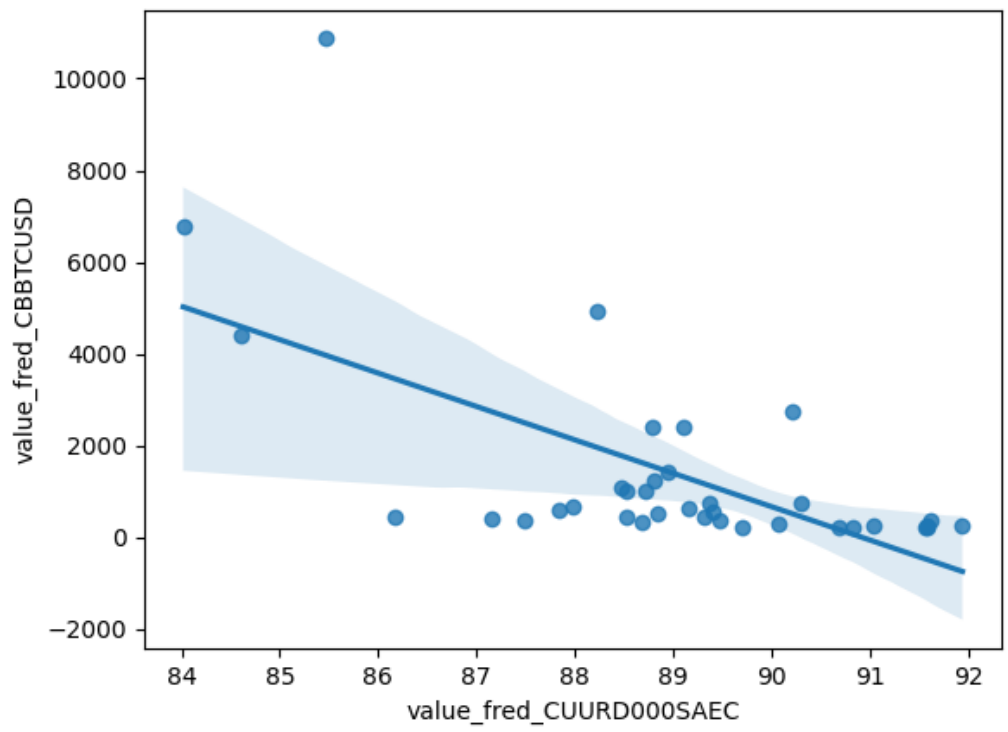
**Figure 7:** Regression Plot for 2024-10-06