

# WHAT AFFECTS U.S. TRADE?

---

ALEC VALENTINO



# DATA

---

- Sources: FRED Economic Data
- Observations: 119
- Data from October 2009 to October 2019 (Time-Series)

# EQUATION

---

- Total Trade =  $\beta_0 + \beta_1 \text{Inflation} + \beta_2 \text{Income} + \beta_3 \text{Unemployment Rate}$
- Lag\_Total Trade =  $\beta_0 + \beta_1 \text{Lag\_Inflation} + \beta_2 \text{Income} + \beta_3 \text{Lag\_unemployment Rate}$

# DEPENDENT VARIABLE

---

- Total Trade
  - Total Trade Balance of Goods and Services

# INDEPENDENT VARIABLES

---

- Inflation Rate
  - The increase in the prices of goods and services over time.
- Disposable Income
  - Total Personal Income after deduction of taxes.
- Unemployment Rate
  - Percentage of unemployed workers in the total labor force.



# WHY THESE VARIABLES?

---

- Inflation Rate
  - With a rising inflation rate, it makes local goods less favorable which may cause consumers to turn to imports if it is cheaper.
- Disposable Income
  - If households receive higher disposable incomes, they may not mind buying local compared to importing.
- Unemployment Rate
  - When more people are unemployed, they may have less money to spend on goods and services.

# SUMMARY STATISTICS

---

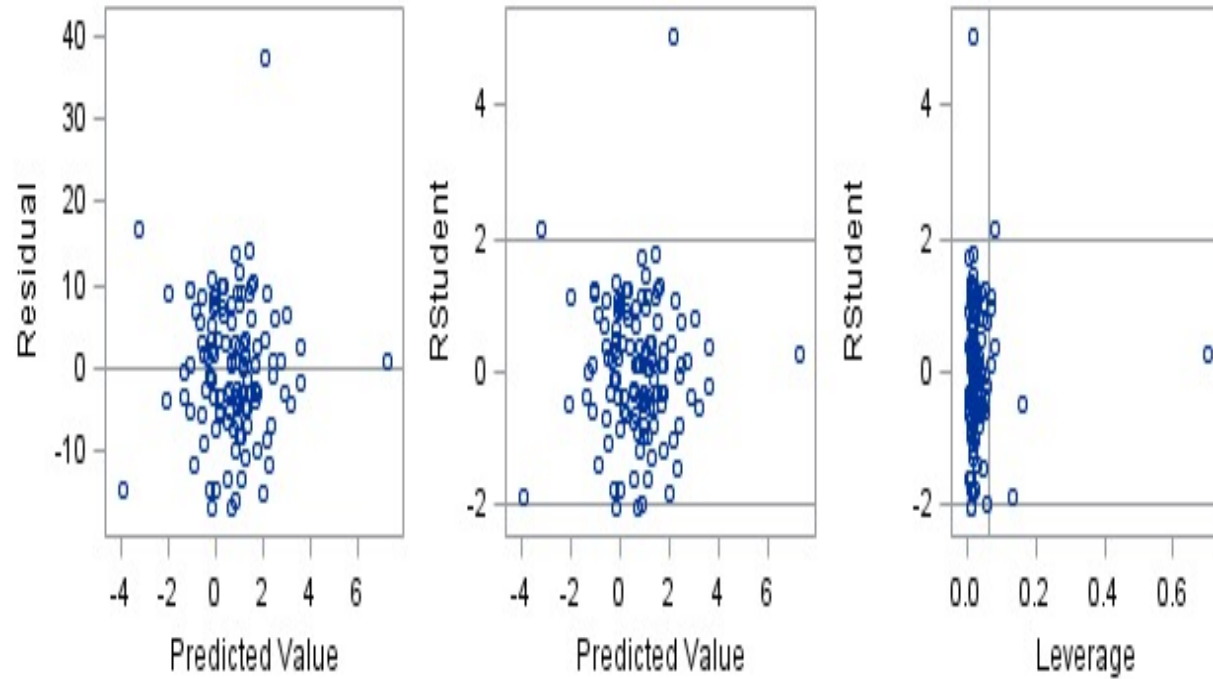
## The SAS System

### The MEANS Procedure

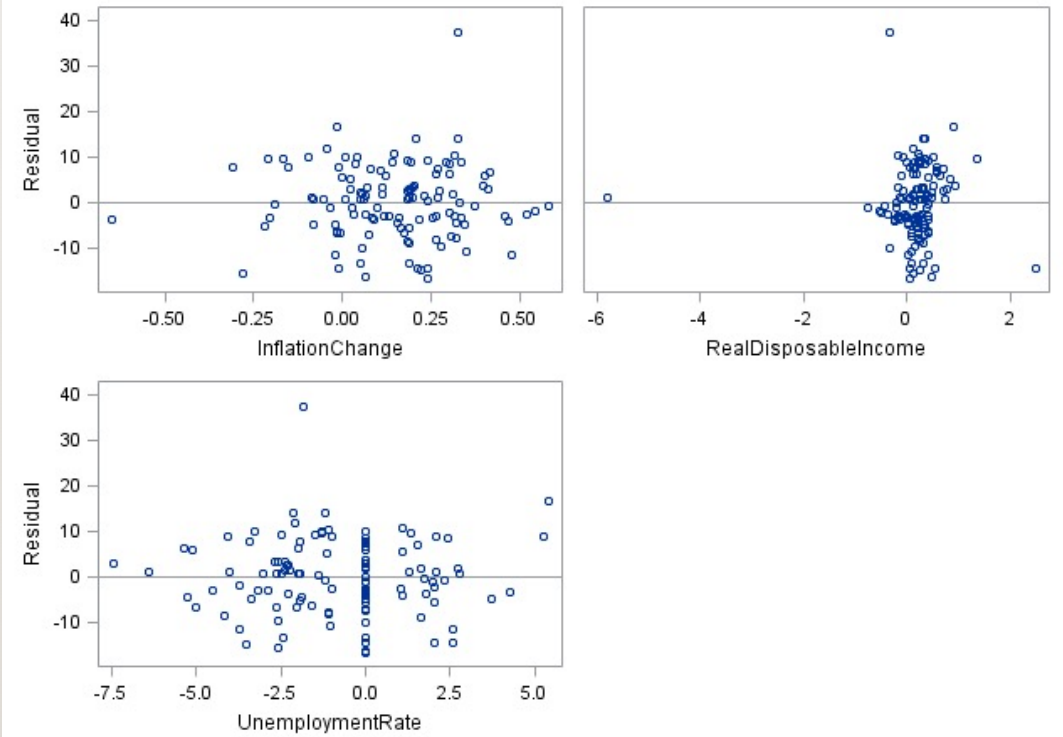
Variable	N	Mean	Std Dev	Minimum	Maximum
TotalTrade	119	0.7228097	8.2667305	-18.3469000	39.6153000
InflationChange	120	0.1435666	0.1907547	-0.6493100	0.5809500
RealDisposableIncome	119	0.1676050	0.6678315	-5.8017000	2.4927400
UnemploymentRate	120	-0.8269538	2.3389920	-7.4626900	5.4054100

# SCATTER PLOT

Fit Diagnostics for TotalTrade



Residual by Regressors for TotalTrade





# RESULTS

## The SAS System

The REG Procedure  
Model: MODEL1  
Dependent Variable: TotalTrade

Number of Observations Read	120
Number of Observations Used	119
Number of Observations with Missing Values	1

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	224.42728	74.80909	1.10	0.3533
Error	115	7839.55510	68.17004		
Corrected Total	118	8063.98238			

Root MSE	8.25652	R-Square	0.0278
Dependent Mean	0.72281	Adj R-Sq	0.0025
Coeff Var	1142.28056		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	1	0.32921	1.01748	0.32	0.7469
InflationChange	1	1.72072	4.04298	0.43	0.6712
RealDisposableIncome	1	-1.23178	1.15709	-1.06	0.2893
UnemploymentRate	1	-0.44550	0.32992	-1.35	0.1796

# INTERPRETATION

---

- Inflation Rate is statistically insignificant
- Real Disposable Income is statistically insignificant
- Unemployment Rate is statistically insignificant
- Adjusted R squared and R squared are low

# CONCLUSION

---

- Inflation Rate, Real Disposable Income, and Unemployment Rate do not have a significant effect on total trade.

# IMPROVEMENTS

---

- Add Consumer Confidence Index as Independent Variable.
- Lengthen the Time Period Viewed/Add More Observations